

The harp in early nineteenth-century Britain:
innovation, business, and making in Jacob Erat's
manufactory

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Abstract

This thesis examines the early nineteenth-century, London-made harp, with particular regard to its mechanical and decorative development, and to the business practices of Jacob Erat (1758-1821), a prominent maker, and his immediate successors. The key protagonists are identified and situated in relation to one another, revealing a hitherto hidden sector of London industry. Forensic analysis of financial accounts (constituting a pioneering big-data study of an instrument) reveals new information about the harp, demonstrating how statistical methods can enrich organology, design history, and cultural history.

A rise in popularity of the harp is traced through quantitative assessment of performance and the publication of printed music. The form and decoration of the harp are considered in relation to architecture, furniture, and pictorial representation of costume, thereby identifying it as the most costly, ornate, and fashionable instrument of the era. A product of industrial revolution, the mechanised harp enjoyed a period of swift development in London, during which predominantly foreign innovators and makers produced a distinctly English instrument, in contradistinction to the French one, which blossomed a generation earlier. Twenty-three British patents (1794-1845) show that competition was intense and that makers vied for superiority.

The Erats' manufactories at 100 Wardour Street (1798-c1821) and 23 Berners Street (1820-1858) are reconstructed from documentary evidence. Changing patterns of workshop use and organisation are revealed by comparison of three inventories (1821, 1822, and 1824). The Erat family is positioned in terms of social class, by analysis of household accounts and wills, showing declining wealth as the business passed between generations. Analysis of company accounts offers insights into manufacture and consumption of the harp: the full range of Erat's products are described, and customers (yielding income) and suppliers (incurring expenditure) are identified. The wages, training, and working conditions of the workforce illuminate the complex organisation of a craft-based company in the midst of industrialisation; Manufacturing techniques, specialised and those common to other trades, are discussed. The workshop diary (1819-21) of Robert Willis (1800-1875), written while an interloper in Erat's manufactory, serves to illuminate the intersection of innovative design, prototyping alongside manufacture, and the web of business relationships between proprietor and workforce, and with customers and competitors.

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Abbreviations and conventions

ACY: Ancestry.co.uk

BL: The British Library

CUL: Cambridge University Library

CWA: City of Westminster Archives

d^o: ditto

ECB: Erat Cashbook, The National Archives, C110/99

EINV: Erat 1824 Inventory, The National Archives, C110/99

EL: Erat Ledger, The National Archives, C110/99

FWM: Fitzwilliam Museum

GMO: Grove Music Online, Oxford Music Online, Oxford University Press

GSJ: Galpin Society Journal

LMA: London Metropolitan Archives

OBOL: Proceeding of the Old Bailey online

r: recto

RCM: Royal College of Music

RSA: Royal Society for the Encouragement of Arts, Manufactures and Commerce

SHC: Surrey History Centre

TNA: The National Archives

TNT: The National Trust

v: verso

V&A: The Victoria & Albert Museum

WD: Robert Willis's Diary, Cambridge University Library, MS ADD 7574

Units and quantities

Monies discussed here predate British decimalisation (1971): currency comprised pounds (£); shillings (s), of which there are 20 in a pound; and pence (d), of which there are 12 in a shilling and 240 in a pound. Where written together, they are abbreviated £/s/d (e.g. the sum of one pound, five shillings, and three pence is written £1/5/3). A guinea was 21 shillings (£1/1/-).

Weights of materials are given in the original Imperial units: a hundred-weight (cwt) is equivalent to four quarters (qr) and to 112 pounds (lbs).

1cwt = 50.8kg; 1qr = 12.7kg; and 1lb = 0.45kg.

Coal was purchased by the chaldron, a measure of dry volume used until the nineteenth century: 1 chaldron (approximately 3140 lbs of coal) = 4 vats (785 lbs each), 12 sacks (262 lbs each), or 36 bushels (87 lbs each).

Harp strings, according to Erat's convention, were sold by the 'set' (for the complete instrument, unless otherwise described), 'bunch' (20 strings), or 'coil' (a single string, coiled).

Editorial conventions

Transcriptions preserve original spelling, punctuation, and grammar. Editorial insertions are in square brackets. Illegible words are denoted by a question mark in square brackets. In the transcription in tabular form of Robert Willis's diary (Chapter 9 and Appendix 9), to make sense of the text and to retain a sense of the original layout:

/ section break

// blank line

- long or short dash

_ long, low dash at end of section

Double space for longer-than-normal spaces

< text > additional text written above line or in margin

[code] shorthand code (not decoded here)

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Chapter 1: Introduction

1.1: Background

This thesis, an appraisal of harp making in early nineteenth-century London (1794-1830), examines business, innovation, manufacture, and competition. Primarily a work of historical organology, it is multidisciplinary, embracing aspects of musicology, material culture, design history, and cultural history. It draws on a wide range of archival materials, principally a recently discovered group of documents (1821-1826) from the company founded by Jacob Erat (i) (1758-1821), the interpretation of which is central to this study. Other primary materials considered include all the patents registered for the harp in Britain; the diary (1819-1821) of Robert Willis, a young innovator, which is examined in relation to the harp for the first time; the letters and ledgers of the Érard family; and representative extant instruments. The success of the instrument is assessed in relation to the publication of music, its use in domestic and concert settings, and its appearance in literature.

Decoration, both surface and three-dimensional ornament, is discussed in relation to the principal influences and sources in the period in order more fully to reveal the visual vibrancy of the late Georgian harp. It considers why and how innovation occurred, the relative merits, successes, and failures of patents registered for the harp, and the use of patent registration in the protection of intellectual property. The Erats, a manufacturing family, are discussed in relation to success and social class. Their products and suppliers are identified, and the structure and operation of their manufacturing business, including the hierarchy and training of the workforce, workshop organisation, and the personal and business relationships with other makers, are examined. The tools and processes used in making the harp are considered in relation to developments in manufacturing technology, and the development of one particular patented design is traced through the diary of Robert Willis, its inventor.

Following formal study of the material reconstruction of historical harps,¹ experience making modern harps with an established manufacturer,² and further independent

¹ BSc Music Technology, London Guildhall University, 1995.

² Pilgrim Harps, South Godstone, Surrey (1995-1996).

experimentation and research which led to my MA,³ this research was prompted chiefly by my discovery of a substantial body of hitherto unrecognised documents pertaining to the Erat company. Comprising an accounts journal (1821–1824) (Figure 1.1), cashbook (1821–1826) (Figure 1.2), inventory (1824), property leases (1812, 1816 and 1821), and the last will and testament (1821) of Jacob Erat (i), they open a window on a major London manufactory during the 1820s.⁴ Catalogued as ‘Master Horne’s exhibits: Sharp versus Erat’, these documents served as evidence in a chancery court case between George Sharp (one of Jacob Erat’s executors) and the Erat family. The reasons for this litigation are unclear as only incomplete court records survive.⁵ Horne was the seventh and final Master (1839–1853) of the Courts of Chancery,⁶ and it is likely that the documents were transferred to the Public Record Office sometime after 1838, although the accession date is not recorded.⁷ This research has resulted in one journal article,⁸ and several conference papers.⁹

³ MA by Project (Music Technology), London Metropolitan University, 2010.

⁴ TNA, C110/99 Master Horne’s Exhibits: Sharp versus Erat, 1821–1826. TNA, PROB 11/1640/314 Will of Jacob Erat, Harp Maker of Saint Marylebone, Middlesex. 3 March 1821.

⁵ TNA, C13/2027/32 Courts of Chancery: Pleadings filed in the Six Clerks Office: Sharp versus Erat. Examination, 1828.

⁶ The Chancery Master’s exhibits, consisting of a wide range of private papers, were passed on by each Master to his successor.

⁷ The Public Record office (now the National Archives) was created in 1838. An old but undated tag, stamped ‘Chancery Master’s Exhibits, Horne 63,’ formerly tied to the tape used to tie the documents, is now loose in the archive box with the Sharp versus Erat papers.

⁸ Mike Baldwin, ‘The Erat Harp Manufactory: Painted and Gilded Decoration, 1821-1824’, *GJ*, 66 (2013), 149-164.

⁹ Mike Baldwin, ‘Patents, Politics, and Personalities: the Mechanisation of the harp, 1794-1845,’ Galpin Society Conference, Oxford University, 25-29 July 2013. ‘Consuming the Harp in late Georgian England: Products, Services, and Customers of the Erat Manufactory, 1821-1824’, Georgian Pleasures Conference, Bath Spa University, 11-12 September 2013. ‘Erat’s Harp Manufactory at 23 Berners Street (1821-1826): Workshop Organisation in a Georgian Townhouse,’ PhD Symposium, London Metropolitan University, 21 May 2014. ‘The Early Nineteenth-Century London-made ‘Grecian’ Harp: Ornamentation, Decoration, and Architectural Monumentality,’ ICON – Gilding and Decorative Surfaces Group AGM, London, 26 November 2014. ‘Robert Willis and Innovation in Harp Design,’ Galpin Society Conference, Cambridge University, 27-30 September 2015. ‘Forgotten Employees of the Late-Georgian Harp Makers: The Apprentice, the Thief, the Dog and its Killer’, Made in London Conference, London Metropolitan University, 28 May 2016.

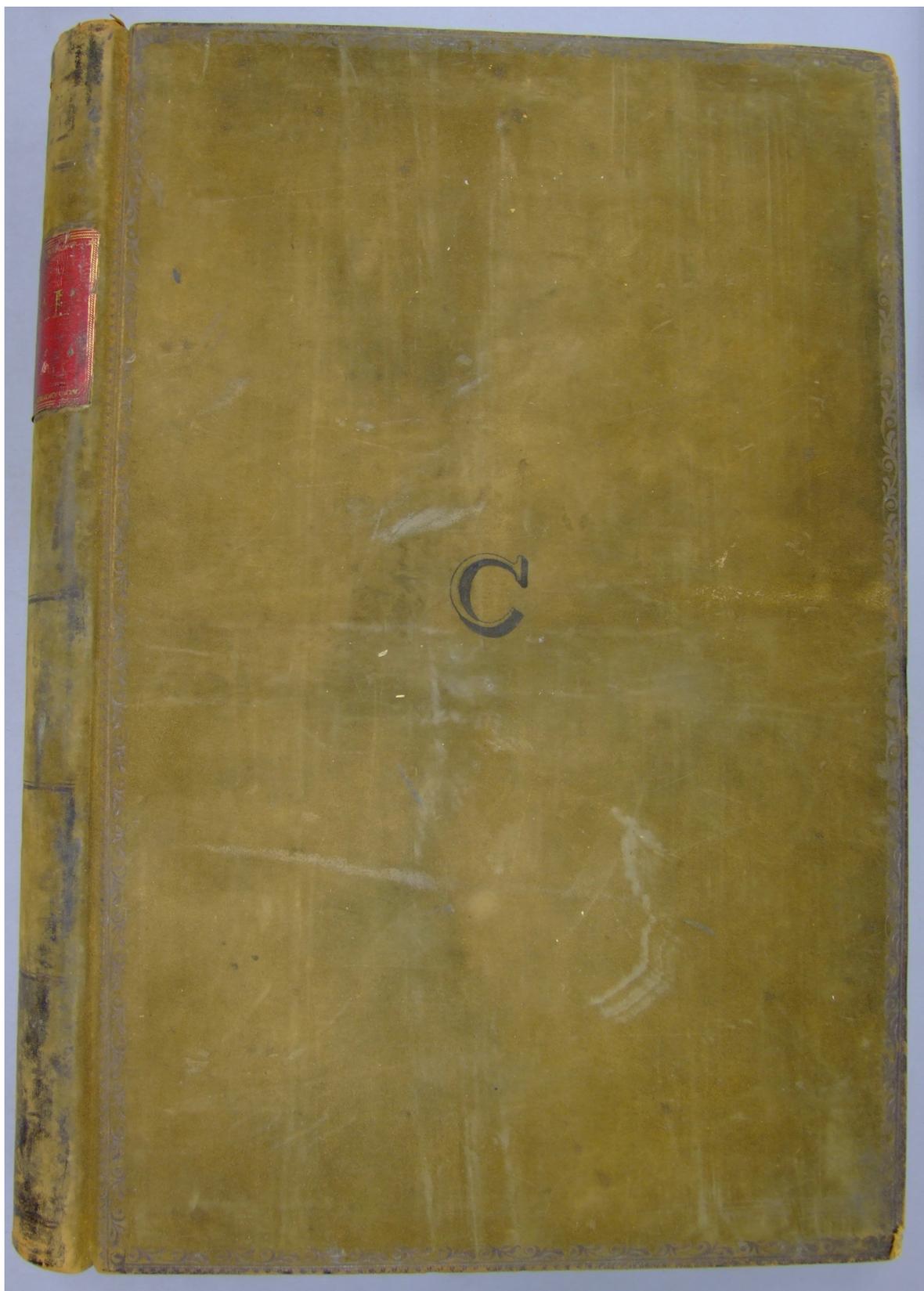


Figure 1.1. Erat Ledger (420mm x 300mm x 65mm, comprising 542 pages). TNA. Master Horne's Exhibits, C110/99.

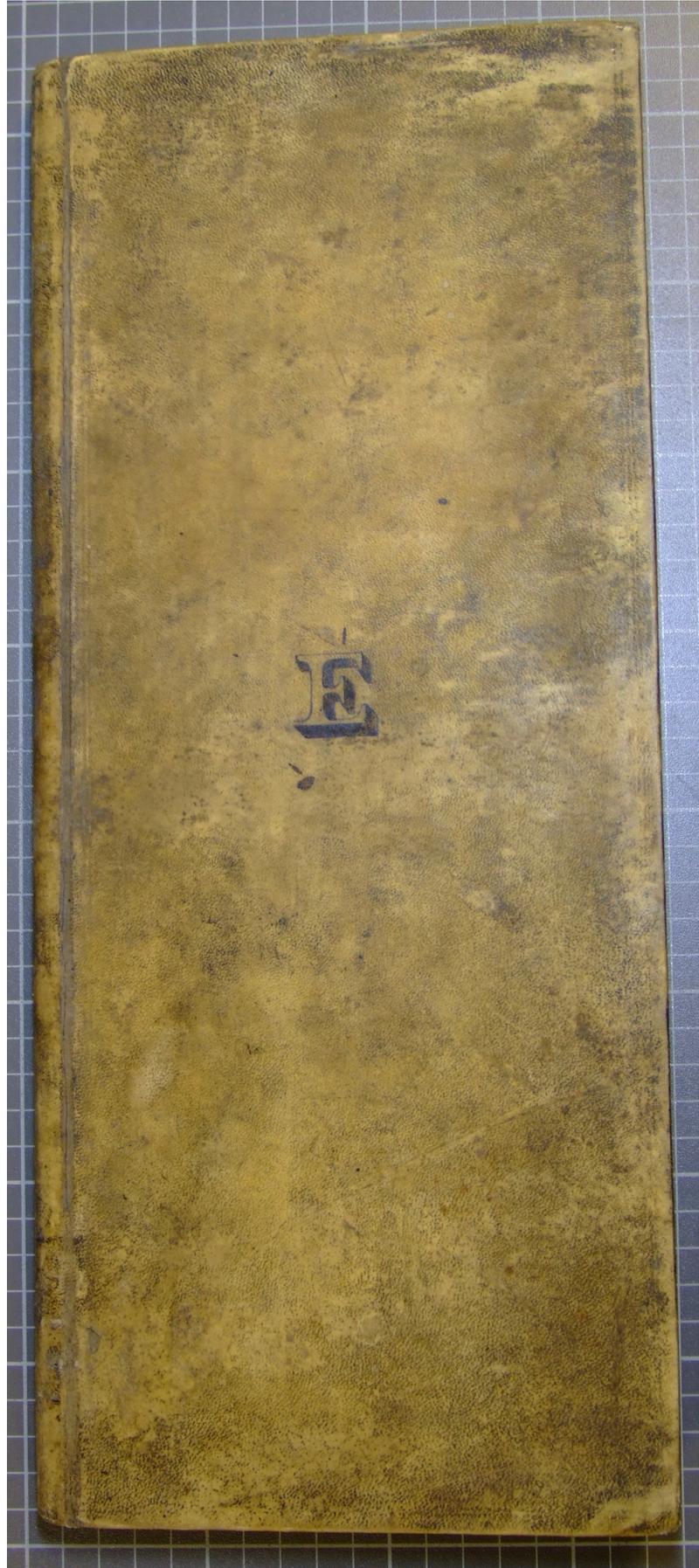


Figure 1.2. Erat Cashbook (430mm by 170mm by 19mm, comprising 156 pages), TNA. Master Horne's Exhibits, C110/99.

1.2: Literature review

This review considers broadly two categories of literature: that relating to the fields of study in which this thesis is situated, and that pertaining directly to the history of the harp. Interest in the early nineteenth-century harp has grown in recent decades. The 1994 International Harp Symposium, marking the 200th anniversary of the single-action harp patent of Sébastien Érard (1752–1831), included an examination by Rudolf Frick of Érard's Swiss origins, and an assessment by Rainer Thureau of his harp action.¹⁰ Ann Griffiths's biography of Érard examines the Érard family and company,¹¹ and Moira Bonnington's genealogical study of her own ancestors, the Haarnack harp-making family, is the first, using trade directories, census information, and newspapers, to investigate a nineteenth-century London maker other than Érard.¹² Mike Parker's *Child of Pure Harmony* discusses single-action harp playing technique.¹³ The study, 'Rediscovering Cousineau's Fourteen-Pedal Harp',¹⁴ by Robert Adelson, Alan Roudier, and Francis Duvernay, examines a recently rediscovered instrument and identifies Cousineau as the originator, as early as 1782, of the double action (an accolade erroneously attributed since 1810 to Sébastien Érard). An exhibition at Le Palais de Lascaris in 2011 celebrated the bicentenary of Érard's 1810 double-action patent;¹⁵ and an article by Jenny Nex in the exhibition catalogue traces, through analysis of the Érard ledgers, the emergence of the double-action harp in London.¹⁶ Histories of Longman and Broderip (Jenny Nex),¹⁷ and their

¹⁰ Rudolf Frick, 'Die Schweizer Ursprünge de Familie Érard', *Harpa*, 18 (Summer 1995), 15-17.

¹¹ Ann Griffiths, 'Érard', in *The New Grove Dictionary of Music and Musicians*, second edition, ed. by Stanley Sadie (London: Macmillan, 2001), viii, pp. 276-278.

¹² Moira Bonnington, 'The Oldest Harp Maker in the World!', *GSJ*, 54 (2001), 45–55. Christian Haarnack (b1774) joined the Érard company, probably as an apprentice, as early as 1786, and by 1808 was head machinist; his son, Henry Haarnack (1808–1890), trained under his father before opening his own business in 1834. The Haarnack Company ceased trading in 1926.

¹³ Mike Parker, *Child of Pure Harmony* (London: Author, 2005).

¹⁴ Robert Adelson, Alain Roudier and Francis Duvernay, 'Rediscovering Cousineau's Fourteen-Pedal Harp', *GSJ*, 46 (2010), 159–178.

¹⁵ Exhibition at the Musée du Palais Lascaris, Nice, 30 March–29 October 2012: 'Érard and the Invention of the Modern Harp, 1811–2011'. Exhibition catalogue: Robert Adelson, Laure Barthel, Michel Foussard, Jenny Nex and Alain Roudier, *Érard et l'invention de la harpe moderne 1811–2011* (Nice: Ville de Nice, 2011).

¹⁶ Nex's initial assessment of the Érard workshop accounts was presented at the 2009 Galpin Society Conference, Edinburgh.

¹⁷ Jenny Nex, 'Longman and Broderip', in *The Music Trade in Georgian England*, ed. by Michael Kassler (Farnham: Ashgate, 2011), pp. 9-94.

successors Broderip and Wilkinson (Michael Kassler),¹⁸ and Muzio Clementi (David Rowland),¹⁹ examine the business of this notable music seller. This thesis parallels these studies, notably in the types of documentary sources used and the focus on one instrument-making business. Nex's PhD thesis (2013) surveys musical instrument manufacture in early industrial London, her case studies including Longman and Broderip and the 1807-1809 workshop accounts of the Érard harp company.²⁰

Of nineteenth-century harp makers, only Érard has been studied in depth. Until very recently, this was limited to biographies and the uncritical reiteration of Sébastien Érard's claim to the invention of the single and double actions. In a jointly authored Grove Music article, Ann Griffiths traces the Érard company from its foundation in 1792, through the development and manufacture of their piano and harp innovations, to the purchase in 1978 of its descendant company, Gaveau-Érard, by Victor Salvi; Richard Macnutt traces their publishing activities.²¹ In 1890 John George Morley bought the goodwill and stock (including tools, templates and decorative moulds, and ledgers) of Érard's London harp-making business;²² and in 1995, the ledgers were bought by the Royal College of Music. Three volumes of transcribed letters (1814-1831) from Pierre to Sébastien Érard, published between 2006 and 2010,²³ constitute the most complete series of extant correspondence of a nineteenth-century instrument manufacturer; they open a new window on Érard's London and Paris businesses. Of two further volumes, published in 2015, which benefit from English translations,²⁴ the first is arranged in four parts: Part one transcribes Érard's 1794 British single-action harp patent, his French 1811 double-action one, and an 1822

¹⁸ Michael Kassler, 'Broderip and Wilkinson', in *The Music Trade in Georgian England*, ed. by Michael Kassler (Farnham: Ashgate, 2011), pp. 95-124.

¹⁹ David Rowland, 'Clementi's Music Business', in *The Music Trade in Georgian England*, ed. by Michael Kassler (Farnham: Ashgate, 2011), pp. 125-158.

²⁰ Jennifer Susan Nex, *The Business of Musical-Instrument Making in Early Industrial London* (PhD Thesis, Goldsmiths University of London, 2013).

²¹ Ann Griffiths and Richard Macnutt. 'Érard', *GMO* [accessed February 8, 2016].

²² <http://www.morleyharps.co.uk/clive-morley-harps/history-of-morley-harps/> [accessed 8 February 2016].

²³ *Mon bien cher oncle: vol. 1, 1814-1817*, ed. By Laure Barthel, Robert Adelson and Alain Roudier (Geneva: Éditions Minkoff, 2006). *Mon bien cher oncle: vol. 2, 1818-1821*, ed. by Laure Barthel, Robert Adelson and Alain Roudier (Étobon: Éditions Ad Libitum, 2009). *Mon bien cher oncle: vol. 3, 1822-1831*, ed. by Laure Barthel, Robert Adelson and Alain Roudier (Étobon: Éditions Ad Libitum, 2010).

²⁴ *The History of the Érard Piano and Harp in Letters and Documents: 1785-1959*, ed. by Robert Adelson, Alain Roudier, Jenny Nex, Laure Barthel, and Michel Foussard (Cambridge: Cambridge University Press, 2015).

pianoforte patent, also registered in France, for the double escapement; Part two is concerned with the business, including transcriptions of a privilege granted by Louis XVI (1785), a denunciation of Sébastien by the revolutionary authorities (1793), and letters (1791-1797) to and from the Érards; and Parts three and four transcribe letters between the business and composers and performers respectively. The introduction to the second volume, of particular importance here, examines Érard's double-action harp through the London harp ledgers, letters, and other sources, and is followed by English translations of the letters. My 2013 article in the *Galpin Society Journal* examines the painted and gilded decoration of harps by Erat (a notable competitor of Érard), revealing a surprisingly wide decorative palette.²⁵

1.2.1: Organology and related fields

Organology, the study of musical instruments, has progressed significantly since its inception. In *De Organographia* (1619), literally meaning 'writing about or description of musical instruments',²⁶ the second volume of *Syntagma Musicum* ('concerning musical instruments in which may be found the name, sound properties, and structural characteristics of every musical instrument ancient and modern'), Michael Praetorius describes an unprecedentedly wide range of instruments, including some non-western ones. He foreshadows key concepts of organology more than four centuries before Nicholas Bessaraboff propounded and defined the term in 1941. Praetorius's intended audience, 'organists, instrumentalists, organ builders, instrument makers, and all who are well disposed towards the muses, but also [...] philosophers, philologists, and historians,' is as applicable to Bessaraboff's organologists of the 1940s as it was to those who studied instruments in the seventeenth century.

²⁵ Mike Baldwin, 'The Erat Harp Manufactory: Painted and Gilded Decoration, 1821-1824', *GSJ*, 66 (2013), 149-164.

²⁶ Michael Praetorius, *Syntagma Musicum II, De Organographia*, translated and edited by Quentin Faulkner (Nebraska: Zea Books, 2014), vi.

Guido Adler (1885), in his seminal essay ‘The Scope, Method, and Aim of Musicology’,²⁷ writes that ‘Intimately connected with the history of orchestration is the history of musical instruments as regards their construction and usage – a subsidiary sphere of the historical section of musicology.’ Although he does not name this new field, he affiliates the study of instruments with general history, the histories of literature, philology, and the mimetic arts, and the biography of composers; thus he augurs the later definition of the field by Bessaraboff. Bessaraboff, who broadly defined musicology as ‘the science of music and of things pertaining to music, including the study of musical instruments’, proposed the division of this ‘cumbersome body of disciplines’ into two related but distinct approaches: musicology (the ‘creative, artistic, and scientific aspect of music’) and organology (the ‘scientific and engineering aspect of musical instruments’).²⁸ In coining the term organology, Bessaraboff gave new nominal identity to an already existing field of study, musical instruments having been the focus of attention for centuries. His definition of organology implicitly encompasses Adler’s history of instruments; the examination of their scientific and engineering aspects is, by its nature, somewhat historical.

Renato Meucci (1999) considers Bessaraboff’s use of the term organology to be ‘improper’, suggesting the need for a less arbitrary, broader, and more articulated definition.²⁹ In preference to ‘the study of instruments’, he defines organology as ‘study on an instrument’, noting that historical approaches to the examination of instruments acknowledge the relationships between them and their society, both in terms of manufacture and use; and technical approaches are concerned with the examination of ‘a self-standing handiwork, based on a more or less complex internal architecture’. He proposes renaming the study of the technical and design aspects of instruments, suggesting ‘organography’ as a possible alternative, returning the field, full-circle, to Praetorius’s *de Organographia*. He suggests the adoption of a systematic approach to this study, citing as forward-looking a chapter entitled ‘Organologia’ in

²⁷ Guido Adler and Erica Mugglestone, ‘The Scope, Method, and Aim of Musicology’ (1885): An English Translation with an Historico-Analytical Commentary, *The Yearbook for Traditional Music*, 13 (1981), 1-21 (p. 9).

²⁸ Nicholas Bessaraboff, *Ancient European Musical Instruments* (New York: October House, 1941), xxvi.

²⁹ Renato Meucci, ‘On Organology: A Position Paper’, *Historic Brass Society Journal*, 11 (1999), viii-x (viii).

Amintore Galli's 1889 *Manuale del Capo-musica*,³⁰ which examines the history, aesthetics, design, and production of sound, technology, and technique, and resource materials of each instrument. My work approaches the harp from a documentary point of view, and although many of the sources closely relate to the manufacture of the instrument, and its relationship to society, it does not sit within Meucci's definition of organology as it is not concerned with the examination of 'self-standing handiwork.'³¹

Sue Carole DeVale (1990) calls for clarification of the term organology, of what it encompasses, and what constitutes its study.³² She progressively proposes a multidisciplinary, systemic approach, encompassing classificatory organology (concerned with the categorisation of instruments), analytical organology (answering questions about instruments by drawing on methodologies from the arts, humanities, and sciences), and applied organology (the practical creation, use, and adaptation of instruments).³³ All organological research inevitably sits across one or more of these three separately definable, but interconnected branches. DeVale, an ethnomusicologist, proposes that the purpose of organology is to help to explain society and culture.

Kevin Dawe (2001) notes that organology has previously drawn upon the methodologies of 'acoustics, wood studies, materials, conservation, museum studies, and biological systems', but that by employing methods adopted from the field of cultural studies, the lives of musicians and makers can also be revealed.³⁴ In *Guitar Cultures* (2010),³⁵ Dawe and Bennett suggest that makers, players, and audiences 'imbue guitar music and the instrument itself with a range of values and meanings through which it assumes its place as a cultural icon.' Although their cultural approach is an important component of the study of instruments, on its own it does not fully describe the instrument, its changeable context (particularly in relation to

³⁰ Amintore Galli, *Manuale del Capo-musica* (Milan: Ricordi, 1889).

³¹ Meucci (1999), ix.

³² *Selected Reports in Ethnomusicology, vol. 3, Issues in Organology*, ed. by Sue Carole DeVale (Los Angeles: University of California, 1990), p. 2.

³³ DeVale (1990), p. 5.

³⁴ Kevin Dawe, 'Objects, Meaning: Recent Work on the Study and Collection of Musical Instruments', *GJS*, 54 (2001), 219-232 (p. 219).

³⁵ Andy Bennett and Kevin Dawe, *Guitar Cultures* (Oxford: Berg, 2001), p. 1.

place, user, and time), or its materiality. Perhaps recognising these limitations, Dawe, another ethnomusicologist, and Bennett, a sociologist, gathered work from scholars in other academic disciplines to present a deeper study of the guitar. Their idea is applicable to all musical instruments, and I argue that the close examination of an instrument, how it was made, when, and by whom, shines a light on those who consume it, its design and manufacture being the result of one or more conceptual relationships. For instance, an instrument is the product of an interrelationship between its maker (with their design and technical skills), other innovators (past and present), musicians (professional, dilettante and amateur), and the wider consuming public (particularly in relation to visual aesthetics and contemporary design). DeVale's, Dawe's, and Bennett's work can be defined as cultural organology.

Grant O'Brien's volume (1990) on the Ruckers' harpsichord and virginal building tradition includes chapters on the family, the types of instruments built, and how they were made and decorated.³⁶ Where O'Brien's work is for the most part based upon the study of instruments, mine draws largely on documents. Bigio's comprehensive history of Rudall, Rose & Carte (the flute makers who succeeded to the Erats' manufactory at 23 Berners Street, London), traces the key exponents of the company, and their innovations.³⁷ Like Bigio's study, this thesis focuses predominantly on one maker, the Erats, but it is wider in contextual scope and more limited in temporal range.

In place of Bessaraboff's 'organology', in which the features, dimensions, and materials of instruments are described but their context is not, I here use the term 'descriptive organology'; hereafter, 'organology' denotes the wider field.

In discussing the theory and method of material culture studies, Jules Prown (1982) notes that classification systems are useful due to the broad nature of objects that fall under their definition. He identifies function as the most promising classificatory mode, suggesting a spectrum from decorative to utilitarian, including art, diversions (books, toys, games, etc.), adornment (jewellery, clothing, hairstyles, etc.),

³⁶ Grant O'Brien, *Ruckers: A Harpsichord and Virginal Building Tradition* (Cambridge: Cambridge University Press, 1990).

modifications of the landscape (architecture, agriculture, and mining, etc.), applied arts (furniture, furnishings, and receptacles), and devices (machines, vehicles, scientific instruments, implements, and musical instruments).³⁸ Prown recognises that these broad categories require refinement and consequently that many objects straddle categories. I argue that as the early nineteenth-century harp is both functional and decorative, it sits in several of Prown's categories.

Steven Lubar and David Kingery (1993) acknowledge that we 'too seldom [...] use artefacts that make up our environment to understand the past',³⁹ these being impenetrable to most people. They note that where they are studied, a variety of approaches are used, and that no one field has a monopoly. They identify this 'history from things' as a separate to mainstream history only in the nature of evidence, historians traditionally relying on documents. I argue that in order more fully to understand the history of an instrument, it is necessary to study not only the object itself but also documents and other sources pertaining to it.

Laurence Libin (2000) writes: 'History, the written record of human events, has aptly been called selective fiction; intellectual fashions and social preoccupations inevitably bias the interpretation of data chosen from an already incomplete chronicle, making a wholly objective, comprehensive account of the past unattainable.'⁴⁰ He infers that these intellectual fashions and social preoccupations have a negative effect on the writing of history; this makes the combined study of document and artefact all the more important; in learning to read the object, we can the better interrogate and understand the documents. Eliot Bates (2012)⁴¹ states that the 'power, mystique, and allure of musical instruments' cannot be separated from their entanglement '[...] in webs of complex relationships – between humans and objects, between humans and humans, and between objects and other objects.'⁴² He coins the phrase 'Social life of

³⁷ Robert Bigio, *Rudall, Rose, & Carte: The Art of the Flute in Britain* (London: Bingham, 2011).

³⁸ Jules Prown, 'Mind in Matter: An Introduction to Material Culture Theory and Method', *Winterthur Portfolio*, 17, 1 (Spring, 1982), 1-19 (p. 2).

³⁹ Steven Lubar and W. David Kingery, *History from Things: Essays on Material Culture* (London: Smithsonian Institution Press, 1993), p. 1.

⁴⁰ Laurence Libin, 'Progress, Adaptation, and the Evolution of Musical Instruments', *Journal of the American Musical Instrument Society*, 26 (2000), 187-213.

⁴¹ Eliot Bates, 'The Social Life of Musical Instruments', *Ethnomusicology*, 6, 3 (2012), 363-395.

⁴² Bates (2012), p. 364.

musical instruments’, and argues that instruments should be studied through ‘the full range of possible human-object-devine relations.’⁴³

Where Libin defines organology as ‘The study of musical instruments in terms of their history and social function, design, construction and relation to performance’,⁴⁴ John Trench and Emily Dolan (2013) suggest an expansion of organology to ‘examine the discourses and practices surrounding both musical and scientific instruments.’⁴⁵ They propose ‘an analysis of instruments’ material configurations, social and institutional locations, degrees of freedom, and teleologies.’ They note that the ‘artificial divide’ between the studies of music and instruments is slowly being overcome, and suggest that in order to analyse the ethics of instruments, it is necessary to study their ‘material disposition’ (the elements and materials of which it is made), ‘mode of mediation’ (whether autonomous or passive, modifying or transparent, hidden or visible), ‘the map of mediations’ (the relationships between the maker, player, composer, listener, but also how the instrument transmits sound), and ‘the telos of an instrument’s activity’ (e.g. social contexts and uses).⁴⁶ Ardal Powell (2006) acknowledges recent discussion of the distinction between scientific (here meaning measuring and documenting) and cultural approaches to the study of musical instruments, and asserts that while there has been a move to integrate these, theory has not kept pace.⁴⁷ He proposes a focus on the ‘dynamic interactions [between] people, organisations, and things’ in order to bring logical consistency to their study, but also consistency with the work of researchers in other fields.⁴⁸ Bernard Stiegler (2014), a French philosopher, takes this further: ‘it is necessary to conceive a general organology’ which would study the joint history of the body ‘with its physiological organisation,’ artificial organs (objects, tools, instruments, and artworks) and social organisations.⁴⁹ He expands organology to include the study of

⁴³ Bates (2012), p. 371.

⁴⁴ Laurence Libin, ‘Organology’ in *The New Grove Dictionary of Music and Musicians*, 2nd edition, ed. by Stanley Sadie (London: Macmillan, 2001), vol. 18, pp. 657–658.

⁴⁵ John Trench and Emily I. Dolan, ‘Towards a New Organology: Instruments of Music and Science’, *OSIRIS*, 28, 1 (2013), 278-298, (p. 278).

⁴⁶ Trench and Dolan (2013), p. 284.

⁴⁷ Ardal Powell, ‘Change lays not her hand: Organology and the museum’, conference paper presented at the 35th annual meeting of the American Musical Instrument Society, held in collaboration with The Galpin Society and CIMCIM, at The National Music Museum, Vermillion, 23 May 2006, p. 1.

⁴⁸ Powell (2006), p. 9.

⁴⁹ Bernard Stiegler, *Symbolic Misery*, vol. 1 (Cambridge: Polity Press, 2014), p. 5.

all objects: organology, which he identifies as a branch of and not separate from ethnomusicology, is appended to the musical sciences, and the failure to reunite organology with 'discourse on music' is 'confirmation of an absurd separation between the objects of practice and aesthetic phenomena.'⁵⁰ I largely agree with Stiegler here: whilst studying the materials and dimensions of an object or instrument is of value, contextualising it in relation to its users (the body), music, and manufacture (the artificial organs), and manufacturers and consumers (the social organisations), enables a fuller and more complex understanding to emerge; through the expansion of organology to encompass interrelationships between people, objects, and organisations, we can develop and adopt methodologies that enable instruments to be understood in a wider context. Stiegler's general organology brings the study of instruments, musicology, material culture, and cultural and design history, with their related methods, within the scope of the musical instrument researcher. The work of this thesis sits within Stiegler's general organology: rather than studying only Bessaraboff's 'scientific and engineering aspect' of the harp, I approach it from the point of view of its makers and users, in particular Jacob Erat, his sons, their craftsmen and customers (Stiegler's body); the physical and business organisation of the Erat manufactory, in social context (Stiegler's social organisations); and the harp itself, its materials and the tools and methods used to make it (Stiegler's artificial organs).

Organology can be traced as an initially narrow discipline (Bessaraboff's descriptive organology), expanding to encompass culture and society (DeVale's, Dawe's, and Bennett's cultural organology), and further widening to include relationships between the body, artificial organs, and social organisations (Stiegler). Figure 1.3 represents the extension of organology beyond the study of instruments per se.

⁵⁰ Bernard Stiegler, *Symbolic Misery*, vol. 2 (Cambridge: Polity Press, 2015), p. 11.

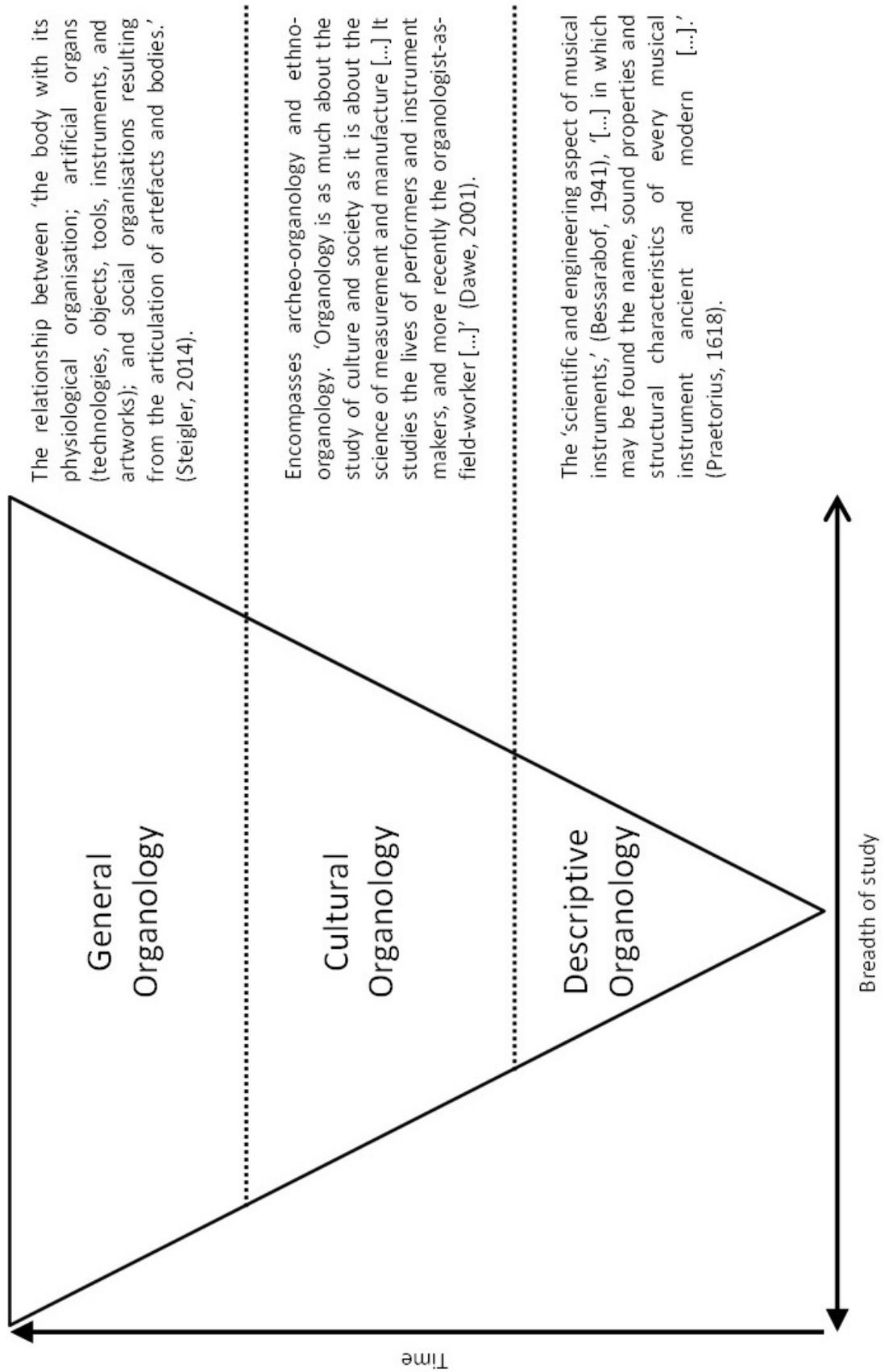


Figure 1.3. The development of organology over time.

The theses of Marie Kent and Jennifer Nex (both of 2013) sit within Bates's 'social life of musical instruments' by combining study of documents, social and business context, and artefacts.⁵¹ Kent investigates little-known London piano makers between 1765 and 1914.⁵² Particular attention is paid to hitherto unknown employees, apprentices, contract workers, dealers, and suppliers, in order to expose the nature and composition of the workforce, these brought to light through a wide range of primary sources including, but not limited to, parish registers, censuses, directories, and wills. Here, in the use of documentary primary sources, there are parallels with my work. Kent's chapters each present a different kind of history: chapter two is concerned with William Frecker, a pianoforte maker; three investigates a class of workers, the London piano silkens; four examines wills of the piano-making workforce; five is concerned with bankruptcy and insolvency; and six traces piano-makers in the 1881 census. Nex explores musical instrument making in London between c1760 and c1820.⁵³ Like Kent, she examines a wide range of historical sources, including personal, family, and company archives (the accounts of the Érard harp-making company being of particular relevance here), newspapers and directories, legal documents, diaries and letters, amongst others, in order to understand musical instrument making from a socio-economic perspective. She assesses performance spaces, and cultures of musical performance in relation to instrument making, including case studies on Érard, and Clauss & Co. (a guitar maker). A chapter on family and gender investigates those involved in musical instruments at all levels; and another discusses trade, and business organisation. Nex identifies her thesis, in not examining biography, the development of instruments, their taxonomy, or the output of a single maker, as standing outside traditional mainstream organology. She shows that by employing methods from other disciplines, particularly history, sociology, and musicology, she broadens the field of organology. Where Nex's industry-scoping thesis is broad, mine is more narrowly focused, primarily mining the depths of a disparate range of documentary sources to assess the harp as an object, and its makers, their processes of innovation, and what can be learnt about the wider industry through scrutiny of papers pertaining to one

⁵¹ Bates (2012), p. 371.

⁵² Marie Kent, *Exposing the London Piano Industry Workforce: c1765-1914* (PhD Thesis, London Metropolitan University, 2013).

⁵³ Nex (2013), p. 18.

company. Kent and Nex are arguably among the first comprehensively to apply methods ordinarily used in social history to the study of instruments; they demonstrate that one does not need to focus solely on instruments as objects to uncover new information about their manufacture and manufacturers.

Through the study of instrument makers, their actions (in business and private) and workspaces, new information about the invention, development, manufacture, and consumption of instruments can be revealed. Widening the field further, it is possible to comment on related manufacturing, trade, employment, and social class and status, to show how manufacturing people lived.

1.2.2: Literature on the harp

Literature on the technical development of the harp and its makers is limited in range and scope. Pierre Érard, in *The Harp in its Present Improved State* (1821),⁵⁴ is the first to write in detail about technical developments. Although predating Bessaraboff by 120 years, it is an example of descriptive organology: Érard identifies the limitations of the French harp and gives an account of structural and mechanical developments patented by his uncle, Sébastien Érard. Reflecting familial bias, he claims pre-eminence in harp manufacture for the family, ignoring the work of other makers who contributed directly or indirectly to their success. This singular view, in part originating as a marketing device, quickly established itself as authoritative, remaining unchallenged until my 1995 article which shows, that in 1807 Charles Gröll anticipated Érard's double action.⁵⁵

Books by Thomas Aptommas (1859) and William Grattan-Flood (1905) sit within Adler's 'subsidiary sphere of the historical section of musicology' and are concerned with description and context.⁵⁶ Aptommas's chronological history explores the harps of the 'Antediluvians, Egyptians, Hebrews, Grecians, Romans, Cimbrians [sic], Celts

⁵⁴ Pierre Érard, *The harp in its present improved state compared with the original pedal harp* (London: Érard, 1821).

⁵⁵ Mike Baldwin, 'The Inventor of the Double Action Harp with Fourchettes: Gröll versus Érard', *FoMRHI Quarterly*, 79 (1995), 29–34.

⁵⁶ Adler and Mugglestone (1981), 1-21 (p. 9).

and French'. 'The need', he states, 'of such a work was absolute. Bunting, Parry, Gunn, Fétis, and others have written upon the subject, but each of them confined himself to the account of the Harp which belonged to his own country.'⁵⁷ Although technical description is sparse, harps, their repertoire, and notably their players are discussed. His chapter on the modern harp is clearly influenced by Érard, to whom he gives prominence, the only illustration of a pedal harp being of Érard's gothic-revival instrument. Other contemporary London makers are named only in passing: 'the most prominent of which were Messrs. Erat, Schwieso and Grosjean, Stumpf [sic], Dodd, Blazdell, &c.' Aptommas concludes his study with short, interesting biographies of contemporary harpists. In its combination of musicology and descriptive organology, it exemplifies Bessaraboff's pre-organological 'cumbersome body of disciplines'. Grattan-Flood's history (1905),⁵⁸ likewise chronological, is concerned with harps of the British Isles. Grattan-Flood considered Aptommas's history, despite similarities to his own, to be 'not altogether trustworthy.'⁵⁹ In discussing the double-action harp, with cursory comments on the single-action, he too attributes all harp innovation in the British Isles to Érard.

Roslyn Rensch, a harpist and art historian, and the most prolific writer on the harp, has published four books. Her first three works fall mainly into the discipline of musicology, but also within art history, and to a lesser degree Adler's organology. The first (1950) is divided into two;⁶⁰ part one traces the development of the instrument from the ancient world, through an archeo- and ethno-organological analysis of statuettes, carvings, paintings, and writings. The European instruments, the mechanisation of the harp in France, and later England are discussed. Like in Aptommas and Grattan-Flood, the invention of the pedal harp is attributed to Hochbrucker and Cousineau, and Érard is named as the sole inventor (by omission of other innovators) of the English pedal harp. Part two, entitled '*Fundamentals*', adopts musicological approaches to discuss the tonal range, tuning, stringing, position, music, and special effects.

⁵⁷ Thomas Aptommas, *The History of the Harp* (New York: Aptommas, 1859).

⁵⁸ William Grattan-Flood, *The Story of the Harp* (London: Walter Scott Publishing, 1905).

⁵⁹ Grattan-Flood, p. 174.

In her second book, Rensch (1969) elaborates upon the themes of her first.⁶¹ Chapters are added about the representation of the harp during the Middle Ages in Western Europe (examining the instrument through illuminations and carvings), and the harp in art from the Romanesque to the Baroque (in particular through the study of Romanesque art, manuscripts, carvings and paintings). She expands upon the European pedal harp. Here we detect modern bias. Of Cousineau's 14-pedal harp, the first known double-action instrument, she writes, 'Fortunately, the French Revolution prevented this small monster from demoralising harp players for all time.'⁶² Whilst recognising the significance of this as the proto-double action, some thirty years before Érard's, Rensch dismisses it due to its perceived complexity, although she does acknowledge that it was in Sébastien Érard's office for many years.⁶³ Érard must have considered this instrument important and undoubtedly retained it for study. Although Rensch mentions a few makers contemporary to Érard (Dodd, Erat, Stumpff and Schwieso), she fails to record their significance in the development and proliferation of the harp.

Rensch (1989) divides her third book into three sections.⁶⁴ Section one, '*The Beginning*', again describes the harps of the ancient world; section two, '*The Non-Pedal Harp in Western Europe and North America*', examines early representations of the harp, the harp in art from 1200 to 1665, the harp in literature, instruments and music; while section three examines 'The Pedal Harp in Western Europe and North America'. Here again she discusses the mechanisation of the harp, but this time expands upon renowned harpists and musicians, and also British, European and American harp makers. In 2005, a revised version of this book was published containing more photographs, and tracing notable events in the harp world from 1983 to publication date.

⁶⁰ Roslyn Rensch, *The Harp: From Tara's Halls to the American Schools* (New York: Philosophical Library, 1950).

⁶¹ Roslyn Rensch, *The Harp: its History, Technique and Repertoire* (London: Duckworth, 1969).

⁶² Rensch (1969), p. 101.

⁶³ The rediscovery of this instrument is reported in Robert Adelson, Alain Roudier, and Francis Duvernay, 'Rediscovering Cousineau's Fourteen-Pedal Harp', *GSJ*, 63 (2010), 159-178.

⁶⁴ Roslyn Rensch, *Harps and Harpists* (London: Duckworth, 1989).

In her fourth book, *Three Centuries of Harp Making*,⁶⁵ Rensch catalogues an exhibition of the same name on behalf of the Museo dell'Arpa Victor Salvi. As in her earlier tomes, she adopts a broadly chronological approach dividing the book into four chapters; ethnic harps, non-pedal harps, single-action pedal harps and double-action pedal harps/ chromatic harps. Using descriptive organological approaches (more in keeping with Bessaraboff's definition than that of Adler), each instrument is photographed, described, and key information is noted (year, maker, origin, number of strings, compass, height, extreme width and weight).

Dagmar Droysen-Reber, Beat Wolf, Wolfgang Mertin, and Rainer Thureau's catalogue of harps in the Berlin Museum of Musical Instruments,⁶⁶ collates the dimensions and materials of harps (eleven non-mechanised, thirteen single-action and one double-action). Published in German and arranged chronologically, with photographs of each instrument, graphs plotting string lengths are included in an appendix. This technical museum catalogue demonstrates that Bessaraboff's descriptive organology remains an important part of the organological spectrum.

Thus, despite the widening of organology, writing on the harp has hitherto been limited to that of Bessaraboff and Adler, or has as a study of art history.

1.3: Methodology and methods

Historians have traditionally thought of history as the narrative of events, reflecting a need to present objective facts.⁶⁷ Primarily concerned with the acts of great men, ordinary people and their histories were secondary. Based on documents, official records and archives, this view-from-above approach is limited. New approaches to history, sometimes referred to as the 'new history', utilise a wider approach. According to Martyn Lyons, 'The new history from below admits more subjective and qualitative evidence, and listens to the individual experiences of ordinary people.'⁶⁸

⁶⁵ Roslyn Rensch, *Three Centuries of Harp Making* (Chicago: Western Central, 2002).

⁶⁶ Dagmar Droysen-Reber, Beat Wolf, Wolfgang Mertin, and Rainer Thureau, *Harfen des Berliner Musikinstrumenten-Museums* (Berlin: Staatliches Institut für Preußischen Kulturbesitz, 1999).

⁶⁷ Ian Mortimer, *The Time Travellers Guide to Medieval England* (London: Vintage, 2009), p. 2.

⁶⁸ Martyn Lyons, *The Writing Culture of Ordinary People in Europe, c. 1860-1920* (Cambridge: Cambridge University Press, 2013), p. 252.

This history is concerned with all human activity, recognising that everyone and everything has a history. History and historical sources are fragmentary. In using multiple sources and approaches, this thesis presents a fuller analysis of harp making than has hitherto been available: it calls upon the voices of the instruments' makers and consumers (professional and amateur; and elite and middle-class), while allowing the instruments as objects to reveal their materials, construction techniques, and use. Munslow classifies three approaches to historical knowledge: reconstructionism, constructionism (which he views as a sub-species of reconstructionism), and deconstructionism.⁶⁹ The reconstructionist approach is rooted in the tradition of established consensus, embedded in nineteenth-century concepts of history based in the belief that truth can be extracted from primary sources. He links the twentieth-century development of constructionism with the social theory schools, noting that in order to explain the past, evidence needs to be placed within an explanatory framework that in turn allows for the calculation of general rules of human action. Deconstructionism is derived from postmodern historical understanding. Munslow suggests that the content of history is defined as much by the language used to define and describe as by the documentary research. This thesis is constructionist in some of its methods: it analyses and integrates data from which patterns and relationships are sought, and contextualises these using contemporary sources. Primary documents constitute the main body of sources studied. Whilst some, such as the Érard Ledgers, are relatively well known, others, such as those pertaining to the Erat company, are examined here for the first time.⁷⁰ Of archival research L'Eplattenier writes:

For long as I have been a historian of composition and rhetoric, I have heard stories about archival work floating around conferences: books and rhetorical theories developed around two or three hours spent in the archives; archival documents consulted for "supporting quotes" after the arguments have been developed, completed, and written; semi-blatant plagiarism from other historians.⁷¹

A methodology in which an historian searches for 'supporting quotes' is led by preconceptions and is a poor substitute for the in-depth interrogation of a source.

⁶⁹ Alun Munslow, *Deconstructing History* (London: Routledge, 1997), p. 18.

⁷⁰ TNA. C110/99, Master Horne's Exhibits.

Traditionally, access to materials in archives has been limited by policy, copyright (where applicable), accessibility, and by time. According to Joan M. Schwartz and Terry Cook, 'Archives – as records – wield power over the shape and direction of historical scholarship, collective memory, and national identity, over how we know ourselves as individuals, groups, and societies.'⁷² However, they identify archives as social constructs and note that the memory contained in them, without the frameworks constructed by living society (the researcher for instance), is inaccessible. Here, taking advantage of recent changes in photographic policy at the National Archives, London Metropolitan Archives, and British Library,⁷³ sources have been photographed. It is possible, by digital photography, to remove them (in the virtual sense) from the institutional archive and to place them in a personal one, thus changing the researcher's relationship to the content. The ability to access, view, consult, and interrogate documents at will, at any time, and to cross-reference with other documents, artefacts, and sources, liberates them and the user from institutional constraint. Manual transcription from photographs to form datasets in Excel databases allows the documents to be searched, sorted, interrogated, compared, and analysed. This method, adopted for both financial accounts (e.g. the Erat ledger)⁷⁴ and narrative ones (e.g. Robert Willis' diary),⁷⁵ can tell us, for instance, how many harps of a particular colour the Erats sold and to whom; the cumulative value of their products by type (e.g. single-action, double-action, strings, music desks) for a particular year; or the number of workmen engaged on Robert Willis's invention, the materials used, and the sequence in which a prototype was made. Both financial and qualitative data can be codified in such a way as to render vast and detailed

⁷¹ Barbara E. L'Eplattenier, 'An Argument for Archival Research Methods: Thinking Beyond Methodology', *College English*, 72, 1 (September 2009), 67-79 (p. 67).

⁷² Joan M. Schwartz and Terry Cook, 'Archives, Records, and Power: The Making of Modern Memory', *Archival Science*, 2 (2002), 1-19 (p. 2).

⁷³The National Archives and the British Library permit the use of digital cameras. (<http://www.nationalarchives.gov.uk/documents/photopolicy.pdf>; <http://www.bl.uk/reshelp/inrooms/stp/copy/selfsvcopy/selfsvcopy.html>). The National Archives, Kew provides universal camera stands in their maps and large documents reading room. Under the Endangered Archives Programme the British Library expresses concern about the long-term preservation and incorruptibility of data held digitally restating that the 35mm microfilm as the accepted standard in both Britain and America. The London Metropolitan Archives permits a modest amount of photography citing the risk of poor document handling and potential breach of copyright as a risk to documents and the information that they contain. (<https://www.cityoflondon.gov.uk/things-to-do/london-metropolitan-archives/about/Documents/collections-access-policy.pdf>).

⁷⁴ TNA. C110/99.

⁷⁵ Cambridge University Library (CUL), MS ADD 7574, Robert Willis's Diary.

documents manageable, and permitting seemingly dry information to be manipulated to yield trends and stories. Here this method has enabled multiple sources to be analysed, compared and contrasted.

Where information originates in pounds (£), shillings (s), and pence (d), each currency unit has here been divided into the smallest denomination (pence), to enable manipulation in a decimal database; then, following calculation, the amounts are restored to their original units. Text is categorised by content and given a three-letter code (in a separate column). For instance, entries containing information about strings are denoted 'STG', and those pertaining to other harp makers, 'HKR'. Unwieldy worksheets can then be sorted, and dedicated ones derived for each category. Where more than one category is identified, multiple columns enable cross-referencing (e.g. harps can be sorted by action type, colour, soundboard decoration, and gilding type). Small spreadsheets can often be analysed at sight, and larger ones can be represented graphically.

According to Gustar (2014),⁷⁶ statistical techniques are widely used in various historical disciplines (including music analysis, perception, and performance studies) but datasets and databases have been largely ignored; he observes that the analysis of these 'can reveal much about the changing characteristics of the population of musical works and their composers, and about the datasets and their compilers.'⁷⁷ He further notes that statistical comparisons are only occasionally encountered in organology;⁷⁸ their use here in relation to instruments, whilst not completely new, moves the methods employed in their study forwards in the comprehensive examination and comparison of different sources, and shows that documents are as important to the understanding of instruments, their manufacture, innovation, and consumption, as the instruments themselves. Statistical analysis of the sources studied here reveals a significant quantity of new information about the early nineteenth-century harp, its makers, manufacture, and consumptions. The 542-page Erat ledger comprises an average of 34.7 lines of information per page (18,807.4 lines in all), totalling 408,052 individual items of data pertaining to the harp and harp

⁷⁶ Andrew James Gustar, *Statistics in Historical Musicology* (PhD Thesis, Open University, 2014).

⁷⁷ Gustar, p. 3.

making. The Erat cashbook has 153 pages, averaging 42.6 lines per page (totalling 6,517.8 lines): a further 42,898 harp-related variables. Robert Willis's diary has 12,516 variables (e.g. words, numbers, dates) detailing the development of his newly invented harp; and of over 1,000,000 entries in the British Library catalogue of music, 74,628 relate to the harp. The resulting database, containing over 560,000 variables, constitutes a big-data instrument for the study of nineteenth-century harp making and consumption. Sandra Tuppen, Stephen Rose, and Loukia Drosopoulou describe big data as that which has 'high volume (in other words, it exists in large quantities), high velocity (more data is being added rapidly), or high variety (the data is heterogeneous)'.⁷⁹ The databases compiled and used here are both high-volume and heterogeneous. Where Tuppen, Rose, and Drosopoulou applied big data methods to the history of music, using sources such as the British Library's catalogue of Printed Music to extend the scope of musicological study,⁸⁰ here they are used to widen the tools available to the cultural organologist.

It is helpful, where possible to understand why a particular document was created, the purpose it served, and why it was retained. Schwartz and Cook note that:

[...] the individual document is not just a bearer of historical content, but also a reflection of the needs and desires of its creator, the purpose(s) for its creation, the audience(s) viewing the record, the broader legal, technical, organisational, social, and cultural-intellectual contexts in which the creator and audience operated and in which the document is made meaningful, and the initial intervention and on-going mediation of archivists,⁸¹ [and that] it is essential to reconsider the relationship between archives and the societies that create and use them.⁸²

The Erat documents were compiled and retained for a legal audience, to record company income and expenditure during a period in chancery. That the outcome may have incurred liability to pay taxes renders the information somewhat questionable; we do not know whether the Erats' recording and declaration were

⁷⁸ Gustar, p. 11.

⁷⁹ Sandra Tuppen, Stephen Rose, and Loukia Drosopoulou, 'Library Catalogue Records as a Research Resource: Introducing a Big Data History of Music', *Fontes Artis Musicae* 62, 3 (2016), 67-88.

⁸⁰ Stephen Rose, Sandra Tuppen, and Loukia Drosopoulou, 'Writing a Big Data history of music', *Early Music* 43, 4 (2015), 649-660.

⁸¹ Schwartz and Cook (2002), p. 4.

⁸² Schwartz and Cook (2002), p. 5.

complete and honest. The Érard letters, private correspondence written with only the recipient in mind, may be read as the true thoughts of their writers, though the information they contain about others, being opinion, may be biased and potentially misleading. Letters from Schwieso to the Royal Society, however, aiming to garner support in the recognition of improvements made to the harp, might exaggerate.

The extant diary of Robert Willis, explicitly a fair copy written after the original, may evince revisions. Willis, 18 years old when he began developing his harp design with Jacob Erat's support and guidance, might, by the time he produced this best copy, have altered his opinion of what he had done, of those he worked with, or of what he had achieved. According to Angelika Menne-Haritz: 'Archives do not store memory. But they offer the possibility to create memory. Their function is that of amnesia prevention.'⁸³ In short, we do not know the mind or motivation of the Erats, of Pierre Érard, or Robert Willis; at best, we can draw conclusions about these from sources, and so we must hunt for facts where possible, and carefully construct narratives only where possible or absolutely necessary.

1.4: Principal primary sources

1.4.1: Financial accounts

During recent years, document-based research has played a growing part in the study of instruments. Whilst examination of instruments remains important and can tell us about their manufacture, materials, dimensions, sound, and sometimes their maker, documents can tell us something of the human experience. For instance, account ledgers enable us to assess the financial activities of a company and the products made; and they might, for example, refer to ephemeral objects that do not otherwise survive. Where sales are recorded, they may reveal something of design and decorative trends, consumption, affordability, social class, and patterns of distribution. Financial information may record wages, indicating hierarchy, the skills of the workforce, wealth – or lack thereof – and consequently their place in society.

⁸³ Angelika Menne-Haritz, 'Access: the reformulation of an archival paradigm,' *Archival Science*, 1 (2001), 57-82 (p. 59).

Kathryn Tomasek and Syd Bauman define historical financial records as ‘A genre of primary sources that includes but is not limited to such materials as bills, receipts, cashbooks, cancelled checks [sic], and the journals and ledgers associated with double-entry accounts.’⁸⁴ Financial accounts, in one form or another, have been kept by businesses for centuries, in order to manage income and expenditure. Their survival, prior to the invention of the personal computer, is rare, and those that do survive are often inaccessible to the researcher. An accounts ledger and cashbook have been used here to describe services, products, and the consumption of the harp in late Georgian London, and to identify the Erat company’s workforce, the materials and processes they used, and the spatial and business organisation of the manufactory.

Financial documents surviving from the Erat company, comprising an accounts ledger (21 February 1821 - 26 June 1824) and a cash-book (21 February 1821 – 31 May 1826), form the largest body of evidence surveyed here; a full description of these documents is presented in Appendix 1.

1.4.2: Inventories

Anne Helmreich, Tim Hitchcock, and William Turkel state that ‘probate inventories are partial and profoundly selective representations of the material world.’⁸⁵ This is true of inventories compiled upon death, these being contingent on the identification of objects, the definition of ownership, and the impartiality of the compiler. The inventory of a manufacturing business tells us not only about ownership and consumption, but also about the status and value of the company. A maker’s inventory may list products, materials, and components, with their associated values, and may document workshop layout and organisation, all of which may inform our understanding of the manufacturing process. Inventories are compiled for a number of reasons. Of the three examined in this thesis, one was created directly following the death of Jacob Erat in February 1821 for the purposes of probate; a second, of December 1822, taking the form of year-end accounts, functions as an inventory

⁸⁴ Kathryn Tomasek and Syd Bauman, Encoding Financial Records for Historical Research, *Journal of the Text Encoding Initiative*, 6 (December 2013), 1-23 (p. 2).

although not originally conceived as such; and a third, of December 1824, was written at the behest of Erat, who stipulated in his last will and testament that one should be made to coincide with his sons' accession to the company upon the eldest's 25th birthday.

1.4.3: Diaries and letters

Irina Paperno identifies diaries and letters as 'people's intimate papers',⁸⁶ written with an audience of one or two. Mostly private during the lifetime of the author, both, on their death, become a narrative testimony. Diaries are ephemeral: often written over an extended period, they can convey the intimate thoughts, daily actions, and plans of the author. Letters are more ephemeral still: once sent, they become fractured narratives. Rarely is a collection of letters by one hand to one recipient available for study; and rarer still is the survival, in letter form, of a dialogue between the sender and recipient.

The motivation of the diarist and letter writer should always be considered during interpretations. Viewpoints may be subjective, biased, or partisan; the writer may have financial or societal reasons to purport or expound their ideas. In this thesis, the diary of Robert Willis,⁸⁷ a 19-year-old harp patentee, is examined in detail for what it can tell us about how new harp designs were invented and patented, and for the information it can impart about Jacob Erat's manufactory, in which the design was developed. Similarly, the recently published Érard letters are scrutinised in order to examine relationships between several contemporary harp makers.⁸⁸

⁸⁵ Anne Helmreich, Tim Hitchcock, and William J. Turkel, 'Rethinking inventories in the digital age: the case of the Old Bailey,' *Journal of Art Historiography*, 11 (2014), 1-25 (p. 6).

⁸⁶ Irina Paperno, 'What can be done with diaries?', *The Russian Review*, 63, 4 (October, 2004), 561-573 (p. 561).

⁸⁷ CUL, MS ADD 7574.

⁸⁸ *The History of the Érard Piano and Harp in Letters and Documents: 1785-1959*, eds, Robert Adelson, Alain Roudier, Jenny Nex, Laure Barthel, and Michel Foussard (Cambridge: Cambridge University Press, 2015).

1.4.4: Patent specifications and technical drawings

The use of patents for the protection of intellectual property increased sharply through the second half of the eighteenth century, and by the nineteenth, patents were signifiers of innovation and success (although patentees' businesses often failed). Exclusivity to an idea or invention afforded the registrant with some protection, though the copying of ideas was rife, but also a recognised marketing tool; almost all harp makers inscribed their instruments patent innovations – even those who do not appear to have registered any. Patents, 'a measure of invention not innovation', are used here to trace the technical development of the harp, to examine competition between makers, as a signifier of relative popularity, and to compare innovative velocity and momentum with that of other instruments. Whilst instrument makers' patents are contextualised in relation to wider patent statistics, comparison is not intended as measure of innovative activity.⁸⁹

1.4.5: Maps, plans, and leases

Maps have been used here geographically to locate makers and customers in relation to one another, to show the scope and reach of the Erat company, and to place the harp industry in the wider London context. According to David Henige, 'Like all historical sources, maps are selective, and therefore subjective.' He observes that it is only in the last 100 years that 'maps began to measure up to the stresses that historians put on them.'⁹⁰ The rise of the harp in London coincided with increased cartographic activity and accuracy. Where Rocque's Map (1735-46), published in 24 sheets, details the layout of the city, with significant addresses (e.g. royal and government buildings, and places of worship), at a scale of 26 inches to one mile,⁹¹ Horwood's Map (1792-99), at the same scale, shows street numbers and the names of some businesses, enabling specific addresses to be located accurately.⁹² The Goad Fire Insurance maps, created by the Charles E. Goad Company in the 1880s, are more detailed still, showing building materials and heights, the location of skylights, and

⁸⁹ Joel Mokyr, ed, *The New Economic History and the Industrial Revolution*, 2nd edition (Boulder: Westview, 1999), 1-127 (p. 16).

⁹⁰ David Henige, *Historical Evidence and Argument* (London: Wisconsin, 2005), p. 197.

⁹¹ John Richardson, *The Annals of London* (London: Cassell, 2000), p. 198.

⁹² Peter Ackroyd, *London* (London: Vintage, 2000), p. 98.

facilities specifically relating to fire (hydrants, stand-pipes, and fire alarms).⁹³ Considered together with leases, later photographs, topographical views, and information in the Erat documents and Willis's diary, maps and plans afford information about the locations and buildings occupied by harp makers, enabling their spatial organisation to be reconstructed. Customer locations are mapped using online software to show their distribution and the reach of Erat's business.⁹⁴

1.4.6: Objects, artworks, and decorative designs

Although this thesis draws predominantly on documentary sources, harps and related objects (e.g. accessories produced and tools used in decoration) are examined too. David Raizman writes: '[...] as arrangements of forms or as the broadly economic, social, and political considerations that bear upon the conceptions for those forms, design [...] is the visible expression of values and attitudes.'⁹⁵ Decorative design influences on the harp are revealed through the examination of contemporary English architecture, London-made furniture, and artworks (paintings, fashion plates, and instructional prints in published harp tutors); surviving decorative sketches demonstrate the design thinking of harp makers and allow the evolution of harp decoration to be traced. These sources are interrogated and correlated to glean information about the decorative form of the instrument, its manufacture, and consumption.

1.5: Thesis outline

As signified by the title, this thesis addresses three interconnected areas of study. Following this introduction in which the aims of the thesis, literature pertaining to organology and the harp, methods and methodology employed, and the principal primary sources that are examined, the first section (Chapters 2, 3, and 4) examines innovation in harp design; the second (Chapters 5 and 6) examines the Erat family

⁹³ [Fire maps], <http://www.bl.uk/onlinegallery/onlineex/firemaps/curatorintro154662.html> [accessed 13 November 2016].

⁹⁴ www.batchgeo.com [accessed 23 March 2013].

⁹⁵ David Raizman, *History of Modern Design* (London: Laurence King, 2003), p. 12.

and their harp-making premises; and the third (Chapters 7, 8, and 9) focuses on the making and selling of harps.

Chapter two contextualises the early nineteenth-century English harp in relation to the manufacture of other instruments and publication of music for them. The relative popularity of the harp is assessed by tracing the frequency of performances on it, and the instrument's social role, particularly its use by women – many of them highly expert but constrained by their situation – is discussed.

Chapter three is concerned with the decorative design history of the harp, from the introduction of Érard's single action (1794), and double action (1810), to the Gothic model (1835). These are discussed in relation to contemporary design, particularly architectural ornamentation and decoration, furniture, and fashion. Successive decorative forms, corresponding with stages in mechanical development, are assessed, and competitors' alternative decorative schemes are compared.

Chapter four considers advantages and disadvantages of patent registration, and trends in patent registration, particularly in regard to musical instruments. The technical history of the harp is traced through the patents registered for it in Britain between 1794 and 1845; the merits, successes, and failures of each are discussed, and the complexities of the registration process are revealed. Competition is examined in relation to the mechanical innovations of rival makers who, working in close proximity, sometimes registered remarkably similar innovations. The development of the harp over half a century is discussed in relation to the increasing need to protect intellectual property as the industrialisation progressed.

The Erat family is central to this thesis. In Chapter five, Jacob Erat's origins are investigated. Accounts in the Erat ledger are interpreted to assess family expenditure in relation to wealth and social class, and the last wills and testaments of three members of the family are interrogated to show a progressive decline in prosperity. The role of the family in the business, and the relationship between business and the standing of the family are discussed. The involvement of Jacob and James Erat in the emergence of the Society of British Musicians is considered.

Following the story of the family, Chapter six mines the Erat documents to reveal the inner workings of the business. Through analysis and interpretation of business accounts, leases, maps, plans, and photographs, their workshops at 100 Wardour Street and 23 Berners Street are described, and the layout of each is drawn. Comparison of three inventories (1821, 1822, and 1824) reveals changes in organisational arrangement of the business.

Chapter seven analyses the Erats' sales to identify customers, their social class, and the products they bought. Harp sales are scrutinised to show the types sold and the decorative finishes (colour, gilt type, and painted ornament) available. The full range of accessories (e.g. strings, covers, and cases) and services (e.g. harp hire, repair, and regulation) are assessed, and the geographic reach of the company surveyed. By assessment of monies owed by the Erats, their suppliers are identified, illuminating the materials, tools, and components used. Finally, income and expenditure are compared, showing the financial position of the company.

Chapter eight examines the Erats' workforce, their working conditions, and wages. The movement of tradesmen between competitors and from other related trades is revealed, and apprenticeships, the main method of training, are examined within the context of harp making. Processes and the tools used in harp making are examined by reference to extant instruments, the Erat documents, and contemporary publications.

Though a study of Robert Willis's diary, Chapter nine draws together the design and manufacturing aspects of this thesis. With the support of Jacob Erat and his men, Willis, the illegitimate son of Robert Darling Willis, George III's physician, invented and patented a new harp. Analysis of his diary illuminates the development and patenting of a novel design, the relationship between Erat and his men, family involvement in the business, workshop organisation, and competition between makers.

Chapter ten, in conclusion, draws together the findings of the thesis, addressing overarching questions about innovation, manufacture, and consumption of the harp

in relation to business practice. It is shown that the decorative design of the instrument intersected with trends in architecture and furniture, and that technical innovation was the result of competition between pioneering makers who vied for dominance. Family and business lives, and sometimes those of customers, were closely allied.

Chapter 2: The late Georgian harp in context

This chapter situates the mechanised harp within the musical and social scene of late eighteenth- and early nineteenth-century Britain. Importation of French harps, and their limited manufacture in London, is discussed, and the events that led to the establishment of a London harp industry are examined. The dates and stories of eleven leading harp makers (1794-1840) are summarised, they are located in relation to one another, and their chosen locations explained. The popularity of the harp, in relation to other instruments, is assessed through performances and printed music, and the role of the instrument in society, particularly with regard to female consumption, societal expectations, class, and cost, are examined.

2.1: The French harp in London

That the pedal harp was developed and adopted in France, before England, is clear. By 1769, Georges Cousineau (1733-1800), a French harp maker, was a member of the Parisian instrument maker's guild, and his son Jacques-Georges Cousineau (1760-1836) joined the business in 1775.¹ Jean Henri Naderman (1734-1799), the German born luthier, was in Paris by 1766, when he received a maker's licence. He was appointed harp maker to Marie Antoinette in 1778, and his sons, Francois-Joseph (1781-1835), and Henri Pascal (1783-1842), later succeeded to his business.²

Few pedal harps were made in the United Kingdom at this time. A Sun Insurance policy shows that Ganer, a piano forte maker of Broad Street, Golden Square, was trading by 1780.³ A *Times* advertisement dated 17 April 1794, identifies him as a 'Grand Pianoforte and Harp-maker',⁴ and the Horwood's Map (1795-1799) describes him as a pianoforte and harp maker.⁵ Ganer, best known for pianofortes as it is only these that survive, may have made a small number of harps, or may have

¹ Roslyn Rensch, 'Cousineau', *GMO* [accessed October 25, 2015].

² Ann Griffiths and Richard Macnutt, 'Naderman', *GMO* [accessed October 25, 2015].

³ Ganer's property at Broad Street was covered by the Sun Insurance Company for £300 in 1780, £900 in 1781, and £1300 in 1782. Lance Whitehead and Jenny Nex, Keyboard Instrument Building in London and the Sun Insurance Records 1775-87, *Early Music*, 30, 1 (February 2002), 4-25.

⁴ 'Mr. William Tibbs's Annual Concert', *The Times*, issue 2965, 17 April 1794.

⁵ Richard Horwood, *Plan of the Cities of London and Westminster, the Borough of Southwark and parts adjoining Shewing every house* (London: Richard Horwood, 1799), sheet b2.

imported French instruments by the likes of Cousineau and Naderman, explaining why no harps inscribed with his name are known. Nex notes that Ganer had a warehouse and workshops adjacent to his house at 47 Broad Street and suggests that he either made instruments, was an out-worker (making on behalf of others), or a specialist; his Sun Fire Insurance policy of 8 August 1787 identifies him as a ‘piano forte maker and inlayer.’⁶ Similarly, we can glean that John Satchel of Great Pulteney Street was appointed harp maker to the Prince of Wales on 28 March 1789,⁷ suggesting that he had been making them for some years; as these harps have not survived, we do not know what sort of harps Ganer and Satchel made. Another pianoforte maker, George Fröschle of Great Pulteney Street, also made harps; a French style single-action by Fröschle in the Vizcaya Museum, Miami, Florida inscribed ‘Great Pulteney Street, Fröschle, Golden Sq., London’ was originally attributed to Cousineau when purchased in November 1914 – could it be that he imported harps too?⁸ That a harp in the Colonial Williamsburg Museum, Williamsburg, Virginia, dated 1793, is inscribed Fröschle in five places, including inside the sound box and on the centre rib, indicates that it was indeed made by him, these being particularly difficult to add to a finished instrument.⁹ The Nydahl Collection, Stockholm, Sweden, has a third Fröschle harp.¹⁰ That Fröschle registered a patent for the harp in 1805 shows that he was either still making then, or was interested in producing a new instrument to meet the growing London demand for them. At this time, the musical instrument makers who made harps also made other instruments. Over the next decade, as demand for the instrument grew, makers specialised, producing solely the harp.

A newspaper advertisement, placed by Longman and Broderip in 1790, confirms that harps were imported to London from Paris. These instruments, made by ‘Naderman, Cousineau and Sons, and other eminent makers,’ were constructed on the ‘newest and most approved principals’, and were ‘tried and approved by the

⁶ Nex (2013), pp. 210-211. LMA. Sun Insurance Policy, MS11936/347/535939, insured: Christopher Ganer, 47 and 48 Broad Street, Carnaby Market, pianoforte maker and inlayer, 15 October 1787.

⁷ ‘Deaths and Preferments’, *The Scots Magazine*, 51 (Edinburgh: Murray and Cochrane, 1789), p. 155.

⁸ <http://vizcayamuseum.tumblr.com/post/104343844930/musical-instruments-at-vizcaya> [accessed 31 December 2015].

⁹ Colonial Williamsburg Museum, Williamsburg, Virginia, USA, acc. no. 1988-429

¹⁰ The Nydall Collection, Stockholm, Sweden, IKN016

most distinguished Professors of the harp in Paris.’ They were advertised together with, ‘much improved Patent Grand and Small Piano Fortes, Harpsichords, Organized Piano Fortes, portable Barrel and Finger Organs, Clavecins, &c. &c. all of which have a superior touch and tone, which is peculiar to the patent action’ (Figure 2.1).¹¹

In 1803, Clementi & Co. reassured a customer that if a harp supplied (maker not named) was inferior to those by Érard, they would replace it with one by that maker. This indicates that they sold English pedal harps, similar to those by Érard. Two years later quality was still a concern when Dora Jordan (the actress and singer) complained that her harp was ‘so very bad’. In 1815 and 1824, Clementi & Co. bought harps from Érard.¹²

¹¹ [Harps], *The Argus*, 248, 2 January 1790.

¹² David Rowland, ‘Clementi’, in *The Music Trade in Georgian England*, ed. by Kassler, pp. 125-158 (pp. 155-156).

H A R P S,
 Just Imported from **FRANCE,**
 BY
LONGMAN and BRODERIP,
 No. 26, **CHEAPSIDE,**
 AND
 No. 13, **HAYMARKET,**
LONDON.

THESE HARPS are from the Manufactories
 of Naderman, Cousineau, and Son, and other emi-
 nent makers, upon the newest and most approved prin-
 ciples; particularly the last invention with a swell, which
 gives an uncommon brilliancy and effect to the perform-
 ance.

These Instruments have been tried and approved by the
 most distinguished Professors on the Harp in Paris.

Where may be had,

Longman and Broderip's much improved Patent Grand
 and Small Piano Fortes, Harpsichords, Organized Piano
 Fortes, portable Barrel and Finger Organs, Clavecins, &c.
 &c. all of which have a superior touch and tone, which is
 peculiar to the patent action.

They have likewise a very large assortment of second-
 hand Finger Organs, Harpsichords, and Organized Piano
 Fortes, which have been taken in exchange for their
 new improved Patent Instruments, and will be sold
 cheap.

A sufficient trial will be given, to determine the merits
 of the Instruments, and if not approved, will be exchanged
 till the purchaser is fully satisfied.

Also Instruments lent out, conveyed and tuned in town
 and country, on the shortest notice, and if purchased and
 paid for within eight months, the hire will be abated.

Just imported, a large Assortment of Violin, Tenor, Vi-
 oloncello and Harp Strings, of an excellent quality.

N. B. Judicious Masters recommended, to teach all instru-
 ments.

Figure 2.1. Longman & Broderip, harp imports from France. *The Argus* (1790).

2.2: Musical life in London

According to McVeigh, concert life in London flourished during the mid-eighteenth century, surpassing that in all other European capitals.¹³ He states that whilst the economic boom of the 1760s was one agent of change, it was further aided by musicians and entrepreneurs who manipulated and developed demand for their products, and in so doing, they fostered a popular and fashionable concert scene. The formation of organisations chiefly concerned with the promotion of music and musicians supported this too; the Royal Society of Musicians was founded 1738, the Philharmonic Society followed in 1813,¹⁴ the Royal Academy of Music in 1823,¹⁵ and the Society for British Musicians in 1834.¹⁶ As the population of London grew, a greater demand for leisure pursuits followed. Although population growth was slow between 1700 and 1750 (674,350 and 676,250 respectively), it grew rapidly from 1750 onwards, rising from 900,000 in 1801, to 1,050,000 in 1811, and 1,274,800 in 1821.¹⁷ It is during this rapid population growth that the harp first arrives in London.

2.3: London harp makers

Sébastien Érard, a Strasbourg born Parisian instrument maker, established a new harp manufactory at 18 Great Marlborough Street, Soho in 1792. Political unrest in France, which led to his move, created both hazards and opportunities: Érard's denouncement by the French revolutionary authorities would have made business there (and possibly survival) difficult.¹⁸ However, the French Revolutionary wars

¹³ Simon McVeigh, *Concert Life in London from Mozart to Haydn* (Cambridge: Cambridge University Press, 1993), p. 53.

¹⁴ John Carnelley, *George Smart and Nineteenth-Century London Concert Life* (Woodbridge: Boydell & Brewer, 2015), p. 9.

¹⁵ Carnelley (2015), p. 19.

¹⁶ [The Formation of the Society of British Musicians], *The London Courier and Evening Gazette*, 13,301, 20 March 1834.

¹⁷ London Statistical Society, *Statistical Illustrations of the Territorial Extent and Population [...] of the British Empire* (London: Effingham Wilson, 1827), p. 163.

¹⁸ In 1785, Louis XVI intervened in an argument between Érard and the Guild of Parisian Luthiers resulting in Royal patronage of Érard's business. Ann Griffiths and Richard Macnutt, 'Érard', *GMO* [accessed 29 September 2016]. In 1793 Érard, 'who left [Paris] fifteen months ago to go and find the other emigrants in London', was denounced by the French authorities, and his premises searched by the *comité de surveillance*. The denunciation reports that Érard had two houses in Paris, has undertaken 'at least 200,00 francs of repairs' on one, and that his paintings, worth 300,000 livres, had been left behind. Adelson et al. vol. 2 (2015), pp. 49-50. The Érards continued to have royalist

(1792-1802) led to a trade blockade that restricted the supply of French-made harps to Britain. In London, Érard developed and patented a new English variant of the French single-action instrument (more fully discussed in Chapter 4). His new harp, initially unimpeded by competition, flourished. The Napoleonic wars (1803-1815) further extended the trade blockade, creating a climate in which Érard and new makers could trade unhindered by French imports.¹⁹ Over the next two decades, other makers were established in close proximity.²⁰

According to a *Times* advertisement, Jacob Erat was trading at 100 Wardour Street by January 1798:²¹

Mr. Erat informs the Nobility and Gentry, having at this time several fine-toned beautiful carved and gilt swell and pedals harps, with the additional strings; a fine-toned grand and small pianoforte, with the additional keys, beautifully inlaid. The Harpsichord taught in the stile [sic] of Mr Clementi; the harp likewise at the same place. Direct to A.B. at 100 Wardour Street; Mr McKeller's of Stanhope Street, Clare Market; at Mr Goodfellow's Music Shop on Thayer Street, Manchester Square.²²

Erat's choice of words, such as 'fine-toned', 'beautiful', 'gilt', and 'inlaid', serve to advertise the high quality and decorative nature of his instruments. That he addresses the advertisement to the 'Nobility and Gentry' shows that he was aiming to sell his instruments to the wealthy upper classes. Whether he was making, or

sympathies: on 20 January 1815, Pierre Érard reported that a party for the workers, which coincided with the 'anniversary of the execution of the virtuous Louis XVI', was to be postponed. Adelson et al. vol. 2 (2015), p. 583.

¹⁹ The transcripts of an 1809 court case between Sébastien Érard and John Bourdelain of Jewry, record Érard's reasons for choosing to import his paintings from Rotterdam at that time, and in doing so confirms the challenging of importing from the continent. Having been advised that the political climate was advantageous, and the ports in Holland were open to partial trade, the blockade presumably meaning that they were normally inaccessible, Érard believed that his pictures could be moved to London without risk of seizure. TNA. C 13/1618/17, *Érard v Bourdelain*, bill and answer. British exports were gradually restricted from 1793 onwards, and Napoleon enforced a continental blockade to all French territories from November 1806. José Luís Cardoso, 'Lifting the Continental Blockade', in *A Global History of Trade and Conflict since 1500*, ed. by Lucia Coppelao and Francine McKenzie (Basingstoke: Palgrave Macmillan, 2013), pp. 87-102 (pp. 87-89).

²⁰ According to Érard's obituary, his single-action harp '[...] had superseded the importation of these instruments from France.' He was praised as a 'remarkably ingenious individual [...] few persons possessed a more fertile imagination, or a more mechanical turn of mind'. 'The Late Chevalier Sébastien Érard', *The Morning Post*, 18,933, 15 August 1831.

²¹ Milhouse, a woodwind maker, became the ratepayer at 100 Wardour Street in 1787 and relocated to 337 Oxford Street ten years later. David Lasocki, *New Light on Eighteenth-Century English Woodwind Makers from Newspaper Advertisements*, *GSJ*, 63 (2010), 73-142 (p. 80). Erat presumably acquired the lease directly after Milhouse.

²² 'The Musical Repository', *The Times*, 3 January 1798.

selling harps on behalf of other makers, is unclear. That he sold pianofortes and advertised the business as a 'Musical Repository' where, later, in *Holden's Triennial Directory* (1802) he is described as a harp maker,²³ suggests that he initially sold music and a wider range of instruments, perhaps acquiring them from nearby makers or, as demonstrated by Longman and Broderip, from France. It is likely that the income from such a venture enabled him to set up his workshops at this time.

Other musical repositories sold a range of music and instruments: in 1804, J. T. Benson of 51 Albermarle Street advertised self-published music;²⁴ and Cobb and Watlen, at their 'Musical Repository and New Subscription Music Library' at 19 Tavistock Street, were 'replete [with] grand, upright, horizontal, and square pianofortes, pedal harps, violins [...] and every musical instrument sold'.²⁵ Erat is described in Holden's 1817 directory as 'Patent Harp manufacturer', acknowledging his 1813 patent, and possibly also his ambition in regard to a further patent attempt.²⁶ In directories published between 1818 and 1823, the company name changed to 'Erat & Sons,' and in 1824, three years after Jacob Erat's death, when his sons assumed control of the business, it changed again to 'J & J Erat'. Between 1799 and 1840, the number of makers who specialised in the harp alone increased. Trade directories name a further nine in Soho: Alexander Barry, John Fuce Brown, Johann Andreas Stumpff, John Charles Schwieso and Frederick Grosjean, Emanuel Serquet, James Delveau, and Thomas and Edward Dodd. Barry was at 10, St Martin's Churchyard in 1808,²⁷ later moving to 17 Frith Street in 1818,²⁸ but advertising at 18 Frith Street the following year,²⁹ and Stumpff was at 44 Great Portland Street in

²³ *Holden's Triennial Directory* (London: Holden, 1802). Amendments in trade directories were not always carried out in a timely manner. Here they are used to indicate makers' locations at approximate times.

²⁴ 'New Music', *The Morning Post*, 11,091, 23 April 1804.

²⁵ 'New Musical Repository', *The Morning Post*, 11,960, 6 November 1804.

²⁶ *Holden's Triennial Directory* (London: Holden, 1817).

²⁷ *Holden's Triennial Directory* (London: Holden, 1808). By 1814, Barry had moved to 25 Kings Street, Soho, and three years later had moved again to 17 Frith Street, Soho.

²⁸ *Kent's Original London Directory* (London: Causton, 1818).

²⁹ *Kent's Original London Directory* (London: Causton, 1819). On 13 June 1821, a cook and housekeeper, who gives her address as 'Mr Barry's, no. 18 Frith Street, Soho, advertises her availability in *The Morning Post*. 'Wants a situation,' *Morning Post*, 15,676, 13 June 1821. Two second-hand Érard harps and a cabinet pianoforte were advertised there on 27 May 1822. 'Harps,' *The Morning Post*, 15,974, 17 May 1822. On 21 November 1823, an auction of Barry's effects at 17 Frith Street suggests that he had ceased trading. 'To Brokers, Harp-makers, Piano-Forte-makers, Cabinet-makers, and Others - Genuine Household Furniture, a fine toned Cabinet Piano-Forte, a New

1811, although he may have been trading earlier.³⁰ Schwieso and Grosjean advertised at 11 Soho Square in 1820,³¹ but were declared bankrupt in November of that year.³² In 1824, Schwieso announced that their partnership has been dissolved and that he had entered into a new partnership:

SCHWIESO and CO., late of the Firm of Schwieso, Grosjean, and Co., Soho-Square, take leave to inform the Nobility, Gentry, and the Public, that having dissolved their Partnership, they have taken a more commodious and eligible situation, at 263, Regent-street, where they will continue, through their own mechanical abilities, to manufacture their newly improved PEDAL HARPS [...] ³³

In 1828, Schwieso and his partner (identified as Serquet) dissolved their business. Schwieso remained at Regent Street and Serquet moved to 77 Titchfield Street.³⁴ Kent's Directory for 1826 shows that Grosjean, Schwieso's former partner, was still at 11 Soho Square. Delveau, trading at 28 Conduit Street at that time,³⁵ had moved to 18 Berners Street by 1840 when he advertised in the *Morning Chronicle*:

Patent Harps, - A large and elegant assortment of Double-action harps, having all the modern improvements, are on sale at Delveau and Co.'s, 18 Berners-street, Oxford-street, comprising the new grand Gothic harp &c., and in every variety of finish, possessing the highest qualities in tone and manufacture. Private purchasers and

Harp, Stock in Trade, Workbenches, and Effects. - By Mr. A. SCOTT, on the premises, no. 17, Frith-street, Soho-square, on Friday, Nov. 21, at Twelve, by Direction of the Proprietor, without reserve.' 'Sales by Auction', *The Morning Advertiser*, 10,024, 18 November 1823. It is probably that Barry either traded from both 17 and 18 Frith Street, or lived in one whilst working in the other.

³⁰ *Kent's Original London Directory* (London: Causton, 1811). On 17 April 1812, Stumpff, a year after advertising as a harp maker at 44 Great Portland Street, sold the lease for his premises on Henry Street to James and Thomas Broadwood. An endorsement on the lease states: 'I hereby pursuant to an agreement entered into and completed this day with Messrs James & Thomas Broadwood for this purchase of my Stock in Trade and premises in Henry Street, and in consideration of five shillings, the receipt of which I hereby acknowledge, I hereby sell to and assign over to James and Thomas Broadwood and their assigns, the whole of my interest in the within indenture.' That he sold his stock-in-trade to a pianoforte manufacturer indicates that he had previously made these; harps, perhaps, were a new venture. Surrey History Centre, 2185/JB/9/23, Stumpff Lease.

³¹ *Kent's Original London Directory* (London: Causton, 1820).

³² 'Bankrupts to surrender at Guildhall', *Public Ledger and Daily Advertiser*, 60, 18,556, 8 November 1820.

³³ 'Schwieso and Co.', *The Morning Post*, 16,676, 1 June 1824.

³⁴ Serquet announced his move to 77 Titchfield Street in *The Morning Post* on 3 July 1828. 'PATENT HARPS. - TO THE MUSICAL WORLD in General, - E. Serquet, late Schwieso and Serquet, begs to inform his Friends and the Trade, that he has REMOVED his Business from Regent-Street to 77, Titchfield-street, Portland-place, where an assortment of his new improved PATENT HARPS, also some Second-hand, may be viewed. Every instrument in the above line manufactured on the most reasonable terms. Harp and other Instrument lent on hire.' 'PATENT HARPS', *The Morning Post*, 17,956, 3 July 1828

³⁵ *Kent's Original London Directory* (London: Causton, 1826).

dealers will find this establishment merit[s] attention. A few second hand harps, in excellent condition, at reduced rates. Harps repaired, and for hire, strings, &c.³⁶

According to the Morning post of 2 April 1836, John Fuce Brown was also on Berners Street (at no. 12):

Harps. – Double-action harps, new and second-hand, for sale and hire at J. F. Browns & Co.'s (from Érard's), 12 Berners-street, Oxford Street. The gentry, merchants, and profession will find the harps on sale at this establishment merit their attention and patronage. They are of very superior description, with the latest improvement, unexcelled in brilliancy of tone or elegance, suited for any climate, and on very advantageous terms. Harps repaired and exchanged. N.B. A very fine toned double-action in perfect condition, 50 guineas.³⁷

The dissolution of a partnership between Delveau and Brown, five years later, indicates that they had worked together despite being at different addresses.³⁸ That harp makers were conglomerating on Berners Street suggests that production was moving from Soho to newer, grander properties north of Oxford Street. Thomas Dodd (1764-1834), the bow maker, was at 92 St Martin's Lane in 1809.³⁹ In February 1813, Dodd (probably Thomas's son, Edward (1791-1843)) advertised a new harp and pianoforte repository at 7 Wade's Passage, Bath, indicating a retail shop rather than factory (Figure 2.2).⁴⁰ Although detail of the instrument depicted in the advertisement is unclear, the decorated soundboard and turned, apparently ornamented column resemble those of his contemporaries. Music businesses were an important part of music trade in Georgian Bath and were typically run by musicians who had diversified.⁴¹ Establishing a shop there placed Dodd's harps within easy reach of the upper class and gentry who frequented Bath. He had left there by 1819 when a portrait painter, T. Peat (probably Thomas Peat, 1791-1831) was at that address.⁴² The Dodds' St Martin's Lane address is confirmed in a patent

³⁶ 'Patent harps', *The Morning Chronicle*, 22,045, 22 July 1840.

³⁷ 'Harps', *The Morning Post*, 20,381, 2 April 1836.

³⁸ 'Partnerships Dissolved', *Perry's Bankrupt Gazette*, 12 June 1841, column 384.

³⁹ William Meredith Morris, *Biography of Thomas Dodd*, <http://www.amati.com/maker/dodd-thomas-i/> [accessed 10 August 2016].

⁴⁰ 'Newly established harp and pianoforte repository,' *Bath Chronicle*, 56, 2661, 18 February 1813.

⁴¹ Matthew Spring, 'The Musical Life of Bath, 1800-1850'. in *Musicians of Bath and Beyond: Edward Loder (1809-1865) and His Family*, ed. By Nicholas Temperley (Woodbridge: Boydell, 2016), p. 38.

⁴² *Gye's Bath Directory* (Bath: Gye, 1819). p. 11.

taken out for the harp Edward, in 1822.⁴³ John Dilworth suggests that Dodd acquired a house at 3 Berners Street in 1813, and both bow and harp businesses moved there in 1825.⁴⁴ Thomas's business ceased trading on his death in 1834, and Edward's establishment closed after he drowned in 1843. Dodd had been visiting his son who was preparing to go to sea. Whilst disembarking he fell into the River Thames. Despite a rescue attempts by his son who held out an oar, Dodd was seen to hold up his arms and slip beneath the water. His body was recovered two hours later. Despite a recent bequest of £50,000 from his father, Dodd's business had been struggling. He left a widow and 12 children in penury. The inquest, held at the Duke of York, Salmon's Lane, Limehouse, recorded a verdict of accidental death.⁴⁵ The *Morning Post* later reported that his son had been leaving to go to Sydney, Australia (perhaps working as a seaman, or maybe seeking to establish a new harp manufactory there). On 28 June 1843, a benefit concert was held for Dodd's widow and *ten* children (suggesting that two had reached their majority) for which 'a host of musical talent has volunteered its gratuitous service';⁴⁶ the maker had clearly been highly respected.⁴⁷

Other lesser-known and overseas harp makers are occasionally named in newspapers: J. Hobart of Warwick Street, Golden Square, was declared bankrupt in *The London Gazette* on 2 March 1802;⁴⁸ John Egan of 25½ Dawson Street, Dublin advertised the raffle of a French pedal harp in *Saunders's Newsletter* on 11 May 1802;⁴⁹ and Mr C. Schultz of 77 Norton Street, Great Portland Place was named in *The Morning Chronicle* as the seller of 'A Select Collection of Lessons' on 21 February 1804.⁵⁰

⁴³ Edward Dodd, *Certain Improvements on Harps*, no. 4671 (London: HMSO., 1822).

⁴⁴ John Dilworth, *Biography of Thomas Dodd*, <http://www.amati.com/maker/dodd-thomas-i/> [accessed 10 August 2016].

⁴⁵ 'Fatal Accident on the River', *Bell's New Weekly Messenger*, 13,674, second edn, 30 April 1843, p. 4.

⁴⁶ *Morning Post*, 22,589, 12 June 1843, p. 5.

⁴⁷ A report of the benefit concert named the musicians who freely gave their time. 'Vocalists - Signore Sivori, Monsignor Dreyschock, Mesdames Caradori Allan, Alfred Shaw, Birch, Rainforth, Dolby, Cubitt, Steale, C. Harper, Williams, M. Williams, E. Lyon, L. Patton, and M. B. Hawes; Messrs. H. Phillips, Hobbs, Stretton, Ferrari, and John Parry. Solo Players - Messrs. J. Balsir Chatterton, Lazarus Richardson, and Harper jun. Leader, Mr F. Cramer. Conductor, Mr Lucas. The orchestra will consist of nearly 100 performers.' Tickets were priced at -/7/- and reserved seats at -/10/6. 'Signor Sivori and Mons. Dreyschock', *Morning Post*, 22,607, 28 June 1843, p. 1.

⁴⁸ 'J. Hobart', *The London Gazette*, 15,459, 6 March 1802.

⁴⁹ 'To be raffled', *Saunders's Newsletter*, 11 May 1802.

⁵⁰ 'To the amateurs in music', *The Morning Chronicle*, 10,844, 21 February 1804.



Figure 2.2. Advertisement for Dodd's harp and pianoforte repository, *Bath Chronicle and Weekly Gazette* (1813).

Location was clearly important to the harp makers. Plotted on a map, one sees that they aggregated close to suppliers, other instrument makers, trades, theatres, music rooms, and notable residents (denoting wealthy consumers) (Figure 2.3). Clive Edwards recognises a long tradition of particular trades clustering in a street or area.⁵¹ He cites clock making in Clerkenwell, silk weaving in Spitalfields, and furniture making on Tottenham Court Road as examples, and to these we can add harp making in Soho. Such clustering enabled businesses to take advantage of 'the economies of agglomeration within a finite spatial limit', the benefits including access to 'supplies of materials or finished goods, space, transport, labour, and [...] market.'⁵²

⁵¹ Clive Edwards, Tottenham Court Road: the changing fortunes of London's furniture street 1850-1950, *The London Journal*, 36, 2 (2011), 140-160 (p. 143).

⁵² Edwards (2011), p. 142.

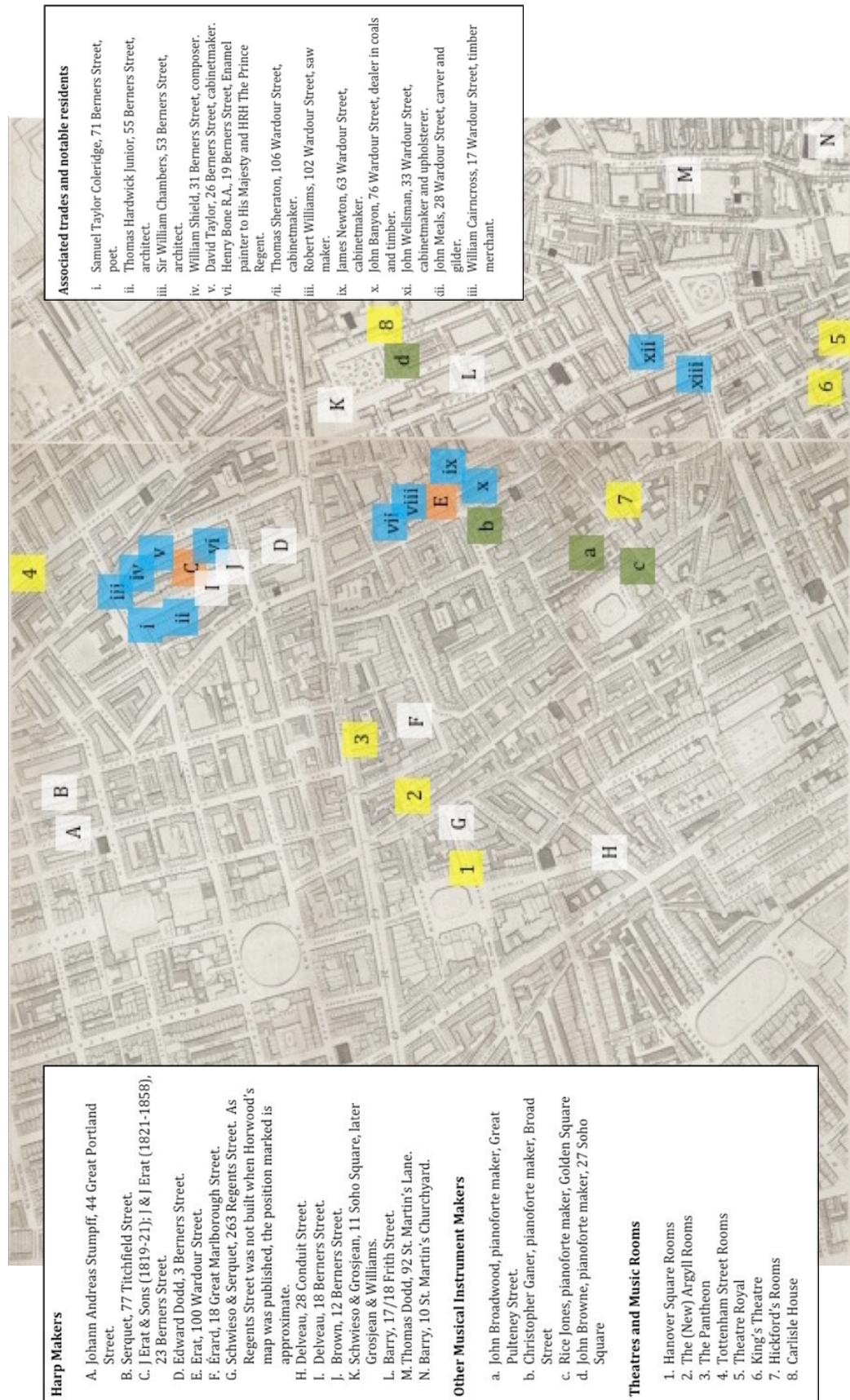


Figure 2.3. Harp makers mapped on Horwood's map (1795-1799). For sources, see Appendix 2.1

The records of the Sun Fire Insurance Company show that nearly half of the Erats' neighbours on Wardour Street were involved in craft-based industries (Figure 2.4) (Appendix 2.2). In contrast, between 1820 and 1825 only 36% of Berners Street residents (following the Erats move there in 1819) were engaged in the crafts, with private properties making up 27% of insurance policies and 18% retail (Figure 2.5) (Appendix 2.3). Notable figures such as Henry Bone (enamellist and portrait painter) lived there, and earlier residents had included the architects Sir William Chambers and Thomas Hardwick Junior. The wider area abounded with musical instrument makers, particularly pianoforte workshops. Nearby cabinetmakers and suppliers offered ready access to labour, materials, and tools, and maker's instruments were demonstrated in theatres and music rooms advertising them to the harp-buying public.

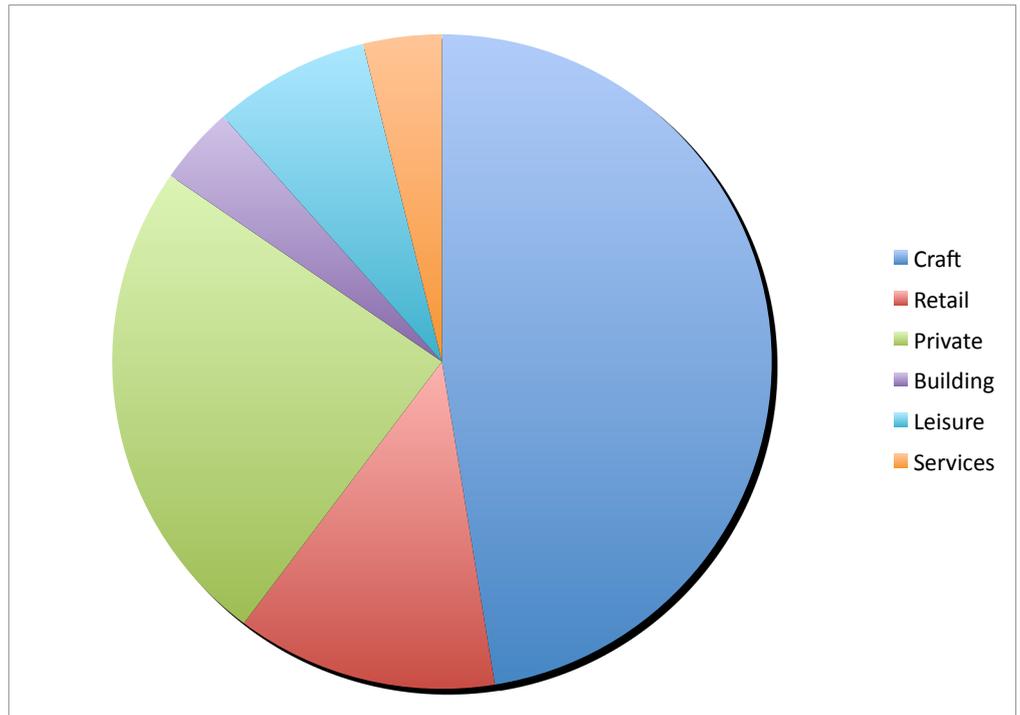


Figure 2.4. Residents of Wardour Street by occupation (1797-1812).

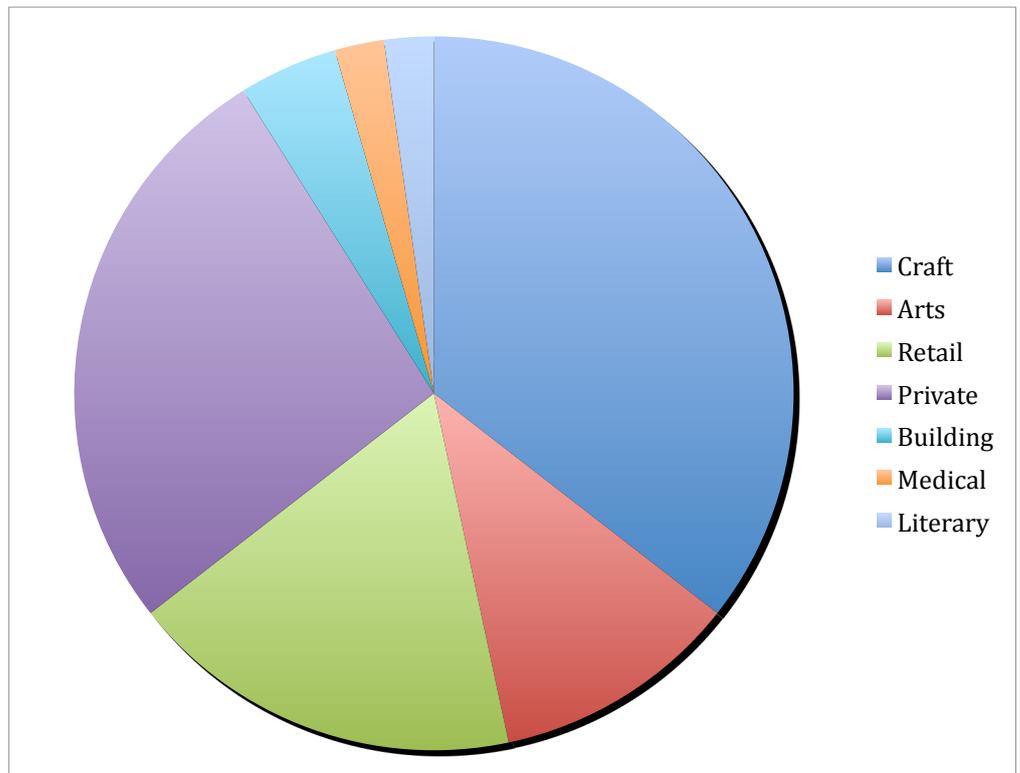


Figure 2.5. Residents of Berners Street by occupation (1820-1825)

Although centred in Soho, harp making and repair also happened elsewhere in the capital: George Morley was reportedly established at 95 Whitechapel High Street by 1817,⁵³ and Sébastien Schwartz was trading at 3, White Row, Spitalfields in 1822,⁵⁴ both some four miles west of the Soho makers.

⁵³ The website of Clive Morley Harps states that George Morley (1790-1852) registered a harp making, tuning and repair business at 95 High Street, Whitechapel in 1817. <http://www.morleyharps.co.uk> [accessed 27 July 2016]. It has not been possible to confirm this date however, and evidence suggests that it is incorrect. On 18 September 1820, James Clutterbuck, a servant of George Morley of Whitechapel, was accused, convicted and transported for seven years for the theft of children's clothes from his master, whose occupation was given as clothes salesman. *OBOL* t18240407-186. On 7 April 1824, Mary Preston was tried and fined -/1/- for the theft of shoes from George and Thomas Morley of Whitechapel, identified as salesmen. *OBOL* t18240407-186. George Morley, giving evidence in another court case, on 16 February 1826, against John Morphew, confirmed his address as 95 Whitechapel High Street, describing himself as 'general salesman'. Morphew had offered Morley twenty-one-dozen penknives (apparently stolen goods). Morley had purchased them for 'for six sovereigns, a fowling piece, and a pistol' but later, realising their true value and becoming suspicious, placed an advertisement in *the Times* to find their owner. Morphew was found guilty and transported for 14 years. *OBOL* t18260216-51. The Morley Harps *Wikipedia* page attributes a single-action harp in the Henry Ford Museum, Dearborn, Michigan, (object no. 29.991.1) to George Morley, dating it c1810. https://en.wikipedia.org/wiki/Morley_Harps [accessed 2 November 2016]. The harp is inscribed 'J. Geo. Morley, no. 1008, 6 Sussex Place, S. Kensington, London' on the base, that address probably signifying repair or resale in the late nineteenth or early twentieth century. The Morley Ledgers (private collection) do not record the construction of any single-action harps by Morley Harps. It is likely that Érard or one of his contemporaries made the instrument in question: the Érard ledgers record the sale of no. 1008 (a single-action harp) on 15 October 1807 to a Mrs Dunbar via Phillippe Meyer (the harpist, composer, and presumably her teacher) for £80/7/- (Royal College of Music Museum, GB 1249 Érard, Érard Ledger, p. 18.) That the earliest surviving Morley ledger dates from 1891 suggests that the company was formed then. A letter of 28 October 1872 from Messrs Sébastien and Pierre Érard to Mr George Morley (presumably Joseph George Morley (1847-1922)) at his Pianoforte Warehouse, Clapham Common, London, accepts his resignation, indicating current involvement with pianos and suggesting that business involvement with harps started then or later. <http://0035926.netsolhost.com/Documents/MorleyResignationfromErard1872.pdf> [accessed 2 November 2016].

⁵⁴ Edward Baines, *History, Directory, and Gazetteer of the County of York* (Leeds: Edward Baines, 1822), xxx.

2.4: Social class and harp prices

Musical practice amongst the wealthy was common. In 1791, an anonymous contributor to *The European* writes:

[...] we should imagine it [musical practice] will attract the notice of all persons of taste, especially as there are now but few families in the kingdom, wherein instrumental or vocal music is not practised by some of the younger persons belonging to them.⁵⁵

Brewer states that eighteenth century critics identified the arts as ‘objects of taste’, and thus illustrative of refinement, in order to differentiate them from fashionable recreations which were regarded as ‘the gratification of appetite’.⁵⁶ Therefore, in this period the phrase ‘persons of taste’ has class explicit connotations, describing the upper classes and aristocracy, and perhaps the aspirational middle classes. To have or display taste one needed the time, education and wealth to develop and practice it. The *European Magazine* was aimed at a literate (hence educated) audience. In suggesting that there were few families in which music practice did not take place, the writer is clearly referring to an educated readership.

In 1814, Colquhoun identified and described eight class divisions (Appendix 2.4).⁵⁷ The highest order was ‘the Royal Family, the Lords spiritual and temporal, the great officers of state, and all above the degree of a baronet’, each with an immense average annual income of between £5,010 and £172,000. The second class comprised ‘baronets, knights, country gentlemen, and others having large incomes’ who earned £800 to £3,500 per year each. The third class, who’s healthy incomes ranged from £300 to £2,600, were ‘dignified clergy, persons holding considerable employments in the state, elevated situations in the law, eminent practitioners in physic, considerable merchants, manufacturers upon a large scale, and bankers or

⁵⁵ ‘A Volume of Letters from Dr. Berkenhout to his Son’, *The European Magazine*, April 1791, p. 27.

⁵⁶ John Brewer, *The Pleasures of the Imagination* (London: Routledge, 2013), p. 81. I would argue that the action of a professional player could be classified as art; that of an amateur (or even dilettante), particularly with regard to female education and accomplishment, might fall within fashionable recreations.

⁵⁷ Colquhoun defined these as the highest orders: the second, third, fourth, fifth, sixth classes, the seventh or lowest class, and the army and navy. Patrick Colquhoun, *A Treatise on the Wealth, Power, and Resources of the British Empire Explained* (London: Mawman, 1814), pp. 106-107.

the first order'.⁵⁸ Whilst those of lower class may have afforded cheap instruments, only those of the higher ones would have been able to access the more expensive instruments and the necessary education to become proficient musicians. Nex states that instruments costing more than £5 were predominantly aimed at wealthy amateurs; but that trumpets, horns, and woodwind instruments (with the exception of the flute) were the preserve of the military, and hence played by professional musicians. In 1798, a trumpet by George Astor could be bought for 5 guineas; 7 guineas would buy a pianoforte guitar from Christian Clauss in 1783; a second-hand grand piano from Broadwood would set the purchaser back by £45/5/- in 1815, with a single-action square piano from the same maker costing £32/15/- three years later; and in 1783 a chamber organ (maker unknown) could be purchased for £85/1/-.⁵⁹

Prices recorded in newspapers and elsewhere reveal that the harp, compared with other instruments, was expensive. A French single-action harp by Naderman, costing 40 guineas, was advertised for sale in the *Morning Post and Daily Advertiser* on 5 April 1779.⁶⁰ The seller, a Mr Smart, stated that Naderman was the best of the Parisian makers, and that the harp could be seen at his music shop on the corner of Argyll Street and Oxford Road, perhaps anticipating a prompt sale, 'until Friday, but no longer.' A second-hand harp by Naderman, 'late the property of a Gentleman in Grosvenor-square, deceased', was advertised for sale at 20 guineas on 5 February 1791: 'it cost Fifty-four Pounds, in Paris a few years ago, exclusive of the duty'.⁶¹ A good French pedal harp by Cousineau, 'the property of a Lady of Fashion, going abroad', was advertised by Smart's Music Warehouse at 35 guineas; he also advertised two 'inferior' French Pedal harps, one by Naderman and the other by La Jeune, without stating their prices.⁶² Nex found that harps ranged in price from 5 guineas (for a child's harp by Hoffman in 1798), to a single-action harp at £84, and a

⁵⁸ Colquhoun (1814), pp. 124-126. That the average annual income ranges for those of the second and third classes cross over suggests that their class designation was as much to do with occupation or role in society as income.

⁵⁹ Nex (2013), pp. 104-105.

⁶⁰ 'Naderman Harp,' *Morning Post and Daily Advertiser*, 2331, 3 April 1780.

⁶¹ *World*, 1279, 5 February 1791.

⁶² [The property of a Lady of Fashion], *Morning Herald*, 6187, 17 July 1800.

double-action one at £126 (both sold by Érard, in 1811 and 1817 respectively).⁶³ According to Adelson et al., one of Érard's single-action harps, priced at £84 in 1811, cost twice the average annual wage of an agricultural labourer (£42 in 1810), and nearly 40% of that of a surgeon's wages (averaging £217 in 1810).⁶⁴ Price and the ability to afford a musical education (and hence class) dictated who might play an instrument.

2.5: Women's education, accomplishment, and the harp

Chirol associates musical education, in particular the learning of an instrument, with women and girls: 'Almost all the daughters of manufacturers, tradesmen, farmers [these being of Colquhoun's third class], learn to dance, to sing, to play on the pianoforte'.⁶⁵ Dougall writes that 'female youth' are generally instructed in music, and that, 'if their voice and ear be such', they may excel in, and gain pleasure from, vocal music. Of instrumental music he adds, 'The harpsichord [and] the harp, are instruments often touched by female hands,' but he finishes with a plea: 'if your daughter have no voice nor ear for music, compel her not to make it a study.'⁶⁶ *The Monthly Magazine* states that a 'young lady' (here denoting status) must attend a boarding school or be educated at home by a private governess, where she may choose to learn to read, write and sew; but – in contrast to Dougall – that she 'must learn to play on the piano, ear or no ear; to sing, voice or no voice.'⁶⁷ The necessity to acquire musical skill, and to display it by performing, was of greater importance than interest or talent. Women were commonly depicted at the harp in portraits, mostly in the act of playing, sometimes posing, and occasionally tuning (Figure 2.6).

⁶³ Nex (2013), p. 105.

⁶⁴ Adelson et al., vol. 2 (2015), p. 529.

⁶⁵ J. Louis Chirol, *An Enquiry into the Best System of Female Education* (London: Cadwell, 1809), pp. 232-233.

⁶⁶ John Dougall, *The Modern Preceptor*, 1 (London: Vernon, Hood, and Sharpe, 1810), p. 29.

⁶⁷ 'Female education,' *The Monthly Magazine*, 60, 418 (London: George B. Whittaker, 1825), p. 484.



Figure 2.6. Anon, Young woman tuning a harp, c1815, oil on brass, 5 x 5 cm, private collection.

Dougall, by stating that ‘A female is to be taught the duties of a wife, mother, and regulator of a family [...] practicing eight hours a day on the piano, and learning French and the harp’, indicates social class; such extended practice would leave little time to develop the practical skills of a ‘wife, mother, and regulator of a family’. His instructions are aimed at families with sufficient wealth to employ servants. In contrast, he states that boys’ education is ‘to make a boy happy in his youth, a good relative, an intelligent man of business and a wise and honest member of the state,’

all of which may be attained through the study of 'Latin and Greek, bad French, and University mathematics.'⁶⁸ The learning of an instrument is not mentioned. However, paintings indicate that boys did play a role in family musical life. One, by John Opie (1761-1807), who lived on Berners Street close to the harp makers of Soho, shows a gentleman with three children, a girl is playing a single-action harp, and an older boy, the flute (Figure 2.7).

Not all writers on the subject believed that this method of education for young ladies was appropriate. In 1787, Wollstonecraft presents a feminist view and argues for an intellectual education for young women:

Girls learn something of music, drawing, and geography; but they do not know enough to engage their attention, and render it an employment of the mind [...] These are at best but trifles, and the fooling indiscriminate praises which are bestowed on them only produce vanity.⁶⁹

Chirol was more concerned that any female education – not least one that included musical achievement - would damage society, arguing that should it continue, 'good house wives will be so rare as to make the number of marriages decrease in an equal proportion; and libertinism will be the order of the day';⁷⁰ he feared that the sensory nature and physical pleasure derived from playing an instrument could loosen the moral restraints of women. Yet a number of characters in contemporary women's fiction illuminate a diverse attitude to music education and particularly that involving the harp. Mrs Mountain, who in William Lucas's 1805 novel had been placed in a boarding school by a kind uncle, associates the harp with the zenith of female education and accomplishment. 'Here, among other things, I became a proficient on the harp [...] having completed myself in every female accomplishment that the school taught.'⁷¹ Miss Amelia Rattle, in a short story in *The Lady's Magazine*, listed the skills she was learning: French, German and Italian, drawing, varnishing, gilding, dancing, singing, and the attitudes.

⁶⁸ Dougall (1810), p. 29.

⁶⁹ Mary Wollstonecraft, *Thoughts on the education of daughters* (London: Johnson, 1787), p. 25.

⁷⁰ Chirol (1809), pp. 232-233.

⁷¹ William Lucas, *The Duellists* (London: Cundee, 1805), pp. 119-121.



Figure 2.7. John Opie, *Portrait of a gentleman with his children*, oil on canvas, 127 x 101cm, photo used with the kind permission of The Potomack Company.

Amelia's mother was motivated by class and money: 'mamma says, as I shall have a better fortune than Lady Di, she vows I shall learn everything she does [...] I have a singing-master, and another who teaches me the harp, and another for the piano-forte.'⁷² Although perhaps exaggerating for comedic value, the author is clearly reflecting the social aspiration of middle to upper class young ladies and their mothers by comparing her daughter to a lady of the gentry – thus highly priced instruments such as the harp feature in her account.

Musical accomplishment, particularly the ability to play the harp, enhanced a woman's marriageability. The schoolmaster in Lafontaine's *Edward and Annette* persuades her parents that 'Annette ought to take lessons on the harp [...] Annette will surely never be the wife of a peasant', implying that the playing of the harp made her more likely to make a good match. Lafontaine adds, 'The harp has made the fortune of many a girl.'⁷³ Edmund, in Austen's *Mansfield Park* attended the parsonage daily in order to be 'indulged with his favourite instrument [the harp],' but also to see Miss Crawford:

A young woman, pretty, lively, with a harp as elegant as herself, and both placed near a window, cut down to the ground, and opening on a little lawn, surrounded by shrubs in the rich foliage of summer, was enough to catch any man's heart.⁷⁴

Here Austen goes further than Chisolm and Douglass. Her association of Miss Crawford's disposition and presentation with that of the harp, and the placement of both in an idyllic pastoral setting, thereby catching Edmund's heart, associates the harp with femininity and love. With the arrival of Fanny Price at Mansfield Park, Austen hints at the class status of the harp. Acknowledging that she had not heard it before, Fanny wishes to hear it played. Her unfamiliarity with the instrument confirms that she had not moved in the elevated circles in which the harp was played. Parker suggests that by giving a harp to Miss Crawford, Austen was indicating that the playing that instrument was an 'arriviste' activity,⁷⁵ indicative of

⁷² 'The Visit with strictures on modern female education', *The Lady's Magazine*, 40, May 1809, p. 210.

⁷³ Augustus Lafontaine, *Edward and Annette* (London: Weise, 1807), p. 13.

⁷⁴ Jane Austen, *Mansfield Park* (London: Egerton, 1814) p. 133.

⁷⁵ Mike Parker, 'Tidings of My Harp,' *Jane Austen's Musical World*, 44 (March-April 2010), 35-39, (p. 36).

privilege and vanity. He supports this by comparing the relative prices of popular domestic instruments: a square pianoforte could be purchased for 15 guineas, and a grand for between £30 and £50.⁷⁶ The harp, however, was significantly more expensive. A writer in *The World of Fashion* asked whether marriage was an enemy to the polite arts, suggesting that the harp was a device used by some women to attract a husband, only to abandon it after marriage:

I beheld, in the drawing-room of the youthful and pretty Mrs. Vernon, a splendid harp, adorned with all the brilliant devices of the nineteenth century, but put up in a solitary corner, where it seemed placed merely as an ornament, and not as a memento of the talent which once existed [...] I approached the instrument with regret, so well adapted to female beauty, and lending such fresh attraction to her native charms, and my eyes immediately discovered that more than half of the strings were broken, and what remained of them twisted round their supporters, testifying, but too evidently, a determined neglect, a voluntary forgetfulness.⁷⁷

It was perhaps the form and lines of the harp, and their relationship to the player, that rendered it a female instrument. Moody suggests that Mary Crawford's playing on the harp conjures erotic imagery, and that Edmund is attracted to this sensual image of her.⁷⁸ That the harpist held the instrument between her knees must have been significant, as was the performance style of some women. A year before Austen's novel, an author, described only as 'a lady of distinction' conjures similar but more erotic imagery. The author admonishes women who, when playing the harp:

[...] twist themselves into so many contortion, and writhe their bodies and faces about into such actions and grimaces, as would almost incline one to believe that they are suffering [...] 'Their bosoms heave, their shoulders shrug, their heads swing to the right and left, their lips quiver, their eyes roll; they sigh, they pant [...] were possible for these conceit-intoxicated warblers, these languishing dolls, to guess what rational spectators say of their follies they would be ready to break their instruments and be dumb forever.⁷⁹

⁷⁶ Parker (2010), p. 35.

⁷⁷ 'The Young Wife's Harp', *The World of Fashion*, 7, 69, 1 February 1830.

⁷⁸ Ellen Moody, 'Harp-playing Ladies', *Jane Austen Information Page*, 10 July 1999. <http://www.pemberley.com/janeinfo/emharpld.html> [accessed 23 October 2015].

⁷⁹ *A Mirror of the Graces* (London: Crosby & Co., 1811), pp. 191-192.

She implies that ‘rational spectators’ viewed these affectations (that some might have considered aspects of expression) as overtly sexualised, but doesn’t tell us whether she thinks the players are conscious of or deliberate in their actions.⁸⁰ She then comments on the relationship between the beauty of the harp and the female form:

[It] certainly admits of more grace, as the shape of the instrument is calculated, in every respect, to show a fine figure to advantage. The contour of the whole form, the turn and polish of a beautiful hand and arm, the richly-slipped and well-made foot on the pedal stops, the gentle motion of a lovely neck, and, above all, the sweetly-tempered expression of an intelligent countenance; these are shown at one glance, when the fair performer is seated unaffectedly, yet gracefully, at the harp.⁸¹

The showing off of the player was clearly as important as the music played. Dubois notes an attempt to ‘gender’ the instrument: ‘The apparent sexualisation of the harp seems to have operated as a vehicle for the idea that sensuality could be conducive to sentiment.’⁸² It is clear, therefore, that the perception of the harp ranged from that of an essential device for promoting status, love, marriage, and women’s education, to a cynical tool used to ensnare a husband, or even one that, in its exaltation of women’s education, would damage the institution of marriage, sexualise women, and reign libertinism down upon society.

2.6: The harp in images

Representations of the harp in contemporary tutors tend to be more demure than those in novels and other texts. Both were representative of reality. Learning, for which tutors were written, may be considered formal and, assuming intention to perform, public. The harpist is therefore represented in a formal, socially acceptable way. According to Pamela Regis (2003), ‘The romance novel has the strange

⁸⁰ Lucas’s character, Mrs Mountain, in his aforementioned novel *The Duellists* fails to become a harp teacher for want of recommendation. She rejects an offer to work for ‘an eminent master’, who appreciated her playing because, ‘his conditions of serving me were too base to accede to [...]’ Although these ‘base conditions’ are not expanded upon, it may be that that Lucas is representing the effect of the erotic perception of the harp as alluded to by the ‘Lady of Distinction’ in the *Lady’s Magazine*.

⁸¹ ‘A lady of distinction,’ *The Mirror of the Graces* (New York: Riley, 1813), pp. 16-17.

⁸² Pierre Dubois, *Music in the Georgian Novel* (Cambridge: Cambridge University Press, 2015), p. 229.

distinction of being the most popular but least respected of literary genres.’⁸³ They were written to entertain and sometimes titillate, hence the depiction of the harpist in sensual, and sometime sexual, manner. The frontispiece of Augé’s 1775 method shows a fashionably dressed lady, apparently nobility or gentry, holding a small, French-style harp between parted knees, her wrists on display (Figure 2.8).⁸⁴ Koda and Bolton note that ‘in the hands of the voluptuary the harp was a powerful instrument of seduction [that] allowed a woman to reveal her musical virtuosity as well as to display her pretty hands and nibble fingers.’⁸⁵ The Doric colonnaded terrace setting and furniture (a pedestal table and Hepplewhite style chair) are neoclassical, the music on a stand indicating musical literacy and education. The intrusion of a wing or adjacent building to the left suggests a very grand house; a swagged curtain, framing the picture from the right, indicates a domestic space. Augé here associates the harp with fashionability, expense, and high status. The grandeur of the setting proclaimed the status of the instrument, giving the potential purchaser something to aspire to.

⁸³ Pamela Regis, *The Natural History of the Romance Novel* (Philadelphia: Pennsylvania University, 2003), synopsis.

⁸⁴ Peter Augé, *New and Compleat Instructions for the Small Harp* (London: Rutherford, 1775), p. 2.

⁸⁵ Harold Koda and Andrew Bolton, *Dangerous Liaisons: Fashion and Furniture in the Eighteenth Century* (London: Yale University Press, 2006), p. 46.

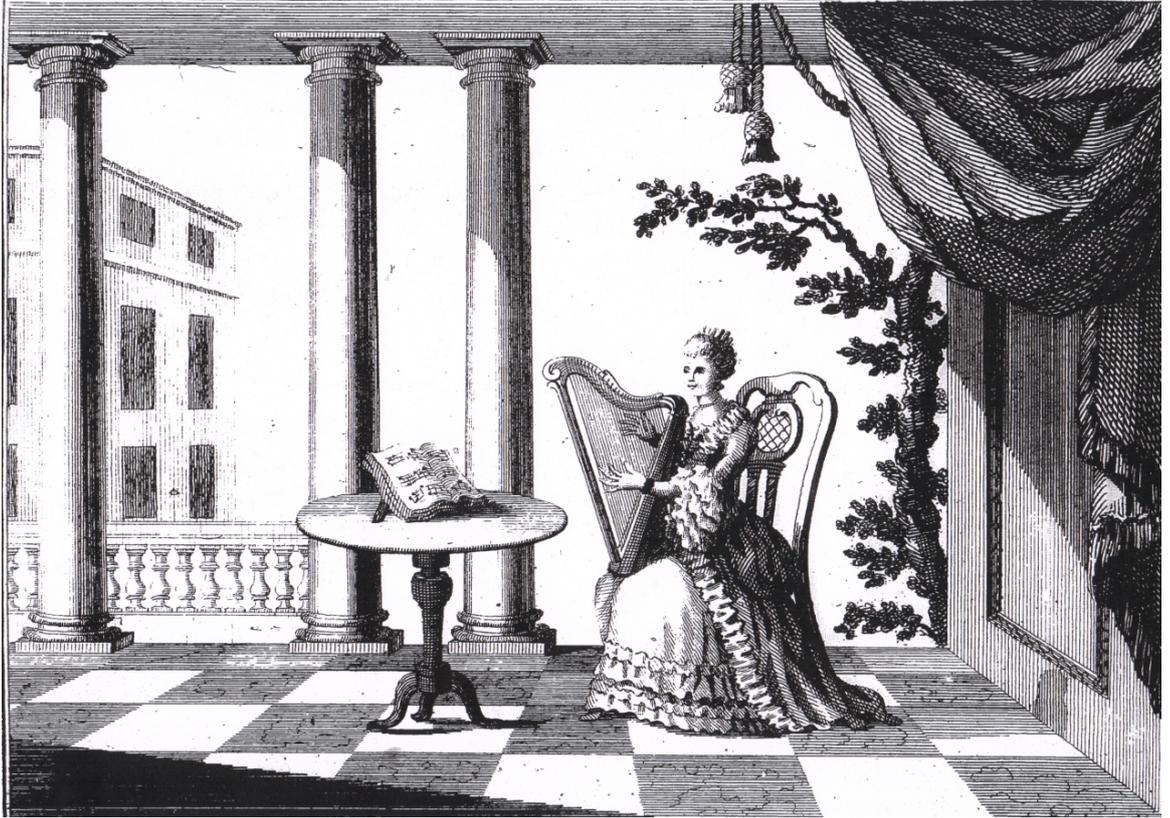


Figure 2.8. Plate from Augé's method (1775) showing the small harp.

Later methods deviate from Augé's grand setting, placing the emphasis on the harp and its player. The image preceding François Joseph Dizi's 1813 method (Figure 2.9) renders the harp (neo-classical in form, the harp column surmounted with an ionic capital) and player (who looks modestly away from the reader) in detail, while the room setting, with column on a pedestal and swagged curtain, is lightly sketched.⁸⁶ The frontispiece of Meyer's 1816 method (Figure 2.10) shows Érard's new 'Grecian' double-action harp (1810 patent) and stool on a resonator box (all three available from the company), demonstrated by a fashionably dressed lady in a Grecian influenced costume, her face demure, ankles, feet, arms and hands bared, and head turned in order to elongate her neck. In contrast with Augé's image, the background is plain, the absence of grand setting suggesting that Érard (the publisher) intended his harp for middle-class homes as well as those of the nobility; indeed Adelson et al write that the majority of Érard's customers were untitled (not of the aristocracy),⁸⁷

⁸⁶ François Joseph Dizi, *Forty-eight Exercises or Fantasias [...] for his patent harp* (London: Dizi, 1813).

⁸⁷ Adelson et al. vol. 2 (2015), p. 526.

but that they must have been of considerable social standing. Like that of Augé 41 years earlier, Meyer's image associates the harp with fashion, now inspired by the Greek revival movement.⁸⁸

The harp in the front plate in Nielson's method (Figure 2.11), 24 years after Meyer's, is still Grecian in style, while the fashions worn by the seated harpist have changed: with her hair up, the sides framing her face in a heart shape, she has a tiara, drop earrings (probably pearl), and a bejewelled bandeau on her forehead. Her shoulders, wrists, and hands are again bare. The use of musical tutors and music as marketing tools has developed too: the mechanism plate of the harp is engraved 'J & J Erat' (presumably the Erats sponsored the publication in some way), and the harp sits on the spring of support (a board to which the harp could be attached in order to relieve the harpist of its weight), a new Erat invention. Although the images differ, they share common themes, depicting a high-value object in proximity to a luxurious setting or cutting edge fashions.

⁸⁸ John Baptist Meyer, *A complete demonstration of the advantages afforded by Mr. Sebastian Érard's new invented harp, with double action in the pedals* (London: Érard, 1816).



Figure 2.9. Frontispiece of Dizi's method (1813).



Figure 2.10. Frontispiece of Meyer's method (1816).



Figure 2.11. Frontispiece of Nielson's method (c.1840).

Depictions of the harp in prints of the day reinforce its status as a fashionable object amongst the upper classes, and its role in women's education and marital advancement. A picture in *The Lady's Monthly Museum* of October 1799 shows two women,⁸⁹ each modelling an afternoon dress, one sat at the harp with music in her hand, the other standing behind and leaning on the instrument (Figure 2.12). The shape of the instrument, with volute and sweeping neck, is similar to that of the Welsh triple harp. Six years later, *The Lady's Magazine* printed an image showing a woman in a pale blue, empire line, 'London fashionable full dress,'⁹⁰ with puffed shoulders, this time standing at a French-style harp suggesting that despite the introduction of Érard's new instrument, the French model was still fashionable (Figure 2.13). In 1826, a fashion print in *The Belle Assemblée* (Figure 2.14) depicts a gloved woman wearing a dress with frilled hem,⁹¹ the waist now lower than the earlier empire one, and a feathered hat upon her head. This harp, with its classically inspired column and capital, is a good representation of the London-made single-actions by Érard. A plate by Thomas Rowlandson,⁹² the renowned artist, caricaturist, and engraver, shows a grand domestic setting in which a young lady plays upon a harp (Figure 2.15). The caption, 'Sweet is the voice whose powers can move the vagrant heart to love', suggests that her singing and playing inspired romance, and by association that of other young ladies; behind her stands a couple in a romantic clinch.

⁸⁹ *The Lady's Monthly Museum*, 3, October 1799, p. 313.

⁹⁰ *The Lady's Magazine*, 36, June 1805, p. 321.

⁹¹ *The Belle Assemblée*, 3 (London: Whittaker, 1826), p. 172.

⁹² William Coombe, *The Dance of Life* (London: Ackerman, 1817), p. 271.



Figure 2.12. Fashion plate from *The Lady's Monthly Museum* (1799).



Figure 2.13. Fashion plate from *The Lady's Magazine* (1805).



PROPOS CONCERT DRESS.

Published by G. B. Whittaker in La Belle Assemblée, N° 60 sur le 1er Avril 1826

Figure 2.14. Fashion plate from the *Belle Assemblée* (1826).

2.7: The harp in performances and printed music

As the concert scene grew, the market for, and consumption of, printed music increased. Music in the British Library shows that whilst the number of works published in Britain was low before 1755, from 1756 it rose sharply (Figure 2.16).⁹³ Music publishing provided an additional income stream for companies that otherwise made musical instruments.⁹⁴ Likewise, publishers sold instruments. In their catalogue of July 1789, Longman and Broderip (musical instrument maker and retailer) listed around 500 works published by the company.⁹⁵

The rise of the harp in a performance context is evident from a close examination of McVeigh's database of London concerts,⁹⁶ and fluctuations in the use of particular instruments are broadly reflected in the flow of music published, much of it for consumption by amateurs. Of all 65,594 musical publications in the British library from between 1700 and 1830, 43,912 were issued in Britain.⁹⁷ Of these, 15,150 mention the pianoforte in their title (by far the most frequently named instrument),⁹⁸

⁹³ This analysis is based on a summary spreadsheet of the British Library catalogue of printed music, made available to attendees of a British Library study day: A Big Data History of Music: Digital Strategies for Historical Musicologists, 11 March 2015. Formed by Act of Parliament in 1753, the British Museum Library, as it was then called, comprised 71,000 objects from Sir Hans Sloane's collection, including books and manuscripts; George II donated the Royal Library to the museum in 1757, and George IV added that belonging to his father in 1823 (The King's Library, https://www.britishmuseum.org/about_us/the_museums_story/kings_library.aspx, [accessed 23 November 2015]). Legal deposit, the requirement of publishers to provide a copy of a published work to nominated libraries, has existed in British law since 1662 (<http://www.bl.uk/aboutus/legaldeposit/>). However, much of the published music in the British Library was collected in the early nineteenth century (<https://www.bl.uk/collection-guides/printed-music>) hence the collection is not comprehensive and is somewhat biased towards British publications. Of works published in Britain, only 4063 date between 1700 and 1752 (averaging 79.1 works per year), but 8,046 over the next 48 years to 1800 (averaging 167.6 per year) (perhaps more representative of total publications), and rising to 25,539 between 1801 and 1830 (averaging 880.6 per year). Although data from the spreadsheet, presented graphically here to show broad publication trends, indicates the relative popularity of these instruments, it cannot be assumed also to represent the numbers of instruments made or in circulation.

⁹⁴ Jenny Nex, 'Longman and Broderip', in *The Music Trade in Georgian England*, ed. by Michael Kassler (Farnham: Ashgate, 2011), p. 9.

⁹⁵ Kassler (2011), p. 25-26.

⁹⁶ Simon McVeigh, *Calendar of London Concerts 1750-1800*, Goldsmiths, University of London, <http://research.gold.ac.uk/10342/> (Version 2, 29 December 2014, accessed 10 November 2015)

⁹⁷ With particular regard to engraving, Krummel (1990) identifies four dominant cities: London (from around 1700), Paris (from around 1740-1760), Vienna (from circa 1760), and Leipzig (from around 1800).

⁹⁸ Works were typically written to be played on more than one instrument, e.g. James Hook, *Martin's Minuet, with Variations for the Harpsichord, Harp or Piano Forte, also for the Violin, German Flute and Guittar* (London: Thompson, 1775). Prior to the development of the pianoforte, works were often

3836 name the flute, 2831 mention the harpsichord, 2735 state the harp, and 427 name the guitar (Figure 2.17).⁹⁹

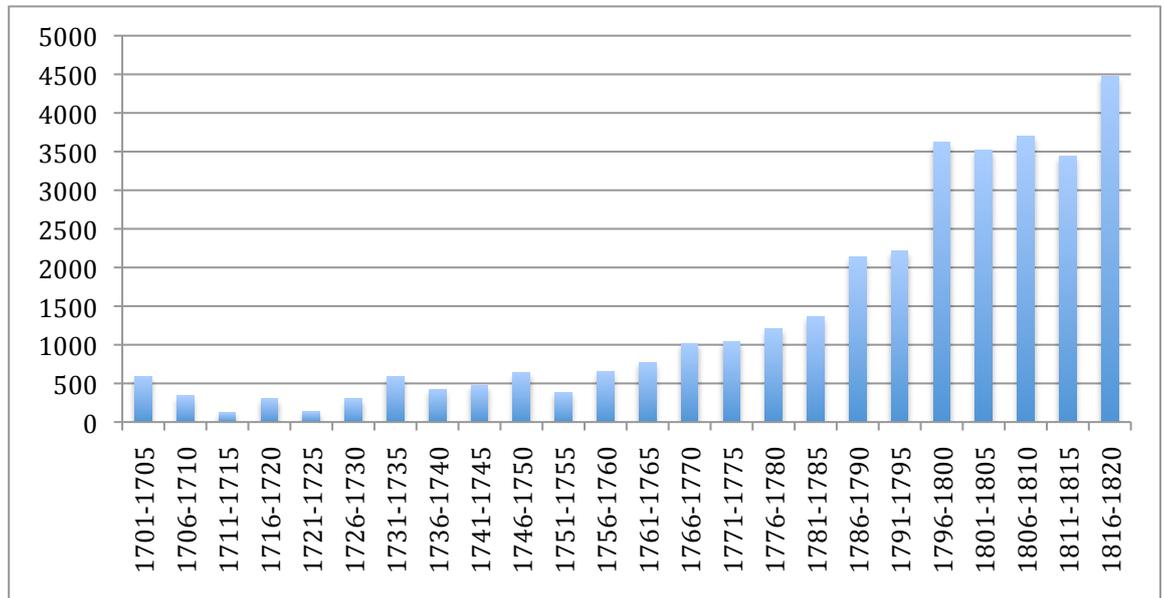


Figure 2.16. Number of musical works published in Britain (BL collection, 1700-1820).

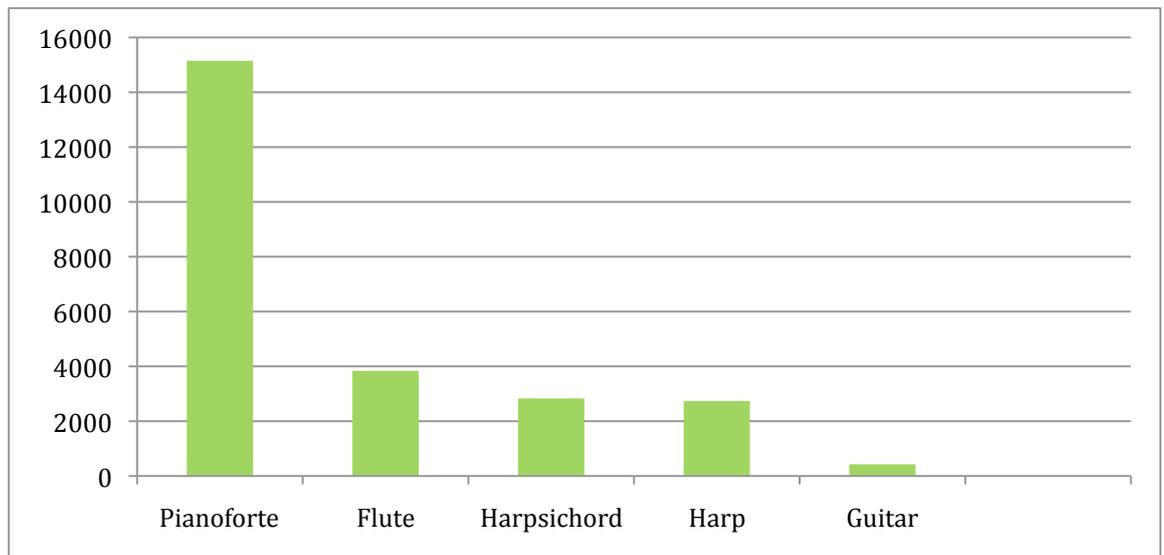


Figure 2.17. Number of musical works published in Britain, by instrument type (BL collection, 1700-1820).

composed for the harpsichord or harp. Afterwards, the harpsichord was increasingly replaced by the pianoforte.

⁹⁹ Of 427 British published works for the guitar (1700-1830) in the British Library, 154 (dated 1791-1830) name the Spanish Guitar. Of the remaining 273 works that specify solely guitar (without nationality) (dated 1746-1830), those published in the eighteenth century (173) were probably for the English Instrument. From the nineteenth century onwards guitar may have referred to either the English or Spanish instrument. The English guitar is not referred to by nationality.

There are only 10 works for the harp dating from between 1700 and 1770. The first British work, dated 1742, is by a Welsh player of the triple instrument, John Parry (c.1710-1782).¹⁰⁰ From 1772 onwards the number of works for the harp increases significantly, starting with Giuseppe Millico's *Six Songs with an Accompaniment [sic] for the great or small Harp, Forte Piano, or Harpsichord* of that year,¹⁰¹ which were playable on the French pedal harp (the 'great' harp) or on a smaller instrument without pedals. The currency of the small instrument is shown by Peter Augé, who, three years later, published a tutor for it (the earliest for the harp in the British Library). He explains that 'the only difference between the Great harp and the small one is, that in the last, instead of pedals there are small turn screws placed near the fillets which are turned with the left hand when one wants to play a \sharp , a \natural , or a \flat ...'.¹⁰² Only 574 British publications for the harp are held for the period 1771 and 1795 (an average of 23.9 pieces per year over the 24 year period) coinciding with its rise in popularity in France. For the five years between 1796 and 1800, the number of works is 315 (a sharp rise in the average to 63 per year) corresponding with its later popularity in the United Kingdom, and establishment of production in London, reaching a peak of 441 works between 1816 and 1820 (an average 88.2 pieces annually), before falling to 437 from 1821 to 1825 (averaging 87.4 per year), and 393 from 1826 to 1830 (an average of 78.6 works per year) (Figure 2.18).

Despite the early establishment of harpsichord makers such as Tabel, Shudi, and Kirkman in London, relatively few works were published for it in England before 1770.¹⁰³ The number and distribution of publications in the British Library show that the harpsichord was growing in popularity and the Broadwood journals confirms that sales were buoyant between 1771 and 1785.¹⁰⁴ Only 347 works date from between 1700 and 1760 (an average of 5.8 works per year); 197 from between 1761 and 1765 (an increased average of 39.4 per year), and publication peaks with 558 works between 1786 and 1790 (averaging 111.6), falling to a mere ten between 1821 and

¹⁰⁰ John Parry, *Antient [sic] British Music or a Collection of Tunes never before published ... Containing twenty-four Aires set for the Harp, Harpsichord, [or] Violin* (London: Mickleborough, 1742).

¹⁰¹ Giuseppe Millico, *Six Songs with an Accompaniment for the great or small Harp Forte Piano or Harpsichord* (London: Welcker, 1772).

¹⁰² Peter Augé, *New and Compleat Instructions for the Small Harp* (London: Rutherford, 1775), p. 2.

¹⁰³ This figure also includes British works for the clavecin.

¹⁰⁴ Michael Cole, *The Pianoforte in the Classical Era* (London: Clarendon Press, 1998), p. 238.

1825, and none at all between 1816 and 1830. Comparison of the numbers of works for the harpsichord and harp suggests that they enjoyed similar levels of popularity, the latter becoming fashionable as the former fell from favour.

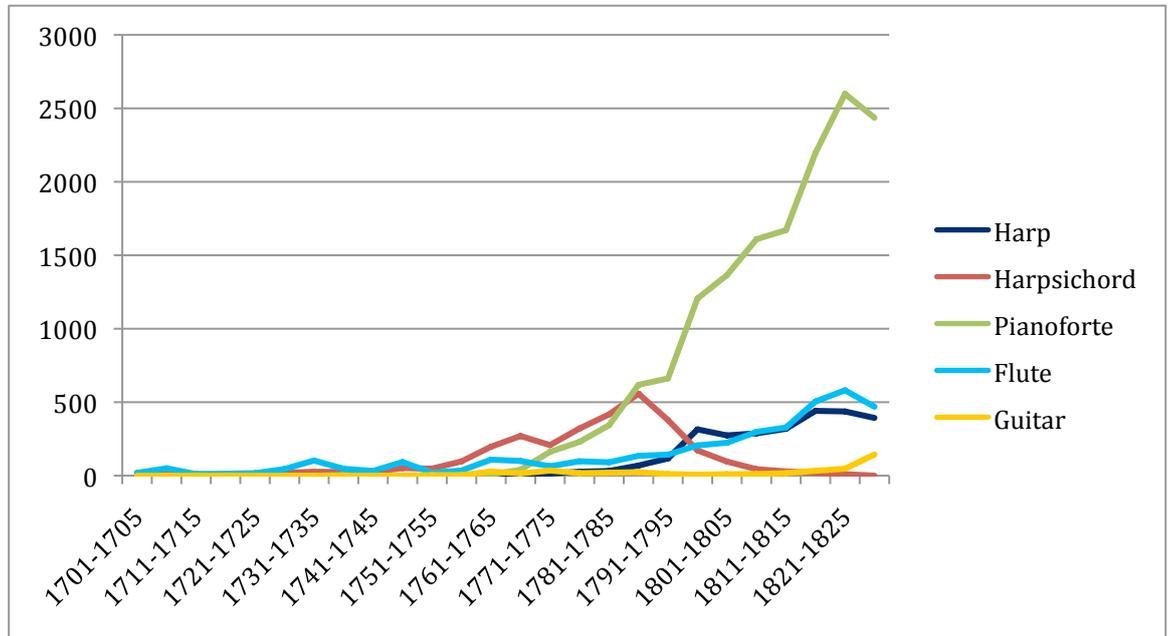


Figure 2.18. Number of musical works published in Britain compared by instrument type (BL collection, 1700-1820). For individual comparative charts, see Appendix 2.5.

From only 12 publications for the pianoforte prior to 1766, numbers rise quickly from 40 between 1766 and 1770 (an average 8 per year) to a peak of 2599 between 1821 and 1825 (averaging 519.8).¹⁰⁵ Although introduced in the United Kingdom around the same time, the pianoforte was always significantly more popular than the harp; perhaps the lower price of the former made it more accessible. Cole (1998) states that it is ‘commonly supposed’ that the pianoforte was beginning to displace the older instrument [harpsichord] throughout the 1770s.¹⁰⁶ In reality, he notes that the initial rise in popularity of the new instrument had little impact on the consumption of the old one, and this is supported by analysis of publication dates of music for both instruments in the British Library.

¹⁰⁵ This figure also includes British works for the *klavier*.

¹⁰⁶ Cole (1998), p. 1.

Between 1766 and 1770 there are 230 more works in the collection for the harpsichord; 46 more are held between 1771 and 1775; 91 more between 1776 and 1780; 74 more from 1781 to 1785, but from 1786 onwards the number works for the pianoforte exceeds those for the harpsichord.

Consistently popular through-out the eighteenth century, the number of works for the flute grew steadily from 19 between 1700 and 1705 (averaging 3.2 per year), entering double figures from 1786, and peaking at 581 between 1821 and 1825 (averaging 116.2 per year). From 1776, the number of works for it broadly follows the same trends as those for the harp. The guitar, by contrast with the other instruments, was only moderately popular, with only nine publications before 1760, rising to 144 between 1826 and 1830 (averaging 28.8 per year). The number of works for these instruments (with the exception of the guitar) decline between 1825 and 1830, perhaps indicative of a now lost collection policy.

McVeigh's spreadsheet lists 4002 concerts between 1750 and 1800, fluctuating across the period and peaking between 1785 and 1789 (Figure 2.19),¹⁰⁷ recording the music performed and performance type (e.g. subscription and benefit concerts, oratorio performances, meetings of musical societies, and concerts at the principal gardens), concert locations, musicians' names, and the instruments played. The number of concerts in which a harp was played was broadly stable between 1750 and 1774, but rose rapidly from 1775 onwards, peaking between 1790 and 1794, comprising 295 for the period surveyed (Figure 2.20).

Macky, reporting on the Mug House Club, Longacre, reveals that a harp was in use in London in 1722, but does not record the type:

[...] every Wednesday and Saturday, a mixture of Gentlemen, Lawyers, and Tradesmen, meet in a great room, and are seldom under a hundred ... A harp always plays all the time at the lower end of the room, and every now and then one or other of the company rises and entertains the rest with a song; and, by-the-by, some are good masters.¹⁰⁸

¹⁰⁷ Simon McVeigh, *Calendar of London Concerts 1750–1800*, Goldsmiths, University of London, <http://research.gold.ac.uk/10342/> (Version 2, 29 December 2014, accessed 10 November 2015).

¹⁰⁸ John Macky, *A journey through England* (London: J. Hooke, 1722), p. 289.

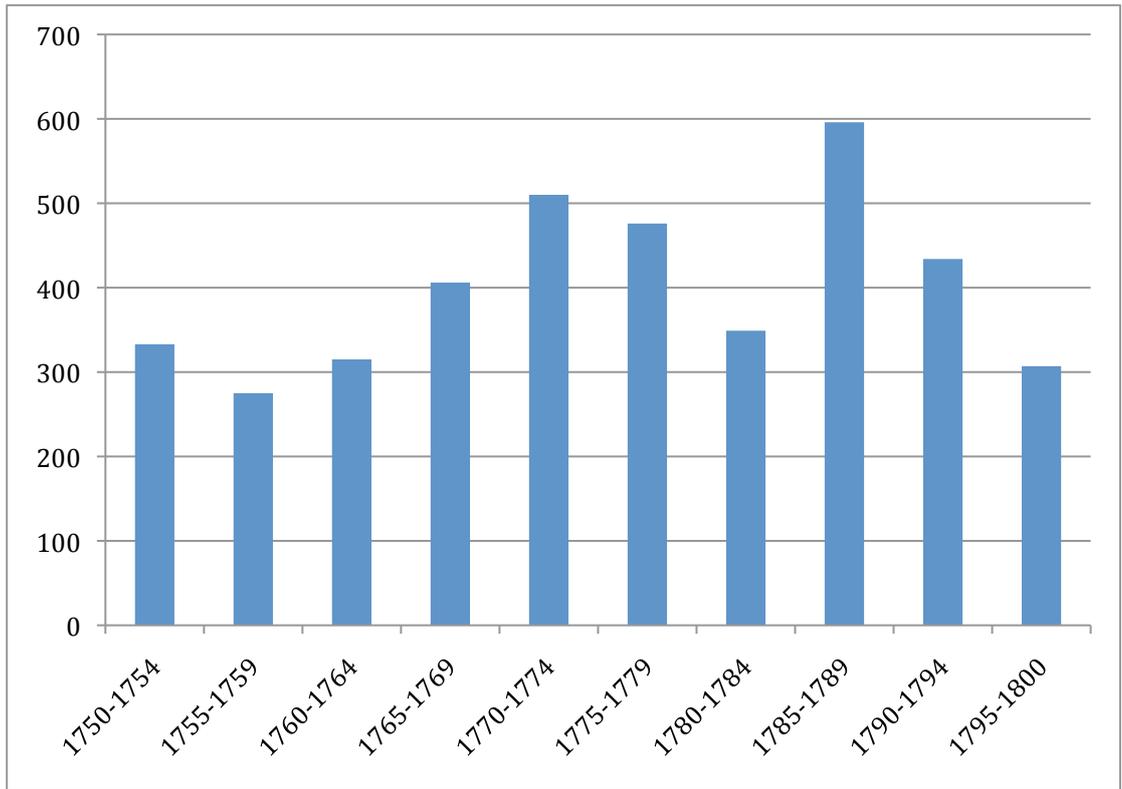


Figure 2.19. Number of concerts in London (1750-1800).

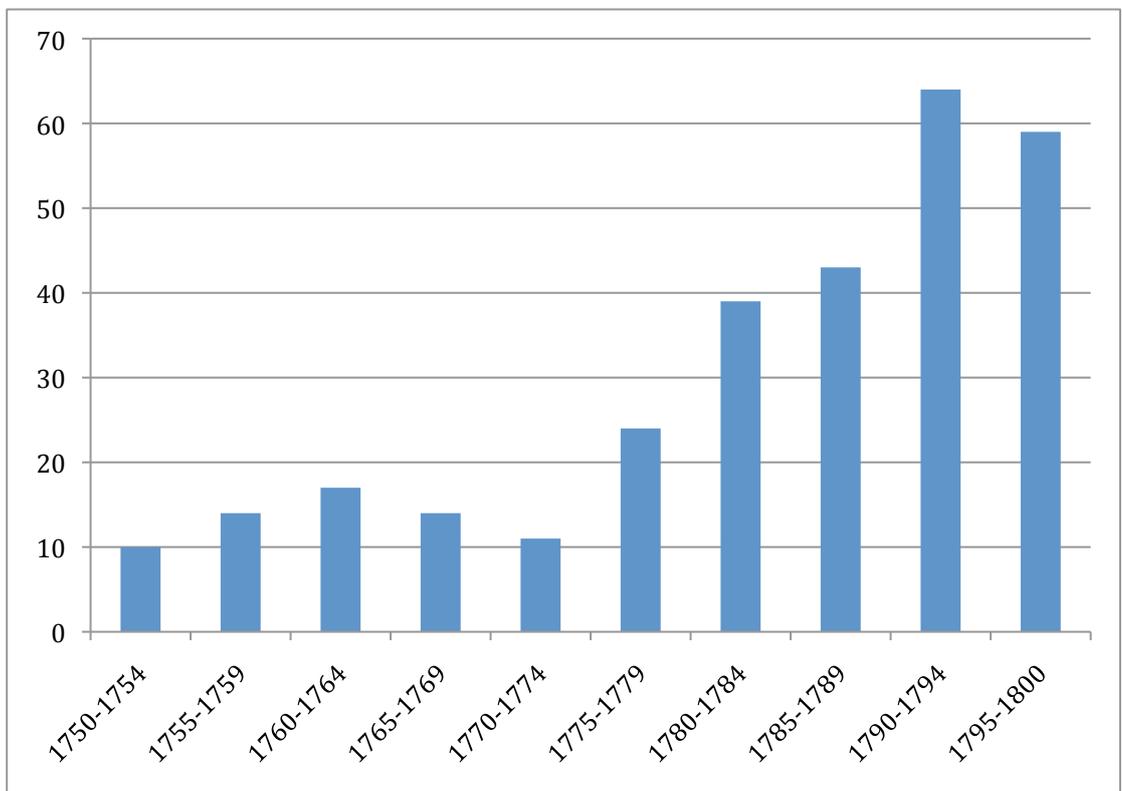


Figure 2.20. Number of concerts in which the harp was played (1750-1800).

The instrument in question was most likely the triple harp that was played in the British Isles from the early seventeenth century onwards, and later denoted Welsh following its adoption by Welsh players in London.¹⁰⁹ Macky does not give the name of the harpist or harpists but the homosocial setting suggests a male player. According to Chambers, ‘at the beginning of the eighteenth century, there was not one [club] in greater favour than the Mug-house club [...] Miscellaneous as it was – and it included barristers as well as trades people – great harmony prevailed.’¹¹⁰

McVeigh’s spreadsheet shows that the Welsh harp was in popular use between 1751 and 1770, and from 1770 to 1785, it was almost exclusively referred to as the triple harp. That both terms were used to refer to harps played by John Parry (c.1710-1782) (the blind Welsh harpist) and an E. Evans (an unknown harpist),¹¹¹ before and after 1770, indicates that these were the same instruments. Although there are 228 unspecific references to ‘harp’ (the type not recorded), by looking at the harpist, it is possible to suggest the instrument type. Again, where Parry and Evans are named, we can assume they played the triple instrument. That, prior to the introduction of the pedal harp, other harpists of the period also bear Welsh names indicates that they too played this harp, and it is possible that some continued to do so afterwards. When this is taken into account and added to the number of confirmed Welsh harpists, their number in concerts between 1750 and 1785 rises from 40 to 72 (Figure 2.21).

There are only 25 references to the pedal harp in McVeigh’s database; the place of origin (France or Britain) is not recorded so cannot be used to denote harp type; the dates, however, indicate that they were all single-actions. Again, where the type is unspecified, those pertaining to the pedal harp may be deduced by examining the

¹⁰⁹ Sue Carole DeVale, et al., ‘Harp’, *GMO* [accessed 11 August 2016].

¹¹⁰ *The Book of Days*, ed. by Robert Chambers (London: Chambers, 1832), p. 109.

¹¹¹ The obituary of an Evan Evans, who died aged 47 years in 1795, states that he was ‘one of the most eminent performers on the triple harp in the kingdom.’ ‘Obituaries’, *The European Magazine and London Review*, 27 (London: J. Sewell, 1795), p. 70. It is unlikely that he was the same harpist who played at Hickford’s Rooms on Brewer Street on 29 April 1756, but the obituary may refer to a son or relative; the latest reference to Evans dates from a concert at the Theatre Royal, Haymarket on 27 April 1785, where he played the triple harp.

names of harpists, most of whom were male.¹¹² Players such as Cramer, De Marin, Dupree, Kirchoff, the Meyers, Seybold, Steibelt, and the Weipperts (m), and Cantelo, Dussek, and Krumpholtz (f), are known to have been pedal harpists. We can therefore suggest that there were 182 additional performances on the pedal harp (Figure 2.22). Whilst the triple harp was in regular use in London concerts, it is the later pedal harp that was the more popular of the two. The database shows that performances on the harp became more common as the eighteenth century progressed, particularly during final the twenty years, mirroring the adoption of the single-action, and the rise of the harp as a fashionable instrument.

The earliest concert in which the pedal harp was played took place not in a London concert hall but at Hodge's Long Room, Sunning Hill on 7 August 1769, the harpist named as Warner. Mr Barthelemon played a German pedal harp at Marybone [sic] Gardens, London on 20 September 1770, the first recorded used in the database of the pedal harp in a London concert. The professional harpists named in McVeigh's database were men from Continental Europe, such as Philipp Joseph Hinner (1754-1805), and Jean-Baptiste Cardon (1760-1803).¹¹³ Others arrived later. Francois-Joseph Dizi (1780-1847), a Belgian, was active in London from around 1803, when a composition by him was advertised for sale,¹¹⁴ and 1830.¹¹⁵ Robert Nicholas Charles Bochsá (1789-1856), a Bavarian, arrived in London (from Paris) in 1817 where he was prominent on the London music scene until he eloped with the opera singer, Anna Bishop (wife of the composer, Henry Bishop) in 1839.¹¹⁶

¹¹² Players identified as pedal harpist by McVeigh are Barthelemon, Delaval, Hinner, Hockbrucker, Jones, Krumpholtz, Musigny, Pugh, Renaudin and Warner. In addition, where only harp has been specified, it has been possible to also identify the following through other sources: Alday, Cantelo, Cardon, Corri, Cramer, De Marin, Denis, Duchatza, Duparque, Dupree, Dussek, Essex, Grandjean, Guedon, Hoffman, Ligard, Lloyd, Kirchhoff, Meyer and son, Salomon, Seybold, Steibelt and Weippert. Simon McVeigh, *Calendar of London Concerts 1750-1800*, Goldsmiths, University of London, <http://research.gold.ac.uk/10342/> (Version 2, 29 December 2014, accessed 10 November 2015).

¹¹³ Other named harpists include Johann Baptist Hochbrucker (1732-1812), Philippe-Jacques Meyer (1737-1819), Frederic Charles Meyer (c1780-1840), Jean-Baptiste Krumpholtz (1747-1790), John Erhardt Weippert (1766-1823), and John Michael Weippert (1775-1831).

¹¹⁴ 'Musical Saloon', *The Morning Post*, 10,703, 22 January 1803.

¹¹⁵ John Lade, 'Dizi, François Joseph', *GMO* [accessed 1 August 2016].

¹¹⁶ Bruce Carr and Nicholas Temperley, 'Bochsá, Nicholas Charles', *GMO* [accessed 1 August 2016].

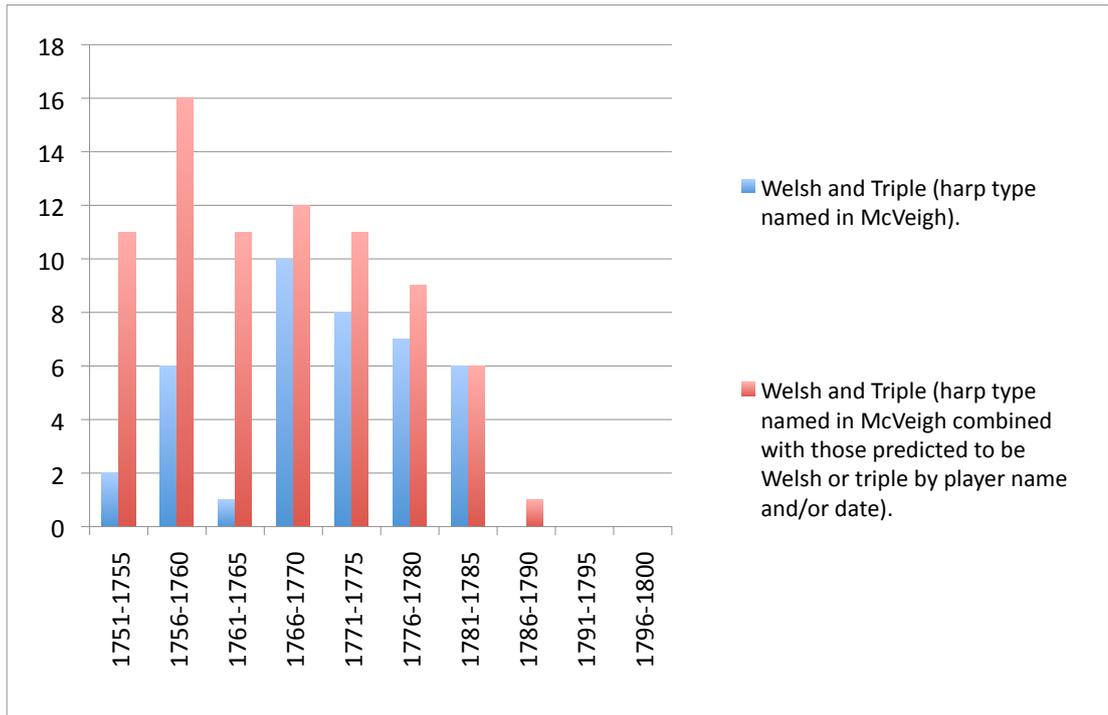


Figure 2.21. London performances on the Welsh (Welch) or triple harp (1750-1800).

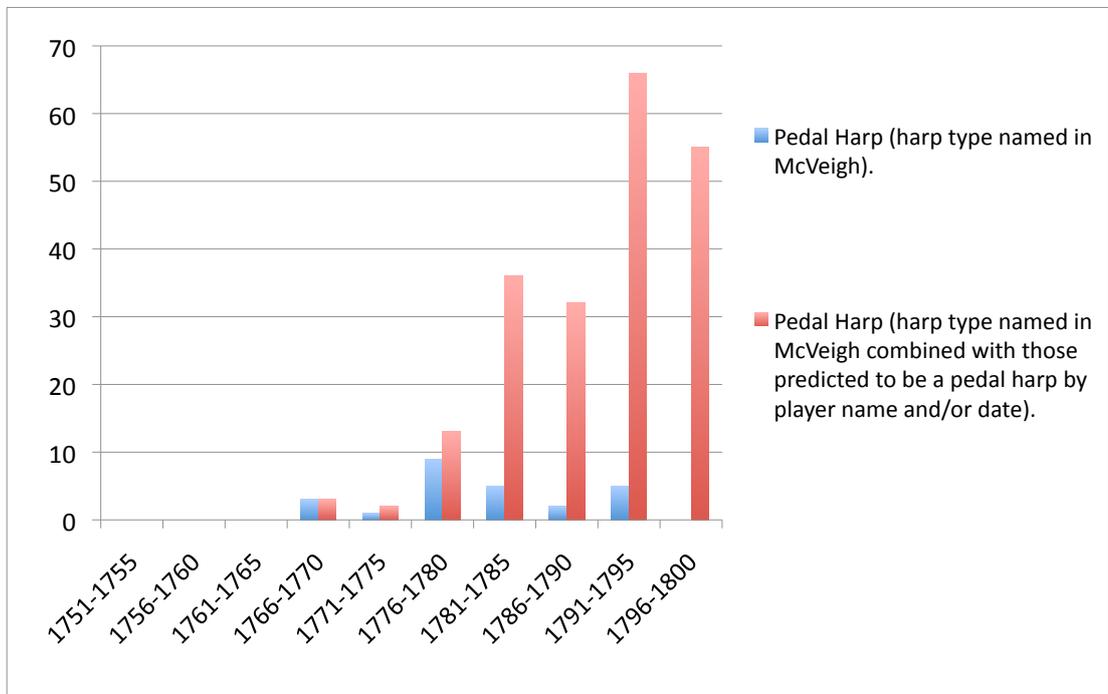


Figure 2.22. London performances on the pedal harp (1750-1800).

Competition between players was fierce; following Dizi's performance with 12 harps at Covent Garden in 1820, Bochsa responded with one with no less than 13 harps, at the Theatre Royal, Drury Lane, in 1821.¹¹⁷

Some female harpists did achieve professional status, most notably those who were married to male musicians, and a few were well known. Sophia Corri (1775-1831) (later Dussek, and then Moralt) was an accomplished Edinburgh-born singer, harpist, and player of the pianoforte, who also worked professionally in Dublin and London. Following a performance in Edinburgh in 1791, a review praised her singing;¹¹⁸ at Salomon's concert in London on 18 April 1801, now known as Madame Dussek following her marriage to the harpist and composer Jan Ladislav Dussek, she accompanied herself on the harp and was 'vociferously encored';¹¹⁹ and in 1805 she advertised her presence in Dublin where she offered to instruct ladies on the harp and pianoforte, and in singing. Following her husband's death, Sophia married the violinist John Alvis Moralt, and by March 1820 she had established 'Madame Dussek Moralt, and Miss Dussek's Musical Academy,' at 29, Winchester Row, New Road, London. Madame Boom, following her appointment as harpist to Her Royal Highness the Duchess of Angouleme announced her return to Paris from Dublin in November 1815.¹²⁰ By January 1816, she was in London,¹²¹ and in January 1817 she announced her arrival in Cheltenham where she planned to remain for part of the season, to give harp lessons.¹²²

2.8: Summary

The pedal harp became popular in Paris during the 1770s from where it was imported to London. The French Revolution and Napoleonic Wars resulted in trade blockades that thwarted French exports to Britain. After arriving in London from Paris (1792), Sébastien Érard took advantage of the scarcity of French harps, developing a new English variant. Soho, his choice of business location, already boasted a tradition of musical instrument making and craft-based trades. His success

¹¹⁷ 'A Grand Selection of Music', *The Morning Post*, 15,609, 27 March 1821.

¹¹⁸ 'St Cecilia's Hall', *Caledonian Mercury*, 10,898, 9 July 1791.

¹¹⁹ 'Salomon's Concert', *The Morning Post*, 10,174, 18 April 1801.

¹²⁰ 'Madame Boom', *Saunders's News-Letter*, 18,232, 08 November 1815.

¹²¹ 'London Sessions', *The Morning Post*, 14,050, 31 January 1816.

¹²² 'Madame Boom', *Cheltenham Chronicle*, 8,409, 19 June 1817.

led to the growth of a new harp industry there. Over the next 40 years, 11 leading harp makers were established in close proximity. These represent the clustering of a hitherto hidden sector of London industry.

Perception of the harp was more complex than is immediately evident. Musical practice amongst the middle and upper classes was socially de rigueur, and harp playing enhanced women's marriageability. As the most costly domestic instrument, pictorial representations marketed it in association with expensive fashions and furniture. Playing it demonstrated female education; its form was associated with femininity and female beauty, and for some the act of playing conveyed was sensuality, and even eroticism. However, Professional players, at least in London, were predominantly continental European men, although a few women achieved success.

An increase in British musical publication rates from 1760 onwards (in general and for the harp) and a rapid rise in the instrument's use in performances show that adoption of mechanised harp in Britain coincided with the development of musical life there. Where the Welsh harp dominated in performances between 1750 and 1770 and was used concurrently with the mechanised instrument during the 1770s and 1780s, by the 1790s, particularly after Sébastien Érard's invention of the English single-action harp, the mechanised instrument had replaced its Welsh counterpart in London concerts.

Chapter 3: Decorative design history of the harp

Where Chapter 2 establishes that the harp was a highly fashionable and expensive status instrument played predominately by young women, this one identifies influences, from architecture and furniture making, on the decorative ornamentation of the instrument, a key feature of its fashionability. It positions the instrument in relation to the classical and gothic revivals, establishing it as distinctly English, in contradistinction to French models.

The design of the late eighteenth and early nineteenth century harp was, like that of furniture, heavily influenced by archaeological discovery and architectural revival. Three models, each invented by Érard and heavily imitated by other London makers, set both mechanical and decorative trends. Érard's single-action harp (now sometimes called 'Empire') was inspired by the classical revival; his double-action harp (now widely called 'Grecian') by the Grecian movement, which was, according to Smith, an 'outgrowth of the dominant classical facet of the Regency which had developed from archaeological prototypes published by Charles Heathcote Tatham in 1799 and Thomas Hope in 1807'.¹ Before the introduction of the double action in 1811, Érard's single-actions were entered in the company ledger by serial number alone; after 1811, they were denoted 'S', and the double-actions 'D'. Pierre Érard's later Gothic harp (denoted 'G' in the ledger) was the only one originally named in relation to its decorative design, a manifestation of nineteenth-century resurgent interest gothic architecture. Following its introduction in 1835, the gothic harp was entered in the company ledger initially as 'Gothic' and later 'G'.

The terms Empire and Grecian, given by analogy to the Gothic, were not commonly used in relation to the harp during the nineteenth century.² The phrase 'Empire style', for an aesthetic movement from 1804 to 1814,³ first entered popular use around 1900, its earliest use in reference to the harp occurring in a press review of

¹ Thomas Smith, *The Modern Style of Cabinet Work* (London: Architectural Library, 1835), v.

² A Google Ngram search for 'Empire harp' in nineteenth-century texts yields no results. Google Ngram is a search engine that uses comma delimited search strings to calculate the frequency of terms that appear in printed sources by year between 1500 and 2000. www.books.google.com/ngrams [accessed 12 July 2015].

³ Hans Ottomeyer, 'Empire style', *GMO* [accessed 21 August 2016].

1902, when one was used as a prop in a stage play.⁴ The term ‘Grecian harp’ first appears in an 1842 advertisement by E. Brailsford, announcing the availability of Érard’s Gothic and Grecian harps, alongside pianofortes by Broadwood, Collard, and Wornum, from 46 Castle Square, Brighton.⁵ The term appears not to have been used by harp makers until the twentieth century. When, for example, a double-action (no. 2370), first sold by Érard on 14 June 1817 (Figure 3.1),⁶ was sold by J. Geo. Morley on 10 January 1891 (Figure 3.2), it was still entered in his ledger by action type (‘double-action’).⁷

Distributed	No.	Description	Price
D	2370	Act. Double 21. Margaret Street. 14th June 1817	152
	2371	Single Harp 6. 4. Street (Brompton) 1817	110

Figure 3.1. Sale of double-action harp, no. 2370, Érard Ledger (14 June 1817)

No.	Description	Price
2370	Came down for packing Erard double action harp No. 2370 for Mr. Moss 21 Trafalgar R. St. Yarmouth sent out per L & N W R	110

Figure 3.2. Sale of Érard double-action, no. 2370, Morley Ledger (10 January 1891)

⁴ ‘Liberty Hall’, *Kent & Sussex Courier*, 2947, 17 October 1902, p. 8. A search for the term ‘Grecian harp’ on the British Newspaper Archive returns only 3 results between 1800 and 1849, 241 between 1850 and 1899, 84 between 1900 and 1949, and 3 between 1950 and 1999, most of the earlier ones referring to the an instrument of ancient Greece. ‘Empire harp’ returns only one result between 1800 and 1849, two between 1850 and 1899 (though none of these refer to an instrument), and 30 between 1900 and 1949 (29 referring to the arrival or departure of a tanker of that name from various British ports). <http://www.britishnewspaperarchive.co.uk/> [Accessed 16 August 2016].

⁵ ‘Broadwood, Collard, and Wornum’, *Brighton Gazette*, 1,096, 17 February 1842.

⁶ RCM. 497, Érard Ledger, 14 June 1817, p. 100.

⁷ Morley Ledger, 10 January 1891, p. 10. Private collection.

3.1: The influence of neoclassicism on the harp

Vicky Coltman writes that ‘Sir Joshua Reynolds provides a theoretical insight into the artistic practice of imitating antiquity’, and that he described the ‘works of the ancients as a magazine [of] common property, always open to the public.’⁸ This can be shown by the ingress of neoclassicism into design practice of the age. During the eighteenth and nineteenth centuries the classical revival, a decorative style inspired by archaeological discovery, influenced architecture, fashion, and furniture, and helped to determine the decoration of the harp.

The earliest Greek revival building in the British Isles was built at Nuneham Courtenay, Oxfordshire, in 1756 when the Earl Harcourt used James Stuart’s Athenian drawings in the design of the principal windows of his house, Nuneham Park.⁹ Stuart and Revett, having visited Naples and Athens in 1748 where they studied the monuments of both, published their studies in 1762, advancing interest in the Greek revival,¹⁰ and Sir William Hamilton wrote a *Collection of Etruscan, Greek and Roman antiquities* in 1776,¹¹ having previously excavated at Herculaneum and Pompeii. Classical revival architecture was on the rise in London. George Dance the Younger’s Newgate Prison was finished in 1778; Lord Elgin began the removal of the Parthenon sculptures in 1800, donating them to the British Museum sixteen years later;¹² and the Theatre Royal, Covent Garden was built by Robert Smirke between 1808 and 1809 (Figure 3.3).¹³ Later, ‘Greek Revival’ buildings such as St. Marylebone Church, completed by Thomas Hardwick in 1817, (Figure 3.4) and St. Pancras New Church, described as ‘Greek with a vengeance!’ by a writer in *The Pamphleteer*,¹⁴ with its Caryatid porch in imitation of the Erectheum, completed by William and Henry Inwood in 1822, shares common design traits with Érard’s Grecian harp.

⁸ Vicky Coltman, Sir William Hamilton's Vase Publications (1766-1776): A Case Study in the Reproduction and Dissemination of Antiquity, *Journal of Design History*, 14, 1 (2001), 1-16 (p. 1).

⁹ Giles Worsley, ‘The First Greek Revival Architecture’, *The Burlington Magazine*, 127, 985 (April 1985), pp. 226-229.

¹⁰ James Stuart & Nicholas Revett, *The Antiquities of Athens and Other Monuments of Greece* (London: 1762).

¹¹ Sir William Hamilton, *Collection of Etruscan, Greek and Roman antiquities* (Naples: Hamilton, 1776).

¹² The Parthenon Sculptures, http://www.britishmuseum.org/about_us/news_and_press/statements/parthenon_sculptures.aspx [accessed 12 August 2016].

¹³ James Elmes, *Metropolitan Improvements of London* (London: Jones & Co., 1827). p. 144.

¹⁴ ‘Observations on buildings,’ *The Pamphleteer* (London: Valpy, 1825), p.288.



Figure 3.3. Theatre Royal, Covent Garden, Elmes (1827).



Figure 3.4. St Marylebone New Church from York Gate, Regent's Park, Elmes (1827).

Robert and James Adam, who worked predominantly in the neoclassical style and were widely imitated, were amongst the first to unite architecture and interiors claiming that to have made:

[...] a remarkable improvement in the [...] outside composition, and in the decoration of the inside [...] In the works which we have had the honour to execute, we have not only met with the approbation of our employers, but even with the imitation of other artists [...].¹⁵

According to Thomas Chippendale: '[of] all the arts which are either improved or ornamented by architecture, that of cabinet making is not only the most useful and ornamental, but capable of receiving as great assistance from it as any whatever'.¹⁶ Classical revival architecture influenced furniture design, and that of Érard's harp. The relationship between furniture and instrument decoration is further demonstrated in two pianoforte drawings by Augustus Charles Pugin, amongst twenty-seven furniture plates published by Ackermann, who writes:

The knowledge of music is now so generally diffuse, that musical instruments are almost become an essential part of furniture [...] As this, from its size, would be a leading feature in any apartment, it ought to partake of the style of decoration adopted for the latter.¹⁷

Contemporary fiction also reflects interest in neoclassical furniture. In *The Old Batchelor*, the narrator found a sick Matilda 'stretched upon a Grecian couch',¹⁸ and in his *Repository of Arts* Ackermann describes an elegant drawing-room with a 'Grecian sofa and stool en suite... the whole of which are not less distinguished for their grandeur, than for simplicity and elegance.'¹⁹ Fashion too was influenced: the scarf

¹⁵ Robert and John Adam, *The Works in Architecture of Robert and James Adam*, vol. 1 (London: Robert and James Adam, 1778), p. 1.

¹⁶ Thomas Chippendale, *The Gentleman and Cabinet Maker's director* (London: Thomas Chippendale, 1754), iii.

¹⁷ *Gothic Furniture [...] from Designs by A. Pugin* (London: Ackermann, 1828), p. 19. The twenty-seven plates that form this book were originally published by in Ackerman's repository of Arts between 1825 and 1827. As Augustus Welby Northmore Pugin was only thirteen when the first plates were published, the Pugin named in the title is likely to have been his father, Augustus Charles Pugin.

¹⁸ 'The Old Batchelor,' *The Lady's Monthly Museum*: vol. 1 (London: Vernor, Hood, and Sharpe, 1806), 57-61, p.59.

¹⁹ Rudolf Ackermann, *R. Ackermann's Repository of Arts*, vol. 8 (London: R. Ackermann, 1812), p. 178.

worn by a woman in a plate from Ackermann is described as ‘a pale buff colour, embroidered with shaded morone silks, in Grecian characters’.²⁰

Whilst cabinetmakers published pattern books, there is no evidence that this was done for the harp. Harp makers opted for catalogues that, ephemeral in nature, rarely survive.²¹ Although discussion of architecture, furniture, fashion and instruments in relation to each other was unusual in contemporary publications, some were shown together in drawings. Harps, as demonstrated in chapter two, were presented as a foil to ladies fashions. That Ackermann depicted instruments in furniture plates shows that besides their primary use in performance, they were also important and stylish pieces of domestic furniture. As such, purchasers would have expected them to sit within their interior decorative schemes and to compliment the latest fashions. As the Adam brothers had linked architecture with interiors, Ackermann and Pugin acknowledged that furniture should reflect the style of interiors in which they were placed. Érard, therefore, in choosing first classical revival, and later gothic revival forms, and in mirroring the latest contemporary trends, positioned the harp, with its rich gilding, and ornate ornamentation and painting, amongst the finest furniture of the day, and as a highly fashionable domestic object.

3.2: Aesthetics, ornamentation, and the harp

Érard’s adoption of classical revival style in favour of the rococo decoration applied to French harps was due to its widening and fashionable use in British design, and Sébastien, having been denounced by the French revolutionary authorities, perhaps wished to associate himself with the new aesthetics of revolutionary France. Bithy R. Goodman writes that ‘revolution era aesthetics’ were amongst the most important cultural changes of the time, and that these were disseminated through trade, conquest, and diplomacy, acknowledging that ‘the French revolution marked the birth of the modern era.’²² Certainly, in 1793, the architecture of Paris was deliberately

²⁰ Rudolf Ackermann, *R. Ackermann’s Repository of Arts*, vol. 9 (London: R. Ackermann, 1813), p. 302.

²¹ On 31 December 1821, the Erat ledger records the payment of 1 guinea to Sawyer & Son (printers) for the composing and printing of 277 catalogues, presumably showing their harp and associated products. TNA. C110/99, Erat Ledger, p. 144.

²² Bithy R. Goodman, ‘The Modernity of la Mode: A History of the French Revolution Through the Lens of Fashion, Culture, and Identity’ (Honors thesis, Bucknell University), pp. 1-2.

replanned by a commission of artists in response to political upheaval there.²³ Nationhood and nationalism were used as symbols of the new republic. According to Mitchell Schwarzer: 'French architects represented the French nation through compositions derived from international classicism.'²⁴

Comparison of the columns of Érarard's Empire and Grecian harps with the classical columns depicted by William Chambers (Figure 3.5 and Figure 3.6),²⁵ shows that their design is similar to those the Doric and Tuscan orders, both of which are simpler in form than those of the Ionic, Corinthian, and composite, in which scrolls and foliage were structurally integral to the design. That the Tuscan order, according to Chambers, was rarely decorated suggests that the harp column is more closely related to the Doric in which 'the metopes are alternatively enriched with these ox-skulls, and with pateras ... but may be filled with any other ornaments, of good form.'²⁶

²³ Anthony Vidler, 'Researching Revolutionary Architecture', *Journal of Architectural Education*, 44, 4 (August 1991), 206-210 (p. 208).

²⁴ Mitchell Schwarzer, 'The Sources of Architectural Nationalism', in *Nationalism and Architecture*, ed. by Raymond Quek, Darren Deane, and Sarah Butler (Farnham: Ashgate, 2012), pp. 19-38 (p. 25).

²⁵ William Chambers, *A Treatise of the Decorative Part of Civil Architecture*, 3rd edition (London: Smeeton, 1791), p. 34.

²⁶ Chambers (1791), p. 49.

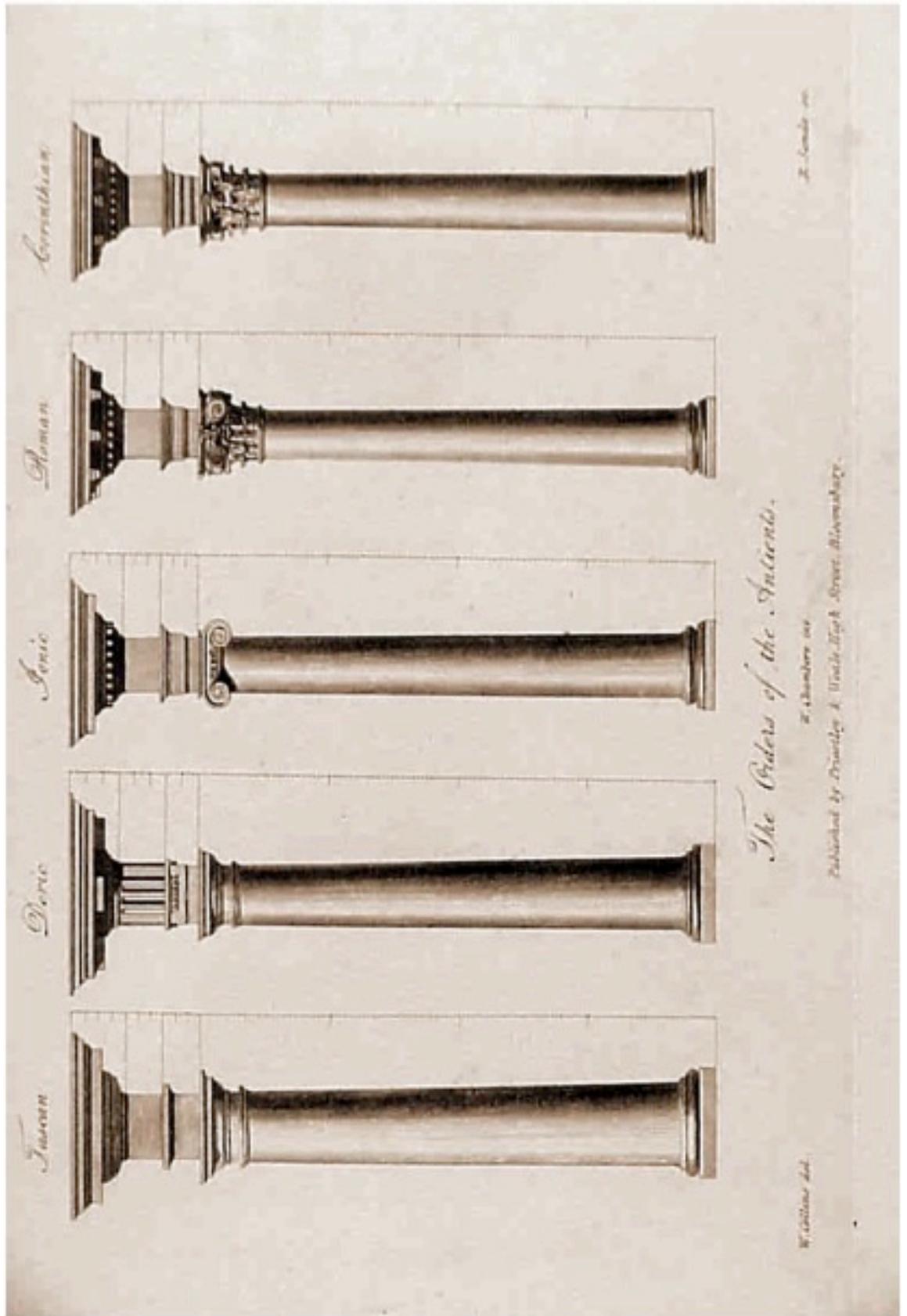


Figure 3.5. The Orders of the Ancients, Chambers (1791).

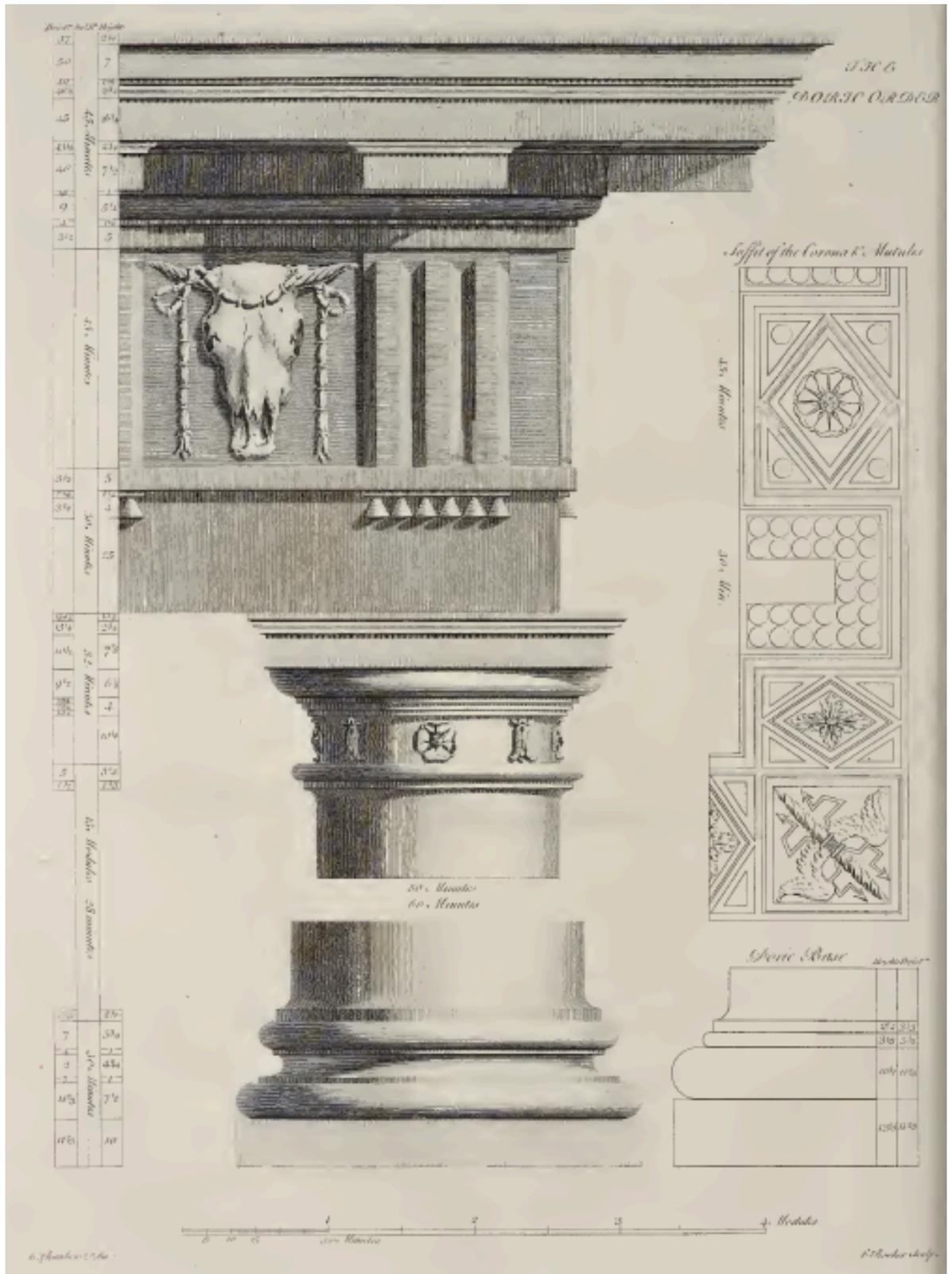


Figure 3.6. The Doric Column, Chambers (1791).

Chambers, however, advises against excess:

The substitution of cocks, owls, or lion heads, &c. for roses; of trophies, cornucopias, lilies, sphinxes, or even men, women, and children, for volutes; the introduction of feathers, lyres, flowers de luces, or coronets, for leaves, are more alterations, than improvements; and the suspension of festoons of flowers, or collars of knighthood, over the other enrichments of a capital; like lace on embroidery: rather tends to complicate and confuse the form, than to augment its grace, or its excellence.²⁸

Of the Doric revival, Curl comments that ‘The eyes of the cognoscenti were too accustomed to Roman Orders, and to the refinements of Palladian Taste, to appreciate Greek Doric, which looked far too clumsy and uncouth.’²⁷ Érarard’s approach to the classical orders, like that of contemporary architects, was by no means purist. Chambers acknowledges that ‘the suppression of parts of the ancient orders, with a view to produce novelty’,²⁸ although rarely successful, was common practise. He notes that ‘in most of the antiques, the Doric column is executed without a base. [...] With regard to bases indeed, their being placed on pedestals, or immediately on the ground, will occasion some little difference in their appearance.’²⁹ Érarard designed his column with a base, albeit conical, and his fluted column is further evidence of adaptation. The application of flutes, described as ‘perpendicular channels, or cavities, cut along the shaft of the column, or pilaster’,³⁰ were common in the ionic, Corinthian, and composite orders but rarely used in the Doric and Tuscan, by applying a base and flutes to the columns of his harps, deviated from the true Doric order.

In his *Four Books of Architecture*, first published in 1570, Palladio (1508–1580), sets out a nomenclature to describe the Doric column;³¹ Chambers, in his 1791 Treatise, discusses the origins of Greek architecture, illustrating and naming each component;³² and Billington, in *The Architectural Director* of 1834, describes how to

²⁷ James Steven Curl, *Georgian Architecture*, (London: David & Charles, 1993), p. 74.

²⁸ Chambers (1791), p. 34.

²⁹ Chambers (1791), p. 47.

³⁰ See ‘Flutes or Flutings’ in Temple Henry Croker, Thomas Williams, and Samuel Clark, *A New and Complete Dictionary of Arts and Sciences*, (London: J. Wilson & J. Fell, 1765).

³¹ Andre Palladio, *Andrea Palladio’s First Book of Architecture* (London: J. Brindley, 1751), p. 10.

³² Chambers (1791), pp. 137-149.

draw the classical orders and, in doing so names their parts.³³ Crabb, in his *Universal Technological Dictionary* of 1823 draws, labels, and describes the parts of the Doric order and these can be projected on Erard's harp column.³⁴ Crabbe divides the column in three: the entablature (the moulds and bands above the shaft), the shaft (or pillar) and the pedestal (the base). The mouldings, each shape having its own name, are then noted. The cyma recta, for instance, is concave in its upper portion and convex in its lower: the cyma reversa is the opposite. According to Crabb, the entablature consists of an abacus, first and second fascias, guttae, taenia, frieze, metop, triglyphs, cap of triglyphs, cavetto, ovolo, mutule, cap of mutule, corona, cima reversa, and cima recta (Figure 3.7). Of the shaft, the capital (at the top) consists of an astragal, neck, apophyge, ovolo, abacus and cyma recta; and the pedestal being made of a base, lower torus, scotia, and upper torus; and the base of a plinth, cima reversa, cavetto reversa, die, cornice, cavetto, ovolo and corona (Figure 3.8). Harps, inconsistently and sometimes inaccurately described today, can be classified using such architectural terms to define parts of the harp column. The adaptation of Crabb's nomenclature allows its morphology to be better described (Figure 3.9), and for trends in manufacture and consumption to be better understood.³⁵

³³ John Billington, *The Architectural Director* (London: Bennett, 1834), p. 125.

³⁴ Architecture in George Crabbe, *Universal Technological Dictionary* (London, Baldwin, Cradock & Joy, 1823), plates 9 and 10.

³⁵ Descriptive errors are common. An Érard single-action harp, sold at Christies, Amsterdam, on 15 December 2004, is described as 'A Regency parcel-gilt, gilt-composition, cedar and fiddle-back maple seven pedestal harp', (Christie's sale no. 2646) – cedar was never used in harp manufacture. Another, sold in New York, on 10 February 2016 was described as 'A Regency gilt brass-mounted penwork and gilt composition harp (Christies sale no. 11,415) – the action type not recorded. Another single-action, this time by J. Erat & Sons, was sold as 'A 19th century black and gold lacquer and gilt-gesso Grecian harp', incorrectly indicating a double-action, on 24 October 2012 by Bonhams, Edinburgh (Bonhams, Hensol, the property of a Gentleman). Similar errors sometimes occur in museum catalogues.

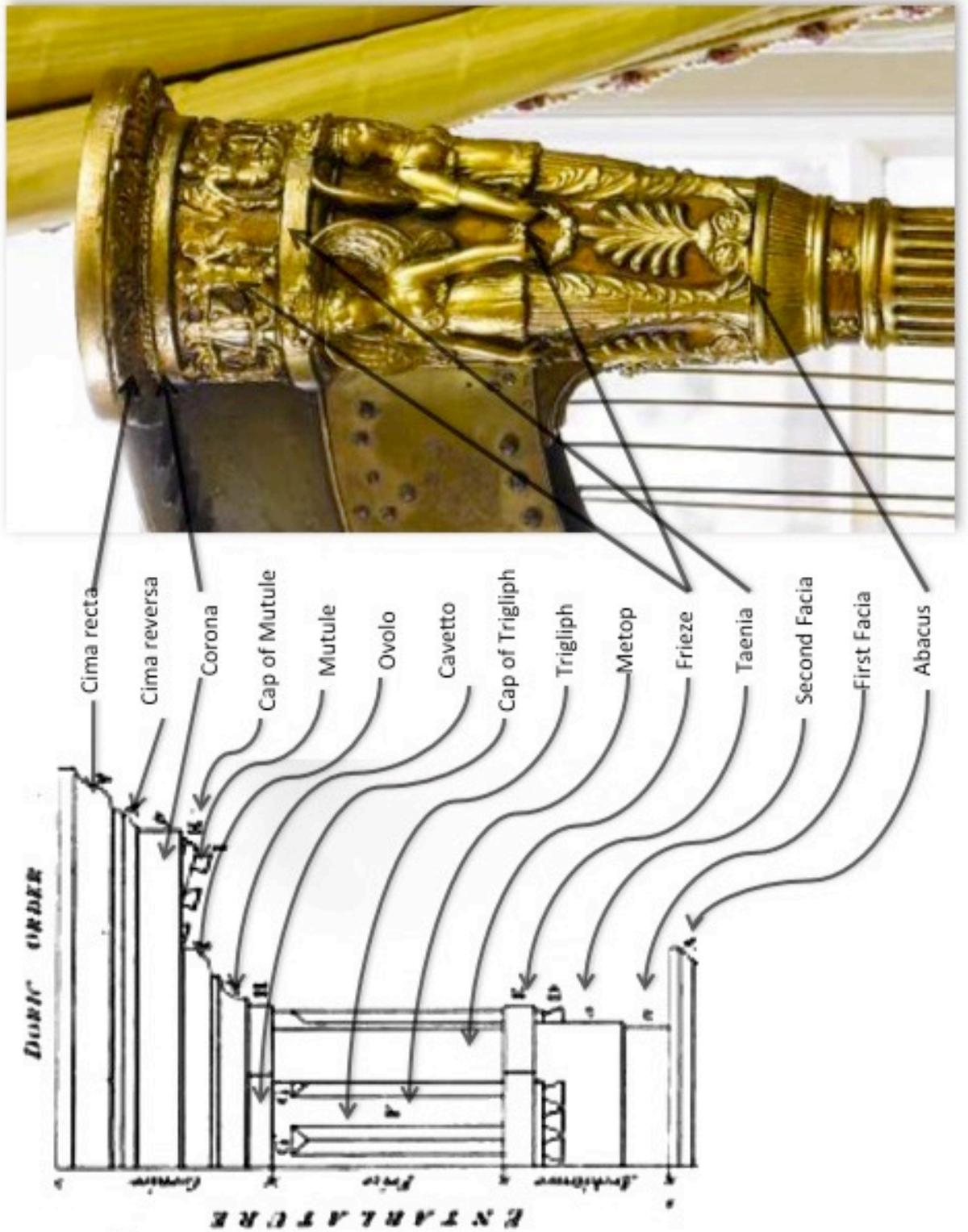


Figure 3.7. Comparison of Erard's harp capital with Crabbe's Doric Nomenclature.

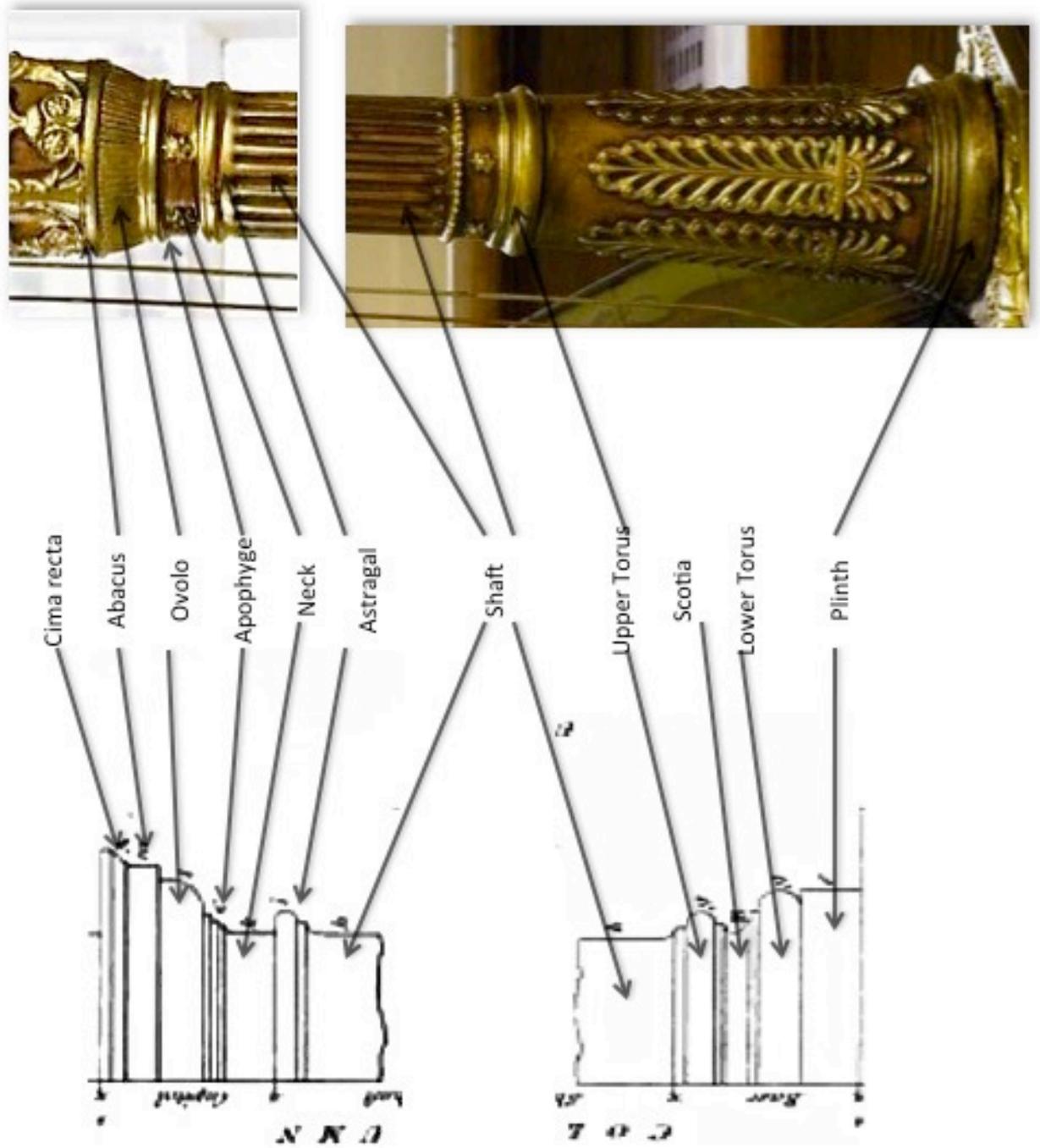


Figure 3.8. Comparison of Erard's harp shaft and pedestal with Crabbe's Doric Nomenclature.

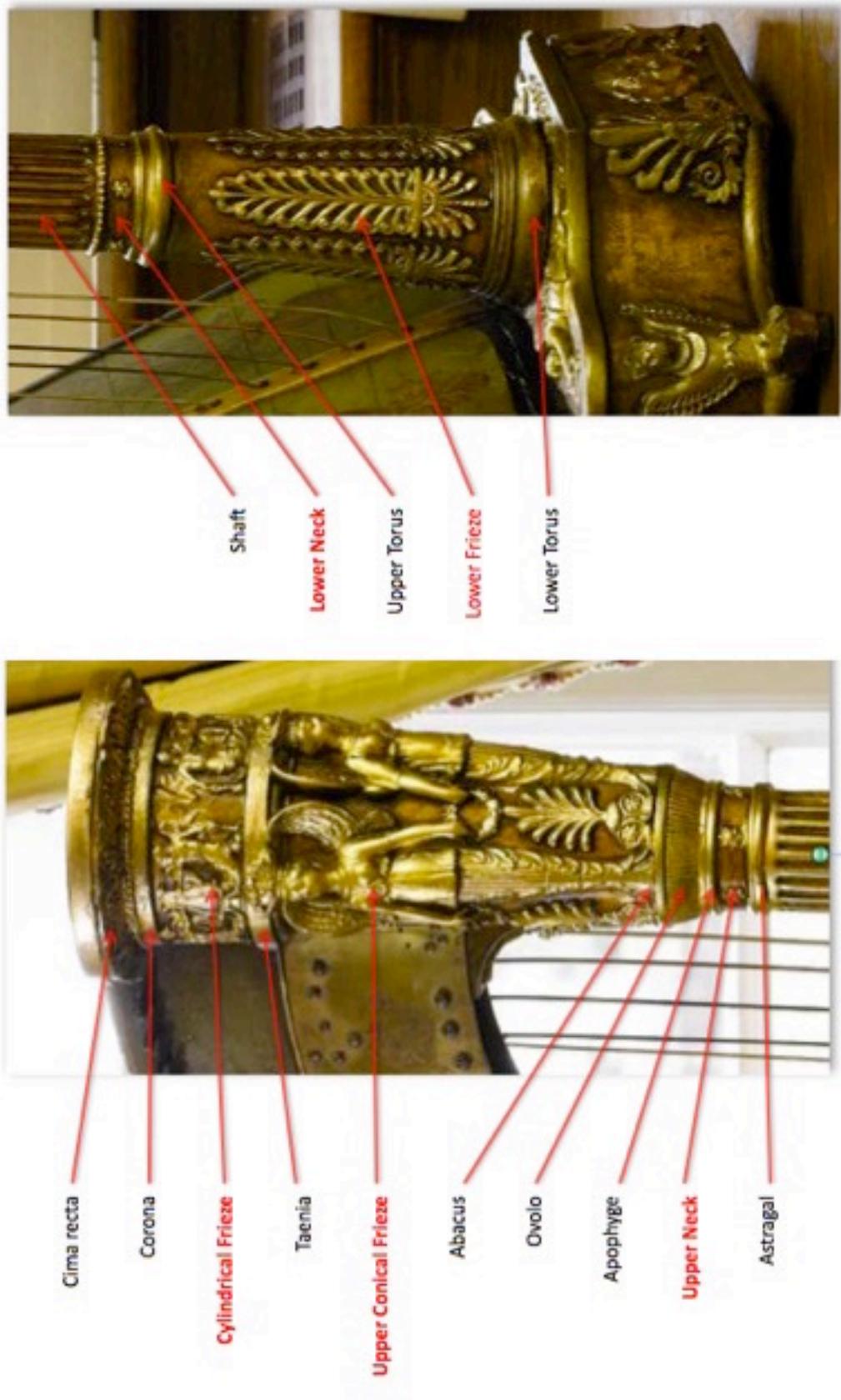


Figure 3.9. Nomenclature for Erard's harp column based on Crabbe.

Some makers applied different ornaments to their harps though, for the most part, these were variants of those used by Érard. François-Joseph Dizi, who developed new type of double-action from around 1812 onwards, deviated from that of his competitors by applying a Corinthian column and volute to his new harp (Figure 3.10 – Figure 3.12), made in conjunction with Edward Dodd.



Figure 3.10. Dizi perpendicular harp. Photograph copyright V&A, no. 382-1907.

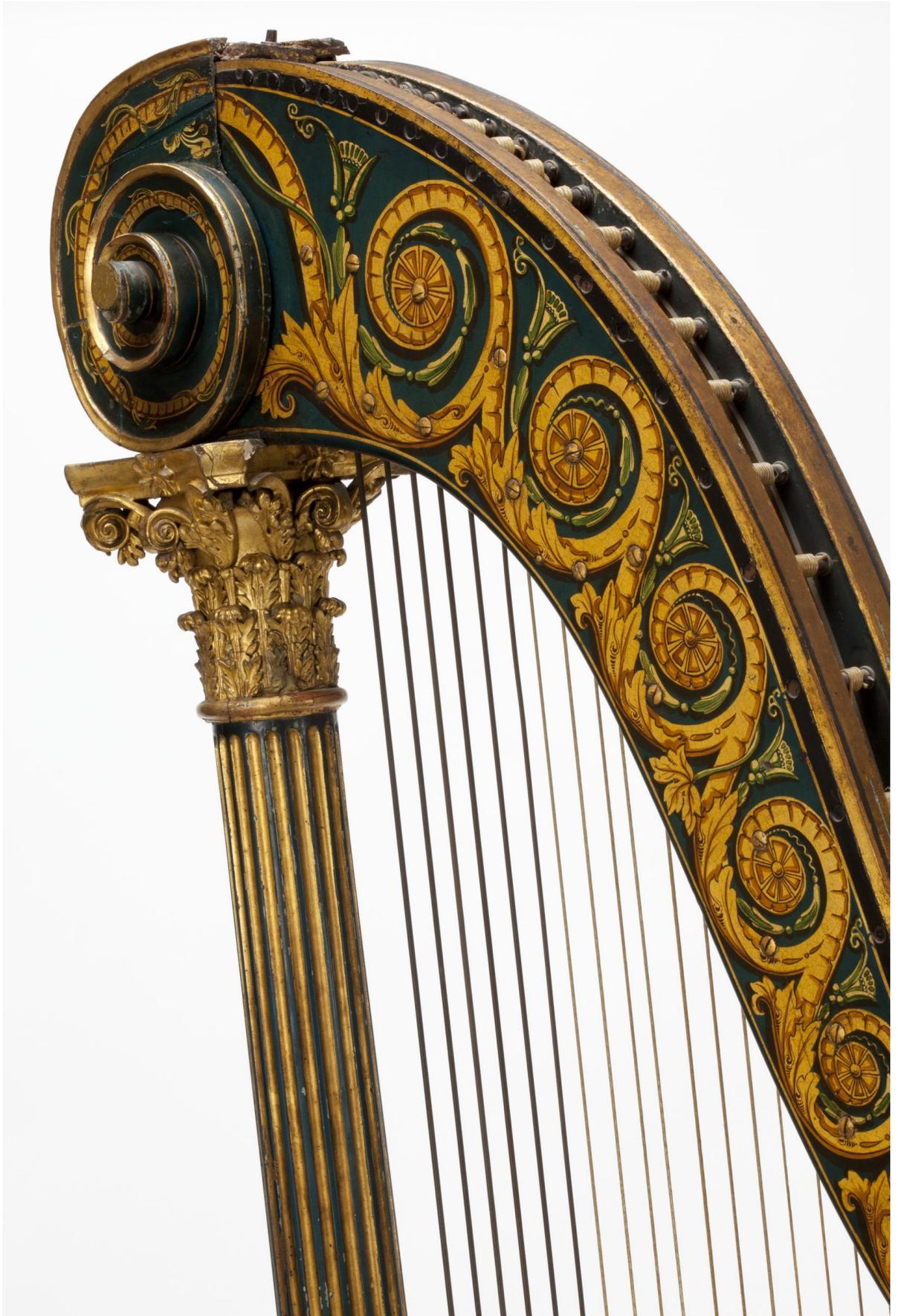


Figure 3.11. Detail of ionic capital. Dizi perpendicular harp. Photograph copyright V&A., no. 382-1907.



Figure 3.12. Detail of column base and sound box. Dizi perpendicular harp. Photograph copyright V&A., no. 382-1907.

3.3: Érard's single-action harp

The structurally essential straight column of Érard's single-action is arguably the most identifiable decorative element of this harp.³⁶ Inspired by the classical revival, it is relieved with gilded flutes, and its capital is ornamented with three ram's heads interspersed with swags, palmettes and herms, stylised anthemion, and pine cones, the transitions between each section masked with beaded chapettes. The foot is decorated with composition acanthus leaves and the base plate with a mirrored pair of hippocampi on either side of the column (Figure 3.13).³⁷

Érard's harps were commonly japanned. The earliest description of such a harp (simply 'Noire' with 'figures') was entered in the Érard ledger on 11 November 1800,³⁸ the purchaser being the Princess of Wales. Of the 50 harps whose colour is noted, 19 were black, 16 red, four are listed as 'violette', and one purple. That the colour of 10 of these harps is not recorded suggests that another finish (perhaps unpainted or varnished timber) which might have been regarded as a default standard, was available too.³⁹ Stobart and Rothery note that the development of japanning was one of the most important decorative movements in Georgian furniture.⁴⁰ In 1817, Clarke and Dougall described it as 'the art of varnishing and painting ornaments on wood'.⁴¹ Its use was common. Sheraton suggested that his

³⁶ The column is essential to the mechanical and structural success of the harp: bearing the string tension vertically, it also channels the pedal rods that communicate movement between the pedals and action (referred to as the 'machine' in the Erat documents).

³⁷ Martha Blythe-Gerson describes these ornaments as used by Robert Adam. She defines ram's heads as corner elements applied to furniture; swags are drapery, foliage, or flowers hanging between two points; palmettes, plant motifs often used in bands or as finials; an anthemion is a palmette with inward-pointing lobes; acanthus refers to ornamental leaves based on the Mediterranean plant of the same name; and an hippocampus is a seahorse grotesque. Martha Blythe Gerson, 'A Glossary of Robert Adam's Neo-Classical Ornament', *Architectural History*, 24 (1981), 59-82 (pp. 60, 64, 77). Robert Chitham defines herms as a bust on a square pedestal, generally tapering towards the base. Robert Chitham, *The Classical Orders of Architecture*, 2nd edition (Oxford: Architectural Press, 2005), p. 219. According to Peter Nicholson, beaded chapettes are small, beaded ornamental fillet. Peter Nicholson, *The Builder's and Workman's New Director* (London: Fullarton, 1845), p. 187.

³⁸ RCM. 497, Érard Ledger, p. 90.

³⁹ RCM. 497, Érard Ledgers, pp. 90-105.

⁴⁰ John Stobart and Mark Rothery, *Consumption and the Country House* (Oxford: Oxford University Press, 2016), p. 46.

⁴¹ Hewson Clarke and John Dougall, *The Cabinet of Arts* (London: Kinnersley, 1817), p. 520.

chairs ‘may be finished in japan painting, interspersed with a little gilding in different parts of the banister,’ noting that these two together had ‘a lively effect.’⁴²

The similarity of the harp column and applied three-dimensional ornaments to those designed by Robert Adam is notable. Blythe-Gerson notes that the ram’s head, originally a vestige of sacrificial rites, was used as corner elements in architecture, and on furniture (Figure 3.14). The swag, described as drapery hanging in a curve between two points (Érard used foliage and flowers), was used in friezes and ceiling designs and also on furniture; and the acanthus leaf, originally associated with death in antiquity, was used by Adam in a variety of forms and contexts.⁴³

That Érard adopted elements of pre-existing decorative scheme is clear. For example, Adam’s designs for Harewood House, Yorkshire, included two semi-oval console tables (attributed to Chippendale) in the gallery, ornamented with similar ram’s heads;⁴⁴ and the columns which decorate the entrance hall, described as ‘fluted and enriched’,⁴⁵ closely resemble Érard’s. Hippocampi, like those used by Érard, are another detail common in Adam’s schemes, such as those on the screen added to the Old Admiralty Building, Whitehall, where they were later described as ‘emblematical appropriate ornaments.’⁴⁶

⁴² Thomas Sheraton, *The Cabinet Maker and Upholsterer’s Drawing Book* (London: Bensley, 1793; repr. New York: Dover, 1972), p. 155.

⁴³ Gerson (1981).

⁴⁴ John Swarbrick, *Robert Adam and his Brothers* (London: Batsford, 1916), pp. 208-209.

⁴⁵ Swarbrick (1916), p. 198.

⁴⁶ *The Pictorial Handbook of London*, ed. John Weale (London: Henry G. Bohn, 1854), p. 703.



Figure 3.13. Single-action harp by Sébastien Érard, no. 1033.
Christie's, New York, sale 11,415, lot no. 476.

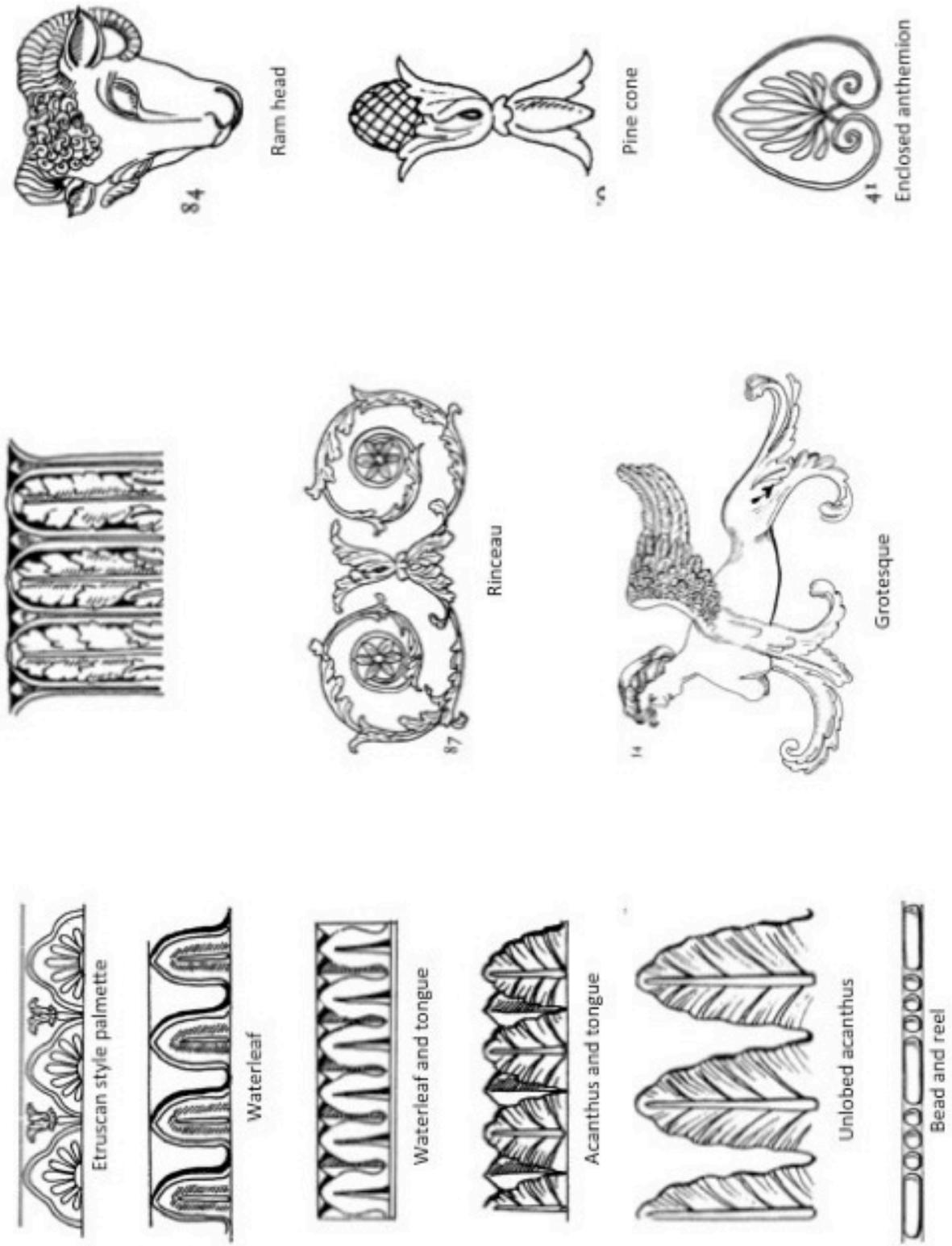


Figure 3.14. Robert Adam's three-dimensional ornaments. Gerson (1981).

Nancy Hurrell describes and attributes meaning to the decoration of a single-action harp by Erat & Sons (Figure 3.15), which she acknowledges is in the style of Érard.⁴⁷ She notes that lions couchant, applied to the column base plate (Figure 3.16), had long been a symbol of royalty and strength, as well as being an early Christian symbol, and that the soundboard and body are decorated with 'dragons, griffins, mermaids and other mythical beasts.' Further meaning is attributed to the gilt vine work comprising 'serpents, with fierce expressions on their faces [...] battling large eagles [...]. This could well be a symbolic battle of good vs. evil, as eagles were Christian symbols in early times.'⁴⁸ Hurrell adds that the eagle, symbolic of ancient Rome, was used by Napoleon during the early 1800s when this harp was made, perhaps intimating that the decorative choices reflect Napoleonic sympathies. We do not know what, if any, meaning the harp makers attributed to their decoration. The absence of contemporary description but adoption of classical revival style indicates that rich decorative and ornamental design choices were purely aesthetic, copying popular trends in British architecture and furniture, associating the instrument with grandeur and luxury, and with upper class and aristocratic customers.

Scrutiny of decorative schemes applied to the capitals of Erat's single-action harps show changes in design and manufacturing technique over time. The top of one, c1805 (Figure 3.17), is ornamented with Etruscan-style palmettes above swags and fruit, bordered top and bottom with beaded chapettes. Below are three ram's heads interspersed with tall acanthus leaves and swags, and beneath these are two painted bands bordering a vertical key and a repeated enclosed pinecone motif. Following the introduction of Érard's double-action Grecian, Erat offered two new styles in addition to continued use of the ram's head capital. The capital of an example of c1815 (Figure 3.18) is decorated with a repeated enclosed anthemion motif above scrolls with birds of paradise. Below these are a triumvirate of winged caryatids holding wreathes, an anthemion between each, and an architectural key with vertical incised lines, three plain gilt bands, and the previously used enclosed pinecone motif.

⁴⁷ Museum of Musical Instruments, Edinburgh. Single action pedal harp by Erat & Sons, acc. 860.

⁴⁸ Nancy Hurrell, *Mythical Beasts to Floral Bouquets*, *The Folk Harp Journal*, 139 (Summer 2008), 43-47, (p.45).



Figure 3.15. Single-action harp by J. Erat & Son. Photo used with the kind permission of the Museum of Musical Instruments, University of Edinburgh. Catalogue no. MIMEd 860.



Figure 3.16. Base of single-action harp by J. Erat & Son. Photo used with the kind permission of the Museum of Musical Instruments, University of Edinburgh. Catalogue no. MIMEd 860.



Figure 3.17. J. Erat, single-action harp, no. 382, c1805.

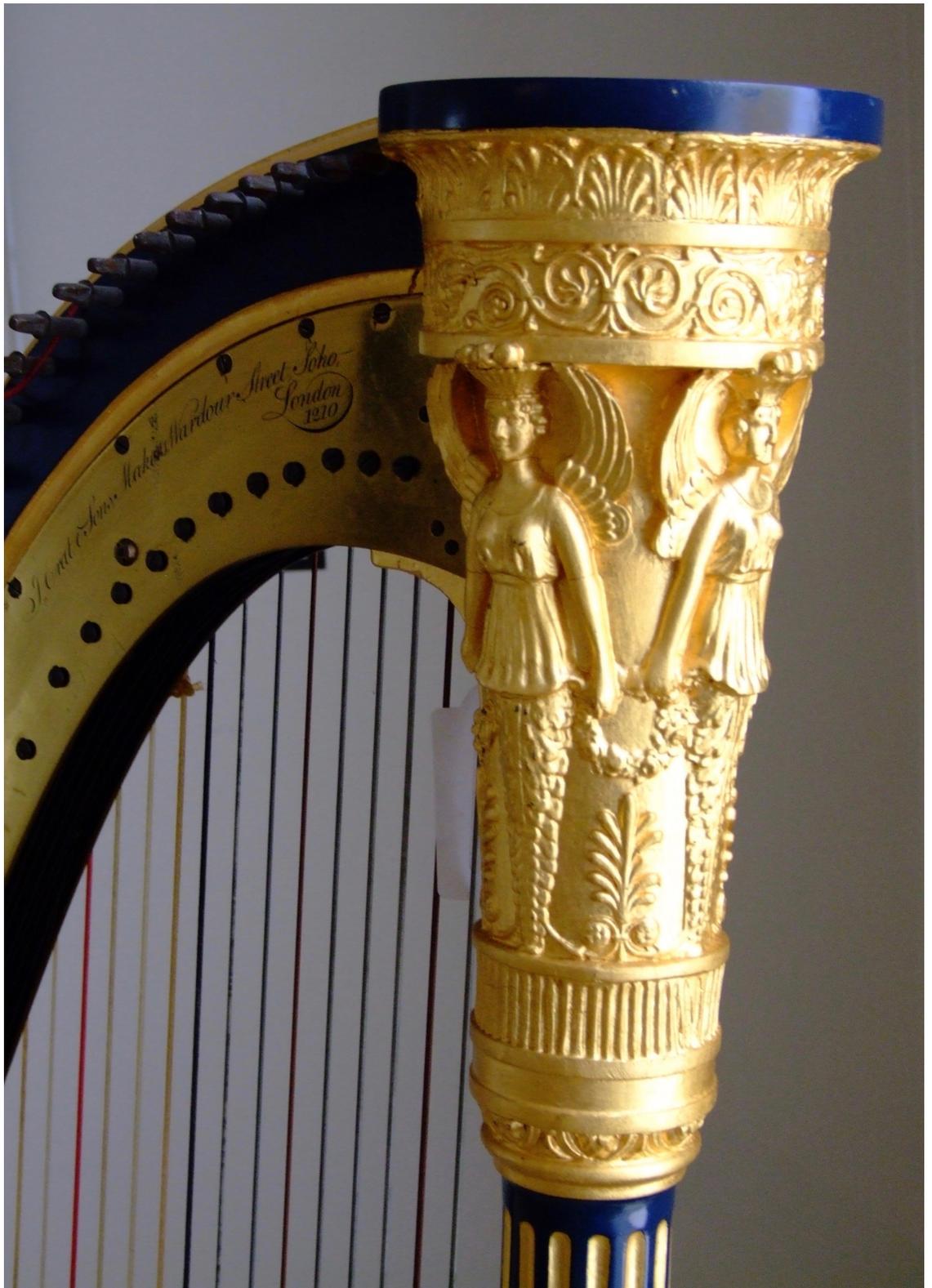


Figure 3.18. J. Erat & Sons, single-action harp, no. 1210, c1815.

The enclosed anthemion is repeated on a later harp, c1825 (Figure 3.19), but the scrolls and birds of paradise are replaced with a mirrored pair of winged mermen holding lyres between them, enclosed between beaded chapettes. In place of the earlier rams heads and caryatids are three Etruscan-style women, each in different positions as though dancing; between these are mirrored scrolls, above swags and vertical floral representations; and beneath, a gothic-revival foliate design is bordered by two gilded bands, and the repeated enclosed pinecone motif is once again evident below. The serial numbers of other Erard harps decorated in this manner suggest that it was in use by 1813 when it was applied to one of his patent double-actions, patented that year. This decoration was also used on harps that were made on the same principals as those by Érard.



Figure 3.19. J. Erat & Sons, single-action harp, no.1509, c1825.

3.4: Érard's Grecian harp

Érard's 43-string 'Grecian' double-action harp (Figure 3.20 – Figure 3.22), patented in 1810, was larger than his earlier instrument and, through changes to its mechanism, could play in all musical keys. The column was made thicker, and hence stronger, to support higher tension stringing than on its earlier counterpart. Again divided into three, at the top three composition winged-maidens, uniting elements of Greek Caryatids and nikes, linked with wreaths (sometimes baskets of flowers), and interspersed with stylized anthemion flowers, decorate a conical frieze. These female figures bear close resemblance to the Caryatids of Erechtheion.⁴⁹ Each figure is dressed in a peplos,⁵⁰ and carries a basket on her head.⁵¹ The addition of wings references nikes, also known as victories. Wings are atypical of true classical-era Caryatid although Ephraim Chambers included an illustration for one such figure (Figure 3.23) in his 1732 *Treatise of Architecture*,⁵² as did William Chambers in his 1759 *Treatise on Architecture* (Figure 3.24)⁵³ and *Treatise on the Decorative Part of Architecture* (Figure 3.25).⁵⁴ Twenty vertical flutes decorated the central portion of the column, and its base was ornamented with five, equally spaced stylised acanthus flowers. Érard's figures are pseudo-Grecian utilizing decorative and architectural ideas from disparate time-periods and geographical locations.

Although the first 'Grecian' harp was sold in November 1811, the earliest descriptive entry in the Érard ledgers dates from September 1812, where only its colour, '*smalt*' (a deep blue pigment made of crushed glass) is noted. Of the 50 harps that follow this one, only the colour of seven is noted: four were green, two smalt, and one ultramarine, suggesting that either a timber finish was now very popular and that

⁴⁹ The Caryatid of Erechtheion in the British Museum was moved to London, on behalf of Lord Elgin, between 1801 and 1803. It is possible Érard may have seen and been influenced by this artifact. The Parthenon Sculptures,

http://www.britishmuseum.org/about_us/news_and_press/statements/parthenon_sculptures/facts_and_figures.aspx [accessed 18 June 2014].

⁵⁰ A tunic pinned at each shoulder.

⁵¹ The Caryatids of Erechtheion are structural figurative columns. The basket-style capitals at the top of each figure transfer forces from the upper frieze, through the figure, to the ground. Érard's figures reference the structural nature of the Caryatids of Erechtheion in a metaphorical, decorative manner.

⁵² Ephraim Chambers, *A Treatise of Architecture* (London: Richard Ware, 1732), plate 120.

⁵³ William Chambers, *Treatise on Civil Architecture* (London: Chambers, 1759), plate 11.

⁵⁴ William Chambers, *A Treatise of the Decorative Part of Civil Architecture*, third edition (London: Smeeton, 1791), p. 69.

painted finishes had fallen from favour, or that colour was now only sporadically recorded.⁵⁵ Decorative descriptions continue to be brief throughout the ledger, and the applied composition decoration is never referred to. The Erat ledger lists 15 different colours between 1821 and 1824 (more fully discussed in Chapter 7). Black and rosewood were the most popular, blue, purple, green, and red were common, and some of the more unusual colours included lilac and salmon.

Colour choices were influenced by those used in room decoration. The decoration of nearby Carlton House, home of the Prince Regent, is suggestive of the harp colours and finishes used by Érard and Erat. The great hall and vestibule were in granite green;⁵⁶ the crimson drawing room was hung in damask silk of that colour with a carpet of light blue velvet;⁵⁷ the circular room was carpeted in a reddish colour;⁵⁸ the walls of the ante-room (to the throne room) were hung with light-blue velvet panels paired with a rich-crimson carpet;⁵⁹ and the blue velvet room was panelled in this fabric surrounded by richly carved gilt moulding and margins of light peach-blossom.⁶⁰ The throne room had lilac doors decorated with gilt arabesques;⁶¹ the folding doors of the golden drawing room were of rosewood⁶²; and those of the dining room were black and gilt.⁶³ In his study of interior house painting, Ian Bristow found that Soane specified a deep yellow with blue borders for the withdrawing room at Wimpole in 1792,⁶⁴ and either a pink or a blue tint for the dining room at Taymouth Castle in 1808.⁶⁵ Vanherman suggested crimson for libraries, and Nash painted the gallery of his own home a pale red.⁶⁶ Hay suggested that bedrooms with north or east light should be painted light shade of yellow, but those in country residences worked well in light blue or grey.⁶⁷

⁵⁵ Of the first 50 double actions for which colour is recorded 31 were smalt and eight ultramarine (indicating that blue was by far the most popular), six were green, three were black, and two red.

⁵⁶ William Henry Pyne, *The History of the Royal Residences*, vol. 3 (London: Dry, 1819), pp. 14-15.

⁵⁷ Pyne (1819), pp. 21-22.

⁵⁸ Pyne (1819), p. 25.

⁵⁹ Pyne (1819), pp. 28-30.

⁶⁰ Pyne (1819), p. 45.

⁶¹ Pyne (1819), p. 26.

⁶² Pyne (1819), p. 56.

⁶³ Pyne (1819), p. 80.

⁶⁴ Ian Bristow, *Interior House Painting from the Restoration to the Regency* (DPhil thesis, University of York, 1983), p. 721.

⁶⁵ Bristow (1983), p. 720.

⁶⁶ Bristow (1983), p. 722.

⁶⁷ Bristow (1983), p. 724.



Figure 3.20. Érard Grecian harp (no. 1643).
Photo used by kind permission of the Scenkonstmuseet, Stockholm
(Museum no. M2281).



Figure 3.21. Capital of Érard Grecian harp (no. 1643).
Photo used by kind permission of the Scenksonstmuseet, Stockholm
(Museum no. M2281).



Figure 3.22. Pedal box of Érard Grecian harp (no. 1643).
Photo used by kind permission of the Scenkonstmuseet, Stockholm
(Museum no. M2281).

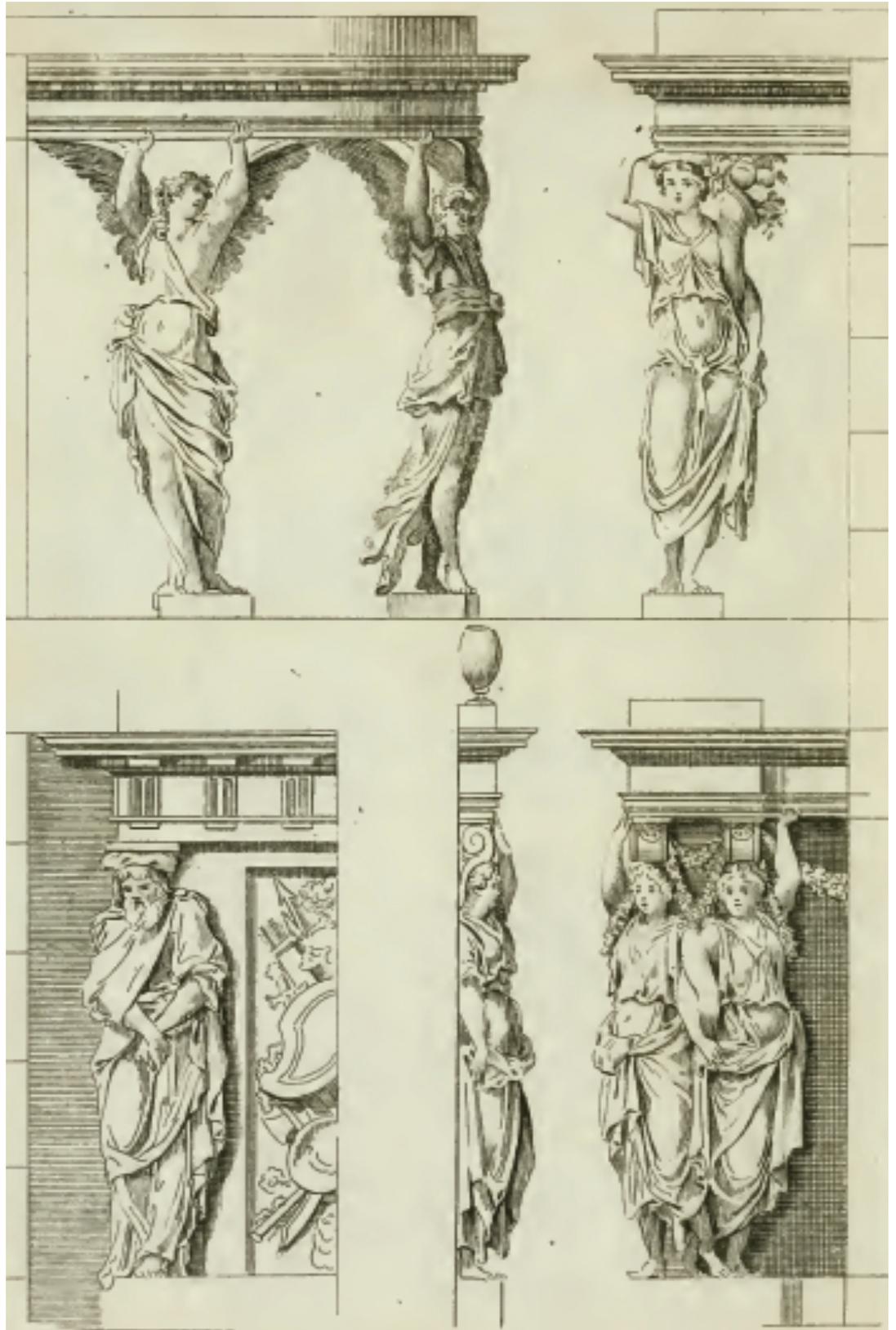


Figure 3.23. Caryatids, Ephraim Chambers (1739).



Figure 3.24. Caryatids. William Chambers (1759).



Figure 3.25. Caryatids, William Chambers (1791).

Hurrell discusses the decoration on harps by the Dublin maker, John Egan, noting that although his small Royal Portable harps were typically decorated with ‘threads of gold shamrocks’, some combined these with roses and thistles, depicting the union of England, Ireland, and Scotland.⁶⁸ Her paper, *Golden Shamrocks and Winged Maidens: the Harps of John Egan*, examined the symbolism of Egan’s harp decoration, suggesting that, as a Dublin maker, he had used Irish nationalist themes to great effect; and that ‘with his sculpted winged maiden harp, he fused a romantic icon for political independence into a playable harp.’⁶⁹ Egan’s ‘winged maidens’ were derivative of those applied to Érard’s harps (as were those used by all of the other makers) and so, as with the single-action instruments, were inspired by the classical revival, and with a wish to associate his instruments with those by Érard, rather than by the fervour of political independence. Mary Louise O’Donnell’s correctly suggests that Egan’s harps became popular, particularly in urban areas, due to a rise in the patriotic Irish middle-classes (and presumably their ability to afford luxury), but also advances in their design pioneered by Hochbrucker, Naderman, Cousineau, and Érard.⁷⁰

3.5: Érard’s Gothic harp

Pierre Érard’s 46-string ‘gothic’ harp, patented in 1835, was the most significant development in the harp since the introduction of the double-action some twenty-five years earlier (Figure 3.27 - Figure 3.28).⁷¹ It was larger (in terms of size, number of strings, and string tension), and had an updated mechanism. Decoratively, as was the case with the earlier Empire and Grecian models, Pierre followed contemporary design trends, in so doing retaining the fashionable position of the harp; decoration, as we have seen, was an important marketing tool for harp makers. The column of this new model was hexagonal with a turned central shaft. The faceted capital was decorated with gothic tracery and bands; different ecclesiastical statues were applied to each of the five niches, and below two additional wider bands of tracery were used to mask the

⁶⁸ Nancy Hurrell, Shamrocks, Roses and Thistles, *The Folk Harp Journal*, 129 (Fall 2005), 54-56.

⁶⁹ Nancy Hurrell, *Golden Shamrocks and Winged Maidens: the Harps of John Egan* Abstracts of Papers and Presentations, 41st Annual AMIS/CIMCIM Meeting, 15 May – 20 May 2012, p. 27.

⁷⁰ Mary Louise O’Donnell, John Egan: An Innovator and Inventor, *The American Harp Journal*, (Summer 2015), 14-27 (p. 15).

⁷¹ The first Érard gothic harp (no. 5086) was entered in their ledger in February 1837, and was delivered to a Mr Liddall on 26 July of that year. RCM. 497, Érard, ledger 2, p. 88.

change from the wider diameter of the capital to the narrower one of the shaft. The top and bottom of the shaft were decorated with vignette mouldings, the base of the column with gothic scroll panels, and the front feet with winged lions. John Henry Parker's illustrations (Figure 3.29), which predate this harp by 95 years and coincide with the early revival of the style, show gothic decorations applied to ecclesiastical building in the British Isles.⁷² Comparison of these to this instrument reveal marked similarities and suggest that the ornaments applied to this instrument were either directly influenced by extant buildings, ecclesiastical furniture, or by drawings in contemporary treatises.

⁷² John Henry Parker, *A Glossary of terms used in Grecian, Roman, Italian, and Gothic architecture* (London, 1740), pp. 21, 63, 77, 83-84, 91, 104, 136; plates xiii, liv.

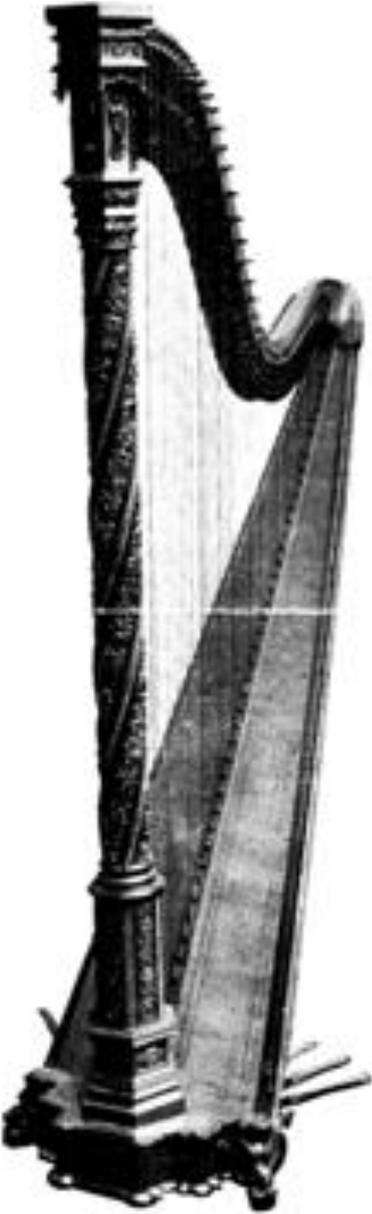


Figure 3.26. Énard gothic harp, no. 6223. Photograph copyright V&A, W.48-1931.



Figure 3.27. Capital of Éradard gothic harp, no. 6223. Photograph copyright V&A, W.48-1931.

S. & P. ERARD, 18 Great Marlborough Street, W. 1
Pianoforte and Harp Makers to the Royal Family.



CONCERT GOTHIC HARP.
No. 1^{re} With Ornamental Pillar.
Height 5 ft. 10½ ins. 46 or 47 Strings.

Figure 3.28. Brochure for Érard gothic harp with ornamental pillar, c.1890.

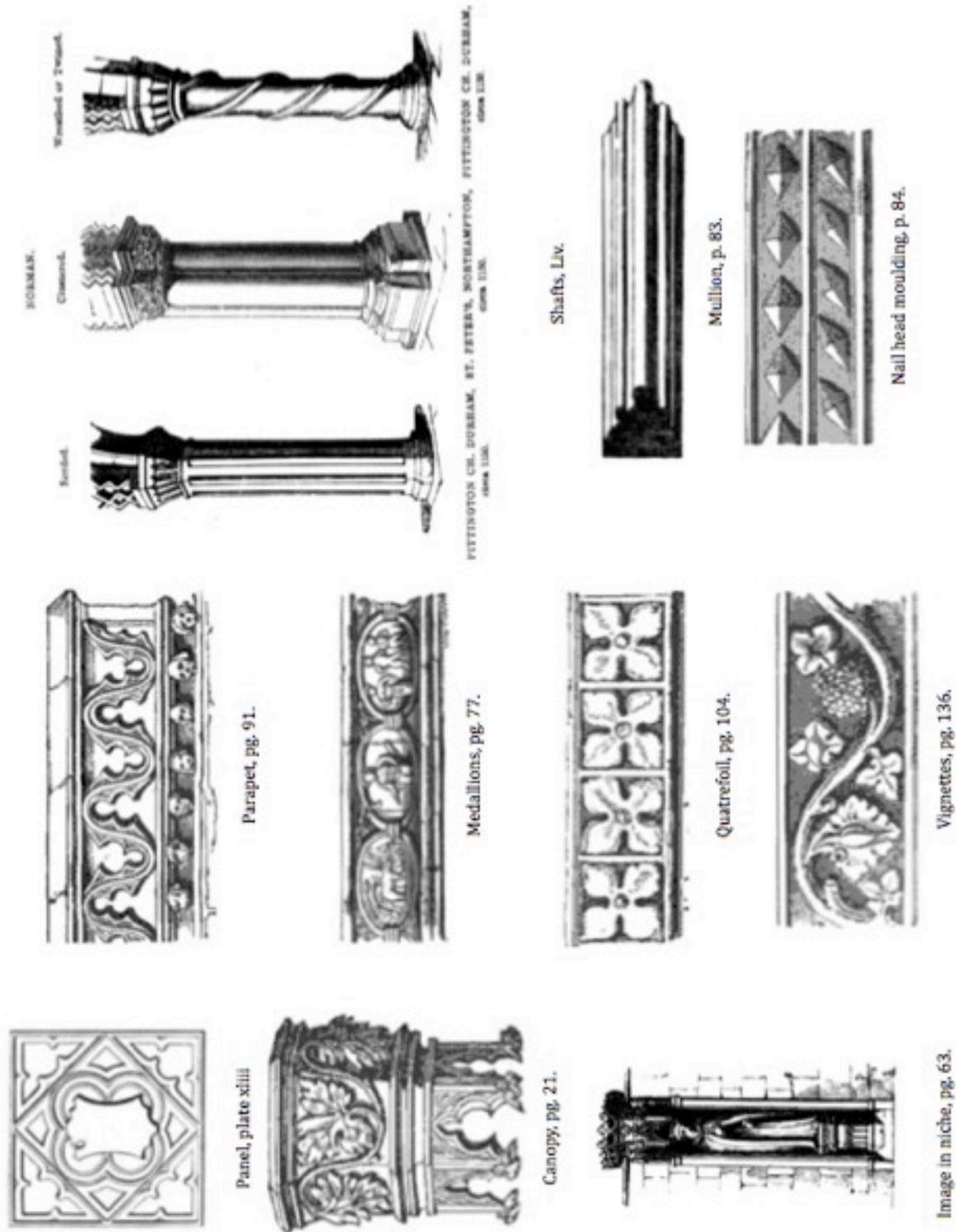


Figure 3.29. Gothic decoration from Parker (1740).

The birth of the gothic revival during the eighteenth century challenged the pre-eminence of the classical revival movement. Starting with architectural ornaments, it later spread to house architecture, interiors, and furniture.⁷³ Parker published *A Glossary of terms used in Grecian, Roman, Italian, and Gothic architecture* in 1740;⁷⁴ Robert Sayer wrote *Ornamental Architecture in the Gothic, Chinese and Modern Taste* in 1758; a year later Paul Decker published *Gothic architecture decorated*;⁷⁵ and Thomas Chippendale presented household furniture in Chinese, Rococo, and Gothic (referred to as Modern) styles in his 1754 *Gentleman and Cabinet-maker's Director*.⁷⁶ In 1826, Ackermann describes a gothic pianoforte (Figure 3.30), drawn by Augustus Charles Pugin (father of the more famous Augustus Welby Northmore Pugin), as decorated with 'traceries and other gothic ornaments [Pugin] chose the style of the 15th century, as being most applicable to our purpose, and admitting the greatest variety of arrangement'.⁷⁷ According to Ackermann 'French ladies of the present day have a perfect mania for gothic ornaments in jewellery'.⁷⁸

Peter Collins states that the gothic revival reflected a series of five ideals: 'romanticism, nationalism, rationalism, ecclesiology, and social reform'. Augustus Pugin promoted it as the architecture of Catholicism, but John Ruskin took an opposing stance, viewing it as the epitome of Protestantism and associating it with societal ideals. To Eugène Viollet-le-Duc it was 'the only rational system of masonry construction'; but to Ruskin it interfered with the 'purity and simplicity' of architecture.⁷⁹

⁷³ Megan Aldrich, Gothic Sensibility: The Early Year of the Gothic Revival, in *A.W.N. Pugin: Master of Gothic Revival*, ed. by Paul Atterbury (London: Yale University Press, 1995), 13-30 (p. 15).

⁷⁴ John Henry Parker, *A Glossary of terms used in Grecian, Roman, Italian, and Gothic architecture* (London, 1740).

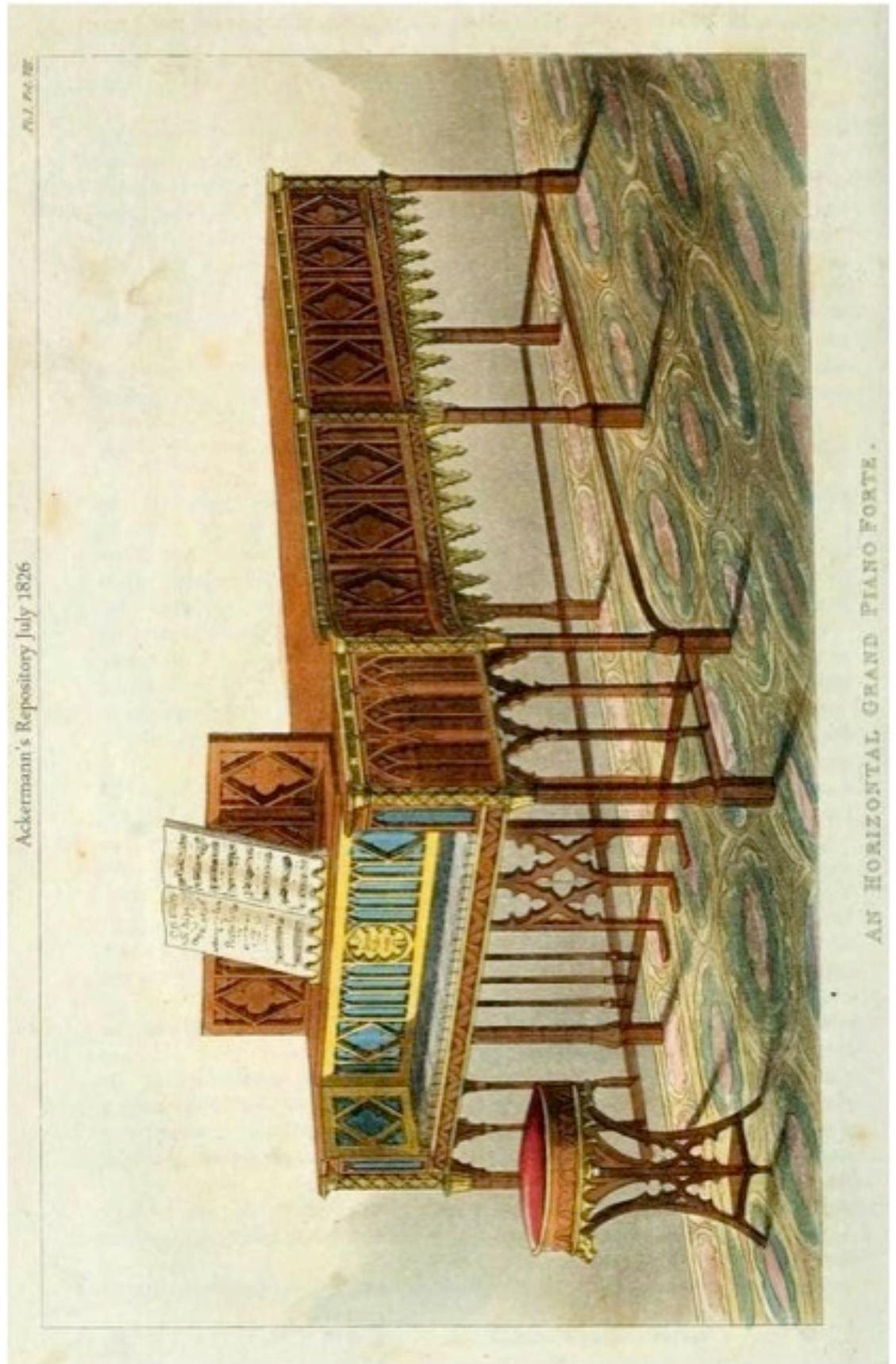
⁷⁵ Paul Decker, *Gothic architecture decorated. Consisting of a large collection of temples, banqueting, summer and green houses* (London: Decker, 1759).

⁷⁶ Thomas Chippendale, *The Gentleman and Cabinet Maker's director* (London: Chippendale, 1754).

⁷⁷ Rudolf Ackermann, *The Repository of Arts*, 8, 43 (London: R. Ackermann, 1826), p.58.

⁷⁸ Rudolf Ackermann, *Repository of Fashion* (London, R. Ackermann, 1829), p.72.

⁷⁹ Peter Collins, *Changing Ideals in Modern Architecture, 1750-1950*, 2nd edition (London: McGill Queen's University Press, 1998), p.100.



Ackermann's Repository July 1826

AN HORIZONTAL GRAND PIANO FORTE.

Figure 3.30. Gothic Pianoforte from Ackermann (1826).

Curl writes that Horace Walpole's house at Strawberry Hill, Twickenham, built in stages between 1749 and 1776, saw the gothic style become fashionable, the house later giving its name to a branch of gothic design. In contrast to earlier architectural trends, Walpole announced that his 'little Gothic castle [would be] the very antithesis of Palladianism.'⁸⁰ He made a conscious decision to move away from the classical-revival. Walpole's descriptions of the architecture and interiors at Strawberry Hill are indicative of the approach taken to gothic revival at this time. Of the library he writes:

The books are ranged within gothic arches of pierced work, taken from a side-door case to the choice in Dugdale's St Paul's. The doors themselves were designed by Mr. Chute. The chimney-piece is imitate from the tomb of John of Eltham Earl of Cornwall, in Westminster Abbey; the stone-work from that of Thomas Duke of Clermont at Canterbury.⁸¹

The contents of rooms that are listed (including Roman antiquities, a silver gilt clock gifted by Henry VIII to Anne Boleyn, and an ossarium ornamented with the head of a horned man with festoons)⁸² demonstrate that far from being purist, the gothic revival brought together an eclectic confection of styles.

As before, Érard's new harp became the preeminent instrument and other makers copied it widely. The Erats initially made a simpler version (Figure 3.31 and Figure 3.32) which emulated Érard's hexagonal column but without the turned shaft. This was decorated with gilded vertical linear composition moulding, imitative of gothic mullions. Like that on the Érard harp, the capital is built up in order to present a greater sense of depth. Five of the six faces are ornamented with niches containing ecclesiastical statues, surmounted by gothic tracery. Below medallions decorate each face of a narrow horizontal band, and the base of the column is ornamented with more tracery and nail head mouldings.

⁸⁰ James Curl, *Georgian Architecture* (London: David & Charles, 1993), p. 59.

⁸¹ Horace Walpole, *A Description of the Villa of Horace Walpole* (Strawberry Hill: Walpole, 1774), p. 43.

⁸² Walpole (1774), pp. 45-46.



Figure 3.31. Gothic revival harp by J & J Erat, no. 2139, c1836.
Photograph used with the kind permission of Dallas Auction Gallery.



Figure 3.32. Capital and column base of a gothic revival harp by J & J Erat, no. 2139, c1836. Photographs used with the kind permission of Dallas Auction Gallery.

Grosjean's catalogue advertises the sale of Swiss and Gothic harps.⁸³ Although undated, that he also announces the availability of '*Geneuphony, A New Musical Theory, and Complete Course in Harmony*' by Jose Joaquin De Virues y Espinola (1770-1840), published by A. Richter & Co. in 1836,⁸⁴ and that he also advertised the 'Victoria lyre-harp' (presumably named in honour of Queen Victoria) indicates a date of c1837.⁸⁵ Exactly how his Swiss and Gothic harps were decorated is unknown. It is likely it was an attempt to establish an alternative model to Érard's Gothic.

In 1839, Alexander Blazdell announced an improved Gothic harp without composition ornaments (Figure 3.33):

HARPS. – A. BLAZDELL, from Erat's, respectfully informs the nobility, his friends, and the public, that he has made considerable IMPROVEMENTS in HARPS, as regards size, tone, and appearance, they being entirely of the Gothic order, thereby doing away with all composition ornaments, and rendering them capable of withstanding the effects of any climate. All the harps are warranted, and exchanged within six months, if not approved of. Harps bought, lent on hire, tuned, taken in exchange, and repaired: strings, string boxes, music stools, desks, and all other requisites for the instrument on moderate terms, at 54 Howland-street, Fitzroy-square.⁸⁶

In recognising the impact of climate on composition ornaments, and by replacing them with carved ones, Blazdell was clearly intent on supplying overseas customers. Three years later Blazdell introduced a new model, the Elizabethian harp (Figure 3.34).⁸⁷ It was adopted by notable harpists, such as Frederick Chatterton.⁸⁸

⁸³ 'Grosjean Catalogue', Bodleian Library, Oxford, John Johnson Collection: Musical Instruments, 3 (28).

⁸⁴ The publication date is advertised in, John George Cochrane (Ed), *The Foreign Quarterly Review*, 32, January 1836, p.18.

⁸⁵ In 1843, Frederick Grosjean is advertised as a 'harp manufacturer, and maker of the crystallized sounding board for all musical stringed instruments (the patent for which is discussed in chapter 4), the *Victoria harp-lyre*, guitars, wernelin harp &c.' *The Post Office London Directory*, (London: Frederick Kelly, 1843), p. 207.

⁸⁶ 'Harps', *Morning Chronicle*, 21,655, 16 April 1839, p. 8

⁸⁷ 'Concert at the Tuilleries,' *The Cork Examiner*, 1, 70, 7 February, 1842. p. 4. The harp is described in an advert by C. Milsom of Bath. NEWLY INVENTED ELIZABETHIAN HARP AT No. 2, ARGYLE STREET, BATH. C. MILSOM Being desirous at all times to place in his establishment the best instruments, with the latest improvement, has now the satisfaction of recommending to the notice of the musical public one of BLAZDELL'S NEW PATENT ELIZABETHIAN HARPS the superiority of which will be at once seen by its beautiful mechanical constructions, and elegant design, which surpasses anything of the kind hitherto manufactured. The compass of the instrument is six octaves and a half, and in proof of its excellence it is preferred by most of the London professors for public and private performance,

A small version, made in 1843 for the Princess Royal (Figure 3.35), was illustrated in the *Illustrated London News*,⁸⁹ and richly described (along with its accessories) in the *Era*:

The instrument is three feet high; the pillar, carved in pure Elizabethan style, of white maple wood, gilt, in burnished gold; the bottom of the pillar is also carved, supported by two dolphins; the body, also maple wood, pure white, the front of which is enamelled, and highly ornamented from the design of Raphael; the neck has double gold lines, and also painted in gold, the rose, thistle, and shamrock; the machine has action similar to the long harps, which is considered wonderful for small an [sic] one, being the only one of its kind ever made; the pedals, which are connected to the machine, are of ivory; also side of body and legs; at the top of pillar is attached a splendid crown, carved and gilt, in burnished gold. [...] The cover of the harps is of white satin, richly embroidered; two wreaths, the rose, shamrock, and thistle, with P.R. in gold. The whole is enclosed in a splendid mahogany case, highly polishes. The string box is also of maple wood, inlaid with pearl; ivory tuning key [...]⁹⁰

This harp was more heavily ornamented than the larger model, presumably due to the status of its royal recipient. Different levels of decoration, reflected in the price charges, were available to customers (see Chapter 7). Blazdell's use of the term Elizabethian is unusual, writers on architecture and furniture preferring to use the era defining word Elizabethan, denoting a transitional style following that of the Tudor or late Gothic;⁹¹ perhaps it was adopted by Blazdell as a brand name.⁹²

and has received Royal preference, Prince Albert having recently purchased one for Buckingham Palace. 'NEWLY INVENTED ELIZABETHIAN HARP,' *The Bath Chronicle*, 85, 4162, 7 April, 1842, p. 2. It is not known whether he continued to make his Gothic model.

⁸⁸ Frederick Chatterton (1814-1894), younger brother of John Balsir Chatterton (c1802-1871), was Professor of the harp at the Royal College of Music and harpist to the Queen. <http://www.reidconcerts.music.ed.ac.uk/performer/chatterton-frederick-1814-1894>. [Accessed 14 August 2016].

⁸⁹ 'Harp for the Princess Royal', *Illustrated London News*, (London: William Little, 1843) p. 272.

⁹⁰ 'Court and Fashion', *The Era*, 6, 262, 1 October, 1843, p. 2.

⁹¹ Banister Fletcher, *A history of Architecture on the comparative method*, 16th edition (London: Batsford, 1956), p. 395.

⁹² According to James Hakewell, Elizabethan architecture originated in Italy. It comprised elements of the Roman orders applied 'in small divisions and highly enriched compartments', so as to form a highly ornamented style. James Hakewell, *An Attempt to Determine the Exact Character of Elizabethan Architecture* (London: Weale, 1836), pp. 11, 20.



Figure 3.33. Gothic harp with carved ornaments by Alexander Blazdell (no. 4,536).
Photographs used with the kind permission of Audrey Cameron Finnemore

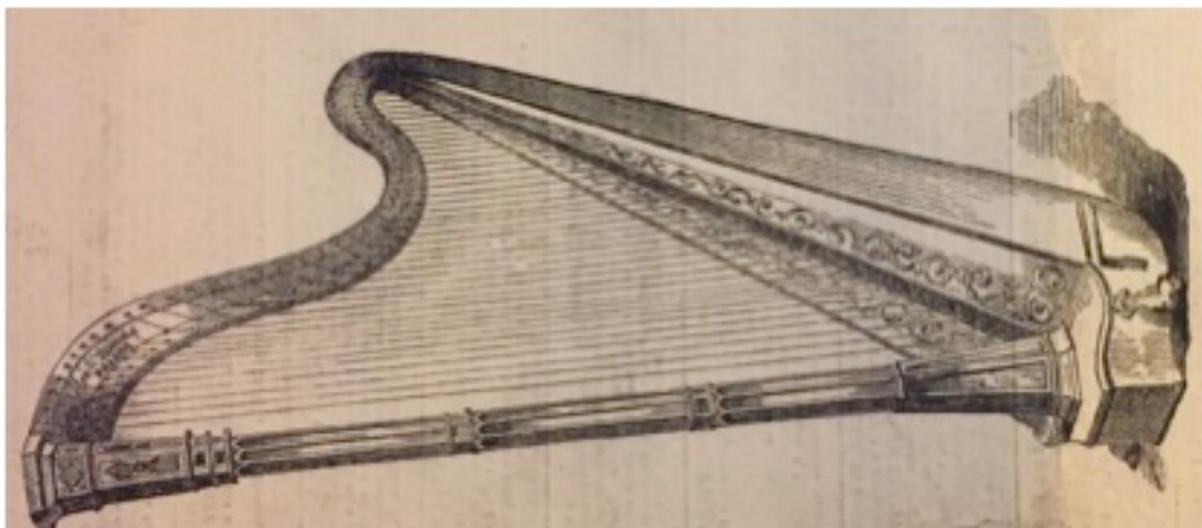


Figure 3.34. Elizabethan harp by Blazdell.
Photograph used by kind permission of Michael Parfett), with drawing of the same *The Era* (1 October, 1843)



Figure 3.35. Small Elizabethian harp by Blazdell with accessories, presented to the Princess Royal. Photographs used with the kind permission of the Tony Bingham Collection, London.

The reasons for stylistic change in the decorative arts, such as that from classical revival to gothic, are multifarious and difficult to define; often more than one style is in use simultaneously. According to Augustus Charles Pugin: ‘a love of change is inherent in the human mind: in consequence, new customs and new fashions are continually succeeding old.’⁹³ Of the gothic style, he adds: ‘[...] when properly understood, it is capable of affording greater variety than the Greek and Roman [...] It is believed that this attempt to illustrate a style which is evidently rising in public favour’.⁹⁴ Ten years later the movement is widespread:

Since the revival of the Gothic style, in the reign of George III., no abatement of public favour towards this beautiful species of architecture has been hitherto manifested; on the contrary, a great number of country-seats, for the residence of the nobility and gentry, has been raised within the last few years, in imitation of castles, abbeys, and mansions of the fifteenth and sixteenth centuries.⁹⁵

That Érard’s gothic-revival harp was first made in the same year that Charles Barry won the competition to rebuild the Palace of Westminster in the Gothic style,⁹⁶ and Pugin published *Gothic Furniture in the Style of the 15th Century*,⁹⁷ is more than coincidence. The adoption of gothic revival ornaments, in favour of the neoclassical ones applied to the harp by his uncle, was influenced by resurgence in (and fashionability of) gothic style during the 1830s. Perhaps, following Sébastien Érard’s death in 1831, Pierre saw an opportunity to rebrand and renew the Érard harp, and to place his own stamp on its decorative and technical design.

⁹³ Augustus Pugin, *Gothic Furniture* (London: Ackermann, 1828), p. iii.

⁹⁴ Pugin (1828), iv.

⁹⁵ Augustus Charles Pugin, *Examples of Gothic Architecture*, Second edn (London: Bohn, 1838), ix.

⁹⁶ Chris McKay, *Big Ben: the Great Clock and the Bells at the Palace of Westminster* (Oxford: Oxford University Press, 2010), pp. 40-41.

⁹⁷ Augustus Welby Northmore Pugin, *Gothic Furniture in the Style of the 15th Century* (London: Ackermann, 1835).

3.5.1: Pierre Érard's decorative gothic designs

Drawings surviving from the design stages of the gothic harp,⁹⁸ made by or on behalf of the Érard Company, help us to understand Pierre Érard's thoughts concerning its design, and the design of earlier instruments. Two, labelled no.1 (Figure 3.36) and no. 3 (Figure 3.37), indicate that a Romanesque style was considered. Both are sketched in the same, somewhat amateur hand, and one is monogrammed ACL and dated 1835, suggesting that they are initial ideas. Both retain a variation of the turned capital used on earlier harps. On the first, the frieze is decorated with layered acanthus leaves, foliage and swags; the second simpler one is ornamented with acanthus leaves above a beaded chaplet. Two more pencil sketches (more carefully drawn than the earlier ones suggesting that they were by a professional draftsman) show gothic revival designs (Figure 3.38). The columns of each are divided into three, as in the earlier single and double-actions, a base (here sitting on ornate pedal boxes), a shaft (each divided by a central boss), and a capital. One is surmounted by a female figure holding a sceptre in her right hand, the left resting upon a harp; the other is topped with a coronet and crown; perhaps Pierre wished to connect his new harp with the monarchy. Both are lavishly decorated with gothic tracery.

⁹⁸ These designs are reproduced with the kind permission of Fonds Gaveau-Érard-Pleyel, deposited by the AXA insurance group at the Association Ad Libitum-Centre International du Pianoforte, Étobon, France.

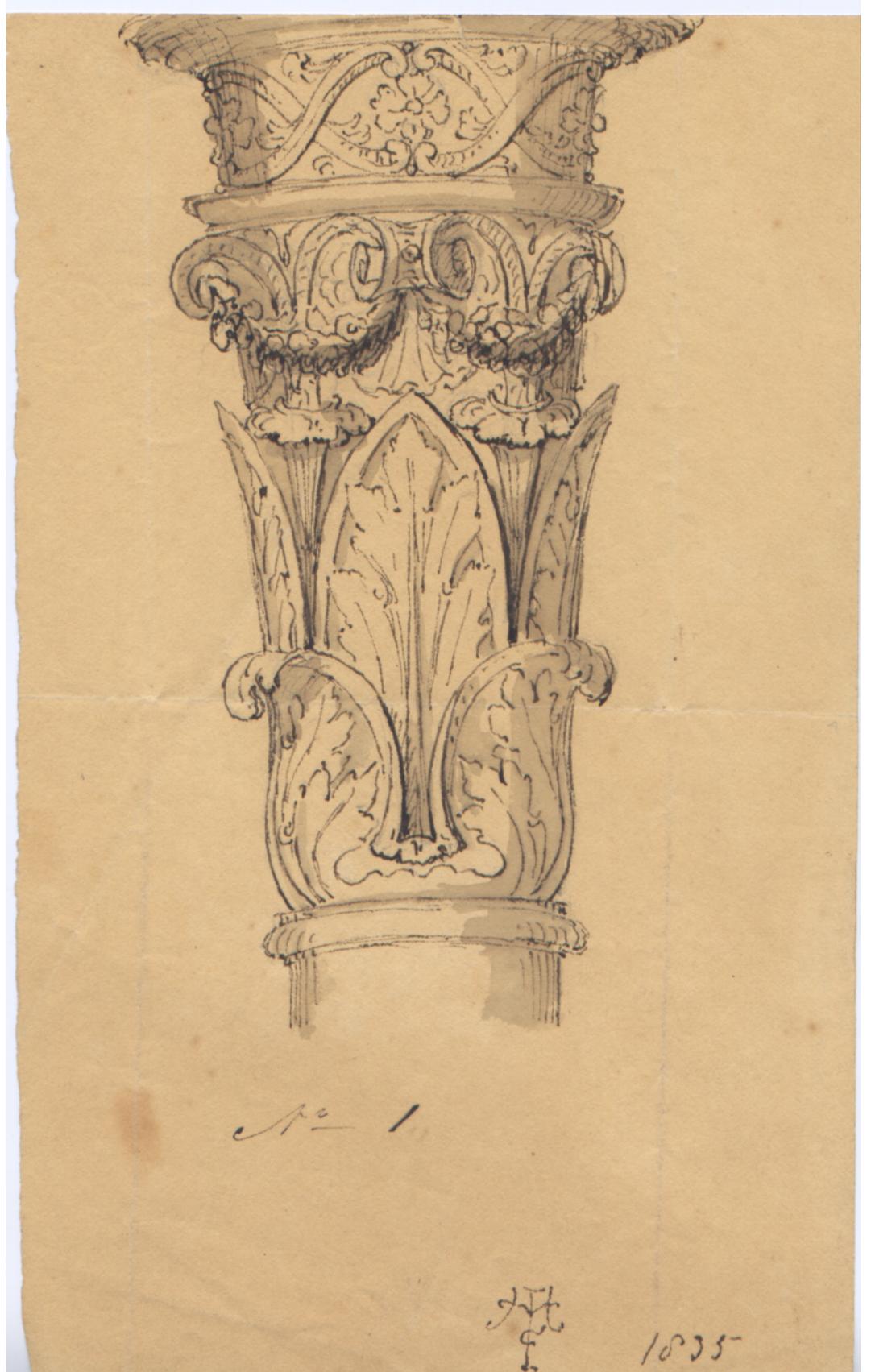


Figure 3.36. Capital no. 1, in the Romanesque style.

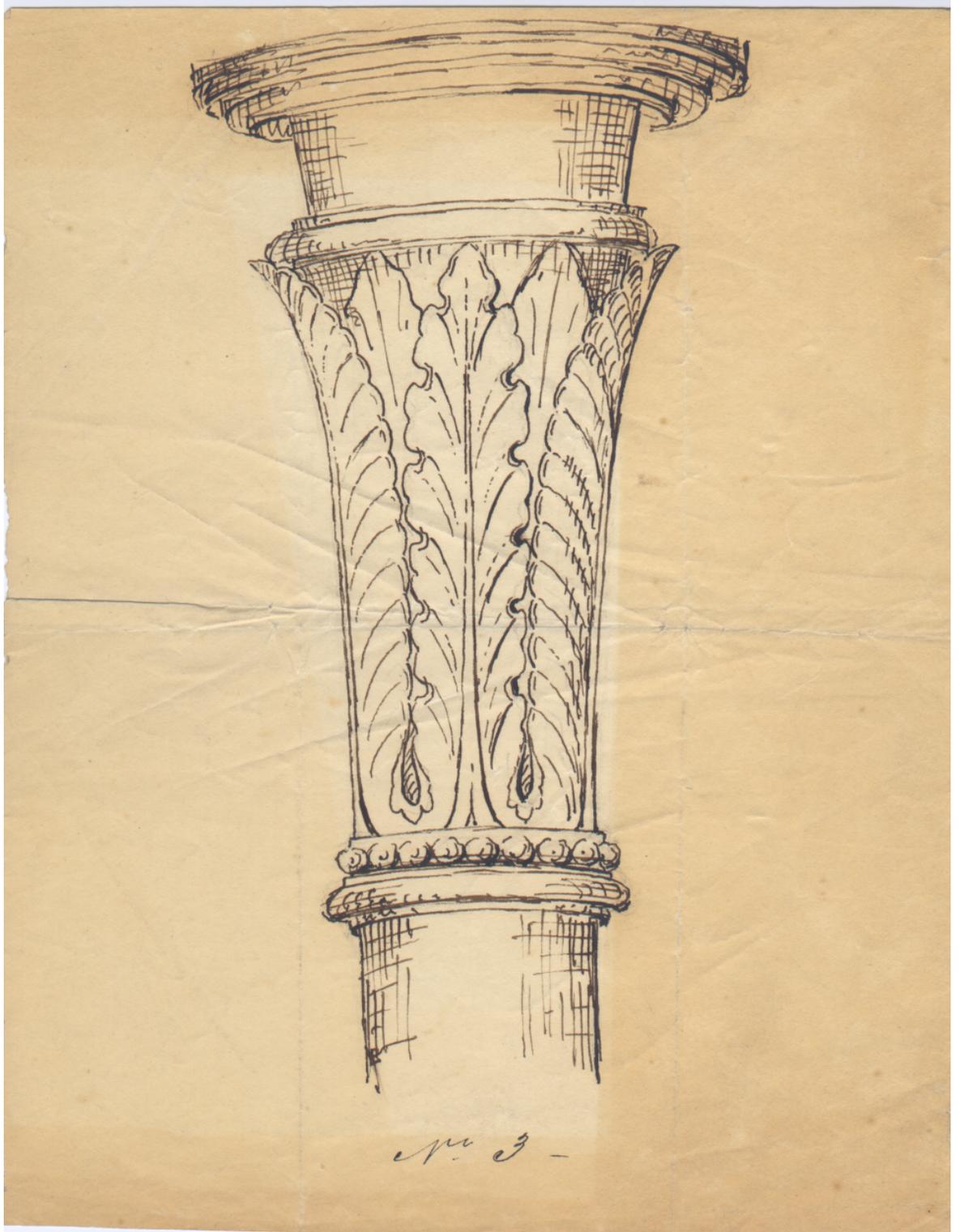


Figure 3.37. Capital no. 3, in the Romanesque style.

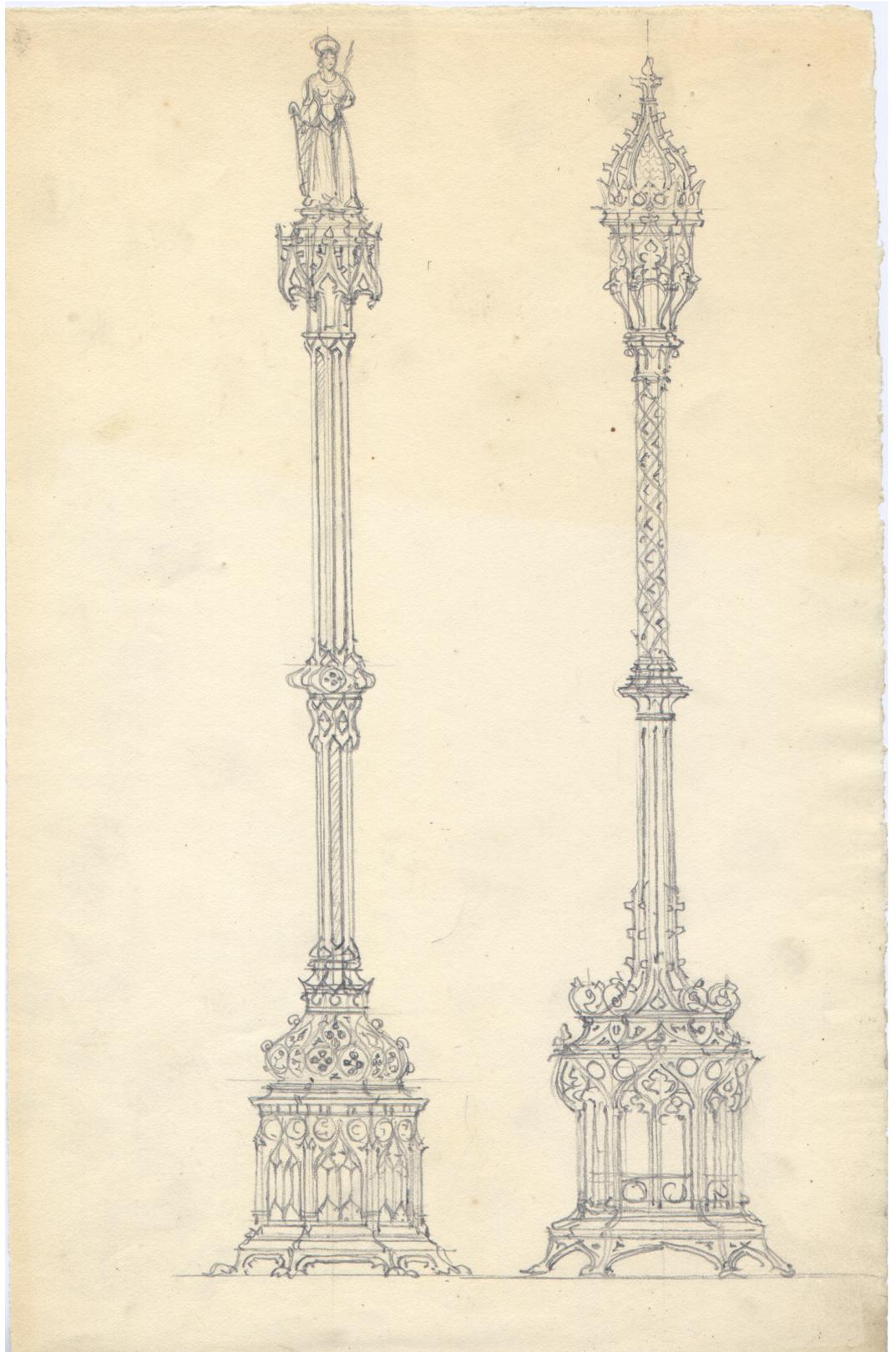


Figure 3.38. Two initial pencil sketches for Pierre Énard's Gothic Harp.

The remaining four pencil and watercolour designs are more developed, and are precisely drawn. One (Figure 3.39) shows a turned column ornamented with gothic tracery. The red and gilt capital is chalice-shaped, and relieved with a niche containing a harp-playing figure; although unclear from this drawing, two more figures must have formed a square frieze, the fourth side housing the neck-column joint. The transition between the capital and the blue and gilt shaft is marked by two bands, interspersed with foliate or vignette ornaments; the shaft is divided horizontally by a raised boss, and vertically into bands above two faceted plinths. The pedal box, again red and gilt, is decorated with gothic window designs, each housing a shield.

Another drawing (Figure 3.40) shows a blue and gilt turned column, the capital again decorated with figures. The shaft is divided in two, the top half decorated with a geometric repetitive gothic design on a blue ground, the lower with gilt floral lozenges sitting upon a gilt plinth. As in the earlier design, the faceted pedal box is ornamented with gothic windows and shield. That the soundboard decoration (blue vignettes and lines) is illustrated (the only drawing to show such decoration) confirms that its designers and makers thought of the decorative aesthetics of the harp in terms of the column and the soundboard. The inclusion of a measurement scale shows that this drawing relates to the later stages of design, and perhaps in relation to a prototype instrument. The pedal box is 1 foot high; the shaft, 4 foot, 4 inches; and the capital 1 foot, 2 inches, bringing the height of the harp to 6 foot, 6 inches - considerably taller than the 5 foot, 9 inch model that was later produced.

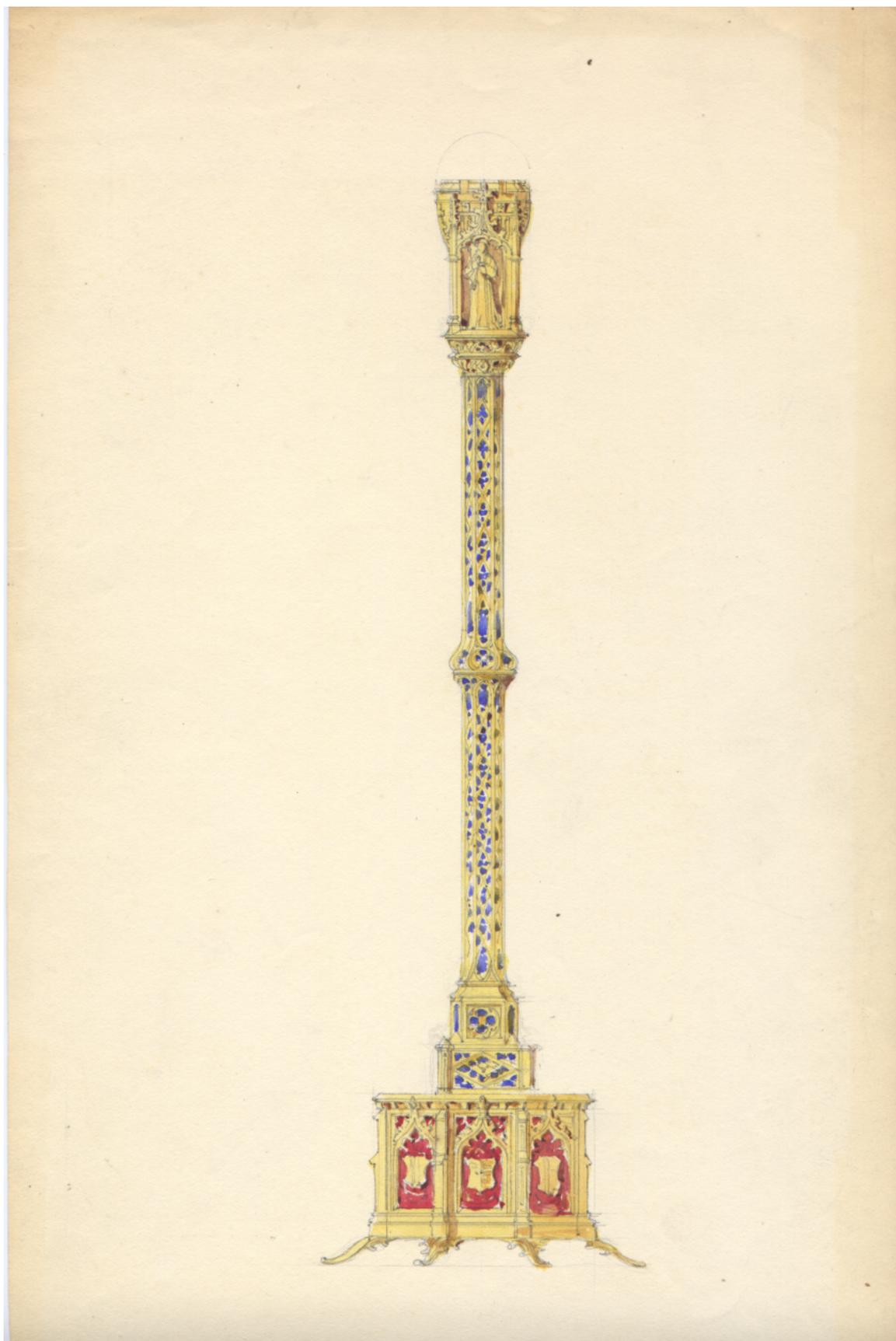


Figure 3.39. Érad's blue, red, and gilt gothic filigree design.

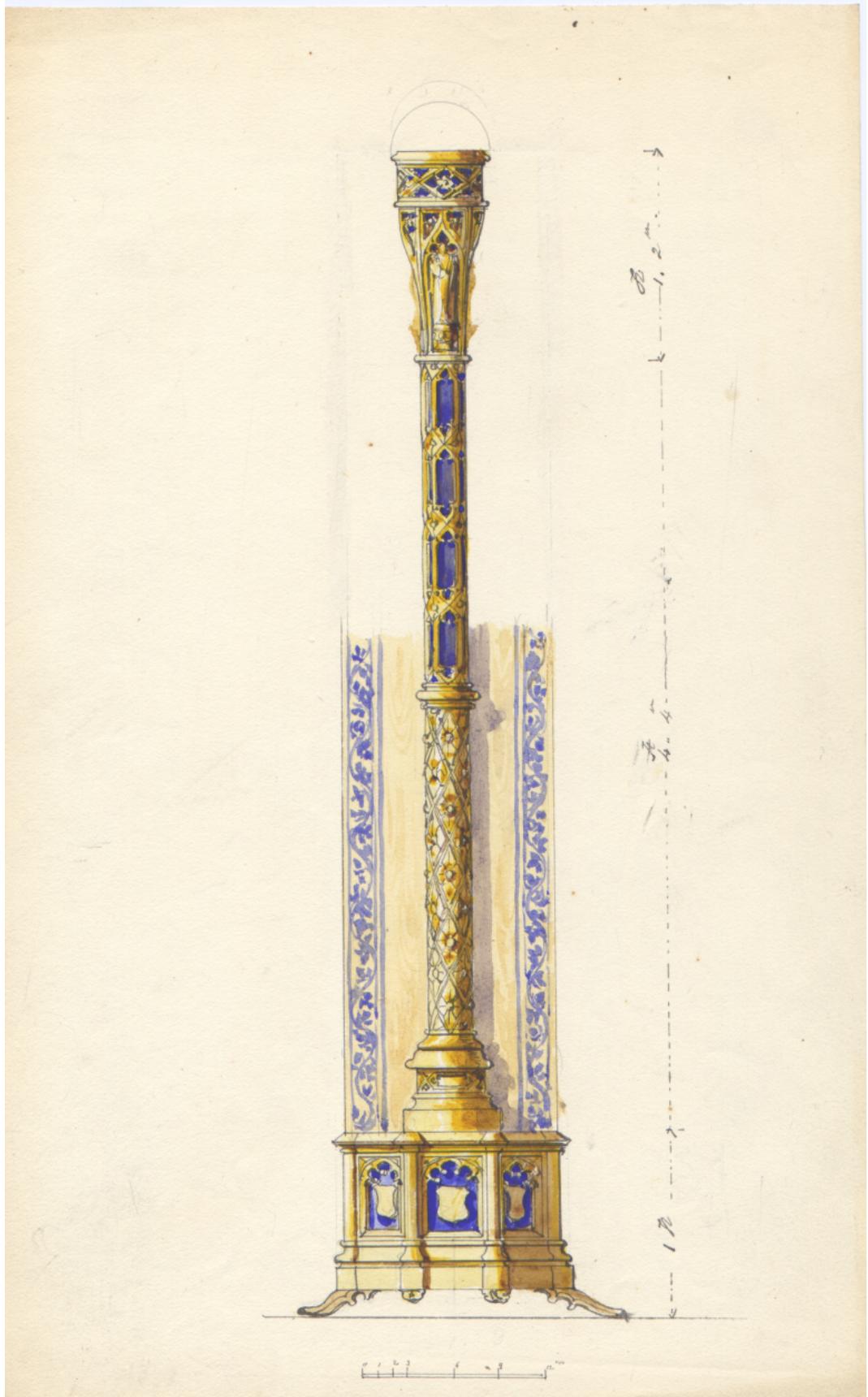


Figure 3.40. Érard's blue and gilt split column gothic design.

The last two designs show the same dimensions as the earlier one. A 6 foot, 6 inch harp would have been difficult to play and move, and explains why the one Pierre eventually made was shorter, the pedal box reduced in height but cutting the pedal notches higher into the bottom chasis. One (Figure 3.41), drawn in pen and ink has a turned column, and the capital, shorter than in other designs, is decorated with quatrefoils with foilage above vignettes. The shaft, topped with acanthus leaves, comprises six poles with a three band moulding in the centre dividing it into two halves. The base of the column is faceted and in two parts, the upper decorated with niches, the lower with more quatrefoils, and the pedal box with gothic panels.

The blue and gilt final design (Figure 3.42) has an hexagonal capital with vignettes and gothic mouldings. Canopies mask the transition to the narrower pentagonal shaft the corners of which are decorated with slim poles with gothic tracery in between. The column is split vertically in half by mouldings, and its base, which like the capital is hexagonal, is ornamented with more tracery. The faceted pedal box is decorated with fleur-de-lis on each face.

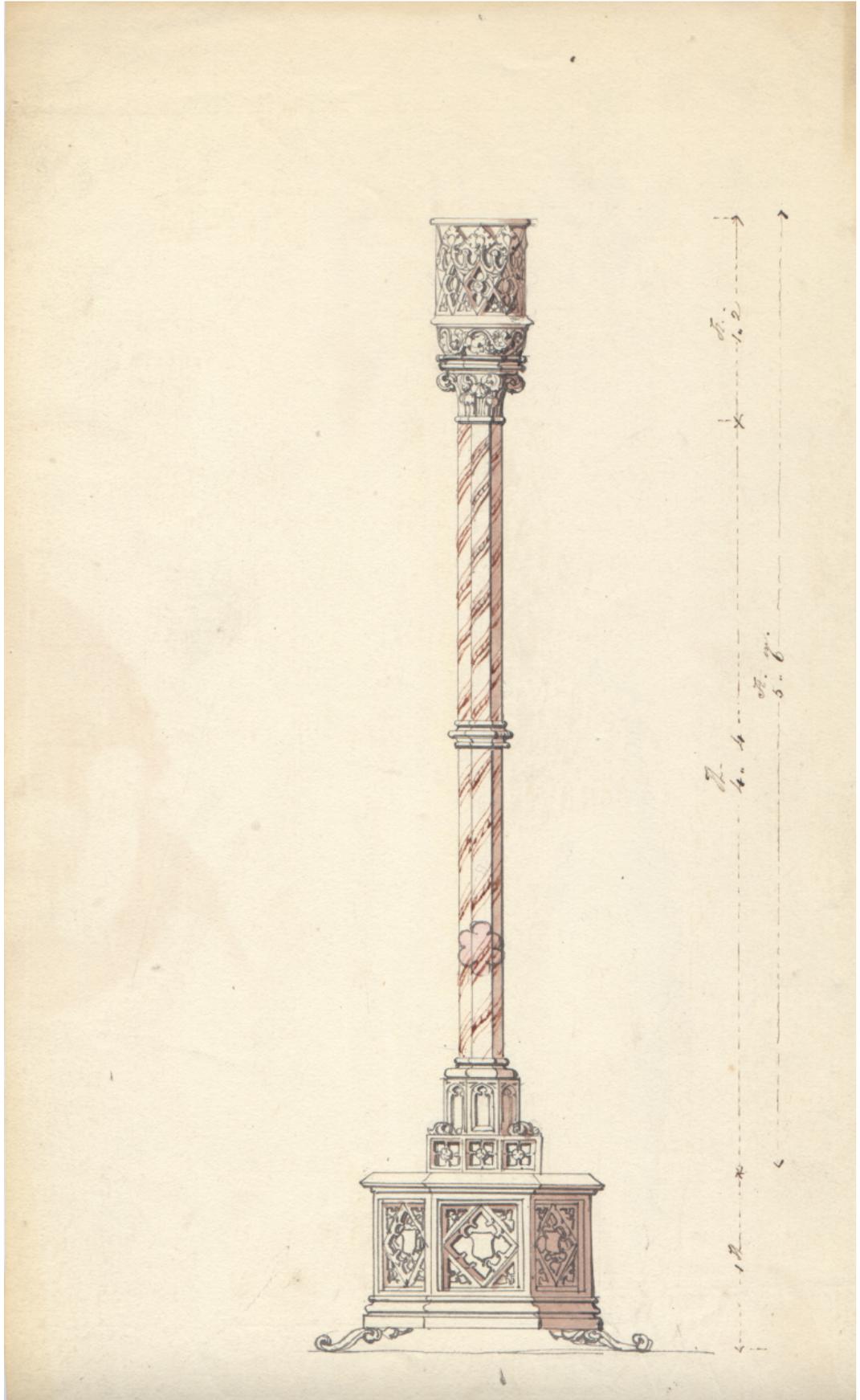


Figure 3.41. Érad's gothic design with six shafts.

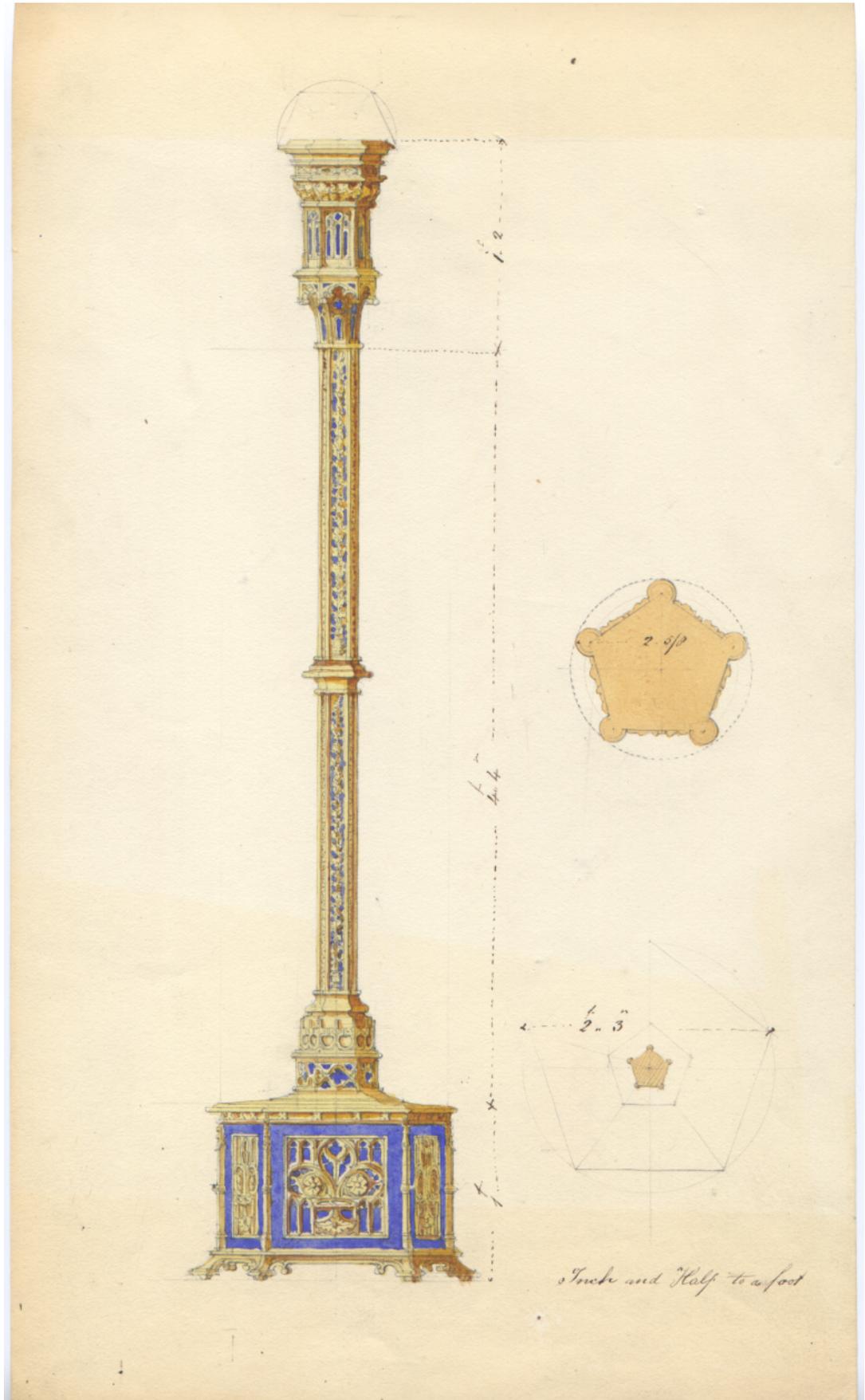


Figure 3.42. Érard's pentagonal gothic design with a turned column.

We do not know whether these drawings were drawn by Pierre Érard himself, an employee, or a hired artist; three, possibly four, different hands are discernable. Although they are dated 1835-c1855 by Centre Sébastien Érard, that one is marked 1835, and that others appear to relate to the design stages of Érard's gothic harp indicates that the range is more limited, perhaps 1835-c1837. It is clear that the decorative design of Pierre Érard's gothic revival harp was carefully planned and the drawings suggest that three initial stages were employed; free-hand pencil sketch, precision pencil sketches, and pencil and watercolour scale drawings. Whilst the finished harp was named the gothic, the choice of style was not clear at the start of the process, and neoclassical ornaments were considered.

The deposition of the drawings with the Axa insurance company in France as part of the Gaveau-Érard-Pleyel archives, following the closure of the Érard company, raises the possibility that this very English of harps (the victorian gothic revival being derived from the distinctively English perpendicular gothic) was in fact designed in France by a French man. It is more likely that once completed in London in around 1837, they were send to the Parisian branch for use or reference, or that following the closure of the English business in the early twentieth century, the designs were repatriated to Paris where they became part of the company's French archive.

It is plausible that the design of earlier Érard harps followed a similar process. I would argue that just as the structure and mechanics of the instrument would have gone through a series of prototypes, the decorative designs went through a range of iterations before the chosen one was arrived at.

3.6: Summary

Classical revival design abounded in London during the second half of the eighteenth century, where, in the early 1790s, it influenced the aesthetics of Sébastien Érard's new single-action harp. Consumers would have placed their instruments in fashionable interiors. Like contemporary architects and furniture makers, Érard adapted the Doric column, the most ornamented and distinctive feature of his instruments. Decorative choices placed Érard's harp at the vanguard of English domestic design, associating it with fashionability, expense, and upper-class consumption. By distancing it from the French harp, whose rococo decoration had become sullied by association with pre-revolutionary France, he established a distinctly English instrument. Continuing use of classical decoration on Érard's 1810 double-action harp maintained a distinctively recognisable style. Having previously been denounced by the French revolutionary authorities, Érard may have aimed to identify himself as a citizen of the new Republic by using the style in which Paris was being rebuilt.

Nomenclatures relating to the classical orders, devised by nineteenth-century architectural writers, serve accurately to describe the harp column, distinguishing between the traits of different makers.

Three harp models dominated production, and hence consumption, in the British Isles: the single-action and double-action (later referred to as Empire and Grecian respectively), and the larger Gothic double-action (named from the outset in relation to its decoration). That they are not, except for the gothic, named by reference to decoration in company documents and contemporary publications indicates that their decorative forms were ubiquitous and accepted as standard. Sketches, drawn during the development of Pierre Érard's gothic harp show that Romanesque decoration, and yet again that of classical-revival, were initially considered. Although the Érards' instruments were widely copied, some makers, including the Erats, experimented with alternative decoration, perhaps in an attempt to differentiate their instruments. The Érards' decorative choices provided effective marketing for the company, and by association, for their competitors.

Chapter 4: Technical design history of the harp

This chapter examines innovation in harp making and design in early nineteenth-century Britain, tracing the transition from the single-action French instrument and its later British counterpart (both limited in their modulatory capacity) to the double-action harp (playable in all keys). Several attributions for the inventor of the pedal harp are considered. The challenges of obtaining a patent are examined, and general trends in their registration at the beginning of the nineteenth century are compared with those of instruments, the harp in particular. Detailed examination of all British harp patents (1794-1845) reveals a complex web of ideas, relationships, and interactions between makers. Developments pertaining to new harp types and accessories, which were not patented, are assessed.

4.1: The mechanisation of the harp

Technical innovations in the eighteenth and early nineteenth centuries resulted in a fundamentally new variant of a long-established instrument that rapidly superseded earlier double and triple-strung European harps. It may be argued that this newly mechanised harp was easier to play than the double and triple-strung ones. It is important to acknowledge that although, with only one rank of strings, the playing technique appears from a modern viewpoint to be simpler than that of instruments with multiple ranks (the Spanish *arpa de dos ordenes*, the Italian *arpa a tre registre*, and Welsh triple harp), and that for players of the earlier hook harp the change in technique was apparently slight, players who made the transition from an older form would have had to learn to modulate using the pedals. Some used the older and newer forms of the instrument concurrently because each offered its own characteristic timbre and effects.

Exactly who first invented the harp with pedals is not known. Zingel attributes the development of the single-action pedal harp to Jacob Hochbrucker of Donauworth in

1720;¹ Parker notes that Simon Hochbrucker, Paul Vetter, and Geog Goepfert have all been named as the inventor;² and Rensch suggests that it was invented sometime before 1720, possibly as early as 1690, and that Hochbrucker was responsible, while Paul Vetter (of Nuremberg) and Johann Hausen (of Weimar) ‘may have been similarly engaged around this time.’³ De Vale and Thym-Hockrein note that Simon Hochbrucker, in the introduction to an undated collection of *Ariettes*, claims that his father Jacob Hochbrucker invented the pedal harp in 1697, but that it was Simon who introduced it to Vienna in 1729 and Brussels in 1739, and it was Goepfert who introduced in Paris in 1749.⁴ It is plausible that more than one inventor was responsible.

The pedal harp first appears to have arrived in London during the 1740s, apparently before its introduction in Paris: in a 1743 advert in the London *Daily Advertiser* (Figure 4.1), Mr Hockbrucker (probably Simon) offered to teach young gentlemen and ladies to play upon a ‘new-invented Pedal Harp’.⁵ Three months later, Hochbrucker, still in London, played a concerto for the harp in a benefit concert for Mr Balicourt.⁶ We do not know whether his instrument was the same as that reportedly invented by his father, or a later development of it.

¹ Hans Joachim Zingel, *Harp Music in the Nineteenth Century*, trans. and ed. by Mark Palkovic (Bloomington: Indiana University Press, 1992), p. 3. Hochbrucker’s name is sometimes anglicised to Hockbrucker; the original spelling is used through-out this thesis.

² Mike Parker, *Child of Pure Harmony* (London, Author, 2005), p. 4.

³ Roslyn Rensch, *Harps and Harpists*, 2nd edition (Bloomington: Indiana University Press, 2007), p. 127.

⁴ Sue Carole DeVale, Nancy Thym-Hochrein, ‘Harp’, *GMO* [accessed 25 October 2015].

⁵ [To all Lovers and Encouragers of Musick], *The Daily Advertiser*, 3745, 19 January 1743.

⁶ [For the Benefit of Mr Balicourt], *The Daily Advertiser*, 3818, 13 April 1743. The concert (costing -/5/- per ticket) at the Devil Tavern near Temple-Bar was due to start at seven o’clock, but was postponed until the following evening due to the ‘particular Desire of Some Persons of Quality’. It included a concerto for harpsichord by Mr Burgess, a new trumpet piece by Mr Snow, and a new concerto (with solo on the German Flute) by Mr Balicourt, probably Simon Balicourt the French flautist and composer.

To all Lovers and Encouragers of MUSICK.
MR. HOCKBRUCKER, lately arriv'd
 from Germany, has brought over with him a new-invented Pedal Harp, and is willing to teach young Gentlemen or Ladies to play thereon; or to entertain the Nobility and Gentry with his Performance, either in full Concerts or Solos, in any Part of the Town; and is hopeful to give Content and Satisfaction to those that employ him.
 Please to enquire for him at the Golden Dove in Exeter-Street, near the Strand.

Figure 4.1. Hochbrucker's announcement of his arrival in London, *The Daily Advertiser* (19 January 1743).

4.2: The difficulties of patent enrollment

Patent registration in Britain during the early nineteenth century was both complicated and expensive; in *A Poor Man's Tale of a Patent*, Dickens parodied the process,⁷ listing thirty-four offices to which John, his protagonist, was required to apply, paying charges at each (totaling £96/7/8) before enrollment was completed (application and payment were actually due at seven offices).

According to Rufus Pollock, a patentee could spend £80 to £120 registering in England, and three times that for protection across England, Scotland and Ireland.⁸ Payments towards patent costs incurred by a harp maker are noted in the Erat ledger. The registration of a patent by Jacob Erat was stopped, apparently before completion, directly following his death. On 21 February 1821 a payment of £50 made to a Mr Wyatt (perhaps a patent attorney) for 'a patent not obtained' with expenses of £14/15/2 'incurred to get the same', a total of £54/15/2.⁹ Presumably had registration taken place, the costs would have been higher.

In 1832 Godson noted that patents could be registered for the protection of 'a substance, or thing made; a machine, or instrument; an improvement, or addition; a

⁷ Charles Dickens, 'A Poor Man's Tale of a Patent,' *Household Words* (London: Bradbury & Evans, 1859), pp. 73-75.

⁸ Rufus Pollock, *The Importance of Patents for Innovation in the Industrial Revolution*, http://rufuspollock.org/papers/patents_and_ir.html [Accessed 27 August 2016].

⁹ EL, p. 9.

combination or arrangement of things already known; a principle, method, or process, carried into practice by tangible means; a chemical discovery; or a foreign invention.¹⁰ A patent should be:

1. New: Not only must the subject be new, in the common acceptance of that word, as to the world in general, but it must not be copied from a scientific work.¹¹
2. Must not have been used by others [...] if several persons about the same time discover the same thing, that he is accounted the inventor who makes the first communication of it to the public.¹² Not only is it required that the subject shall not have been publicly used, but the patent will be void if the inventor had made any use of it himself prior to the time of obtaining his grant.¹³
3. Vendible: The subject of a patent must be vendible matter. It seems reasonable that it should be something capable of being bartered in commerce, — or some substance in contradistinction to any thing that is to be learnt by practice.¹⁴
4. Useful: The number of patents that have been cancelled for not being beneficial to the public is very small; although it is always distinctly left to the jury to say, whether the invention is a material and useful manufacture.¹⁵

In reality, these rules were difficult to enforce. According to Zorina Khan, the complexity of the patent system ‘made it difficult, if not impossible, for inventors outside of London to readily conduct patent searches. Patent specifications were open to public inspection on payment of a fee, but until 1852 they were not officially printed, published or indexed.’¹⁶ Patents could be registered in one of three offices of Chancery so ensuring something was new or not used by others was time consuming and complicated. Consequently, it was possible, at least in theory, for duplication to occur. Defining vendible and useful was also problematic; the patentee must have believed that their object was saleable or that had economic value in order to justify the expense of registration. Their belief, however, could

¹⁰ Richard Godson, *A Practical Treatise on the Law of Patents for Inventions and of Copyright* (London: Saunders and Benning, 1832), p. 58.

¹¹ Godson, p. 60.

¹² Godson, p. 62.

¹³ Godson, p. 64.

¹⁴ Godson, p. 65.

¹⁵ Godson, p. 66.

¹⁶ Zorina Khan, ‘An Economic History of Patent Institutions’, *The Encyclopaedia of Economic and Business History*, 2008. <https://eh.net/encyclopedia/an-economic-history-of-patent-institutions/> [accessed 19 June 2016].

only be tested if their product was available for sale that presumably only occurred after their patent was registered. Similarly, usefulness was subjective. Could Frederick Grosjean's patented crystalline soundboard, devised to improve the acoustics of the harp, really be justified as useful?

The patent specification was written to a standard format. The patentee was named, and their claim as inventor and to sole rights to the invention was asserted. The prayer of the petitioner, requesting exclusive benefit to protection for a set period of time, was followed by a Royal command to all subjects not to interfere with the registrant's patent rights and a mandate to all officers not to molest the patentee in the exercise of his patent rights; a recapitulation of the grant, invention and proviso for the specification followed. Once registered, the patent would be considered void if the registrant was later found to have wrongly claimed the invention or right to the invention, if it interfered with previously registered letters patent, if the invention was not clearly described or enrolled within a calendar month of the letters patent, or if the patent was transferred to more than five persons. Where successful, registration afforded gravitas to a maker, advertising both ingenuity and financial capacity to develop complex and often expensive innovations. It was rarely unsuccessful. Pollock notes that between 1770 and 1799 only 1.5% of patents were contested; if the patentee had the money, registration was a foregone conclusion. Whilst patents were designed to protect intellectual property, their defense in court was expensive and hence rare. Breach of intellectual property rights, however, might be turned to the patentee's advantage; in response to one such attempt to counterfeit his single-action harp mechanism (Figure 4.2), Érard placed a rare advert in *The Morning Chronicle* offering 100 guineas for information leading to conviction of the infringer. Such an act by such a notable figure is further evidence that careful management of a damaging situation could be turned to garner positive publicity:¹⁷

¹⁷ [Érard's new patent harp], *The Morning Chronicle*, 8977, 2 March 1798.

Erard's new Patent Harp, One Hundred Guineas Reward.
 Mr. Sebastian Erard is informed that attempts have been made to counterfeit the mechanism of his new Patent Harp: whoever will bring information against the culpable to No. 18, Great Marlborough Street, shall, on his or their conviction, receive a reward of 100 guineas. Although Mr. Erard is certain that every attempt to imitate must fall infinitely short of the perfection to which he has brought his new Patent Harp, yet he thinks it a duty he owes to himself and the public to punish this base violation of the rights of property.

Figure 4.2 Notice from Érard of a reward for the identification of the counterfeiter of his patent harp mechanism.

It is likely that the perpetrator was Jacob Erat who, established at 100 Wardour Street no later than January of that year, was the only other maker of Érard-style harps in London at that date, and it is difficult to believe that Érard was unaware of his enterprise. Érard must have known that enforcing his rights would have been costly. Although Erat's harp was decoratively similar (protection of decorative designs was not possible before the 1839 *Copyright of Designs Act*),¹⁸ its mechanism was different enough to avoid breaching Érard's patent. On Erat's early harps, the fourchettes (one of Érard's innovations) were replaced by rings, through which the strings passed (Figure 4.3). When a pedal was depressed, the rings of the corresponding note rotated, stopping the strings to raise their pitch by a semitone. To return the action, Erat placed ratchet-adjusted springs below the trains in the machine (in Érard's they were above), making regulation and repair simpler (Figure 4.4). These springs became a standard feature of Erat's single-action harps, although the rings were later replaced by fourchettes. The soundbox and swell shutters were made in a continuous curve (Figure 4.5), while Érard's shutters were flat.

¹⁸ The 1839 Copyright Design Act protected new and original designs including, '[...] modeling, or the casting, or the embossment, or the chasing, or the engraving, or for any other kind of impression or ornament, or any article of manufacture, not being a tissue or textile fabric', this being particularly relevant to the three-dimensional ornaments of the harp. Protection lasted for one year. Whilst some instrument makers did use this legislation to protect their innovations, harp makers did not. *Copyright Design Act of 1839*, statute 2 and 3, Victoria, c. 17, p. 92.

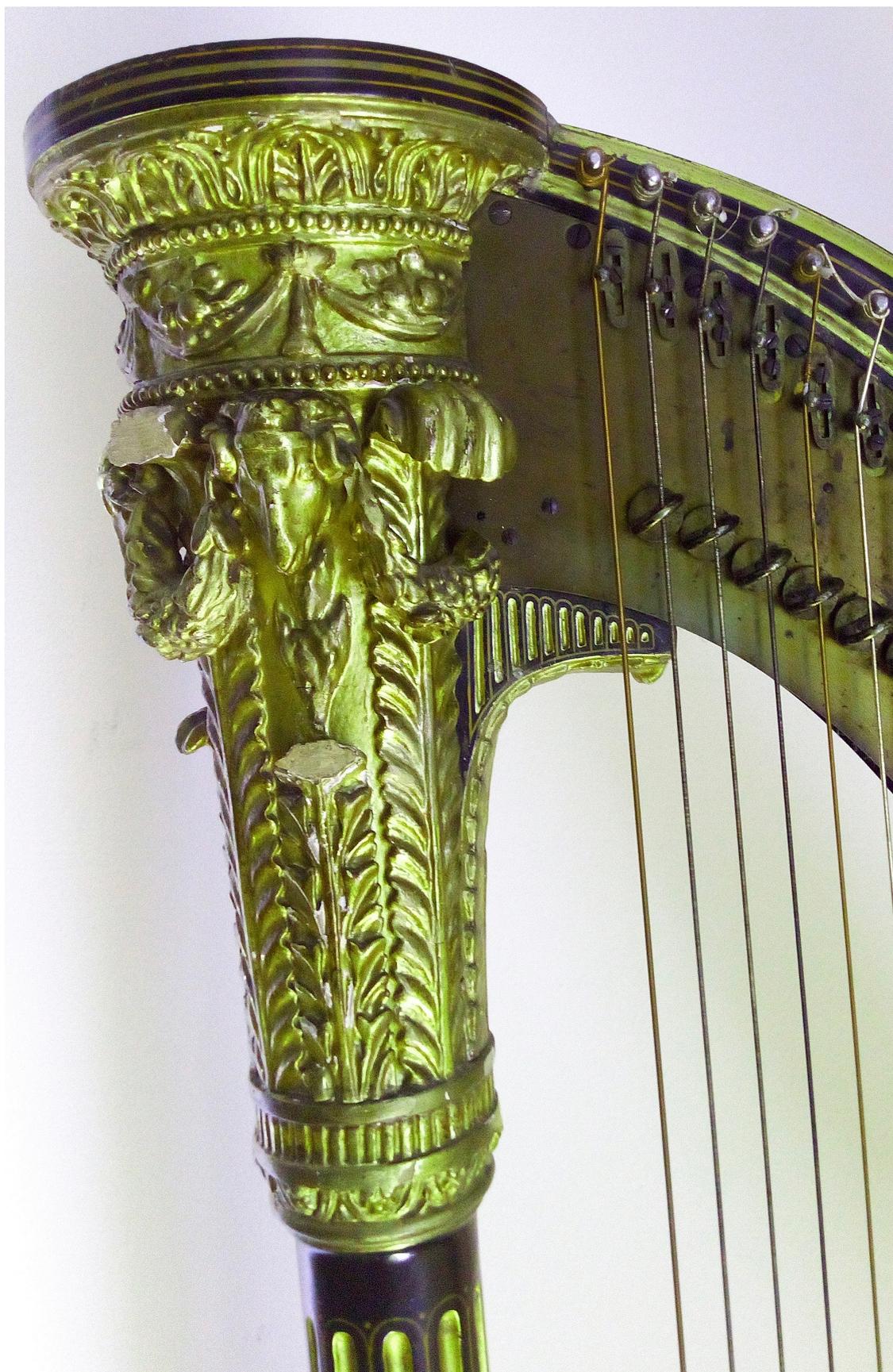


Figure 4.3. Early Erat single-action harp (no. 345) with ring stops.

Photo used with the kind permission of Dr M. C. Cleary (harpist).



Figure 4.4. Machine plate of Erat single-action harp (no. 345), showing adjustable ratchets to tension internal springs. Photo used with the kind permission of Dr. M. C. Cleary.



Figure 4.5. Curved shutters on Erat single-action harp (no. 345).
Photo used with the kind permission of Dr M. C. Cleary.

Whilst Érard publicly claimed that his mechanism had been copied and threatened prosecution, he stopped short of claiming breach of patent. In reality, his 1794 patent afforded little protection. Although his mechanism was new, it copied principles employed by earlier French makers: seven pedals acting upon wires to engage a series of stops against strings, shortening each in proportion to one semitone. Rather than legally challenging Erat, Érard seems to have exploited Erat's imitation in order to gain publicity.

In letters to Sébastien Érard, Pierre Érard revealed his thoughts on other London makers' innovations, his close monitoring of their patent attempts, and his actions to prevent their registration, not only of those he thought infringed their own but also of those that clearly did not. In a letter of 11 November 1814, he recounts his visit to view Edward Dodd's and Frederick Dizi's new harp. Visiting with pretended anonymity, with the purported intention of seeking a harp for his sister, he tried to ascertain information about the harp:

The unknown person: I plan to buy a double-action harp for my sister. I am Parisian and my sister writes to me from Paris that M. Érard's harps have just come out and that the Institute has given them a very favourable report. Before buying one, I would very much like to see his mechanism as well as that made by M. Dizi to compare the two. Is it not here where one can buy M. Dizi's harps?

M. [Thomas] Dodd:¹⁹ Yes sir, but they are not yet ready and we do not know when they will be ready. M. S. Érard never would have made his had it not been for his extreme fondness for inventions.²⁰

Having been told by Dodd that he could only show the harp when his son, the maker, was there, Pierre returned later to find the harp partly strung and apparently unregulated. He attempted to string it but was told by the younger Dodd that only two harps had been made, and that the only tuning key was with Dizi.²¹ In a letter

¹⁹ Thomas Dodd, the bow maker, was the father of Edward Dodd, harp maker.

²⁰ Adelson et al. vol. 2 (2015), pp. 562-564.

²¹ That Dodd did not recognise Pierre Érard, the director of his son's biggest competitor, is surprising. Furthermore that Érard returned later to meet the harp maker himself demonstrates that despite the concentration of numerous companies within a small area, and although the movement of workforce between them was common, Pierre was unknown to them. He must have been sure that he could visit anonymously; to be discovered would surely have risked ridicule.

three years later, Pierre reports that sales are good, necessitating expansion of the workforce. He had hired a trained craftsman from Dodd who is likely to have worked on Dizi's perpendicular harp. Pierre comments:

Dizi and Dodd are fighting constantly. Their harps are all sent back within two or three days. It seems they have abandoned their beautiful patent, but Dizi is preparing another masterpiece. I went yesterday to the patent office to find out where he stands with his new patent. He continues his actions, but it will not be released until April. It is more likely that they grope about for two or three years, with their new discovery, and after spending much money, they will not be any further along than they are today. From what I have heard, Dodd advanced the money and now finds himself to be the butt of the joke!²²

Pierre writes to Sébastien to inform him of Erat's 1813 patent reporting that the first movement is copied from their 1794 patent, and the second from Cousineau.²³ In a later letter he says that Erat had sold some of his new double-action harps and, despite saying that he had yet to examine one, reports that the pedals do not work well.²⁴

As the harp industry in London grew, competition became a driving force of innovation. Makers monitored, bought, copied and modified others' ideas and patents. By 1810 a highly skilled, specialised workforce was established and it is likely that the transmission and proliferation of ideas between companies was promoted by the movement of craftsmen as well as by industrial espionage. Whilst most patents did not result in a production instrument, a few set trends.

²² 16 December 1817, in Adelson et al. vol. 2 (2015), pp. 672-673.

²³ Adelson et al. vol. 2 (2015), pp. 578-579.

²⁴ Adelson et al. vol. 2 (2015), p. 607.

4.3: Patent trends

In Britain, industrialisation drove innovation in business. According to Iorwerth Prothero, profit-making entrepreneurs took control of production during the early nineteenth century resulting in purpose built factories, labour saving machines, and job specialisation.²⁵

Despite the challenges of revolution in and war with France (the later resulting in the post-Napoleonic depression), and the stock market crash of 1825, the rate of patent enrollment increased throughout the nineteenth century. Between 1790 and 1799, 647 patents were successfully registered in Britain, increasing to 924 between 1800 and 1809, 1,136 from 1810 to 1819, 1,451 in the 1820s, 2,452 in the 1830s, and 4,581 in the 1840s.

The French patent system was simpler and cheaper than its British counterpart. It allowed the patentee to register a manufactured article or method without stating what was new about it; a caveat was printed on each specification: 'The government, in granting a patent without prior examination, does not in any manner guarantee either the priority, merit or success of an invention.' In France there were initially fewer registrations than in Britain: 112 between 1790 and 1799, 511 between 1800 and 1809, and 1,041 between 1810 and 1819, after which they increased more rapidly, exceeding those registered in the Britain: 2,685 in the 1820s, 5,932 in the 1830s, and 18,223 in the 1840s (Figure 4.6).²⁶

Musical instrument patent registration in Britain followed an upward trend, though a period of stagnation between 1825 and 1835 marks the depression following the 1825 bank crash. Fifteen were registered during the 1790s, 25 between 1800 and 1809, 30 in the following decade, 33 in the 1820s, 29 in the 1830s, and 48 in the 1840s (Figure 4.7).

²⁵ Iorwerth Prothero, *Artisans and Politics in Early Nineteenth-Century London* (London: Routledge, 2013), p.1.

²⁶ Zorina Khan (2008).

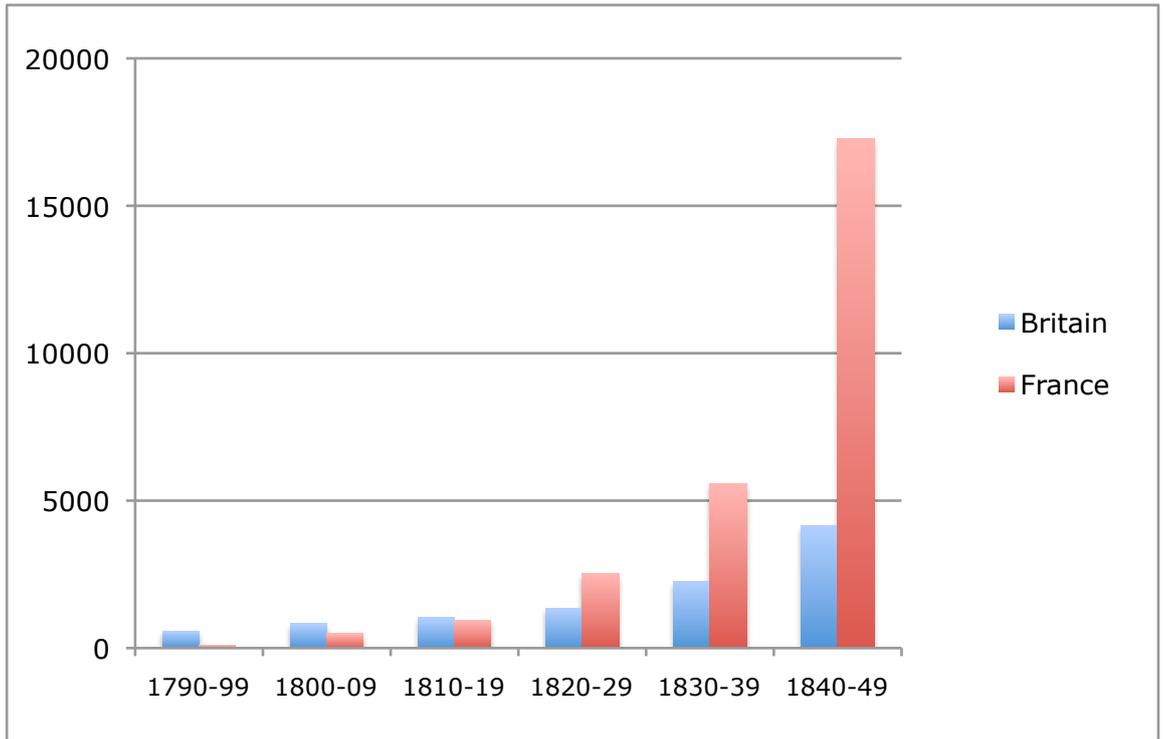


Figure 4.6 Patent Enrollments in England and France (1790-1849).

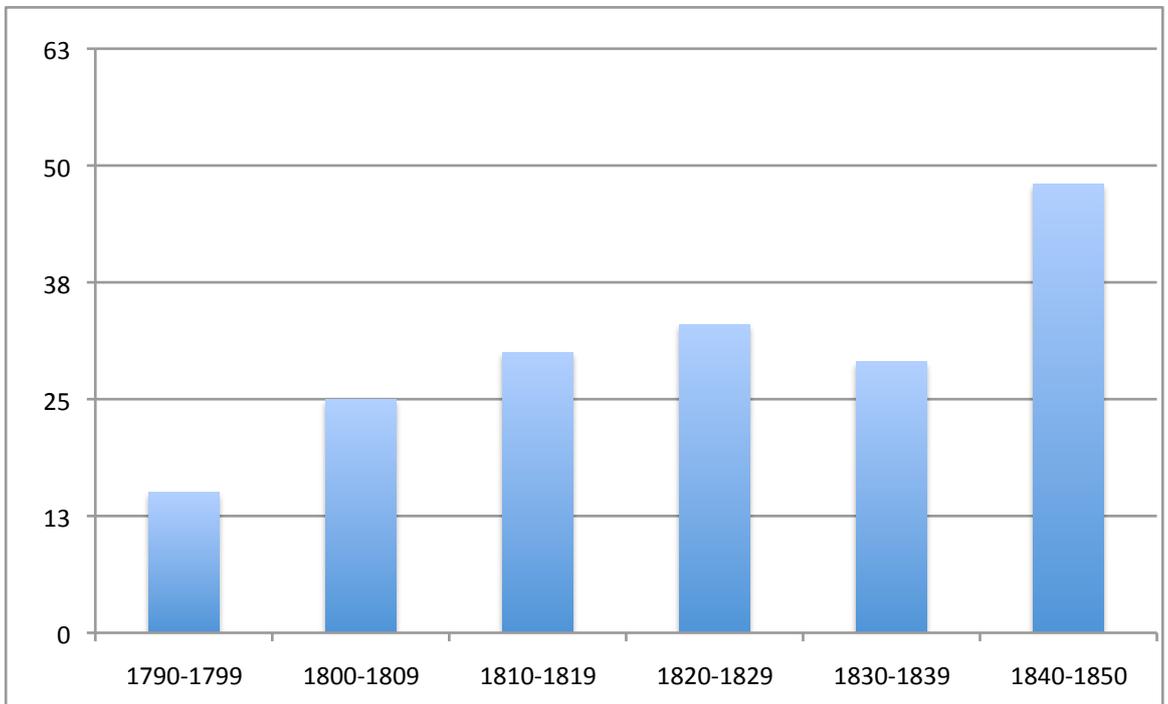


Figure 4.7. Musical instrument patents by decade (1790-1849).

Only one patent was registered for the harp before 1799 rising to eight between 1800 and 1809, the peak period of registrations for the instrument; five were registered between 1810 and 1819, four in the 1820s, three in the 1830s, falling to two in the 1840s. Whilst the number of patent registrations for instruments as a whole continued to grow, those for the harp ceased abruptly in 1845; the bankruptcy, business closure, and emigration of a number of makers indicates the instrument was less popular in England than it had been during the early years of the century.²⁷ Between 1790 and 1849, patents were registered for nineteen instruments or instrument groups in Britain. Despite their limited number and a relatively short period of innovation, harp patents constitute 12% of all instrument patents, second only to the pianoforte (52.8%), and followed by the flute (7.8%), generically termed 'wind instruments' (4.4%), and keyboard instruments (also a group) and the organ (3.3% each) (Figure 4.8).

Comparison of the number of harp and pianoforte patents with those for all instruments shows that although registrations for the harp declined and stopped (indicative of maker and player satisfaction and a decline in consumption), those for the pianoforte (despite also falling during the bank crash) rose considerably between 1790 and 1849, their sheer quantity setting the overall trend for all instruments (Figure 4.9).

²⁷ Edward Dodd was declared bankrupt on 2 February 1838 (*London Gazette*, issue 19,586, 2 February 1838, p. 244; the partnership between John Fucs Brown and James Delveau was dissolved on 7 June 1841 (*London Gazette*, 19,986, 8 June 1841, p. 1476). Brown later emigrated to America where he continued to make harps; Alexander Blazdell was declared bankrupt on 26 December 1843 (*London Gazette*, 20,303, 9 January 1844, p. 84) and was residing in the Fleet Prison on 21 January 1845 (*London Gazette*, 20,434, 21 January 1845, p. 203); and Thomas Martin succeeded to the business of Johann Andreas Stumpff upon his death in 1847.

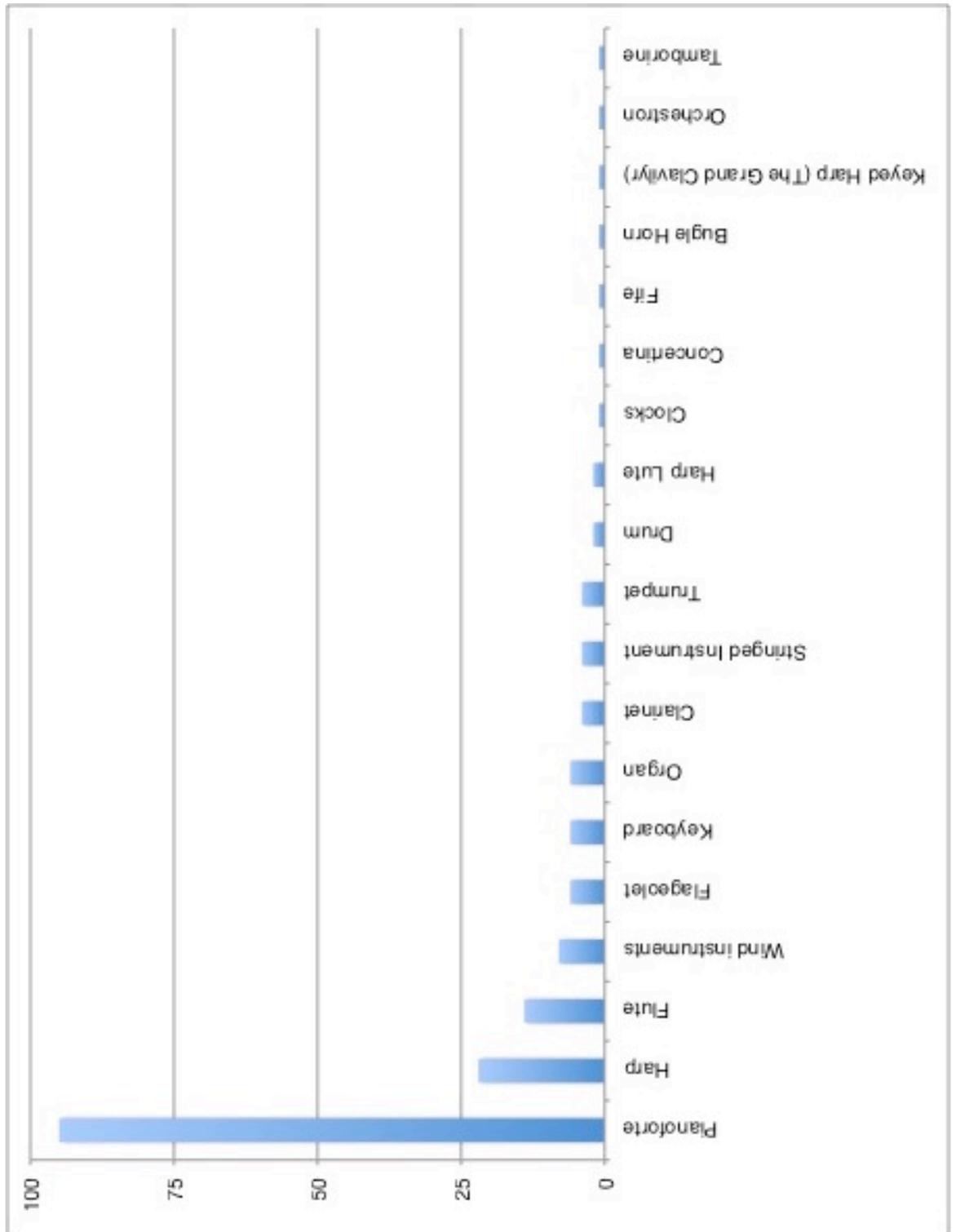


Figure 4.8. Musical instrument patent enrollments by type (1790-1850).

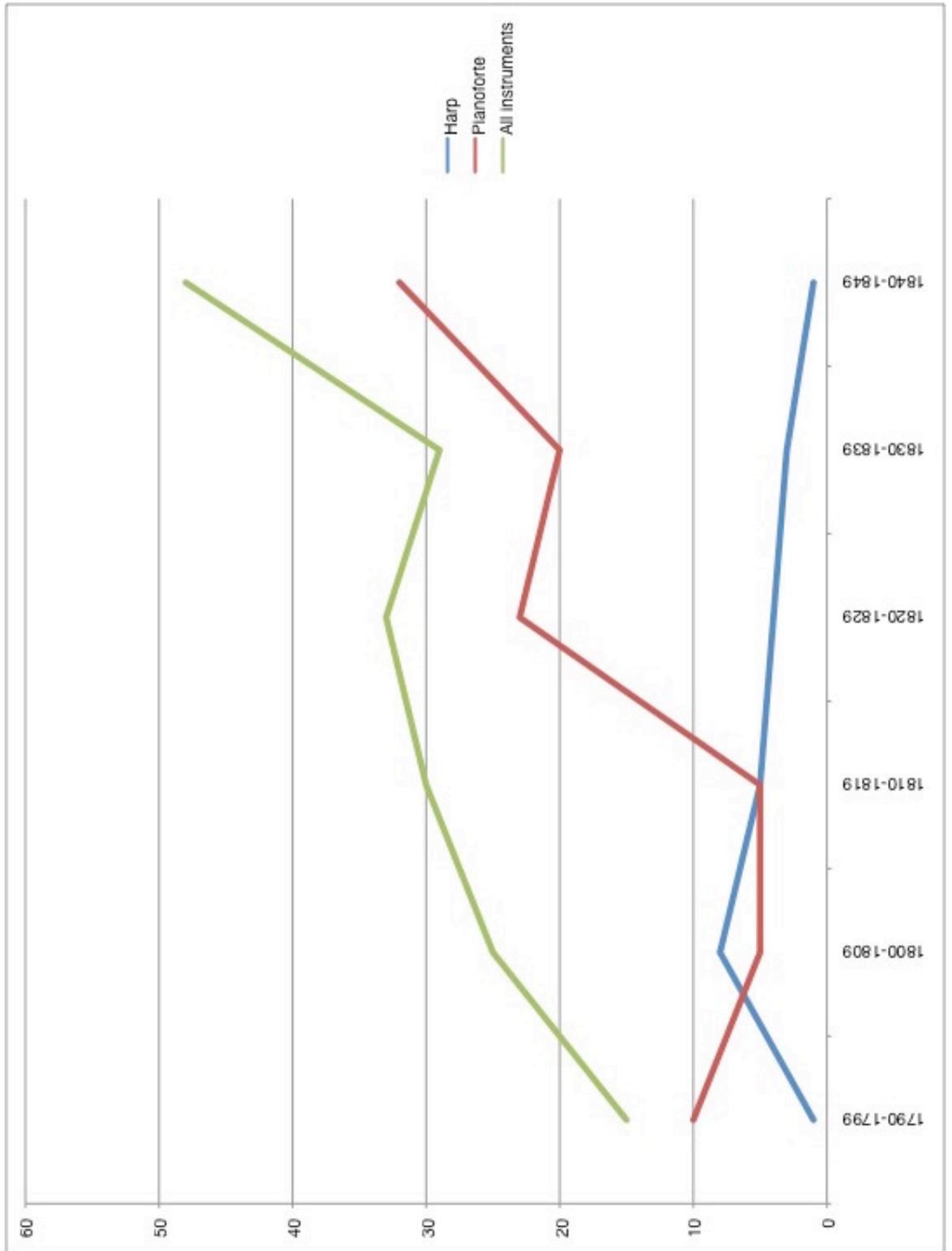


Figure 4.9. Number of patents registered for the Harp in Britain compared to the pianoforte and total instrument registrations (1790-1849).

4.4: Harp patents 1794-1845

Between 1794 and 1845 17 makers and inventors registered 23 patents for the harp (Appendix 4.1). Four schools of innovation emerged: those concerned with the improvement of the semitone mechanism; those that addressed perceived structural weaknesses; those that sought to alter tone; those for adapting tuning; and those that enabled the playing of new musical effects. This section examines the development of the harp through these patents, and their drawings.²⁸

4.4.1: Sébastien Érard's patent, no. 2016, 17 October 1794

Certain improvements in the construction of harps

Sébastien Érard registered the first British patent for the harp on 17 October 1794 beginning a British domination in the development of the instrument.²⁹ This harp departed from French models on which the mechanism was housed in the wooden neck.³⁰ The patent specification describes 'two plates of copper fixed to the sides of the arm between which the mechanism which forms the semitones is placed.' A new stopping device, illustrated in the patent drawing (Figure 4.10), was activated by a pedal that communicated movement via a pedal rod housed in the column to the trains of the mechanism turning a forked disc (Érard's *fourchette*) on the outside of the plate. This was one of Érard's most important innovations: the fork raised the pitch of a string by a semitone without laterally displacing it. Each pedal corresponded to a diatonic note of the musical scale and controlled all forks of that note. The pedals, labelled D, C, B to the players left, and E, F, G, A to the players right, were arranged within a pedestal, commonly known as the pedal box.

²⁸ The selected patent drawings used to illustrate the development of the harp have been chosen due either to the introduction of a new concept, or in connection with important developments. Those not included can be seen in Appendix 4.

²⁹ Sébastien Érard, *Certain Improvements in the harp and pianoforte both large and small*, no. 2016, (London: HMSO, 1794).

³⁰ Érard patented this harp in France in 1798. Érard frères, *Harpe perfectionnée à pédales et à renforcement*, no. 301 (Paris: Érard, 1798).

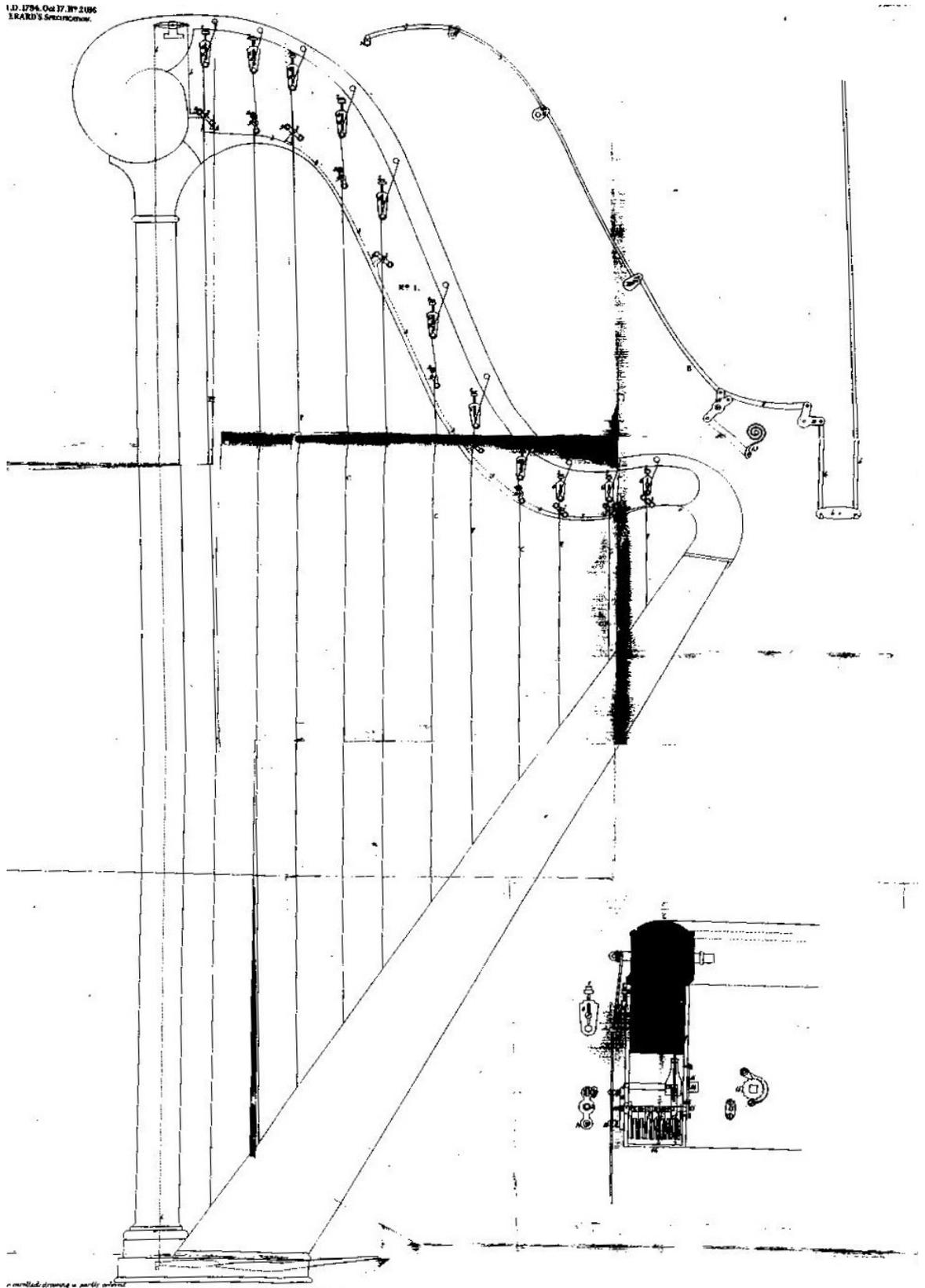


Figure 4.10. Sébastien Érard's 1794 patent drawing.

In order to regulate the semitones, Érard made the forks adjustable by means of a screw attaching each to a pivot. Each could be loosened, repositioned and tightened to correctly regulate the harp. In his specification he described adjustable bridge pins: ‘supporters or stops [...] which may be raised or lowered by means of a screw [...] for fixing the semitones when once regulated’ that enabled further tuning of the semitone. A writer in *The Quarterly Musical Magazine* noted that ‘By these arrangements Mr Érard was enabled to employ stouter strings, which has greatly improved the general tone.’³¹ This indicates that the tone of this harp was richer and fuller than its French predecessors. Érard’s new harp was publicised by contemporary harpists and teachers. In August 1796 a report in *The Star* announced contemporary celebrity endorsement of Érard’s new harp by Anne-Marie Krumpholtz (1755–1824), one of the most renowned harpists of her day (Figure 4.11).³²

The new patent Pedal Harp, invented by SEBASTIAN ERARD, will now be introduced into all the most fashionable circles, especially as the celebrated Madam KRUMPHOLTZ, in her exquisite performances on that instrument, prefers those of his manufacture, to all others of the kind that have yet been made.

Figure 4.11. Madame Krumpholtz performing on Érard’s single-action harp, *The Star* (10 August 1796).

Such approval was newsworthy and sufficient to create interest in and sales of Érard’s harp. A report in February 1797 states that Madame Krumpholtz had abandoned her ‘favorite harp,’ presumably a French single-action, in favour of Érard’s single action. It praises his invention reporting that Madame Krumpholtz

³¹ *The Quarterly Musical Magazine*, 5, London, 1823, p. 102.

³² [The new patent Pedal Harp], *The Star*, 2493, 10 August 1796.

found it 'infinitely preferable to all others in point of harmony and mechanical perfection' (Figure 4.12).³³

It is impossible to bestow sufficient praise on the extraordinary talents which the celebrated Madam de KRUMHOLTZ displayed on her long-wished for re-appearance at the Opera on Monday last. It is to be hoped that this darling of APOLLO will, for the future, be less sparing of the superior gift she has received from nature, and that she will gratify the musical circles more frequently with her performance. The celestial melody which flows from her Harp, will endear that sublime instrument still more, not only to the amiable sex, to whose graces and elegance it seems peculiarly adapted, but to all the true Amateurs of Music. She has abandoned her favourite Harp, for the famous Patent Harp, invented and made by Mr. SIEB. ERARD, in London, which she finds infinitely preferable to all others in point of harmony and mechanical perfection.

Figure 4.12. Madame Krumpholtz abandons 'her favourite harp' (11 February 1797).

According to Grainger, Jean-Baptiste Krumpholtz, a Czech composer and harpist, influenced Érard's manufacturing decisions:

A celebrated harpist Krumpholtz, begged (Sébastien) Érard to give his mind to the subject. In a short time Érard told him a harp could be constructed on a perfectly new principle. Meanwhile Krumpholtz had associated himself with an opposition harp maker of the old school, and perceiving that his partner would be at once ruined if Érard's new harp was introduced, he went to the latter and begged him to desist. It is certainly one of the oddest facts in the history of inventions that Érard, touched by the distress of Krumpholtz, abandoned his brilliant scheme and quietly laid aside as lumber about 80 harps he was constructing on his new principal.³⁴

³³ [Madame Krumpholtz's abandonment of the French harp], *The Star*, 2649, 11 February 1797.

³⁴ A. Grainger, *A Genius of France. A short sketch of the famous inventor, Sébastien Érard* (Paris: Maison Érard, 1924), pp. 2-3.

Érard's apparent altruism is implausible. Krumpholtz's suicide in February 1790 preceded Érard's relocation to London and subsequent registration of his single-action patent. He was working on his new single-action around this time but is unlikely to have desisted in order to appease a friend or preserve the business of a competitor.³⁵ Perhaps the hiatus in production was caused by a sharp decline in income from piano sales corresponding to the French Revolution. Ann Griffiths notes that the French sales registers for 1788 and 1789 record 254 and 410 pianos respectively, followed by a decline of over 80% to 76 in 1790.³⁶

Once patented and put into production, Érard's single-action harp quickly grew in popularity and was considered to be an improvement on those by French makers. The strings sounded as clearly when the action was engaged as when the strings were open. This advancement was advertised as the pinnacle of single-action technology. Pierre Érard later wrote, '[...] the French harps and Sébastien Érard's compared might be said to have that striking difference between each other, in point of tone, which exists between a grand pianoforte and a harpsichord.'³⁷ In a musical world transitioning from harpsichord to pianoforte it is not surprising that makers of the harp sought similar changes in tonality. This harp was the first step towards the development of the double-action instruments.

A House of Commons Select Committee report (1829), which represents an attempt to rationalise patent registration, minutes the questioning of Mark Isambard Brunel (1769–1849).³⁸ Brunel, when asked 'whether it would be advantageous to have a commission of persons appointed to examine the specifications?' responded:

³⁵ Érard's first single-action harp (c1786-1791) survives in the collection of the Centre Sébastien Érard. Like that of its French counterparts (and in distinction from that patented by Érard in 1794) its mechanism is housed inside the wooden neck, and its back is staved.

<http://www.SébastienÉrard.org/en/?m=instruments&d=d200915> [Accessed 24 August 2016].

³⁶ Ann Griffiths and Richard Macnutt, 'Érard,' *GMO* [Accessed 31 May 2013].

³⁷ Pierre Érard, *The Harp in its Present Improved State Compared with the Original Pedal Harp*. (London: Érard, 1821), p. 6.

³⁸ Mark Isambard Brunel, the French-born engineer and inventor, was the father of Isambard Kingdom Brunel.

I think it would be a very good thing; I should imagine that it would be an object for that commission to receive a rough outline of the invention, and to give the inventor a year or two to improve his machine, and then he may come again to the commission, and deliver a specification with all the improvements he has made during that time; that, I think, would be desirable.

On whether it was appropriate that the specification of ‘anything old’ in a patent might result in rejection he answered, ‘It is a thing which nobody can guard against, because no inventor can know the thousands of patents that have preceded.’³⁹ Érard’s 1794 patent, an example of the registration of ‘anything old’, had not been examined by a committee of persons nor a tribunal of ‘scientific men’. Although the fourchette was new, in using pedals to communicate movement to a mechanism in order to stop strings his action was otherwise broadly similar to that of the French harp.

Later writers considered the single-action harp musically limited, a modern misunderstanding of an important instrument that was widely adopted and written for.⁴⁰ Indeed, The Érards continued to sell single-actions as late as 1821, ten years after the introduction of their double-action;⁴¹ the Erats were still making them in June 1824;⁴² and a catalogue from Grosjean’s harp manufactory (c1836-40) shows that they were still being made then.⁴³ Naderman, Chevalier of the Legion of Honour and Professor at the Paris Conservatoire, was fully acquainted with the double movement harp, but preferred those with the single-action. In his *Method* (c1832) he states that ‘the single movement harp suffices for everything, can pass into every imaginable key, and can be played in every possible modulation.’⁴⁴ It may be that

³⁹ Report from the Select Committee on the Law Relative to Patents for Inventions (London: House of Commons, 1829), pp. 38-40.

⁴⁰ Wenonah Milton Govea, *Nineteenth- and Twentieth-century Harpists: A Bio-critical Sourcebook* (London: Greenwood, 1995), p. 207, writes: ‘[...] the repertoire of the double-action pedal harp far outshone that of the single-action, was harmonically more pleasing, and yet retained all the virtuosic possibilities of the single-action, a somewhat subject and modern perspective.

⁴¹ Single-action, no. 2796, 20 October 1821. RCM. GB 1249 Érard, Érard Ledgers, p. 143.

⁴² Single-action, no. 1469, 3 March 1824. EL, p. 511.

⁴³ ‘Grosjean Catalogue’, Bodleian Library, Oxford, John Johnson Collection: Musical Instruments, 3 (28).

⁴⁴ Francois Joseph Naderman, *École ou Méthod Raisonnée pour la Harpe* (Paris: Naderman, c1832), iv.

Naderman was not strictly impartial in his judgement, but biased by a desire to sell his single action harps.

Although Joseph George Morley (1894) suggests that the single-action was 'despised' by contemporary harpists, he acknowledged its importance: 'This [...] very serviceable instrument had been used in his or her early days by nearly every one of the celebrated harpists, including Messrs. Naderman, Bochsa, Oberthur, Wright, and Miss Clara Eissler.'⁴⁵ He adds that Madame de Genlis, governess to the French royal family, exponent of the harp, and enthusiastic dilettante, claimed to have played the most difficult harpsichord pieces on the single action when she was only fourteen years old. In conclusion he writes:

These statements, made by responsible musicians in prominent public positions, even if not accepted as incontrovertible truths, plainly show that the simple movement [single action] harp is neither useless nor despicable; but that it is, on the contrary, capable of giving an immense amount of pleasure to the musician or student.

Morley's comments suggest there was more to Naderman's passion for the single-action; there was certainly a large repertoire for it. As Professor of harp at the Paris Conservatoire from a harp making family, Naderman would have been interested in the development of the harp in London. Like Cousineau, his Parisian competitor, Naderman also had the capacity to develop a double action instrument but clearly chose not to.

⁴⁵ J. George Morley, *Price List of Harps* (London: Morley, 1894), p. 7.

4.4.2: George Fröschle's patent, no. 2387, 3 May 1800

Two several improvements in the pedal harp.

In May 1800 George Fröschle, a pianoforte maker of Great Pulteney Street, London registered the second and final English patent for single-action harp.⁴⁶

Two several improvements in the pedal harp; by one of which improvements, when the pedals are used for the purpose of producing semitones, and when the strings on which the semitones are produced remain in their original position when played upon by the fingers even with the other strings, the semitones are better defined than they had hitherto been in pedal harps; and by the other of which the tone of the whole instrument is at pleasure rendered soft, and at pleasure restored to its original sound, in another manner and with better effect than has ever then yet been produced.

Fröschle's drawing (Appendix 4.2) shows levers which, when activated by the pedals, stopped and shortened the string to achieved a semitone. His damper, of cloth or leather, was fitted within the mechanism and could be engaged with the strings at will. Érard dominated the manufacture and sale of harps in the British Isles. That Fröschle was prepared to spend time and money developing another instrument indicates that he felt he could compete. His damper mechanism for the harps is an example of parallel development.

The next three patents, registered in 1801 and 1802, all pertain to instruments on which the tension of the strings was raised by turning the tuning pins to achieve semitones.

⁴⁶ George Fröschle, *Two several improvements in the pedal harp*, no. 2387 (London: HMSO, 1800).

4.4.3: Sébastien Érard's patent, no. 2502, 16 May 1801

Certain improvements in the construction of harps and pianofortes, both large and small

In June 1801 Sébastien Érard registered his first UK patent for a harp capable of modulating into every practicable scale of music;⁴⁷ this, in affect, was the first English double-action harp. The patent specification describes a round metallic pin corresponding to each string that is turned by the depression of a pedal causing the pitch of the string to be raised by two successive semitones (see patent drawing in Appendix 4.3). The movement was communicated from the pedals via the pedal rods to the mechanism housed as before between two metal plates. This motion turned a lantern pinion that drove a wheel, enabling the tuning pin to be turned through the appropriate number of degrees to achieve one or two semitones. Rather than one pedal notch in the pedal box, this instrument had two. The pitch of each string could be rendered from flat to natural to sharp depending upon which notch the pedal was positioned in. This idea was not new. George Cousineau, Jacques, and Michel-Joseph Ruelle registered a French patent for their *harpe à chevilles mécaniques* (on which the tuning pins were turned by pedal-activated ratchets) only two years earlier.⁴⁸ Again Érard was taking advantage of technological advances pioneered by overseas makers. Érard made two further improvements. Firstly he re-housed the returning springs below the trains rather than above, in imitation of single actions by Jacob Erat. This made access for repair easier. He also improved the method of opening and shutting the swell with firmer motion and uniformity than before. In order to indicate the key into which the harp had been modulated, Érard fitted the tuning pins with arrows that indicated whether it had been set flat, natural or sharp.

⁴⁷ Sébastien Érard, *Certain new improvements in the construction of harps and pianofortes both large and small*, no. 2502 (London: HMSO, 1801).

⁴⁸ Michel Joseph Ruelle, George et Jacques Cousineau, *Mécanisme particulier, destine à tendre les cordes de harpe*, no. 1840, 17 March 1799.

4.4.4: John Conrad Becker's patent, no. 2551, 7 November 1801

Improvements in musical instruments, chiefly applicable to harps and pianofortes

John Becker's innovation worked on a similar principal to Érard's 1801 double-action.⁴⁹ Becker, a pianoforte maker from Bavaria,⁵⁰ proposed a system in which the pedals, acted upon pedal rods or linkages. Concerned that the harp was difficult to tune, the end of string being visually separated from the tuning pin head by the neck, Becker reversed it so that the string and tuning head were on the same side. This was then permanently fixed in the socket and given a notched wheel that turned on an endless screw to which the string was attached. The depression of a pedal turned this wheel altering the tension and pitch of the string (Figure 4.13). Becker's harp differed from that of his competitor in being able to play 'quarter-notes, or any intermediate variation deviating from the natural notes.'⁵¹ A *rack* was applied to the pedals in order 'to stop [them] at four different stations, answering to the natural note, to one quarter, to one half, and to three quarters';⁵² this was not a double action harp, but a quadruple action one with four notes per string.

This microtonal instrument may have been influenced by musical interest in the Greek revival. The sixteenth century *archicembalo*, also microtonal, could play the 'diatonic, chromatic, and enharmonic genera of the ancient Greeks',⁵³ and Rameau used quartertones in his 1733 opera, *Hippolyte et Aricie*. According to Downing Thomas, 'the legendary affective force of quarter-notes contributed to the enigma and fascination of ancient Greek music and continued to be sought after by theorists

⁴⁹ John Becker, *Improvements in musical instruments, chiefly applicable to harps and pianofortes*, no. 2551 (London: HMSO, 1801).

⁵⁰ Robert Palmieri, ed., *The Piano: An Encyclopedia* (London: Routledge, 2003), p. 42.

⁵¹ 'Specification of the Patent Grant to Mr John Conrad Becker [...] for the improvement in Musical Instruments, chiefly applicable to Harps and Piano Fortes', in *The Repertory of Patent Inventions*, 16 (London: Nichol & Son, 1802), pp. 146-150.

⁵² *The Repertory of Patent Inventions* (1802), p. 147.

⁵³ Edwin M. Ripin, 'Arcicembalo', *GMO* [Accessed 24 August 2016].

throughout the eighteenth century.’⁵⁴ Instruments were sometimes made enharmonic in order to solve problems with tuning or temperament, or to enable specific effects to be played: a Zumpe pianoforte of 1766, made in London, has a partly enharmonic keyboard for the former reason;⁵⁵ and in 1799 Giovanni Batista Orzai, a Neapolitan, published a treatise for the flute in which the octave was divided into 24 quarter-tones to offer greater expressive potential.⁵⁶

Although no harps by Becker are known to survive, that he announced an intention to establish a factory at 5 Leicester Street, Leicester Square in March 1802 in *The Repertory of Patent Inventions* indicates that intended to begin production.⁵⁷

⁵⁴ Downing A. Thomas, *Aesthetics of Opera in the Ancien Régime* (Cambridge: Cambridge University Press, 2002), p. 164.

⁵⁵ Christopher Clarke, The English Piano, in *Music of the Past, Instruments and Imagination*, ed. by Michael Latham (Bern: Lang, 2006), pp. 239-270 (p. 255).

⁵⁶ Patrizio Barbieri and Hugh Ward-Perkins, ‘G. B. Orzai’s Enharmonic Flute and Its Music (1797-1815)’, *GSJ*, 52 (1999), 281-304 (p. 281).

⁵⁷ *The Repertory of Patent Inventions* (London: Wyatt, 1802), p. 151.

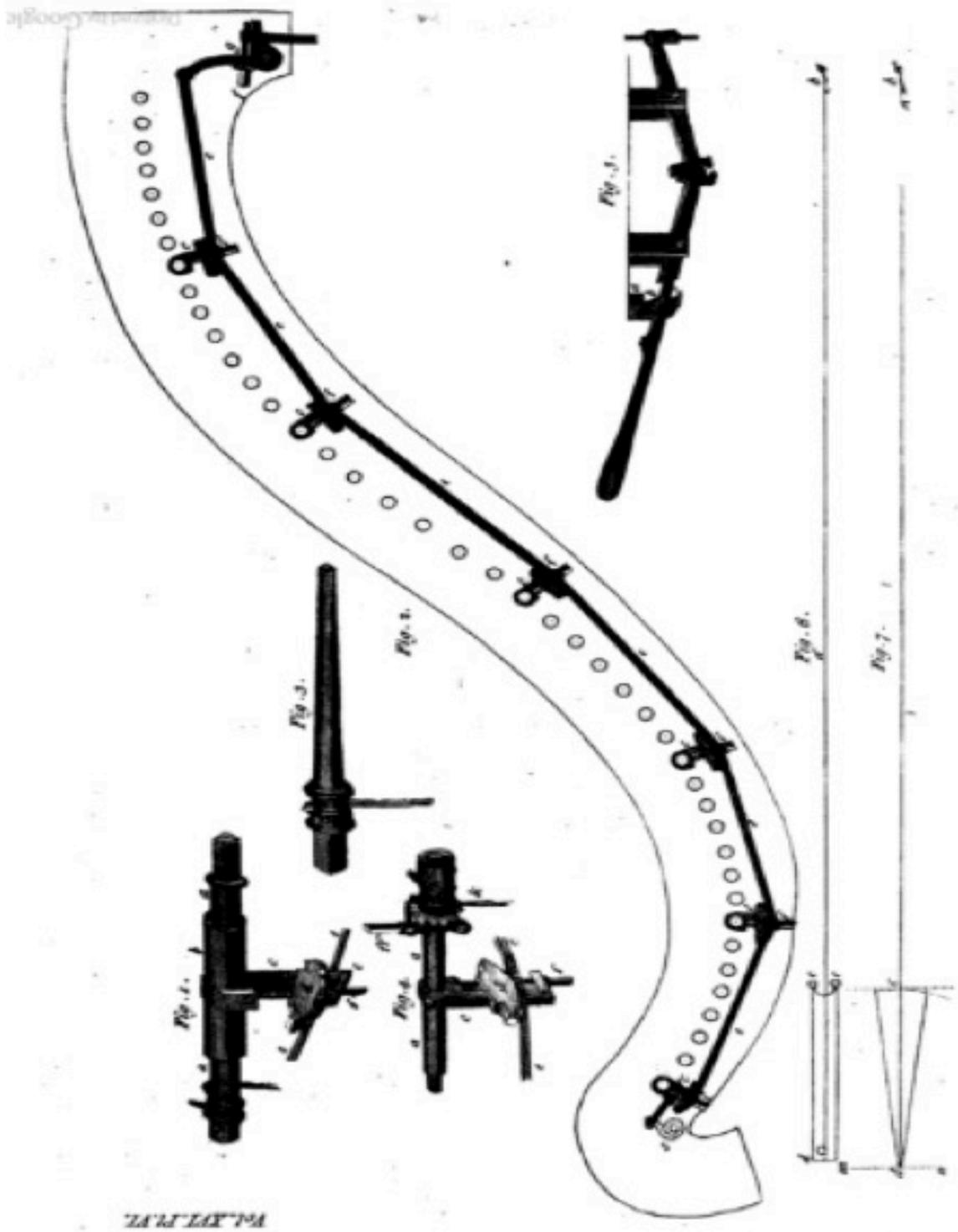


Figure 4.13. John Conrad Becker's harp, patent drawing from *The Repertory of Patent Inventions* (1802).

4.4.5: Sébastien Érard's patent, no. 2595, 25 April 1802

Improvements in the construction of the musical instrument called a harp

In 1802, Érard registered an update of his 1801 patent;⁵⁸ the semitone mechanism worked on the same principle. This harp, although made as a prototype, was never produced for sale. Pierre Érard writes: 'This mode of effecting the semitones upon the harp had some advantages, but was attended on the other hand with inconvenience, that of increasing the tension of the strings.'⁵⁹ Érard replaced the two-part pedal, originally applied to his single-action, with one-part ones which allowed for easier lateral placement in the pedal box, and hence flexibility in design. These would have been simpler, quicker and cheaper to make than the earlier ones, and easier to regulate and repair; Érard was identifying ways of reducing production costs. The swell mechanism was also improved:

[...] a method of connecting the several flaps or doors which produce the swell in such a manner that there shall be no noise or jar produced by their movement. Each door is affixed to the door beneath it by a bended or notched piece of metal or other material, which causes them all to move together, altho' each several door or flap is moved upon its own appropriate hinges or joints.

It may be that this harp marked an increase in string tension, the vibration of which caused the old swell to rattle. In linking the shutters with a bracket Érard stiffened them and reduced unwanted noise (see patent drawing in Appendix 4.4).

⁵⁸ Sébastien Érard, *Improvements in the construction of the musical instrument called a harp* (London: HMSO, 1802).

⁵⁹ Érard (1821), p. 8.

4.4.6: George Woods's patent, no. 2718, 28 June 1803

Certain new methods of constructing harps, harpsichords, pianofortes, violins, and guitars, and other stringed musical instruments

George Woods' patent consists of fixing the strings of an instrument 'at one or both ends to pullies [sic], beams, levers, or other mechanical powers'⁶⁰ in order to alter their tension.⁶¹ He proposed that the upper part of the harp be: '[...] made as usual, but the sounding-board or box instead of projecting at the bottom, must project at one side, and the strings must pass over it in a parallel direction [...] The strings will be forty-two in number.' The upper part here referring to the semitone mechanism, Woods rendered the tension of the instrument changeable at will: 'if found more advantageous the tensions may be varied, giving to the bass strings a greater tension than the higher ones. They may easily be varied every four or eight strings...'⁶²

By passing the strings in a parallel plane to the sound box, and not through it as had previously been done, this patent describes an asymmetrical harp with the strings running from the left side of neck to the corresponding side of the body. It is the only patent to stipulate string lengths and diameters (Appendix 4.5) to ensure that each carried of equal tension.

⁶⁰ 'Specification of the patent granted to George Wood [...] for certain new methods of constructing harps, harpsichords, pianofortes, violins, and guitars' in *The Repertory of Patent Inventions*, 5, 2nd edition (London: J. Wyatt, 1808), p. 241.

⁶¹ George Woods, *Certain new methods of constructing harps, harpsichords, pianofortes, violins, and guitars, and other stringed musical instruments*, no. 2718 (London: HMSO, 1803).

⁶² *The Repertory of Patent Inventions*, p. 253.

4.4.7: Richard Jubb's patent, no. 2838, 5 April 1805

Making and tuning the musical instrument called the pedal harp

Richard Jubb's patent,⁶³ similar to those of before, modulated using a ratchet turned by pedals. It differed in that the string passed over a screw, attached to an axle, which was tied to a tuning pin. When the pedal was activated, the screw turned by a preset number of degrees thus altering the tension of the string. Like that of Becker, Jubb's harp could also play half and quarter notes:

[...] adjusting rollers or axels, which is fixed on the end of the arbors for producing the quarter note and half note by the pressure of the foot on the pedal, and is turned by a wrest pin similar to those in common use.

In altering the string tension, Jubb's invention faced the same problem encountered by Érard and Becker. Jubb also applied a harmonic stop that passed across the strings at the octave harmonic position increasing the range of possible effects for the harpist (see patent drawing in Appendix 4.6).

4.4.8: Charles Gröll's patent, no. 3059, 13 July 1807

Improvements upon harps

Charles Gröll (1770-1857), a Polish immigrant, registered a patent for a double-action harp in 1807.⁶⁴ He was the first one to register a doubling of Érard's fourchette system with two acting upon each string; he maintained Érard's pedal arrangement but housed the spring in the capital of the harp (Figure 4.14). Gröll's patent preceded Érard's one for double-action with fourchettes by fourteen months. According to Lilliana Osses Adams, Gröll's harp efforts were financially supported by Count Michal Kazimierz Oginski (1728-1800), also Polish. Now in London, Gröll was

⁶³ Richard Jubb, *Making and tuning the musical instrument called the pedal harp*, no. 2838 (London: HMSO, 1805).

⁶⁴ Charles Gröll, *Certain improvements upon harps*, no. 3059 (London: HMSO, 1807).

struggling financially and the patent was sold to Sébastien Érard.⁶⁵ Pierre Érard confirmed his uncle's purchase, and hence Gröll's prior claim to the invention, in a letter to Sébastien (8 March 1820): 'At least one is not bringing up Gröll's patent which is earlier than yours! But one could reply quite firmly that his idea is impractical, that it was not put into practice, and that in any case it belongs to you!'⁶⁶ In a subsequent letter of 7 July 1820 Pierre recognised that Gröll's patent jeopardised a potential patent infringement case against Frederick Dizi who, according to Pierre had copied Érard's double-action:

[...] you cannot go after him [Dizi] for the two forks, unless you rely on your rights to Gröll's patent! [...] He commits himself to it in a letter that I found, but he could put obstacles in our path! The best way would be to have Gröll's patent annulled as it is impossible to make! But would it not be unwise to bring all of these discussions in court, where unfortunately we would have to deal with people who know nothing of mechanics, and who often persist through ignorance to the first and worst ideas of Dizi from the start.⁶⁷

With this letter Pierre demonstrates the influence of Gröll's harp upon Érard's renowned double action innovation. Although its sale was yet to be completed, Pierre must have believed that Gröll would not press his claim. Later, however, he expresses concern that Gröll's patent may be used against the Érards in court:

Since I plan going after Dodd and forcing him to pay me damages for the forty or so harps he has made according to your ideas, I need to defend myself by all possible means. They might argue that since Gröll took out his patent for two rows of divisions, nobody after him has the right to take out a patent for two rows of divisions or forks. In this case, they would annul our patent and we would have no recourse.⁶⁸

⁶⁵ Lilliana Osses Adams, 'About the Harp', <http://www.zwoje-scrolls.com/zwoje38/text06p.htm> [Accessed 13 April 2011] reports that Érard paid between 10,000 and 30,000 red zlotys, but no source is cited.

⁶⁶ Adelson et al. vol. 2 (2015), p. 737.

⁶⁷ Adelson et al. vol. 2 (2015), p. 747. Pierre's comments about the technical understanding of the court mirror those expressed by Davies Gilbert Esq. in the House of Commons Select Committee report on patent law of 1830.

⁶⁸ Adelson et al. vol. 2 (2015), p. 806.

Despite the Érards' claim to be the sole inventors of the double-action harp and widespread repetition of this by later writers, Gröll was the first to double the their single action mechanism. Little is known about Gröll. Osses Adams repeats Scholes' suggestion that he and Rouelle, who reportedly sold his rights for a double-action harp to Sébastien Érard in 1788, may have been the same person, their names being similar.⁶⁵ Could this be true? That Gröll would have been only 17 or 18 years old in 1788 needn't present a problem (Robert Willis, a later patentee, registered his innovation aged only 19), but their differing forenames (*Charles* Gröll and *Michel-Joseph* Ruelle) do. However, here may still be some truth in this notion.

Instrument making families were common in the eighteenth and nineteenth centuries: George Cousineau worked with his son Jacques;⁶⁹ Jean-Henri Naderman with his son Henri-Pascal;⁷⁰ Sébastien Érard with his brother Jean-Baptiste in Paris, and with his nephew, Pierre, in London;⁷¹ and Jacob Erat with his sons, Jacob and James. Scholes' Rouelle may well be a variant spelling of Ruelle, and both might be French pronunciations of Gröll. In that case, Gröll and Ruelle may have been related, conceivably two members of a now-forgotten family of harp innovators. Ruelle's and Cousineau's 1799 French patent influenced those registered by Érard in 1801 and 1802. In 1802 Ruelle registered a patent and immediately ceded it to the Cousineaus, as he had previously done to Érard, and as Gröll was to do in 1807.⁷² This pattern suggests Ruelle and Gröll were inventors rather than instrument makers. If Gröll and Ruelle were indeed related, then it is possible that together they not only influenced Érard's double-action harp but also invented one as early as 1788 and, assuming that their business relationship was established before their joint patent, it is plausible that Ruelle had worked with Georges Cousineau on his earlier 1782 proto-double-action instrument. Tantalisingly, Gröll's 1807 patent

⁶⁹ Roslyn Rensch, 'Cousineau', *GMO* [Accessed 23 August 2016].

⁷⁰ Ann Griffiths and Richard Macnutt, 'Naderman', *GMO* [Accessed 23 August 2016].

⁷¹ Ann Griffiths and Richard Macnutt, 'Érard', *GMO* [Accessed 23 August 2016].

⁷² Michel-Joseph Ruelle, Pour une nouvelle mécanique de harpe, à plans inclinés, paraboliques, et à renforcements acoustique, in *Description des machines et procédés spécifiés dans les brevets d'invention* (Paris: Huzard, 1818), pp. 169-172. Ruelle's patent was dated 20 July 1802.

drawing shows a French-style harp with scroll, rather than the capital typical of early nineteenth-century English-made ones. This, an unlikely design choice for a British maker or innovator, being an outmoded style, may indeed indicate that he had worked in France. These forgotten inventors, whether related or not, who influenced the development of the harp for over 30 years, should be acknowledged amongst the most important in their field.

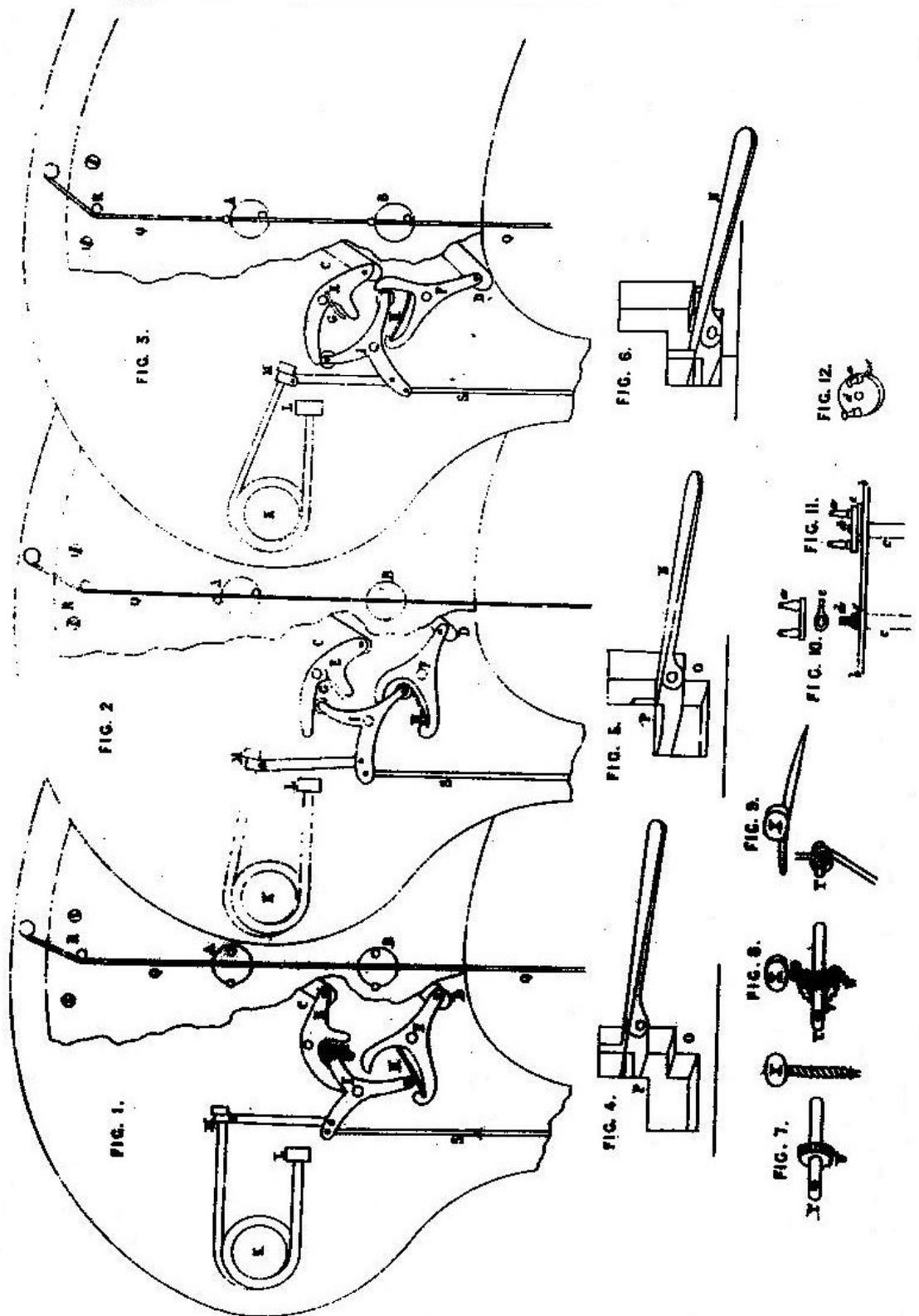


Figure 4.14. Gröll's 1807 patent drawing.

4.4.9: Sébastien Érard's patent, no. 3170, 24 September 1808

Improvements upon pianofortes, large and small, and upon harps

This patent describes the production of natural and sharp notes by a new pedal-activated stopping contrivance.⁷³ The drawing depicts the application of an upper lever and lower fork-type device to the strings. The lever, when activated, stops the string from the right, and a lower fork pinches it from the left to achieve the natural note (Figure 4.15) (see patent drawing in Appendix 4.7). Both were further turned so that the fork engaged the string from both sides to make the note sharp. Although not made for sale, the principal of engaging a string at four points (2 x 2), copying Gröll, was developed further in Érard's next patent.

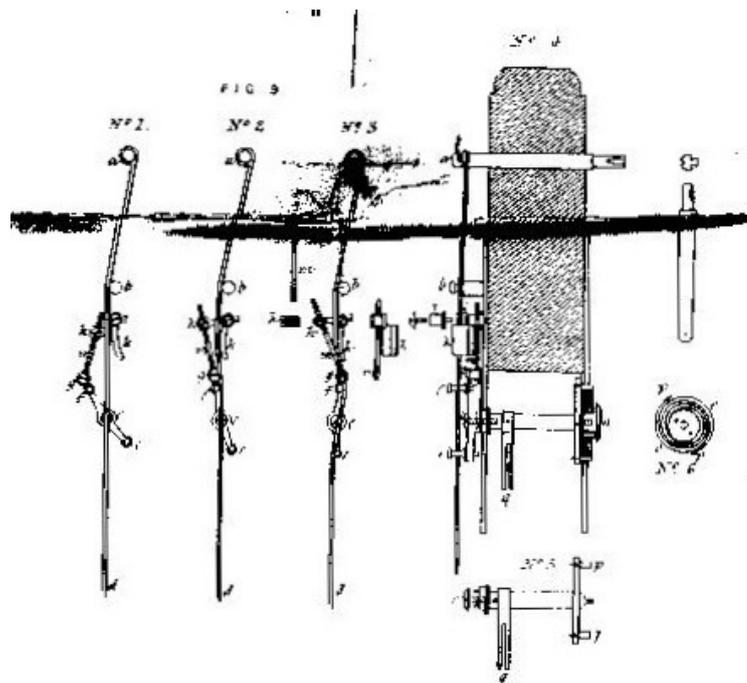


Figure 4.15. Fourchette positions from Sébastien Érard's 1808 patent drawing.

⁷³ Sébastien Érard, *Certain improvements upon pianofortes, large & small, and upon harps*, no. 3170 (London: HMSO, 1808).

4.4.10: Sébastien Érard's patent, no. 3332, 2 May 1810

Further improvements on pianofortes and harps

In using two forks per string in this patent Érard borrowed ideas from Gröll's 1807 one. By the depression of a pedal into the first of two notches, housed in the pedal box, the upper fork rendered a note natural; movement into a second one turned the lower fork and raised the pitch to sharp. Érard fixed external linkages between the natural and sharp row of fourchettes at the bass end of the instrument (Figure 4.16) rendering the neck deeper and hence stronger. This improved the rigidity and stability of the instrument allowing higher tension stringing. Although Érard patented a damper action, suggesting that the increased tension had resulted in a more resonant instrument, this was never added to instruments sold:

[...] a damper for the chords of the harp, which consists of a small piece of leather or other fit substance, at the extremity of a spring, which by preference I make a spiral, and by which the leather is disposed to press against the chord or string, at the same time is regulated by the action of a piece with projecting arms, one for each damper, which by a slight motion backwards or forwards, either permits the dampers to rise or keeps them down.⁷⁴

Sébastien announced his 'improved harp' in newspapers, stating that he had gone to 'much expense and three years exertions' (Figure 4.17).⁷⁵ According to Pierre Érard, Sébastien spent 'no less than twenty thousand pounds in establishing in his manufactory the different machines upon which the nicety of the execution of a mechanical work so essentially depends.'⁷⁶ The development and set-up costs incurred during the design of this harp were huge leaving the Érard firm vulnerable for some years after it went into production.

⁷⁴ Sébastien Érard, *Certain further improvements upon pianofortes and harps*, no. 3332 (London: HMSO, 1810).

⁷⁵ 'Mr Sébastien Érard,' *The Morning Chronicle*, 13253, 30 October 1811.

⁷⁶ Érard, p. 9.

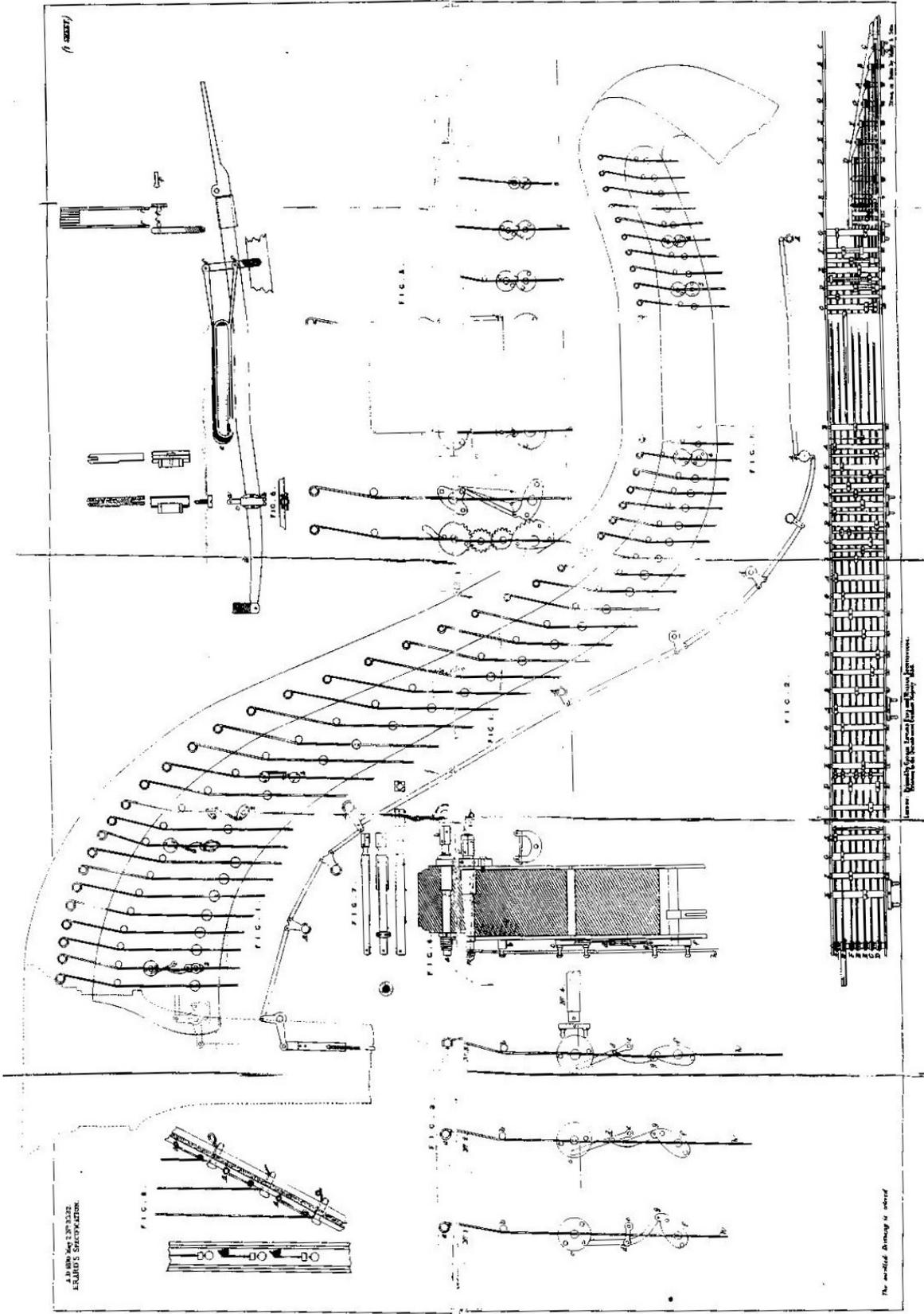


Figure 4.16. Érard's 1810 patent drawing.

... on every article.

MR. SEBASTIAN ERARD, No. 18, Great Marlborough-street, respectfully informs the Nobility, Gentry, and the Public in general, who have so long and liberally patronized his IMPROVED HARP, that after much experience and three years exertions he has at length obviated all the defects which hitherto-circumscribed the talents of the composer and performer, by giving as great a variety of note and facility of execution as is possessed by any instrument whatever. This is effected by means of each of the strings producing three distinct tones instead of two, as on the old Harp; in consequence of which the performer, instead of being confined as heretofore to a very limited number of keys, can now play in every known key, and perform the most extensive and abstruse modulation with perfect facility. The hand is also allowed more and sufficient room in the top of the instrument. These improvements have the advantage of conferring on this noble instrument every possible degree of solidity and elegance.

Figure 4.17. Érard's new improved harp, *Morning Chronicle* (30 October 1811).

Of the transition from single to double action Johann Baptiste Mayer writes:

Persons who play already on the common (single action) harp have only to pay a little more attention to the double motions of the pedals, in less than one week, they will be able to play this new harp. [...] This most admirable instrument is executed in the highest perfection, for solidity, elegance and graceful form, useful for demonstrating music in general and must be a great gratification to composers.⁷⁷

Érard's new double-action harp, apparently the first to be manufactured, went on sale in 1811 and, being highly desired by professionals and amateurs, was quickly established as the preeminent instrument. At first, other makers continued to develop new instruments, their focus remaining on the mechanism, although later they closely imitated Érard. This, the most important of the harp patents, set the direction of harp manufacture for the remainder of the nineteenth century and the principals of Érard's mechanism remain in use today.

⁷⁷ Johann Baptist Mayer, *The New invented Harp by Sébastien Érard* (London: Mayer, 1811), p. 13.

If Érard's single-action marked him out as an ingenious inventor, in recognising the importance of Charles Gröll's 1807 patent and buying it, his double-action identified him as a shrewd businessman. The combination of innovation and the gathering of other's ideas enabled Érard to become the most successful and prolific of the London harp makers. The company Ledgers reveal that 6,862 harps were made between 1797 and 1917. In 1820, Érard's personal wealth enabled him to buy a wing of Chateau La Muette, a former royal hunting lodge close to Paris, which he decorated with a large and important collection of old-master paintings. Charles Gröll, meanwhile, had associated himself with François-Joseph Dizi,⁷⁸ the renowned London-based Flemish harpist, and together they developed a new perpendicular harp (described below), patenting it three years after that of Érard.

4.4.11: Charles Gröll's and Frederick Dizi's patent, no. 3642, 22 January 1813

Improvements on harps

The harp registered in this patent reveals an interesting three-way business relationship. In working with Dizi to design and patent a harp, Gröll confirmed his role as inventor-for-hire; that both are named as patentees indicates that they shared development and patenting costs. Dizi, a renowned harpist and composer, brought his musical skills and reputation, and the maker, Edward Dodd, not named in the patent suggesting that he became involved later, his manufacturing abilities and workshops. It raises the possibility that earlier patents, although registered by sole inventors, may have been the results of collaboration. Dizi's involvement in the design and manufacture of a harp shows that rather than being the exclusive domain of the instrument maker, composer-players influenced their development too. Good relationships between makers, harpists, composers and teachers could have been nurtured for promotion and sales.

⁷⁸ Dizi anglicised his name from François-Joseph to Frederick for the purposes of registering his 1813 and 1817 patents for the harp. He continued to publish music using his Flemish name.

The patent describes a centrally strung harp, with the strings and mechanism housed between two plates in order to reduce twist on the harp. The instrument was modulated through pedal-activated sliders (Figure 4.18):

[...] by means of which the said end shall become movable, at pleasure, backwards and forwards in a direction at right angles to the length of said string, or nearly so, and the said string or strings shall be brought into contact or firm bearing, with or against one or more studs or bridge pins [...]⁷⁹

Each slider could be applied to strings of the corresponding note by the activation of a pedal, the first movement producing a natural note and the second a sharp one. Apparent animosity, revealed in a letter from Pierre to Sébastien Érard on 30 April 1815, suggests that there was fierce competition between the rival makers: ‘Dizi always behaves very badly, but with his ridiculous plan and his false manner, he does much harm to himself. Whatever you think of whether M. Dizi speaks well or ill of your harps, I lose no opportunity to refute the nonsense he utters [...] Dizi must curse me because he frequently finds me in his way.’ Pierre then reports a conversation with Lady Lyddle:

Lady Lyddle: I gather that it is difficult for you to say what you think of M. Dizi’s harp, but tell me honestly what you think.

P. Érard: My lady, I think that M. Dizi’s harp, instead of being an *improvement* is highly flawed.

Warming to his attack on Dizi and his harp, he adds that it can only be played close to the soundboard, otherwise ‘the strings jangle’, that it is very difficult to string, that its shape is unpleasant, and that ‘the major defects that he tries to hide when he plays on it [will] become obvious and will soon be recognised by all his enemies when the harp is in the hands of everyone.’⁸⁰ Rivalry between the Érards and other makers continued and, as will become clear, resulted in industrial espionage and further defamatory comments.

⁷⁹ Charles Gröll and Frederick Dizi, *Certain Improvements on harps*, no. 3642 (London. HMSO, 1813).

⁸⁰ Adelson et al. vol. 2 (2015), p. 597-599.

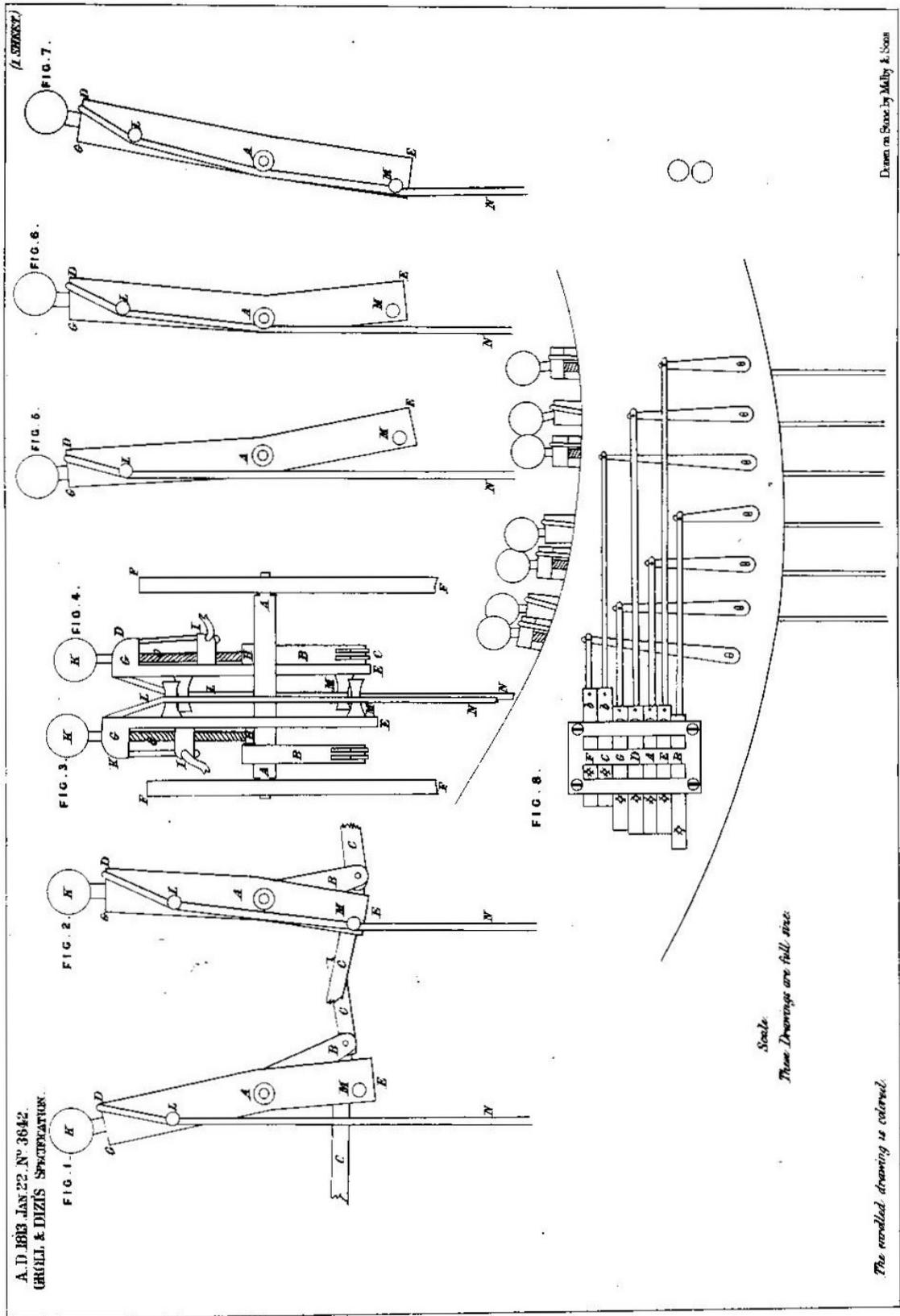


Figure 4.18. Gröll's and Dizi's 1813 patent drawing.

4.4.12: **Jacob Erat's patent, no. 3693, 8 May 1813**

An improvement in the construction of a pedal harp

Erat's patent, also for a double-action harp, addressed a regulation problem.⁸¹ The increased tension associated with Érard's new double-action instruments caused their soundboards to stretch upwards, in so doing shortening the string length and compromising the interval between the natural and sharp notes.

[...] whereas the truth and accuracy of the half note afforded by the fork ... in common harps are produced and determined by means of the adjustment of the bridge pin [...] the same truth and accuracy of the stopped whole note could not be had by a second fork upon each string, particularly in the event of any change in the figure of the belly of the instrument [...]

The patent describes a harp with fourteen rather than seven pedals, positioned one above the other, the upper pedals activating Érard's fourchettes to make the natural notes, and the lower ones activating adjustable bequille-like stops, similar to those used on Cousineau's fourteen-pedal double-action of 1782, to render the strings sharp (Figure 4.19). The rumour mill had clearly been working. Perhaps a customer or former employee reported the details of Erat's new harp to Pierre Érard who, on 3 January 1815, writes:

I understood that Erat had delivered to someone his first double-action harp. From what I could gather it has 14 pedals, one on top of the other. The first action is your first patent, and the second the double crutch from Cousineau. I will do my utmost to see one, if in fact he has made several of them in order to give you a detailed description.⁸²

The accompanying drawing shows two pedal arrangements, one with two pedals per note, and the other with only one. Extant instruments, of which only five are known today, indicate that the later system prevailed (Figure 4.20 and Figure 4.21).

⁸¹ Jacob Erat, *An improvement in the construction of the pedal harp*, no. 3693 (London: HMSO, 1813).

⁸² Adelson et al. vol. 2 (2015), p. 578.

Seven months later Pierre was still to view this instrument. 'Erat has sold some more of his double actions. I know that the pedals function poorly, and are often in the way, but I am trying to see one in order to pluck it if there is one.'⁸³ Erat appears to have continued to innovate. On 27 September 1818 Pierre writes:

It seems that Erat's double action does not work any more, that it is constantly creating problems. I hear that he will begin working with someone named Taylor, one of Dizi's students, a harpist of little talent. He has come up with a new mechanism that is supposed to change both semitones with one single *sliding* fork, which is at the same time used to adjust the semitone. That would be something to see.⁸⁴

⁸³ Adelson et al. vol. 2 (2015), p. 607.

⁸⁴ Adelson et al. vol. 2 (2015), p. 689.

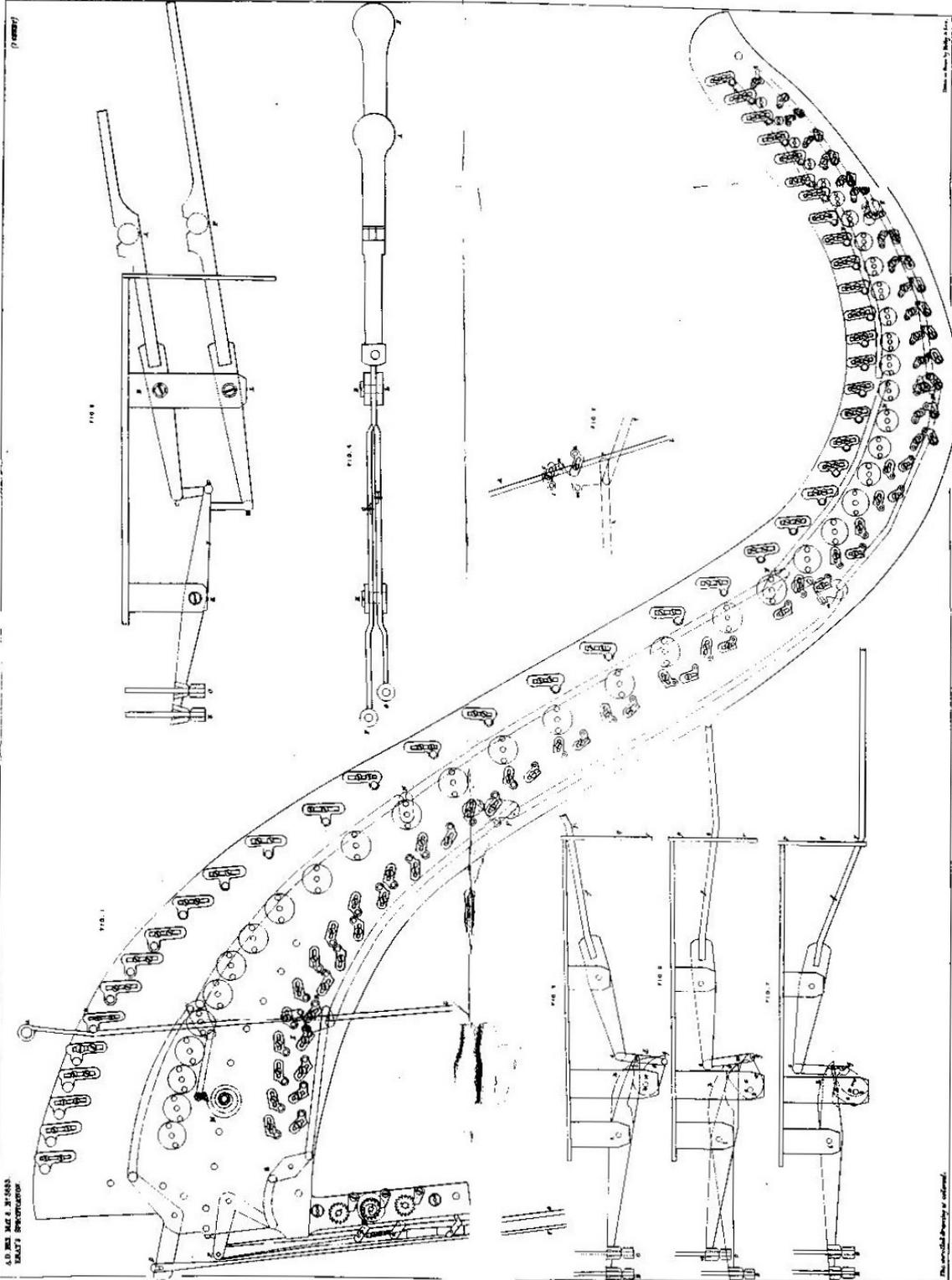


Figure 4.19. Jacob Erat's 1813 patent drawing.



Figure 4.20. Erat 1813 patent harp (no. 1066).



Figure 4.21. String stops on Erat 1813 patent harp showing fourchettes (top) and bequilles (below).

Despite Pierre's disdain for Erat's developments, Erat's business was clearly prospering. On 8 January 1819 Pierre writes:

Erat went to see the house on Marlboro [Great Marlborough Street] where Horn and his wife are still living. He will be annoying because of the resemblance of the name [and presumably proximity to the Érard manufactory] [...] I am sure to have an advantage over any other price offered £300! Last year Erat sold 60 harps, can he spare £300 for a house?⁸⁵

Erat was looking for new premises at this time. Perhaps locating his business close to his main, and more successful, competitor would have been good for his business.

4.4.13: Frederick Dizi's patent, no. 4171, 13 February 1817

New invented improvements on harps.

Dizi's second patent for the harp describes a perpendicular instrument like that in his 1813 patent.⁸⁶ To this Dizi added a key indicator to the machine plate to enable to key to be instantly identified (Figure 4.22 and Figure 4.23). Despite an 1802 Érard patent for a similar device, Pierre's report to Sébastien indicates that he had neither seen Dizi's one, nor his patent for it:

Yesterday I went to the Attorney General to signal my opposition to Dizi's new patent. According to the various questions that Sir Samuel Shepherd asked me, I suppose that the object of the patent is a sort of addition to the harp, an indicator that, by the combination of the different positions of the pedals in the different keys would positively show the key in which the harp was when the pedals are in the position that requires that state of the various strings in the same key.⁸⁷

⁸⁵ Adelson et al. vol. 2 (2015), p. 699.

⁸⁶ Frederick Dizi, *New-Invented Improvements on harps*, no. 4171, (London: HMSO, 1817).

⁸⁷ Adelson et al. vol. 2 (2015), p. 667.

Dizi's new harp is described in a review, written by the Royal Harmonic Society (the author's name not given), in the *Quarterly Musical Magazine*:

Mr Dizi calls his invention 'the Perpendicular Harp.' The principle is that the tension of the strings acts upon a centre, parallel to the centre of the column, as well as to that of the sonorous body. He has arranged his mechanism between plates of iron and brass, which are at such a distance as to allow the stings to vibrate freely. These plates are held together by the pins which serve to turn the string. The strength of these metal plates is much more than equal to the pressure upon them, and they are therefore not liable to the common disturbances and evil arising from loss of shape. The column, which assists in supporting the mechanism, takes the pressure exactly in the centre, and therefore has no tendency to incline to either side. The strings are stated to possess a freer power of vibration, and consequently the tone is prolonged. They are more-over so placed, that when at their utmost tension they still preserve a straight line and make no angle.⁸⁸

Again, Dodd made these harps on Dizi's behalf although they never received the attention that Dizi had hoped. Dizi moved to Paris in 1830 where he had intended to establish a workshop with the Pleyel Company. Although according to John Lade, this new partnership never happened,⁸⁹ surviving instruments suggest otherwise.⁹⁰

⁸⁸ 'A Series of Twelve Fantasias', *The Musical Quarterly Magazine*, 5, 17 (London. 1823), 101-104 (p. 103).

⁸⁹ John Lade, 'Dizi, François Joseph', *GMO* [Accessed 27 August 2016].

⁹⁰ At the time of writing one such instrument is advertised for sale by Clive Morley Harps Ltd., the mechanism plate of which is engraved, 'Harpes a simple et a double mouvement, Brevet d'invention de F. Dizi Clle [Camille] Pleyel et Cie.' This instrument differs from Dizi's earlier perpendicular ones, and resembles those of Érard with two rows of fourchettes and strings to the left side of the neck.

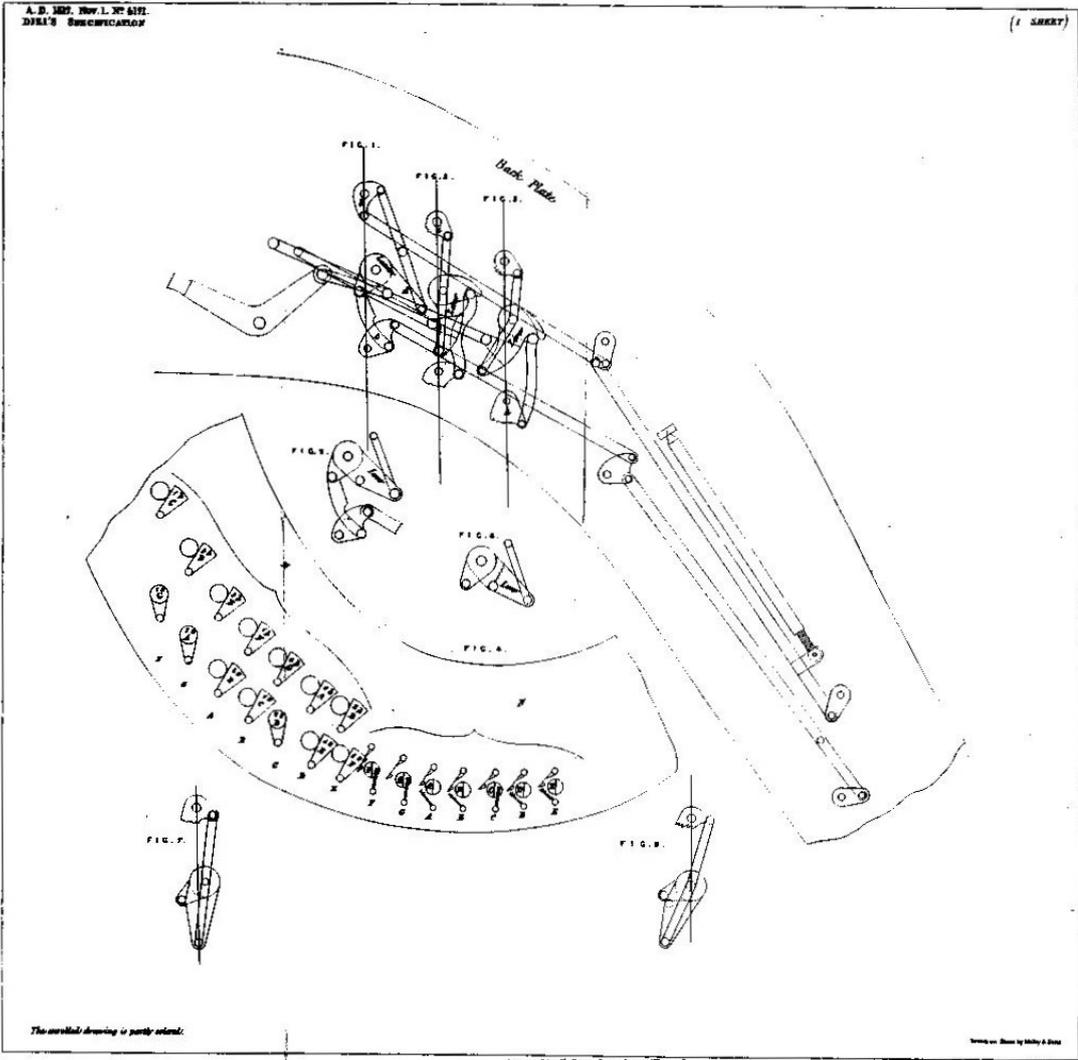


Figure 4.22. Dizi's 1817 patent drawing.

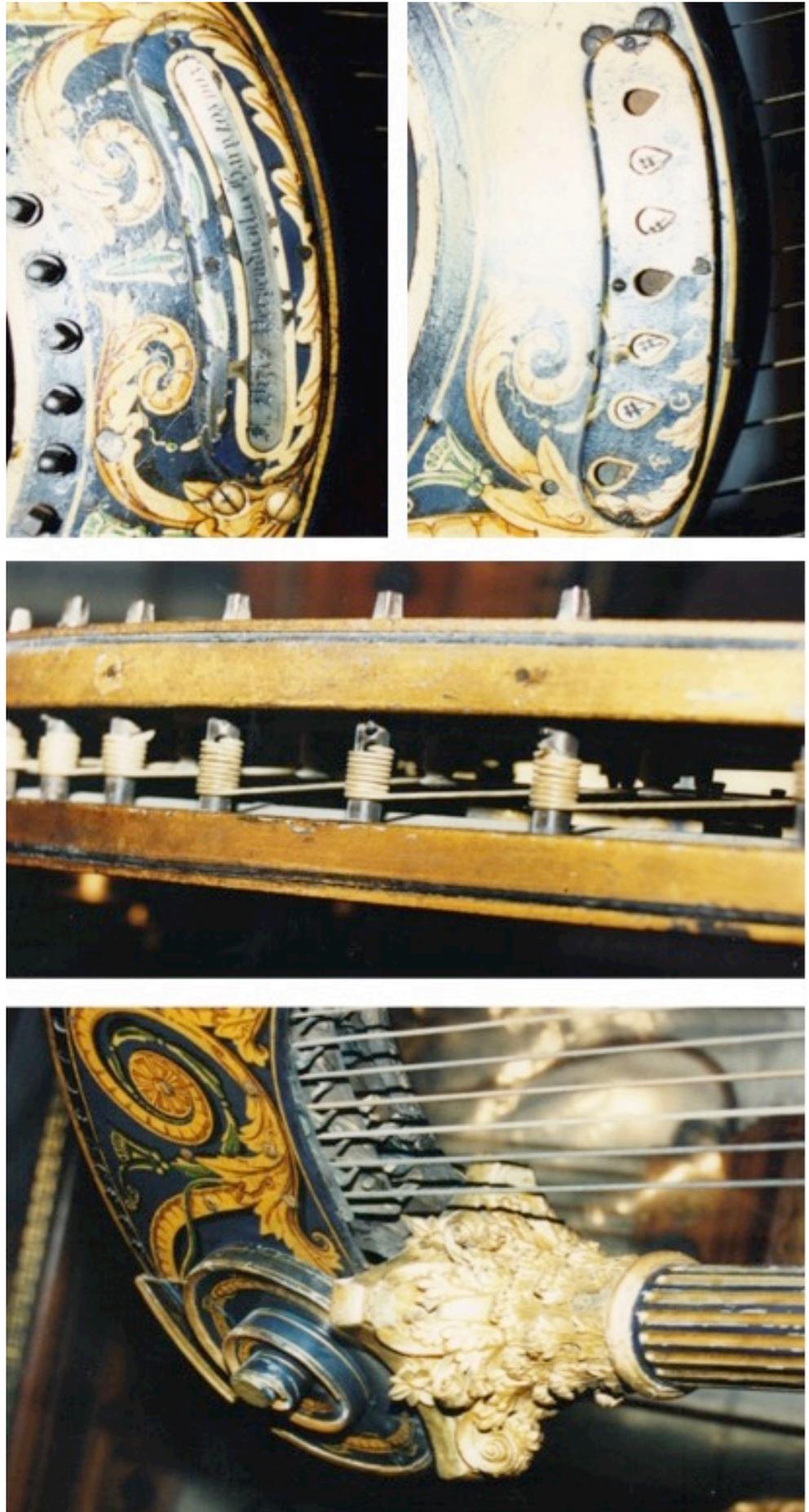


Figure 4.23. Dizi's harp showing central stringing, name plate, and key indicator.
V&A. 382-1907. 209

4.4.14: Robert Willis's patent, no. 4343, 13 February 1819*An improvement or improvements upon the pedal harp*

In this patent, Robert Willis, the youngest of the harp patentees (19 years) addressed a problem caused by the rotary motion of Érard's fourchettes that, whilst retaining the original alignment of the string, pinched it.⁹¹ Willis, who worked on his harp in Jacob Erat's manufactory at 100 Wardour Street, described a new double-action mechanism that stopped the strings without bending or straining them. He introduced three mechanised bridge pins that, by the depression of a pedal, could be applied to or withdrawn from the string. The pedal arrangement and tuning remained that in common use. When in the default position, the upper bridge-pin was applied to the strings and the harp was set in C♭. Depression of the pedal into the natural position withdrew the upper bridge pins, simultaneously applying the middle (natural) ones to the strings rendering the harp C natural. With the pedals set to sharp, these pins withdrew and the third and final bridge pin could be set and the harp key modulated to C sharp (Figure 4.24). Willis registered the only patent to fully address the string bending problems of earlier harps, and his collaboration with Jacob Erat is further evidence of co-operation between inventors and makers. His diary,⁹² which details the development of his harp as a paying guest in Erat's manufactory (revealing its organisation and workforce), is examined in detail in Chapter 9.

⁹¹ Robert Willis, *An improvement or improvements upon the pedal harp*, no. 4343 (London: HMSO, 1819).

⁹² WD.

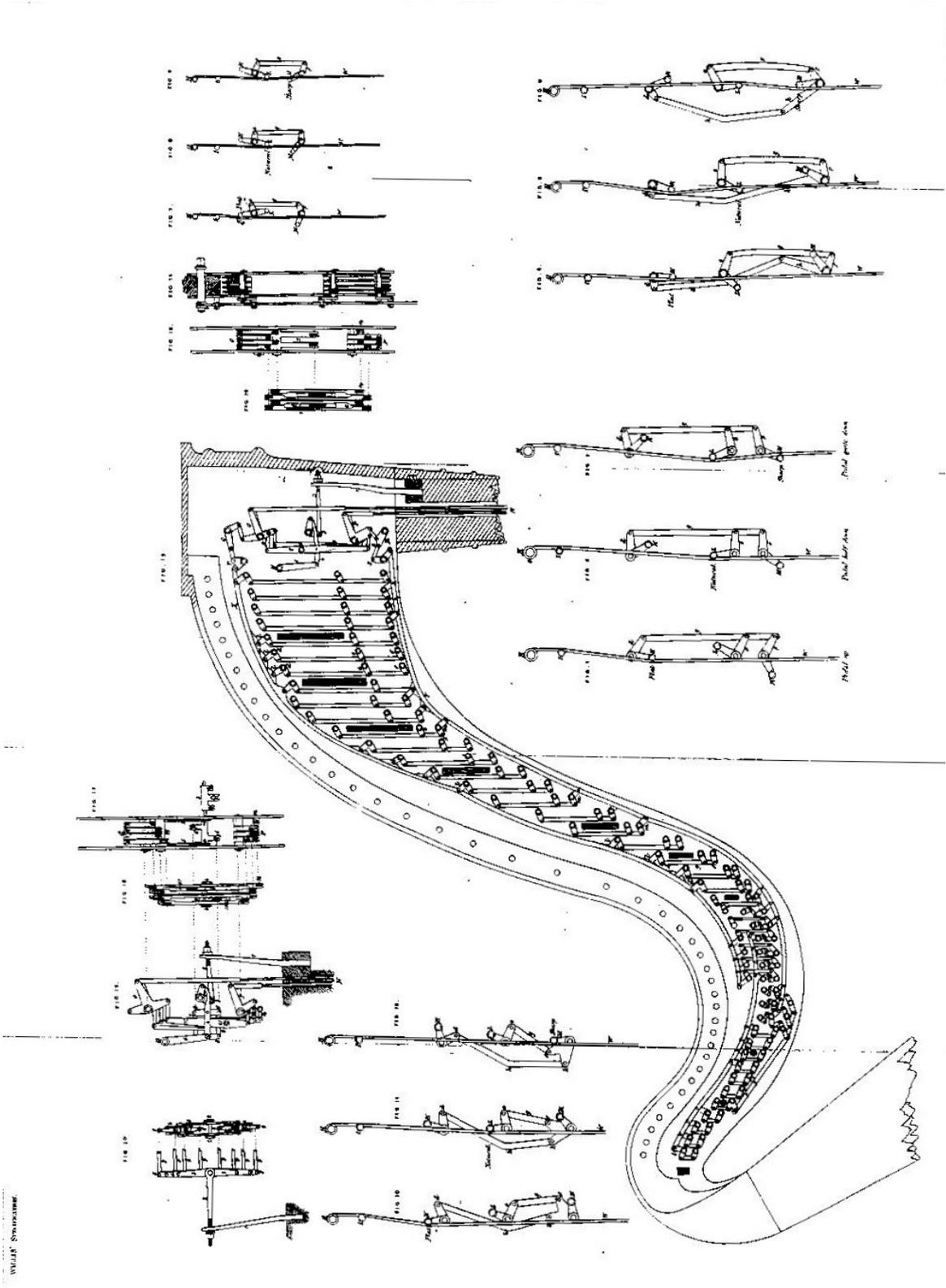


Figure 4.24. Robert Willis's patent drawing.

4.4.15. Three patents in one day

On 24 April 1822, three consecutively numbered patents were enrolled; one by Pierre Érard (seemingly registering in an attempt to obstruct his competitors, further evidence of competition), one by Edward Dodd, and another by James Delveau; whether all three gentlemen queued together at the patent office is not known. Pierre Érard's inclination was to try to prevent others from registering any innovation for the harp, regardless of its content or his knowledge of it. In this he was following Sébastien's instructions. On 5 February 1822, having been told of a new pending patent by Dodd, he writes to Sébastien:

When we recently spoke in Paris about the harp, and the changes you wanted to make on it, you told me that to protect against the view of the harps makers, new and old the best thing to do was to take out a patent immediately. I now regret not having done so straight away, as I have just been informed that Dodd of St Martins Lane had requested a patent for *certain improvement on Pedal Harps*. I am immediately opposing it and what is more I will request a patent tomorrow in order to be sure of the priority in case one of these gentlemen decides to try some of the additions that you propose. For the opposition of Dodd's patent, I will ask for the necessary time so that you can give me your instructions.⁹³

Pierre was clearly very concerned that another maker might register a successful idea. Writing to Sébastien three days later he asks, 'Would you by chance have revealed something of your new ideas for the harp to Kessell? He was always writing to Delveaux [sic]! I think it is wise to watch out for him! He is devious'.⁹⁴ On 19 February he adds, 'Delveaux benefitted from what he saw in the workshop. The Attorney General said that in the case of similarity, priority of invention shall prevail'.⁹⁵ Two of the three registrants (Dodd and Delveau) applied their patent innovations in the manufacture of their harps.

⁹³ Adelson et al. vol. 2 (2015), p. 786.

⁹⁴ Adelson et al. vol. 2 (2015), p. 788.

⁹⁵ Adelson et al. vol. 2 (2015), p. 791.

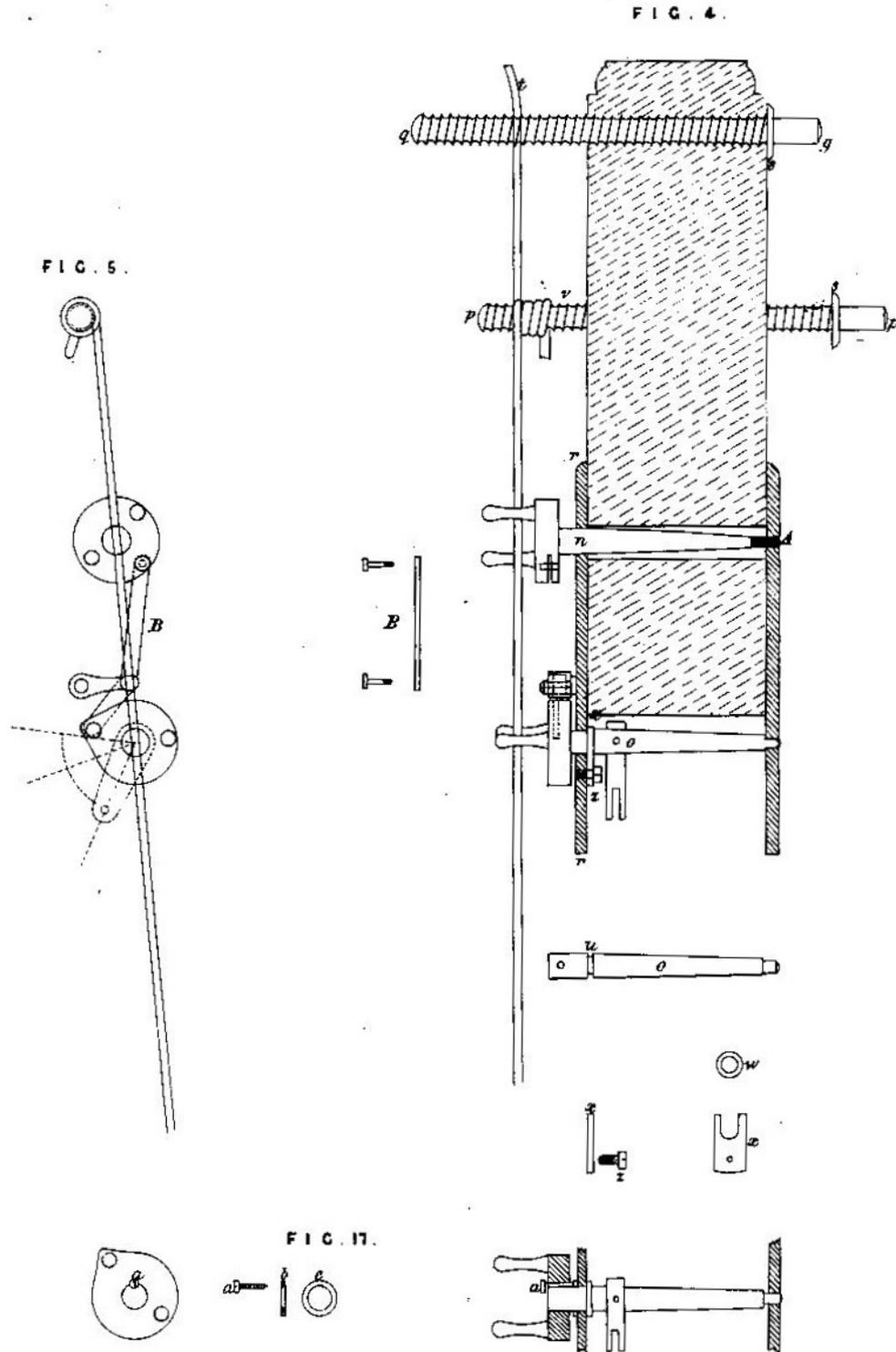
4.4.16. Pierre Érard's patent, no. 4670, 24 April 1822

Certain Improvements on harps

This patent, Pierre Érard's first, is interesting in that some of the ideas are not original, '[...] part of which improvements were communicated to me by a certain foreigner residing abroad'; who this foreigner is we are not told, although it is probable that they were passed to Pierre from Sébastien who was in Paris at this time.⁹⁶ Firstly, Pierre addressed the strengthening of the neck. Where Sébastien's 1810 patent detailed externally linked forks enabling a deeper and stronger neck at the bass end of the instrument, Pierre proposed a new mechanism for the treble end so that the neck there could also be deepened. One row of forks, rather than the two previously used, were adapted to produce both natural and sharp notes. In the natural position the string was supported on a bridge pin; when the note was raised to the natural the string was stopped at two points; and on sharpening at three, the string pinched between two prongs of the fork and a third one on an arm extending from it. Next Pierre described threaded tuning pins that fixed the distance of the strings from the neck; the strings were wound in the threads removing the need for a bridge pin. Finally Pierre reintroduced a, 'new description of index or indicator [...] to show at one glance the key in which the harp has been put' (Figure 4.25 – Figure 4.27). This idea was first patented in Sébastien's 1802 patent, and later by Gröll and Dizi in 1813. Rather than fundamentally changing Sébastien's already successful instrument, or fundamentally altering the method by which semitones were produced, this patent is concerned with adapting the mechanism in order to strengthen the harp's structure, and with the addition of a new key indicator. No instruments made to this specification are known to survive perhaps indicating they were not made.

⁹⁶ Pierre Érard, *Certain Improvements on harps*, no. 4670 (London: HMSO, 1822).

A.D. 1822 APR. 24. N^o 4670.
ERARD'S SPECIFICATION.



The enrolled drawing is colored

Drawn on Stone by Malby & Sons

LONDON: Printed by GEORGE EDWARD EXLEY and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1827

Figure 4.26. Pierre Érad's 1822 patent: threaded tuning pins, and single fourchette.

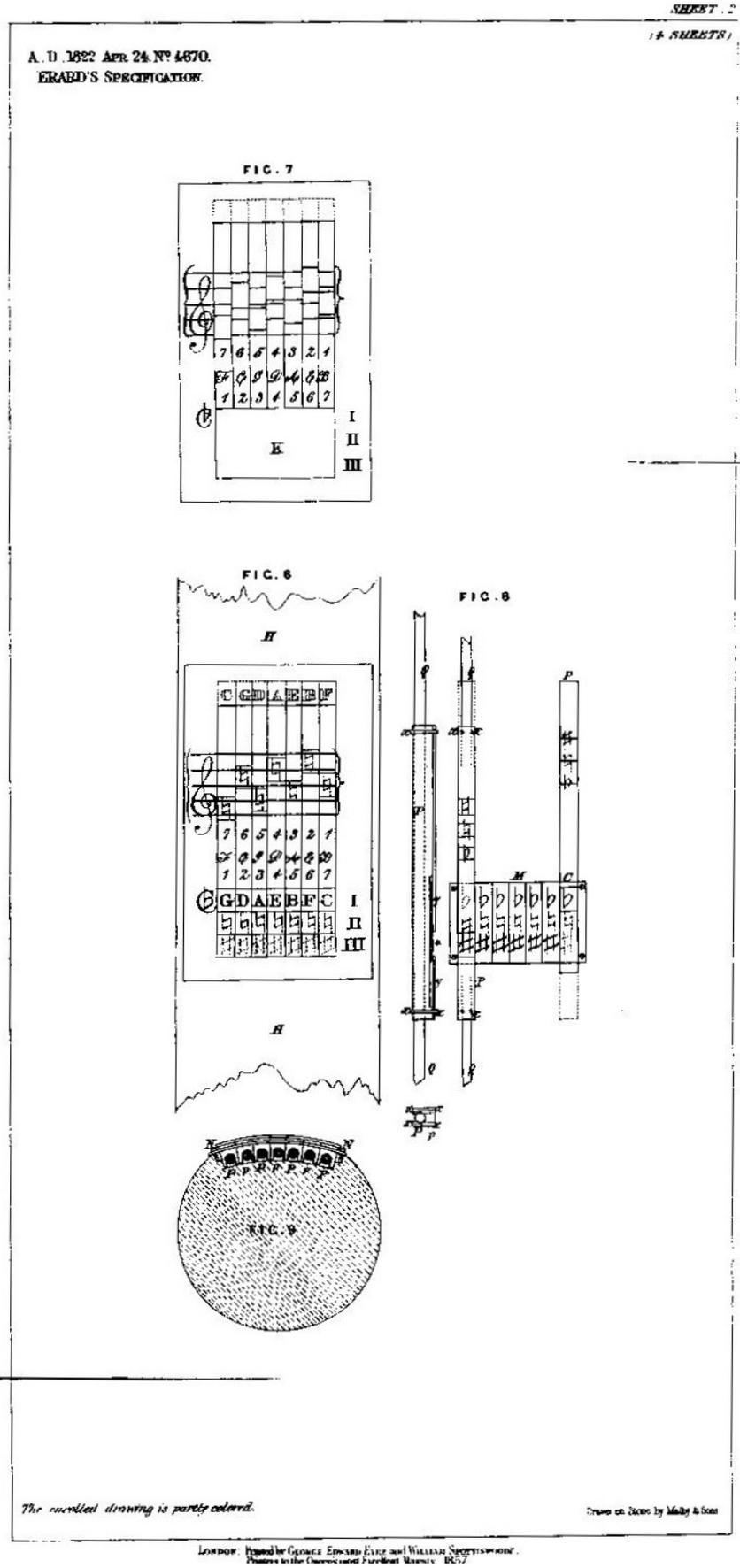


Figure 4.27. Érard's 1822 patent drawing: key indicator and pillar cross section.

4.4.17: Edward Dodd's patent, no. 4671, 24 April 1822*Improvements on pedal harps*

Edward Dodd's patent, like that of Pierre, addressed the strength of the harp.⁹⁷ By laminating thin timber strips together, each the width of the neck, and by forming these to the neck curve, Dodd made it stronger and more able to bear the pull of the strings. Turning to the soundboard he thickened the bridge on its underside, bevelling its edges: 'the elasticity of the edges [...] obtained by these means, will prevent the breaking or cutting of the sounding board, which is created by the current mode of making [...]. Dodd then repositioned the ribs within the soundbox in line with the strings (so as to counteract their pull), and by drilling the string-holes of the soundboard at the same angle (so that they were no longer bearing on the hole edges), he strengthened the body and reduced string breakage (see patent drawing in Appendix 4.8). Dodd certainly employed this new sound box construction although whether he adopted his new laminated neck is unclear, these being commonly replaced during the life of the harp.

4.4.18: James Delveau's patent, no. 4672, 24 April 1822*An improvement on harps*

James Delveau's patent was the first to address the possibilities of extending the harp soundboard to increase the bass response of the instrument, a practice common on modern instruments. He achieved this by continuing the soundboard into the pedal box (Figure 4.28).

By this improvement I obtain a greater degree of elasticity than usual in the sounding-boards, in consequence of its extending some inches below the peg or suspension point of the lowest bass string [...] instead of terminating very near the suspension of said string, as is the case in the present construction

⁹⁷ Edward Dodd, *Improvements on pedal harps*, no. 4671 (London: HMSO, 1822).

of harps, where the sounding-board, as before mentioned, terminates about the level of the dotted line 0,0. The pieces of wood forming the top of the pedestal are hollowed out, as seen at *i, k*, in fig. 1st, so as not to touch the sounding-board in the middle, but only at the two edges thereof.⁹⁸

The pedals were cranked around this longer soundboard and the pillar base plate relieved where it meets it in order to allow it to vibrate. The decorative design of Delveau's harp, whilst bearing some resemblance to that of Érard's widely copied one, deviated from the by now standard column model; a lyre replaced the base of the pillar (Figure 4.29 and Figure 4.30).

⁹⁸ James Delveau, *An improvement on harps*, no. 4672 (London: HMSO, 1822).

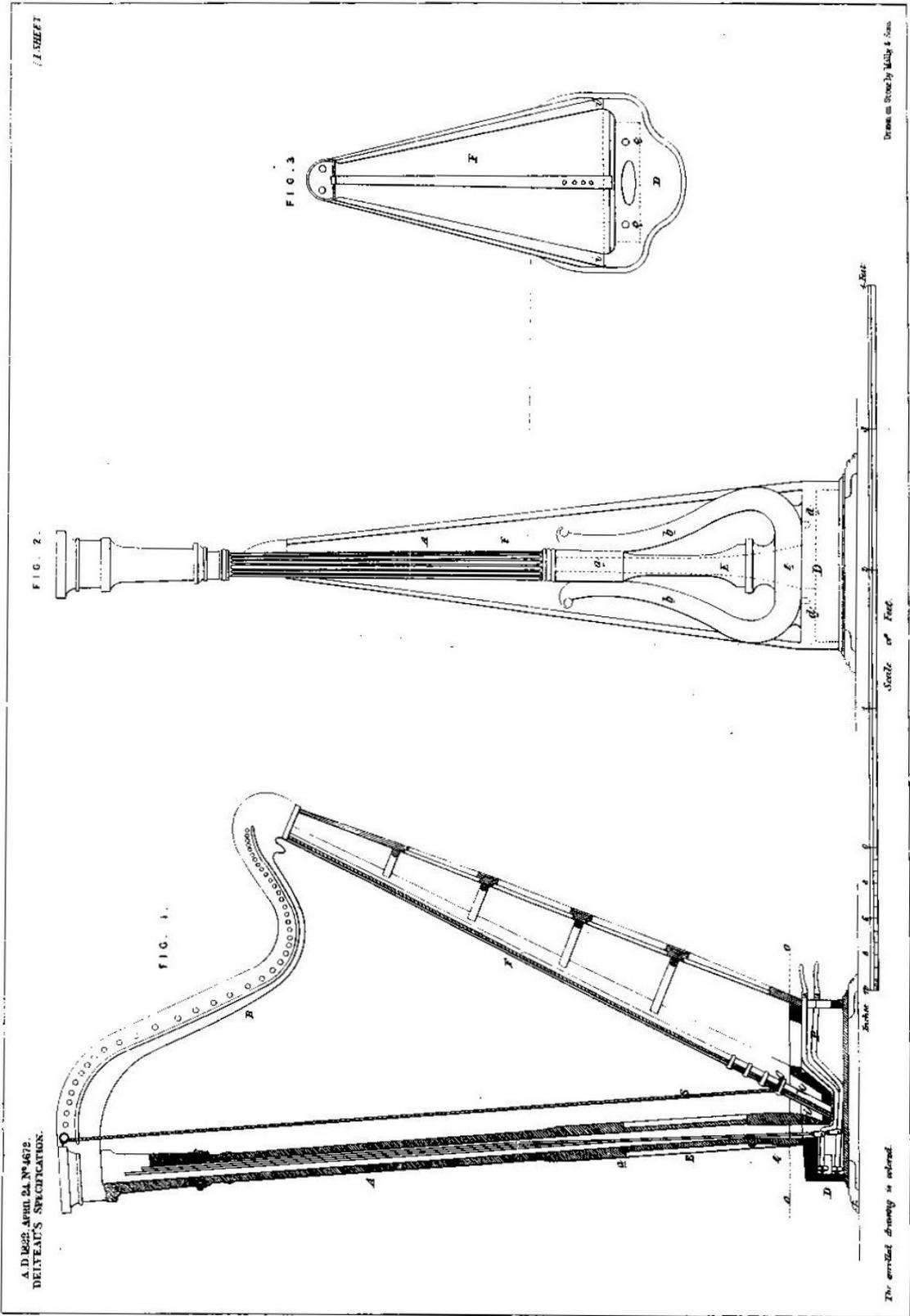


Figure 4.28. Delveau's 1822 patent drawing.



Figure 4.29. Delveau harp with extended soundboard and lyre pillar. Photos used with the kind permission of William Freeman.



Figure 4.30. Detail of lyre on Delveau 1822 patent harp. Photos used with the kind permission of William Freeman.

4.4.19: John Charles Schwieso's patent, no. 5404, 22 August 1826*Improvements on certain stringed musical instruments*

John Charles Schwieso's patent registered three improvements, two pertaining to the harp, and the third relevant equally to the harp, piano and other stringed instruments. Firstly, addressing problems with the mechanism, he proposed that: '[...] each of the forks which make the natural tones on the harp is connected with a spring placed immediately over it on the head of the harp, which keeps it steady and prevents it from jarring'.⁹⁹ Turning to the 'arbours which carry the forks used to make the sharp tones', he applied a spring '[...] to the back of the head of the harp [...] in such a manner that the said spring shall always be acting against the pedal action so as to draw the fork into its open position whenever the pedal is released' (see patent drawing in Appendix 4.9).

Schwieso also registered a new device for fine-tuning:

... a series of small screw nuts, to be used in turning the strings, and placed in such a situation as for one of the nuts to screw down upon each string of the instrument [...] this improvement is not a substitute for, but is to be added to the modes of tuning now in use, and will enable the tuner to bring the instrument to a much greater degree of exactness that can now be done.

Schwieso submitted a full-page advertisement to *The Harmonicon* in May 1827 (Figure 4.31).¹⁰⁰ That his partnership with Emanuel Serquet was dissolved on 20 June of that year,¹⁰¹ only a month later, perhaps indicates some difficulties. Maybe the advert was an attempt to attract new customers. Schwieso's business clearly failed and he was committed to the Fleet Prison 'for want of bail' on 6 May 1831,¹⁰² and declared insolvent 5 days later.¹⁰³

⁹⁹ John Charles Schwieso, *Improvements on certain stringed musical instruments*, no. 5404 (London: HMSO, 1826).

¹⁰⁰ [Schwieso & Co.'s Patent Harp], *The Harmonicon*, 53, May 1827, p. 8.

¹⁰¹ *The London Gazette*, 18373, 26 June 1827, p. 1376.

¹⁰² TNA. PRIS 1/43. An entry in the Fleet Prison commitment books notes that the Sheriff detained Schwieso on 2 May 1831 to answer to Joseph Barber and Sampson Mordan in a plea of trespass.

¹⁰³ 'Declaration of Insolvency,' *London Courier and Evening Gazette*, 12,421, 25 May 1831.



Figure 4.31. Schwieso & Co.'s patent advertisement, *The Harmonicon* (May 1827).

4.4.20: Pierre Érard's patent, no. 6962, 18 December 1835

Certain Improvements on harps

The final Érard harp patent (nominally the Gothic harp) is concerned with an increase in the instrument's compass from 43 to 46 strings (C and D were added at the bottom of the harp, below the normal E, and an f was added at the top). The soundboard length was increased from 4' to 4' 4", in order to accommodate these. The patent introduced:

[...] an improved double-action harp with the required advantages of a more harmonious, powerful and effective tone, giving to the instrument at the same time an easier touch for facilitating to the performer the execution of new passages introduced in modern compositions for the instrument.¹⁰⁴

In order to include his key index (first patented in 1822), Pierre altered the arrangement of the mechanism in order for the movement of the pedals to correspond with the index:

[...] the usual arrangement of the pedals in Sébastien Érard's patent double-harp is not disturbed, that is to say those pedals range in the following order: D, C, E, B, F, G, A [...] for applying my former index the pedals required to be arranged in a different and unusual order; but this part of my present improvements consists in the following mechanism for establishing a correspondence and proper communication between the pedals in their own usual order, and the sliders of the index in their own proper suitable order [...]

Pierre quoted the pedal layout of Sébastien's 1810 harp incorrectly in this specification. Extant Érard instruments have a standard arrangement: D, C, and B to the player's left, and E, F, G, and A to the right (Figure 4.32). Although Érard did not apply the key index to gothic harp, that it was patented again here suggests that some players were still coming to terms with the increased complexity of the double action.

¹⁰⁴ Pierre Érard, *Certain Improvements on harps*, no. 6962 (London: HMSO, 1835).

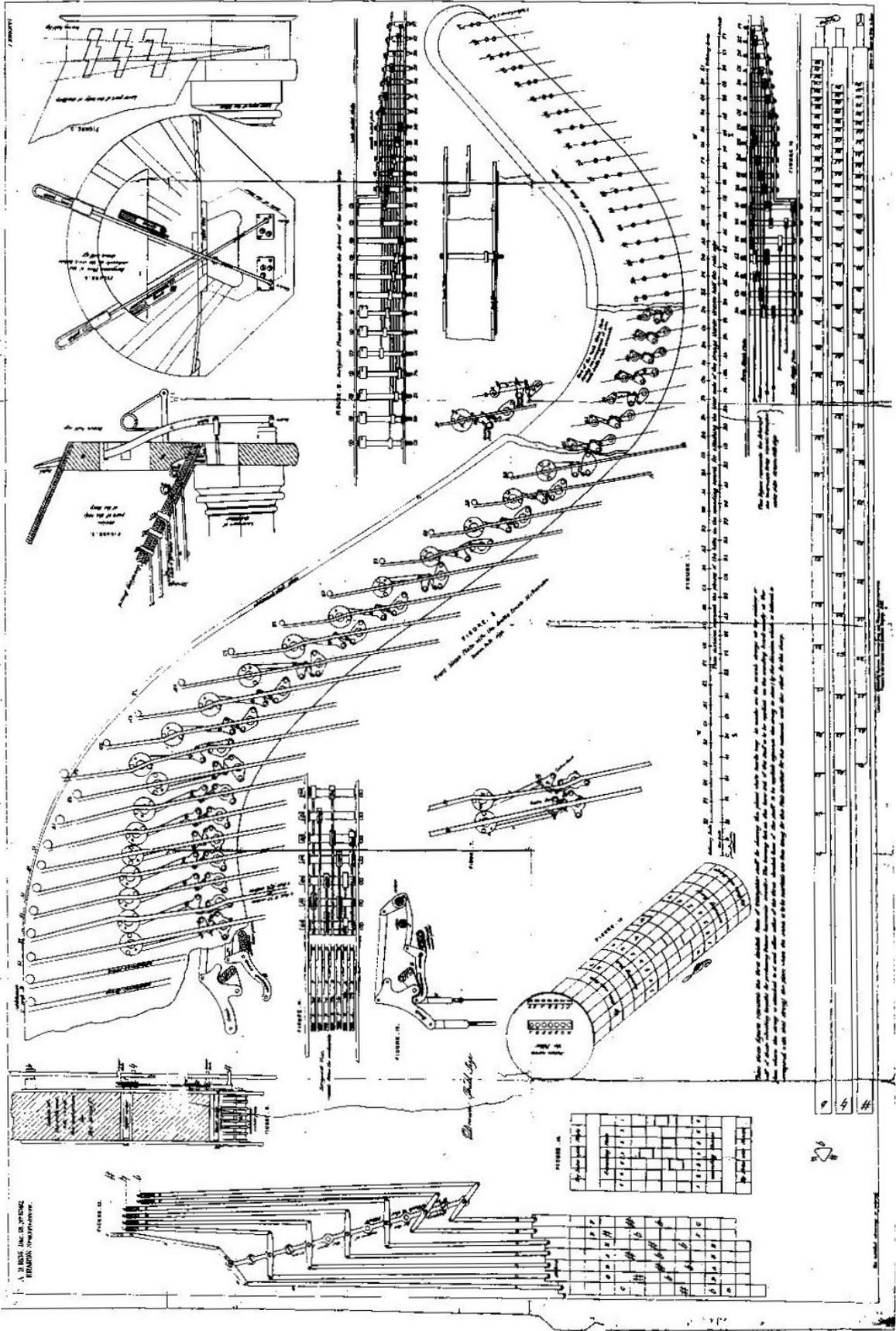


Figure 4.32. Pierre Éard's 1835 patent drawing for the Gothic harp.

4.4.21: James Corbett's patent, no. 7241, 2 June 1836

Certain improvements in producing harmonic sounds on the harp

Corbett's patent focused on the production of harmonics rather than string stopping or structural reinforcement (see patent drawing in Appendix 4.10). The addition of a moveable bridge enabled harmonics to be played on any string at will:

The apparatus, which is strapped to the pillars of the harp, consists of a light but strong frame, containing a series of projecting moveable plates so arranged that when pressed inwards by the performer certain of the plates come against the middle of particular strings from which it is desired to produce harmonic tones. Before commencing to play, the performer arranges these moveable plates in such a manner as that each shall be opposite to a particular string.¹⁰⁵

There is no evidence that this was ever made.

4.4.22: Frederick Grosjean's Patent, no. 7450, 20 October 1837

Certain improvements on harps, which improvement are applicable to other musical instruments

Grosjean's improvement concerned the tone of the harp.¹⁰⁶ Through the application of 'vitrified or crystallised matters to the sounding boards and other surfaces of harps, and other stringed musical instruments,' he claimed to be able to 'obtain greater fullness and richness of tone.'¹⁰⁷ He identified various materials, some more suitable than others, including 'glass, flints, sand, metals, and other vitrified and crystallised substances',¹⁰⁸ citing glass as his preference, which could be cemented to the surface of the soundboard. Grosjean described his method of achieving this:

¹⁰⁵ James Corbett, *Certain improvements in producing harmonic sounds on the harp*, no. 7241 (London: HMSO, 1836).

¹⁰⁶ Frederick Grosjean, *Certain improvements on harps, which improvement are applicable to other musical instruments*, no. 7450 (London: HMSO, 1837).

¹⁰⁷ 'Specification of a patent granted to John Frederick Grosjean', in *Repertory of patent inventions and other discoveries*, vol. 9 (London: J. S. Hodson, 1838), 340-343 (p.340).

¹⁰⁸ *Repertory of patent inventions*, p. 341.

I take any quantity of flint glass (by preference), and having pounded it in a mortar and broken it into parts somewhat smaller than peas, I put it into a coffee mill, and grind the same to as even a state as possible, in order to obtain a quantity of particles of about one-sixteenth of an inch.⁹⁹

He graded the ground glass through two progressively smaller sieves to remove the finer particles:

I prefer to sweat the particles in a linen cloth, which operation is performed by putting the sifted glass in a cloth and shaking it to and fro several times, by which the parts or crystals with have any dust separated therefrom [sic] which would otherwise adhere. Having thus prepared the broken glass, I proceed to apply it to the sounding board and to other surfaces of a harp... and for this purpose I employ a cement, by preference, of glue with isinglass about one half by weight of each.⁹⁹

Grosjean then describes the application of the cement (probably hide glue) to a warmed soundboard, on to which the glass, heated 'to a degree that the hand can just touch', was evenly sieved. He claimed that when the glass covered the whole instrument, it resembled a grotto.¹⁰⁹

4.4.23: John Hawley's patent, no. 8526, 1 December 1840

Improvement in Pianos and harps

This patent, 'a communication from abroad', registered by John Hawley, a watchmaker, is concerned with the application of springs to harps and pianos, in particular the method use to temper them.¹¹⁰ Although these springs, described as 'cylindrical, angular, or quite straight – except for the deep notes, those being thickest in the middle and tapered off towards each end', were to be applied to the instrument, their exact use is unclear. The recipe and method for tempering them gives a clue:

The wires are hardened by being heated red hot and quenched in the following mixture, viz. 5lbs. of tallow; 6lbs. beef suet; 1lb. bee's wax; 5lbs. olive oil; ¼lb. hartshorn in powder, and 32 grains of mercury. They are then to be tempered by

¹⁰⁹ *Repertory of patent inventions*, p. 342.

¹¹⁰ 'Notes and Notices', *The Mechanic's Magazine*, ed. by J. C. Robertson, 33 (London: Robertson, 1840), p. 64.

bazing [brazing?] off, or any other convenient method, but the extreme ends of the wires must be let down and made quite soft, to allow them to be wound around the pegs of the instrument without breaking.¹¹¹

That Hawley intended to wind them around the pegs (presumably tuning pins) suggests that, applied in this way, they tightened them within the pinholes in order to keep the instrument in tune.

4.4.24: John Henry Pape's patent, no. 10,668, 17 November 1845

Improvements in musical instruments

Pape, a pianoforte maker, patented a cross-strung harp with a string for each note of the chromatic scale, described in the specification as analogous with the piano, the 'tones on one side of the console and the half tones on the other'¹¹² (see patent drawing in Appendix 4.11). This, undoubtedly informed by the earlier Spanish *arpa de dos ordenes*, anticipated the chromatic harp produced at the end of the nineteenth century by Pleyel, Wolff, Lyon & Cie., for whom Pape worked after his arrival in Paris.¹¹³ Pape's patent was the final one registered for the harp.

4.5: Occupations of harp patentees

Pat Kirkham notes that three-quarters of those who registered patents for furniture during the nineteenth century were not furniture makers. Of those who were, most were entrepreneurs rather than working craftsmen. Kirkham asserts that it was entrepreneurial spirit rather than craft skills which drove innovation in furniture.¹¹⁴ The occupations of those who registered patents for the harp tell a different story: eight were harp makers (two of whom also made pianofortes), two solely pianoforte makers, two inventors, one watchmaker, one musician, and three unknown.

¹¹¹ 'John Hawley, Frith Street, Soho, Watchmaker', *The Mechanic's Magazine*, ed. by J. C. Robertson, 33 (London: Robertson, 1840), p. 589.

¹¹² John Henry Pape, *Improvements in musical instruments*, no. 10,668 (London: HMSO, 1845).

¹¹³ Margaret Cranmer, 'Pape, Jean Henri', *GMO* [Accessed 27 August 2016].

¹¹⁴ Kirkham, pp.124-125.

Although, like furniture making, harp making required cabinetmaking skills, the skills of the metalworker and mechanic were needed as well. That just over half the harp patents were registered by instrument makers suggests that musical and haptic knowledge were at least as important as entrepreneurship in the instrument development.

4.6: Other harp innovations

Several other inventions for the harp were not patented. It is possible that some patent attempts were unsuccessful, or that cost prevented or dissuaded some inventors from trying. Makers also sought to maximise income by offering a range of accessories (such as harp covers and string boxes) together with essentials (strings and tuning keys), some of which are advertised in newspapers. A letter from Nicholas Charles Bochsa to John Egan, an Irish harp maker, published in the *Dublin Evening Post* (8 September 1821), reveals that Egan had not only invented the Royal Portable Irish Harp (a small single-action) but also a triple-action instrument, although what triple means in this context is not noted:

I have the great pleasure in informing you, the Royal Portable Irish Harp, invented by you, has my decided approbation. Its peculiar sweetness of tone, so admirably adapted for accompanying the voice; the great facility of changing the keys, and its portability, make it a most desirable Instrument to proficients on the Pedal Harp. Of your Double-action Pedal Harps I have given a convincing proof of their merits, by playing on one of your make on Friday, at the Coronation Concerts, Theatre Royal; and, as further proof, I request you will make for me a Double-action Pedal Harp, a Royal Portable Irish Harp, and also one of your newly-invented Triple-action Pedal Harps, which invention I do consider the highest degree of perfection the Harp can arrive at.¹¹⁵

A furniture sale advertisement, placed in the *Morning Post* (14 May 1829) by Mr Crockford of 156 New Bond Street, announced the availability of a ‘small size pedal harp by Erat and Sons, expressly made for Miss Fanny Woodham, the celebrated vocalist.’¹¹⁶ The advertisement shows that the Erats produced instruments in more

¹¹⁵ ‘By Special Appointment’, *Dublin Evening Post*, 91, 8 September 1821.

¹¹⁶ ‘Second consignment of elegant Foreign Cabinet Furniture’, *Morning Post*, 18,227, 14 May 1829. Fanny Woodham was a ‘young musical prodigy, the protogé [sic] of a circle of ladies of the highest

than one size. The serial number of a recently discovered, apparently unique, 29-string, single-action harp by Erat, suggests a manufacture date of c1830; it is conceivable that this is the instrument made for Fanny Woodham (Figure 4.33).

Schwieso and Grosjean developed a double action with two ranks of strings named the Cambrian harp. Hoping to capitalise on the popularity of the Welsh triple harp, they received acclaim in some quarters, in particular from John Parry, the renowned Welsh harpist:

Your readers will be glad to hear, that a newly-invented Pedal Harp, with two rows of strings, was introduced at the last meeting of the Canorion. The idea of this very clever instrument, as now produced, originated with Mr. H. Williams, of Dean Street, though I ought to observe here, that Mr. James, of Oxford, who obtained the prize for the best Englyn on “Awen” at the Wrexham Eisteddvod, had long contemplated such an improvement. As I intend to describe the Cambrian Pedal Harp in an article preparing for the “Annual Report of the Cymmrodorion,” I shall only add that it will be found to possess all the requisites of the Welsh harp, together with the advantages derived from the pedals, which act twice, viz. they will raise any note half a tone, or a whole. The appearance of the harp is very elegant, and the mechanism does great credit to the artists, Messrs, Schwieso and Grosjean, of Soho Square.¹¹⁷

That there are no known examples of the Cambrian harp suggests that few were made. It was, however, successful enough that Grosjean continued to advertise it in 1828, following his split from Schwieso (Figure 4.34), and both single and double action versions, costing £84 and £147 respectively, were included in his later catalogue.¹¹⁸

rank, including the Duchess of Kent, and others of the royal family, and even the Queen.’ C. A. Stewart, *Sketches of Society in Great Britain and Ireland*, vol. 1 (Philadelphia: Carey, Lea, & Blanchard, 1834), p. 147.

¹¹⁷ John Parry, [To the Editor of the Cambro-Briton], *The Cambro-Briton*, 3 (London, 1822), p. 425.

¹¹⁸ ‘Grosjean Catalogue’, Bodleian Library, University of Oxford: John Johnson Collection: Musical Instruments 3 (28) (c1838-40).

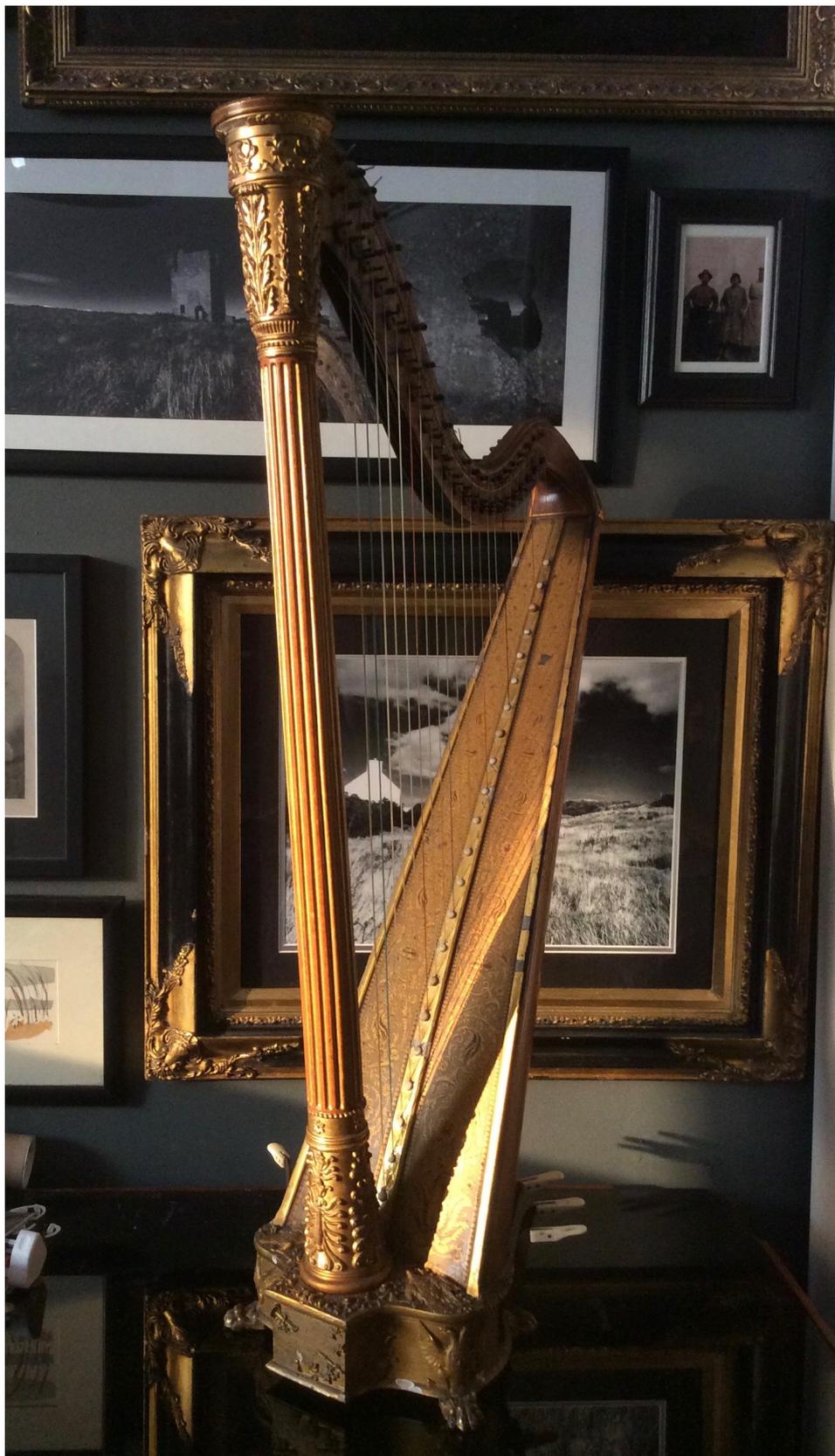


Figure 4.33. Small, 29 string Erat single-action harp, c1830, possibly made for Fanny Woodham, private collection.



Figure 4.34. Advertisement for Grosjean, Harp maker. Exeter and Plymouth Gazette (26 April 1828).

On 25 June 1828 Grosjean announced that he had produced a ‘little dumb harp’ for practice (without sound box) after an invention made by Madame de Genlis for a blind friend, described in her *Memoires*. The report in the *Athenaeum* asserts ‘that we may soon expect to see our young ladies practicing their harp lessons as they take their evening drives, or whilst sitting under the tormenting hands of their hair-dresser,’ (Figure 4.35). The article quotes Madame de Genlis’ description:

[...] rather longer than the finger range, and of only a sufficient width to admit gut strings of a middling thickness, well stretched, and placed at the same distances as on the harp. A small strip of scarlet cloth, drawn through the strings, entirely deprived them of sound. [Of her friend she writes] She always carried this miniature harp about with her, in a bag, and it was scarcely more cumbersome than her fan. She played on it whilst travelling, and frequently without being noticed, by hiding it under her shawl.¹¹⁹

¹¹⁹ ‘Harp a la Genlis’, *The Athenaeum*, 35 (London: Lewer, 1828), p. 554.

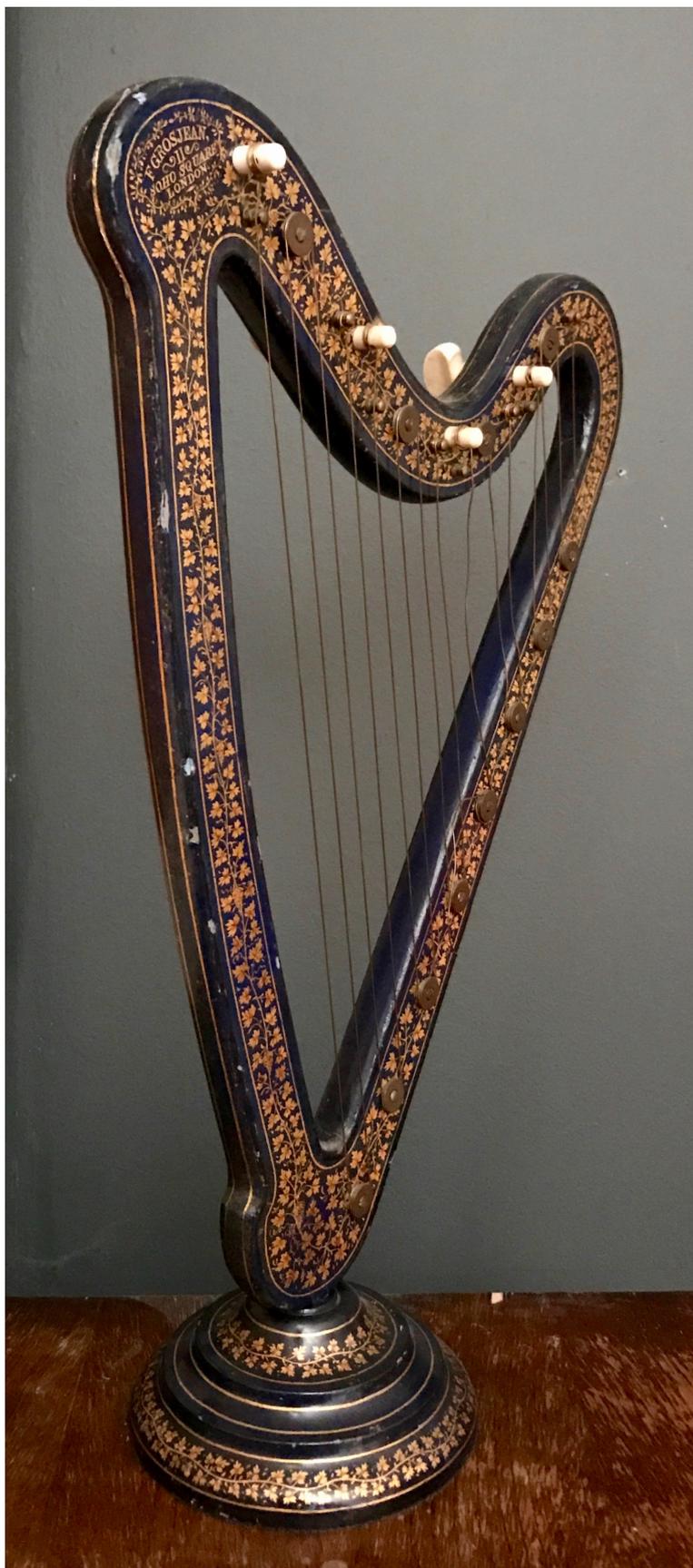


Figure 4.35. Grosjean's Harpe a la Genlis, private collection.

Grosjean's catalogue, published some ten years later, names other harps in 'antique shapes':

Hibernian Harps	84 guineas and upwards
Wernelin Harps	30 guineas and upwards
Carriage Harp	25 guineas and upwards
Victoria Harp Lyre	12 guineas and upwards

Although these are not described, Carriage Harp suggests a small, perhaps lap-type instrument, like the 32-inch diatonic harp by Grosjean sold at auction in 2015 (Figure 4.36). One might assume that Hibernian harp emulated the form of an antique Irish instrument, or perhaps those of Egan; the price suggests that it was a substantial, possibly mechanised, instrument.¹²⁰ A 41-string ornately japanned, gilded, and painted diatonic harp (maker unknown) in the Scenkonst Museet, Stockholm (Figure 4.37), has a similar bridge-pin arrangement to the aforementioned harp, and hence may be a Grosjean Hibernian harp. Wernelin Harp does not offer clues about that type.

Grosjean's Victoria Harp Lyre is described in the *Musical World* (18 January 1844) (Figure 4.38). It comprised a pedestal of carved oak and burnished gold; a body of polished rosewood (presumably veneered); a green and gold neck decorated with gold lines and shamrocks; and an enameled, cream-coloured front. At seven feet tall, it was larger than the Gothic harp, but with only 18 strings attached to three tuning machines. Like the harp, it had a neck and pedestal, and it was richly decorated. It apparently combined the effect of the harp with that of the Greek lyre.¹²¹

¹²⁰ An anonymous 41-string non-mechanised harp in the Swedish Museum of Performing Arts (no. F472) may be by Grosjean. The harp has a japanned and gilded, curved column (like its Irish counterparts) that terminates in a rococo-style scroll. The neck curve is close to that of the standard double-action instrument, and the sound box construction similar of those of the period; the soundboard is decorated with Chinese figures and chinoiserie, imitative of those used to decorate French harps during the eighteenth century.

¹²¹ 'The Royal Victoria Harp Lyre', *The Musical World*, 19, 3, 18 January 1844, p. 20

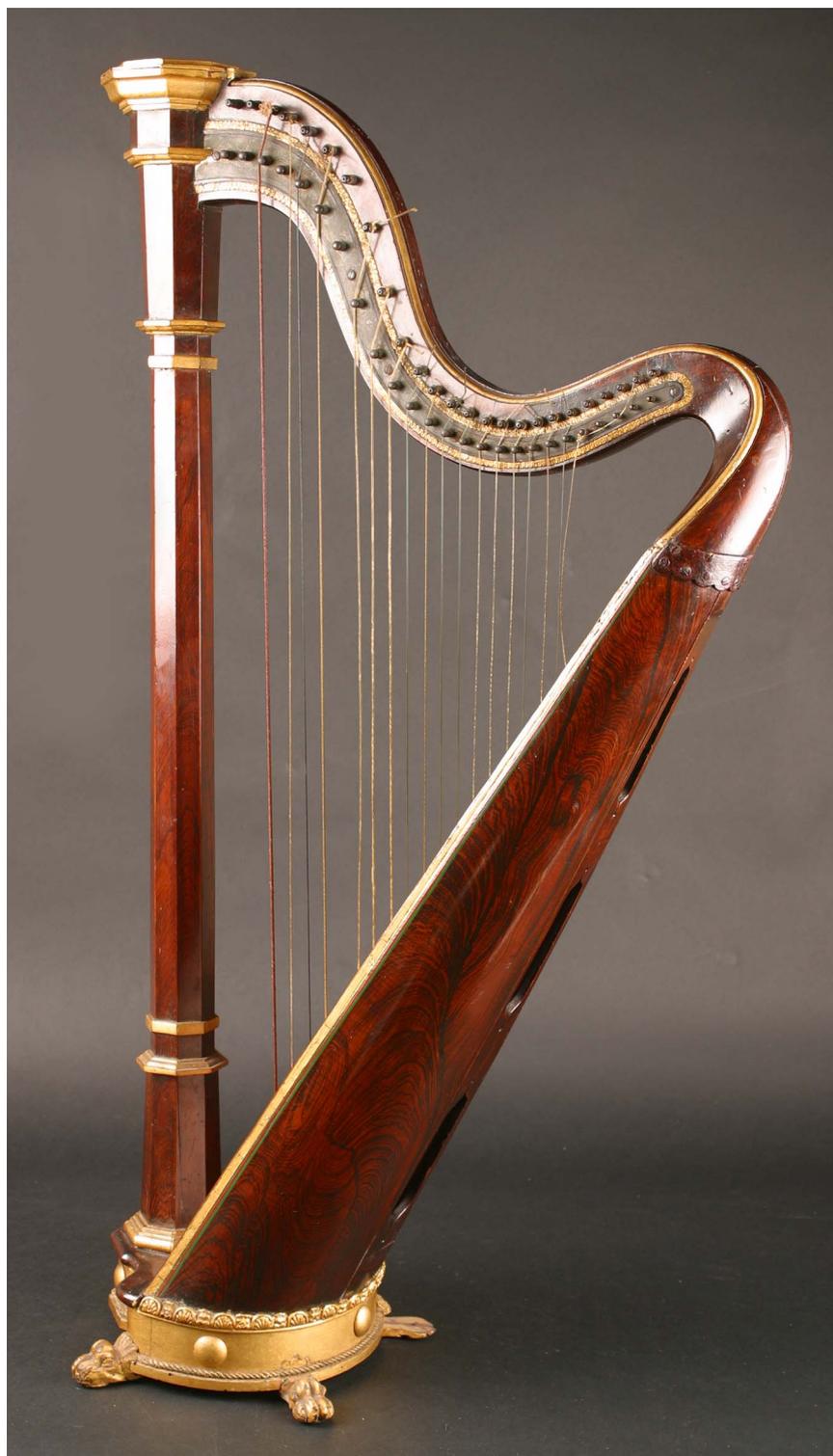


Figure 4.36. 32-inch harp by Grosjean, presented by William Butler Yeats to Maud Gonne. Photograph used with the kind permission of Whytes Auctioneers.



Figure 4.37. Anonymous 41-string harp, possibly a Grosjean Hibernian (photograph used with the kind permission of the Scenskantz Museet, Stockholm).

“The Royal Victoria Harp Lyre,”—unlike the ordinary Harp, this unique instrument, rests upon a pedestal of carved oak and burnished gold, which lends it an effect, at once grand and imposing—while its sweetness and delicacy of tone, (as produced from it by Mr. White,) forms a charming accompaniment to the voice. The body is rose-wood, highly polished. The neck has double gold lines, entwined with Shamrocks, in green and gold. The front, which is of cream color enamelled—has the following inscription in letters of gold—encircled by a garter bearing the Rose, Shamrock, and Thistle:—

“Royal Patent Victoria Harp Lyre, expressly designed for and presented to P. F. White, Esq. the distinguished illustrator of National Minstrelsy—(author of the “Boudoir Lyrics, &c.”) by the manufacturer, Frederick Crosjean.

There are three machines mounted in mother of pearl, by which the strings (18 in number) are tuned). At the top of the neck is a crown, supported by national emblems, carved and burnished gilt. Its height from the base of the pedestal to the summit of the crown is seven feet; the workmanship is of the first order, and reflects credit upon the talent of its inventor. As an ornament for the drawing-room, as well as an improvement on the ancient Lyre of the Greeks, combining the effects of the modern harp—“The Royal Victoria Harp Lyre,” must become popular. In selecting our native Melodist, Mr. White as the bard worthy of such a boon—we conceive that an honorable, and friendly feeling toward Ireland, has been manifested by the London manufacturer, to whom, we thus feel bound to express our acknowledgements.

Figure 4.38. Grosjean’s Victoria harp lyre, described in the Musical World (18 January 1844).

Some products were made to help harpists. Jacob and James Erat announced their new invention, a Spring of Support, in *The Harmonicon* of February 1830.¹²² It consisted of a raised board on which the harp was mounted, the base of the pedal box attached by a spring, which took the weight of the harp and freed the player to move independently (Figure 4.39).



Figure 4.39. Erat's spring of support, *The Register of Arts, and Journal of Patent Inventions*, (1830).

According to *The Register of Arts*, the harp could be supported 'in any position convenient to the player [...]. If the inclination of the harp be too great or too little, its base is shifted a little forward or backward, which makes no difference in the support afforded by the springs.'¹²³ This device was aimed at all harpists but 'particularly [...] young ladies of delicate health'.

¹²² [Erat's Spring of Support], *The Harmonicon*, 26, February 1830.

¹²³ [Spring support to a harp], *Register of Arts, and Journal of Patent Inventions*, 4 (London: B. Steil, 1830), p. 305 and plate 19.

4.7: Summary

Industrialisation in London created a climate in which innovation flourished. Following Sébastien Érard's arrival there in 1792, it became the foremost centre of harp manufacture. Patent registration, although expensive and complicated, increased rapidly in Britain between 1790 and 1849. Patents could be registered for new, 'unused by others', vendible, and useful innovations, although it was also possible to patent ideas from overseas. Registrations for the harp were second only among musical instruments to the pianoforte. Due to lack of scrutiny, patent applications were often successful, and were not always defensible against a breach of intellectual property rights. This protection of an invention proclaimed an inventor's skills, such that the rewards might substantially outweigh the cost. Twenty-three harp related patents were registered in Britain during a fifty-one-year period (1794-1845), framed by Sébastien Érard's single-action and Pierre Érard's gothic harps.

Unlike those who registered furniture patents, often not of that trade, half of harp patentees were instrument makers. The Érards, registering seven, dominated; Gröll and Dizi registered two each (one of them in partnership); Erat registered one and contributed, with Willis, to the development of another; and Fröschle, Becker, Woods, Jubb, Dodd, Delveau, Schwieso, Corbett, Grosjean, Hawley, and Pape each registered one. Four areas of innovation emerged: stopping the strings to change key; structural strengthening; tuning stability; and the achievement of new musical effects. The appearance of the instrument, including decoration, was not protected, and that of instruments by Érard, the technical and decorative trendsetter, was widely copied. In doing so, other makers saved on design, development, and manufacturing costs; and benefitted by association with the most successful manufacturer.

Although the Érards' designs prevailed, they also bought other makers' innovations, to adapt and develop them. Sébastien Érard's claim to be the sole inventor of the double-action harp with fourchettes is false: Gröll's patent (1807) preceded his by a year. Other makers borrowed ideas from Érard and from each other.

While the frequency of patent registration accelerated, that for the harp slowed throughout the 1820s. Some innovations were not patented – perhaps the expense exceeded the potential income. Registrations ended in 1845 with Pape’s cross-strung instrument, perhaps due to the dominance of the Érards’ designs, decline in consumption, and expense.

Chapter 5: The Erats: a manufacturing family

This chapter examines the Erat household during the period 1821-1824, that is directly following Jacob's death. Family members are identified, and Jacob's country of origin, hitherto unknown, is discussed, and possible nationalities are considered. Family spending, recorded with that for the business, is scrutinised in relation to domestic life and social status. Jacob's will (1821), analysed to reveal his wealth, is compared with those of his son and daughter-in-law, Jacob junior (1837) and Ann-Caroline (1838), showing declining family fortune. A court case (1825-1831) instigated by George Sharp (one of Jacob senior's executors) reveals how and why the futures of the family and business were jeopardised. The interconnection between the family's business interests and social lives are discussed in light of their pivotal role in the Society of British Musicians, and the later lives of Jacob Erat's children are traced through census and probate records.

According to Leonore Davidoff and Catherine Hall, profit between 1780 and 1850 was secondary to the creation of an 'establishment', a word that they use to denote the 'combined enterprise and family/household.' They conclude that the importance of family life derived from religious belief which in turn framed business activity, and that 'economic organisation, finance, training, and personnel were interwoven with domestic affairs'.¹ As this is true of the Erats, a study of the business would be incomplete without examination of the family.

Manufacturing families in nineteenth-century London were common. The Erats' nearest and more successful competitors, the Érards, consisted of Sébastien Érard, his Paris-based brother, Jean Baptiste, and his nephew Pierre, who ran their London business from 1814.² The marriage of Burkat Shudi's daughter to his apprentice, John Broadwood, initially resulted in a harpsichord-making partnership, which grew to become the Broadwood pianoforte making company to which Broadwood's two sons succeeded after his death.³ Family business was not restricted to the

¹ Leonore Davidoff and Catherine Hall, *Family Fortunes* (London: Routledge, 1997), p. 198.

² Ann Griffiths, Robert Adelson and Jenny Nex, 'Érard', in *The New Grove Dictionary of Musical Instruments*, 2nd edn, II, ed. by Laurence Libin (Oxford: Oxford University Press, 2014), 234-237 (p. 235).

³ Derek Adlam and Cyril Ehrlich, 'Broadwood' in *The New Grove Dictionary of Musical Instruments*, 2nd

instrument trade. Whilst the histories of some larger family-run companies have been written,⁴ many smaller ones have been ignored. The Erat accounts offer a glimpse of their family life in juxtaposition to their business.

5.1: Jacob Erat's origins

Little is known about Jacob Erat's origins or how he became a harp maker. He married Martha Pridmore at St James's, Westminster, in 1796;⁵ they had eight children. Catherine was born in 1797, followed by Mary-Ann in 1798;⁶ Jacob, their first son, arrived the following year,⁷ and James in 1801.⁸ Martha (junior) was born in 1803,⁹ William in 1806,¹⁰ Georgiana in 1808,¹¹ and Julia in 1811.¹² It is likely that Jacob, like many of the other London harp makers, was of continental European origin;¹³ a note written on the back of an envelope (c1960) by Catherine Brown, his great-granddaughter (Figure 5.1), states that the Erats came to England when they were expelled from Southern Germany; a payment of 2 guineas to the Society of Poor Germans, entered in the Erat Ledger on 20 April 1822,¹⁴ might support this German connection.

edition, vol. 2, ed. by Laurence Libin (Oxford: Oxford University Press, 2014), 410-412.

⁴ Detailed histories have been written about large and long-lasting companies such as Broadwood (David Wainwright, *Broadwood by Appointment* (London: Quiller, 1982)); Hoare's Bank (Victoria Hutchins, *Messrs Hoare Bankers* (London: Constable, 2005)); the Wedgwood family (Wedgwood: *The First Tycoon* (New York: Viking, 2004)); and some companies have even published their own histories (Tim Lawler, *Fortnum and Mason: The First 300 Years* (London: Fortnum and Mason, 2007)).

⁵ Marriage of Jacob Erat and Martha Pridmore, St. James, Westminster, 1796, Pallot's Marriage Index, 1780-1837, Ancestry.co.uk [Accessed 30 August 2016].

⁶ According to Robert Henderson, Jacob's great-great-great-grandson, Catherine was baptized on 2 July 1797 indicating that she was born shortly before, and Mary-Ann was born on 21 September 1798. I have been unable to validate these dates.

⁷ Jacob Erat, born 9 December 1799, *Select Births and Christenings, 1538-1975*, Ancestry.co.uk [Accessed 30 August 2016].

⁸ James Erat, born 10 January 1801, *Select Births and Christenings, 1538-1975*, Ancestry.co.uk [Accessed 30 August 2016].

⁹ Martha Erat, born 7 October 1803, *England & Wales, Christening Index, 1530-1980*, Ancestry.co.uk [Accessed 30 August 2016].

¹⁰ William Erat, born 31 January 1806, *England & Wales, Christening Index, 1530-1980*, Ancestry.co.uk [Accessed 30 August 2016].

¹¹ Georgiana Erat, born 4 June 1808, *England & Wales, Christening Index, 1530-1980*, Ancestry.co.uk [Accessed 30 August 2016].

¹² Julia Erat, born 27 June 1811, *England & Wales, Christening Index, 1530-1980*, Ancestry.co.uk [Accessed 30 August 2016].

¹³ James Delveau was Belgian; John Charles Schwieso and Johann Andreas Stumpff, German; and the Érards, and probably Frederick Grosjean, French.

¹⁴ EL. p. 200.

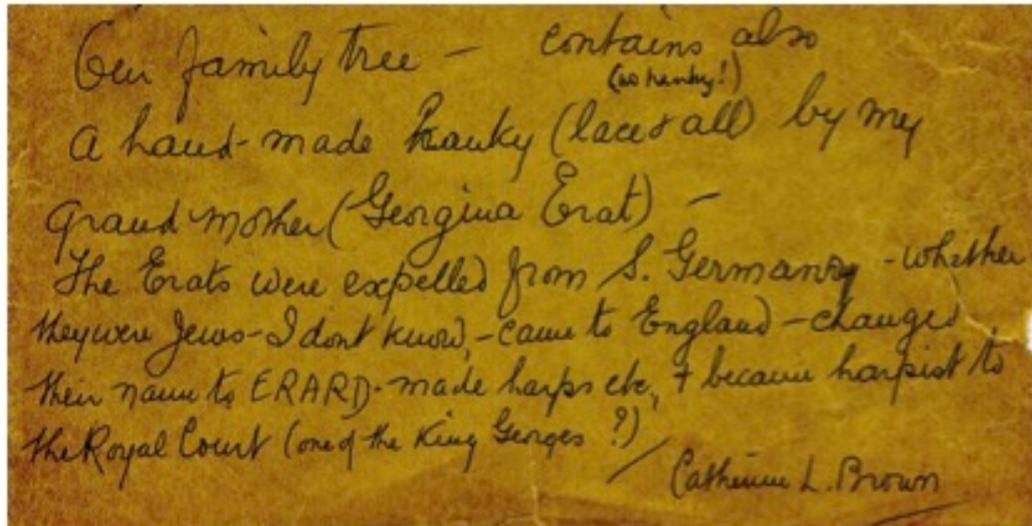


Figure 5.1. Note written by Catherine Brown, grand-daughter of Jacob Erat, c1960, used with the kind permission of Robert Henderson, his great-great-great-grandson.

That Catherine was unsure of Jacob's religion is unsurprising. Orally transmitted family history, such as this appears to transcribe, is subject to inaccuracy over time. There is no evidence that Jacob was Jewish or that he was expelled from Germany because of his religion. According to Avieser Tucker, 'some processes preserve in their end states information from their initial states'.¹⁵ Is information about Jacob's origins (initial state) alluded to in this note (end state)? Could Catherine have been correct in asserting that Jacob was expelled from Germany? Whilst the Jews were not officially persecuted in Germany during the eighteenth century, their relationships with the German states were strained, and by 1750 they formed a substantial, impoverished begging class.¹⁶ Perhaps Erat left Germany for London in search of work and prosperity. In the decades that followed, nationalist tensions in Europe rose, especially after Napoleon's 1815 defeat at the Battle of Waterloo; and from 1819, German pogroms, student protests (1830-32), and an unsuccessful revolution (1848-49) saw many Jews stripped of their rights, resulting in mass emigration.¹⁷ Could Catherine have been wrong about the country but right about Jacob's exile? Such an event is likely to have been remembered within the family, even if the facts mutated over time. Is it possible that the Erats, if not

¹⁵ Avieser Tucker, *Our Knowledge of the Past: A Philosophy of Historiography* (Cambridge University Press: Cambridge, 2004), p. 121.

¹⁶ Till van Rahden, *Jews and Other Germans* (London: University of Wisconsin Press, 2008), p. 26.

¹⁷ Andrea Mehrländer, *The Germans of Charleston, Richmond and New Orleans during the Civil War Period, 1850-1870* (Berlin: Walter de Gruyter, 2011), p. 14.

excluded from Germany, were exiled from another country? Might Jacob's choice of business location, London's Soho district, indicate a French Huguenot ancestry? At least 200,000 Huguenots emigrated from France to nearby Protestant countries, including Prussia.¹⁸ Soho and Spitalfields saw the immigration of French Huguenot refugees following the Edict of Fontainebleau (1685),¹⁹ during the late seventeenth and early eighteenth centuries, and many of those who moved to Soho were employed in watch making, silversmithing, and finance.²⁰ Jacob is named as a 'clock manufacturer' on the marriage certificate of his daughter Georgiana, indicating his initial training (Figure 5.2). Such skills would have been invaluable in developing and making harp actions. The Érards employed a watchmaker, albeit to work on wind instruments;²¹ and Robert Willis consulted Vulliamy, the renowned clock maker, during the development of his harp (discussed in Chapter 9). Erat's decision to establish himself in Soho may have been influenced at least as much by the presence of fellow Huguenots as by the availability of materials, workforce and market. Jacob's marriage to Martha at the Anglican St James's Westminster and his family's attendance there indicate that he was a Protestant.²² The Marriage Act of 1753 which required non-conformists to marry in an Anglican church exempted Jews and Quakers;²³ had Erat been Jewish, he could have married in a synagogue. It is unlikely that he was a convert or that he left Germany because of anti-Semitism. Some of the ornamentation of Erat's harps might conceivably allude to a German family connection: that of a small, single-action harp of about 1830 is decorated with double-headed imperial eagles (the heraldic emblem of both Bavaria and Nuremberg) (Figure 5.3).

¹⁸ Yehuda Cohen, *The Germans: Absent Nationality and the Holocaust* (Brighton: Sussex Academic Press, 2010), p. 51.

¹⁹ Following the Edict of Fontainebleau (also known as the revocation of the Edict of Nantes) 50,000 Huguenots emigrated to Germany and the same number moved to England.

²⁰ Clive Emsley, Tim Hitchcock and Robert Shoemaker, "Communities - Huguenot and French London", OBOL [accessed 19 January 2015].

²¹ Adelson et al. vol. 2 (2015), pp. 562-563.

²² The family paid a biannual amount of £2/5/- for a pew at church. EL. p. 10.

²³ *An Act for the Better Preventing of Clandestine Marriage*, 26 Geo. II. c. 33 (1753).

1827. Marriage solemnized at the Church in the Parish of St James Westminster in the County of Middlesex

No.	When Married.	Name and Surname.	Age.	Condition.	Rank or Profession.	Residence at the Time of Marriage.	Father's Name and Surname.	Rank or Profession of Father.
880	August 31	Daniel Brown	27	Single	Silversmith	James St	Daniel Brown	Polisher
		Georgiana Erat	21	Single		St James St	Jacob Erat	Black Man foundry

Married in the Church according to the Rites and Ceremonies of the Established Church by James Erat Minister of the said Church.

This Marriage was solemnized between us, Daniel Brown and Georgiana Erat in the Presence of us, James Erat and Jane Brown

Figure 5.2. Marriage certificate of Georgiana Erat and Daniel Brown (31 August 1827). My thanks to Robert Henderson for sharing this.

Did kinship and trade perhaps influence location of Erat's workshop? In 1739, Maitland writes that 'many parts [of Soho] so abound with French, that it is an easy matter for a stranger to imagine himself in France'.²⁴ In 1711, two-fifths of Soho's 8,133 inhabitants (3,253) were French, and its Francophile population was still evident during the early nineteenth century, when German and Italian immigration enriched its diversity.²⁵ The French revolution of 1791, seven years before the establishment of Erat's London workshop, resulted in a second wave of immigration from France to Great Britain, and this was recognised by parliament which made a grant of £923,747 in support of the '[...] dissenting ministers and French refugees, from 1794 to 25 March 1814 inclusive, being 16 years'.²⁶ Of those who gave their names to the British authorities in 1796, 33% settled in Marylebone, close to the harp makers of Soho.²⁷ If Erat was a German with recent French Huguenot ancestry, Soho would have perhaps felt like a home away from home.

²⁴ William Maitland, *The History and Survey of London*, vol. 2, bk. 3 (London: T. Osbourne and J. Shipton, 1739), p. 716.

²⁵ Judith Summers, *Soho: A History of London's Most Colourful Neighbourhood* (London: Bloomsbury, 1989), p. 37.

²⁶ Patrick Colquhoun, *A treatise on the wealth, power, and resources of the British Empire* (London: Joseph Mawman, 1814), p. 237.

²⁷ Kirsty Carpenter and Philip Mansel, eds., *The French Emigres in Europe and the Struggle against Revolution, 1789-1814* (Basingstoke: Macmillan, 1999), p. 45.

There is no evidence to support Catherine Brown's claim that the Erats 'became harpists to the Royal Court'. It is probable that some of Erat's children played the harp, and William Erat, a 'professor of music' who published arrangements for the harp (c1830),²⁸ probably taught the instrument.²⁹ The erroneous confusion of the Erat and Érard families in Catherine's note is understandable, but in spite of similarity in name and close proximity of business address, there is no evidence of a familial link. Pierre Érard, acknowledges this nominal similarity in a letter to Sébastien (8 January 1819), expressing annoyance that Jacob had viewed a property close to theirs (18 Great Marlborough Street) and suspecting an intention to trade on it: 'He will be annoying because of the resemblance of the name.'³⁰ In a letter of 5 January 1822 (nearly a year after Jacob's death), Pierre conveys distance from – even unfamiliarity with – the Erats: 'I hear that Delveaux [sic] is now working with Erat's eldest son, a young man of 20 or 22 years old, and that they have rented a house in Soho Square'.³¹ This conveys that Erat's son (Jacob) was unknown to the Érards. While there is no evidence that Jacob junior or Delveau actually took a house on Soho Square, it is possible that the presence of Schwieso (dismissed by Érard in 1819) and Grosjean (another former employee), trading together at no. 11 there, might have led to the rumour reported by Pierre.³² Whether the erroneous aspects of the brief history reported in Brown's note undermine the more credible elements of the story is a matter for conjecture. With every new generation, the knowledge of previous ones becomes more opaque and the gaps in family history widen, often to be filled by error, supposition, rumour, and embellishment. Whilst these do not necessarily render a story untrue, the establishment of fact becomes harder, requiring deeper research, and that is the case here.

²⁸ William Erat, *The Favourite Air of the Blue Bells of Scotland* [with an Introduction and Variations for the Harp, Composed and Dedicated to Mrs George Oakley Hemings] (London: Erat, c1830). William Erat, *Introduction and Favorite Air with Variations for the harp* [composed and dedicated to Miss Holmes] (London: Erat, c1830).

²⁹ In March 1822 the ledger record a payment of £41/10/9 to a Mr Binfield of Reading for year's instruction of William Erat who was presumably boarding at his school there. EL. p. 186. That Binfield ordered seven harps and hired six from the Erats between February 1821 and June 1824 indicates that he was a harp teacher.

³⁰ Adelson et al. vol. 2 (2015), p. 699.

³¹ Adelson et al. vol. 2 (2015), p. 783.

³² Jacob Erat's first workshop at 100 Wardour Street, and second one at 23 Berners Street were within half-a-mile of Érard's manufactory at 18 Great Marlborough Street. The confusion of two unrelated harp makers with similar names within such close proximity was inevitable.



Figure 5.3. Heraldic detail on a 22-string, single-action harp by Erat, no. 1913, private collection.

5.2: The Erat accounts: domestic life and social status

The Erat accounts for 1821-24 reveal that company and family success were closely enmeshed: amongst business income and expenditure recorded are rents (both paid and received), payments for food, furniture, household goods, clothing, education and entertainment. Family spending is indicative of income, social class, and status. While early nineteenth century middle-class consumption tended to follow the patterns of the gentry, Davidoff and Hall identify that there was also reciprocal influence. A family's economic activity was governed by domestic ideals.³³ As manufacturers and retailers of expensive, high-status objects, the Erats would have emulated the customs and aspirations of their customers.

During the early years of the company, the family may have lived at their business premises on Wardour Street, although their attendance at St James's, Piccadilly, not the closer St Ann's, suggests that they might have lived in that parish, separating their domestic and business environments. In 1812, as the family – and presumably its income – grew, they moved to a new house on Park Street, Camden Town, on the edge of an area of small-holdings, some distance from the bustle of Soho.³⁴ Only a year earlier, the Prince Regent had commissioned John Nash to develop a grand plan, including the Regents' Park, for this neighbourhood. The choice of location demonstrates rising status and the wish to climb the social ladder. Although the ledger pertains mainly to the Berners Street manufactory, it also includes domestic costs associated with members of the family, perhaps indicating consumption at their Park Street home.

5.2.1: Rental payments

Throughout the ledger period (1821-1824) the Erats, despite having moved their business to 23 Berners Street in 1820, continued to pay quarterly rent of £18/10/- on 100 Wardour Street, where rental income they received initially shows that it was sublet to one Mr. Michell. According to the 100 Wardour Street lease of 1 September 1821, J. Michell had agreed to buy the lease to the premises, for £150,

³³ Leonore Davidoff and Catherine Hall, *Family Fortunes* (London: Routledge, 1997), pp. 195-196.

³⁴ TNA. C110/99. Park Street lease.

prior to Jacob Erat's death. The final £50 was paid on 21 February 1821 (see Chapter 6), the day after Erat's death. For the year 1821-1822, Michell paid the Erats £18/10 for 'one quarter's rent due March 25 1821' (Christmas Day to Lady Day),³⁵ and the Erats paid Michell £51/14/- for three quarters (Lady Day to Michaelmas);³⁶ they were evidently leasing back the premises whilst the business was in transition to Berners Street. In 1822-1823, the Erats paid £74 (i.e. a full year) and Michell returned 'one quarter', the reason for this apparent refund is unknown.³⁷ In 1823-1824, the Erats paid the full rent, suggesting that they were still working there.³⁸

The ground rent of 23 Berners Street, £15 (paid annually on Michaelmas in 1821,³⁹ 1823,⁴⁰ and 1824⁴¹), was £3/10/- less than that of Wardour Street, despite the new house being larger and more imposing.⁴² This lesser sum, coinciding with building work there, may indicate that a relatively low rent had been agreed during conversion to business use. During the ledger period, £202/14/- was paid for the rental of Wardour Street,⁴³ and £37/-/- received from J. Michell in return; for Berners Street the Erats' paid £52/10/-.⁴⁴

5.2.2: Housekeeping

Ledger entries for housekeeping, which typically specify the amount but not what was purchased, mostly refer to lost folios, which presumably recorded details (Figure 5.4). The Erats' recorded payments explicitly to their servants of only £20/17/6 over four years.⁴⁵ According to Kirstin Olsen, servants were normally hired annually on Michaelmas (29 September), and could expect to receive board, lodging, and sometimes other perks.⁴⁶ On 24 January 1822, Jane Higton, the only servant actually

³⁵ EL. p. 47.

³⁶ EL. pp. 36, 77, 113.

³⁷ EL. pp. 160, 199, 239, 273.

³⁸ EL. pp. 340, 371, 373, 406; 336, 371, 404, 443, 493, 524, 516, 524.

³⁹ EL. p. 124.

⁴⁰ EL. p. 384.

⁴¹ EL. p. 503.

⁴² That the payment for 1822 is not recorded may be due to an accounting error.

⁴³ EL. pp. 36, 77, 113, 158, 160, 199, 239, 340, 373, 406.

⁴⁴ EL. pp. 9, 443.

⁴⁵ EL. pp. 77, 161, 253, 394, 431, 492, 503.

⁴⁶ Kirstin Olsen, *Daily Life in 18th-century England* (London: Greenwood, 1999), p. 124.

named, received a single payment of six months wages of £5 (indicating a low £10 annual salary of £10, though food and lodging may have comprised part of her salary).⁴⁷

Brought forward			30. - 1/2
Amount of Housekeeping	From Housekeeping		
Brought	23		15. 0/2
ditto	24		5. 11. 4/2
ditto	25		1. 19. 3/2
ditto	26		19. 7
ditto	27		13. 5/2
ditto	28		2. 12. 7/2
ditto	29		1. 10. 4
ditto	30		1. 19. 0/2
ditto	31		2. 1. 5
ditto	32		19. 1
ditto	33		2. 17. 2

Figure 5.4. Typical entries for housekeeping. EL. p. 49 (19 May 1821).

In April 1822, £12/19/- was paid to Mr Burton for coal supplied for the house (presumably Berners Street), and £15 for that for the manufactory.⁴⁸ Presumably coal was used for heating both, and also for forging metal in the latter. Although 11¼ chauldrons of coal were used in 1821,⁴⁹ payment was not recorded until July 1822 (£15 each for the manufactory and house). In 1823, T. Morgan supplied two chauldrons at £6 in March,⁵⁰ and in December, coal costing £8/19/6.⁵¹

⁴⁷ EL. p. 161.

⁴⁸ EL. p. 201

⁴⁹ EL. p. 241. 'Coals are sold in London by the chauldron of 4 vats, 12 sacks, or 36 bushels. The coal bushel is 19 inches wide (from the outside) and 8 inches deep.' The Anti-Jacobin Review (London: J. Whittle, 1811), p. 30. In 1821, the Erats paid between £2/16/- and £2/18/9 for a chauldron of coal. That in 1822 £6 was paid for two chauldrons of coal, suggests the price had risen too, indicating that one could be purchased for £3. At this rate, the £15 payment in 1822 would have bought five chauldron.

⁵⁰ EL. p. 361.

⁵¹ EL. p. 468.

Mr Penly supplied chairs costing £2/5/6 in March 1822,⁵² and in August, the aptly named Mrs Crystal (perhaps an occupational nickname) was paid -/4/- for the hire of glasses (suggesting entertainment) for one evening.⁵³ Linen drapery (curtains), at £3/2/-, was bought from Shoolbred & Co. in January 1823;⁵⁴ in November, Mr Bird (perhaps Catherine Erat's fiancé Thomas) was paid £14/12/9 for painting the outside of 23 Berners Street.⁵⁵ The following month, Mr Hope was paid £4/14/6 for 'the use of glass furniture' (purpose unknown);⁵⁶ and in March 1824, Mr Kirby received £2/18/3 for poultry.⁵⁷ At £1516/6/11, housekeeping was the largest expense during the ledger period.

5.2.3: Education

Of the monies spent by the family, expenditure on education is perhaps the most indicative of aspiration and class. Jacob's daughters received a typical education for early nineteenth-century upper-middle class girls. In 1821, 4 guineas (2 per quarter) was paid to a Miss Massions who taught Martha to speak French;⁵⁸ and a Mr Mathieson was paid £3 (-/15/- per quarter) for teaching Georgiana and Julia, the subjects not noted.⁵⁹ The next year, Mr Cubitt was paid £2/17/9 for teaching Martha to sing.⁶⁰ Erat's youngest son, William, received the education of a gentleman: Mr Binfield of Reading, with whom he boarded, received £59/10/9: £41/10/9 for a year's instruction,⁶¹ indicating £18 for board and lodging.⁶² In 1823, Mr Mathieson was paid £3 for the instruction of Georgiana and Julia;⁵⁶ and Misses Webb & Co. were paid £43/2/4 for six months board and education (January to June) for Georgiana and Julia.⁶³ Two further payments for their education, £48/-/-

⁵² EL. p. 187.

⁵³ EL. p. 254.

⁵⁴ EL. p. 339. James Shoolbred & Co. was a newly established draper's shop at 155 Tottenham Court Road, later enlarged to become one of London's first department stores. 'James Shoolbred & Co', <http://cosgb.blogspot.co.uk/2012/03/james-shoolbred-co.html> [accessed 2 September 2016].

⁵⁵ EL. p. 455.

⁵⁶ EL. p. 468.

⁵⁷ EL. p. 515.

⁵⁸ EL. p. 114.

⁵⁹ EL. p. 124.

⁶⁰ EL. p. 161.

⁶¹ EL. p. 186.

⁶² Mr Binfield was located in Reading. On 14 February 1822 an entry in the ledger shows that £4 was spent on William's expenses for travelling there. EL. p. 174. Presumably this was for more than one journey.

⁶³ EL. p. 272.

and £48/2/- to Misses Webb & Partridge for board and instruction,⁶⁴ confirm that they too were at boarding school. A payment of £20, entered in the ledger on the 28 June 1822, records 'Housekeeping paid Mast. W. Erat for his expenses in going to France.'⁶⁵ In a letter sent the next day, Pierre Énard reported to Sébastien that he had given George Sharp (a harp teacher, neighbour of the Erats, and one of Jacob's executors) a letter for him, presumably introducing the two. According to Pierre, Sharp was accompanying 'the two Erat sons who are going to France to learn how to make harps'. He adds, '[Sharp] is a false man! But who wants to give the impression of being honest.'⁶⁶ The end-of-year accounts in the Erat ledger record a payment of £18 'Housekeeping paid Mr Geo. Sharp his expenses in going to France in June last for the purpose of placing Mr W. Erat in Paris'.⁶⁷ Despite Pierre's claim to the contrary, Sharp accompanied only one of Erat's sons, William. That his older brothers, Jacob junior and James, were already making harps and trading as Erat & Sons in London, suggests that they were already accomplished harp makers. Between 1821 and 1824, £281/6/4 was spent on education in total.

5.2.4: Entertainment

Payments relating to entertainment in the journal and cashbook suggest a cultured family. In 1821, 2 guineas were spent on tickets for Miss Sharp's benefit concert,⁶⁸ -/28/- [£1/8/-] on tickets for a concert featuring a Mrs Broadhurst;⁶⁹ and £1 on six box tickets, and 3 pit tickets for Mr Stevenson's benefit.⁷⁰ All three were customers. George Sharp commissioned repairs and purchased strings and covers, probably on behalf of his daughter, such as regulating a harp on 9 August 1821,⁷¹ buying a silk cover on 28 August 1821,⁷² and bundles of no. 1, no. 2, no. 3, and no. 4 strings (the

⁶⁴ EL. p. 361 and p. 444. That Miss Partridge is recorded buying harp strings in the journal, suggests that Georgiana and Julia also learned to play the harp.

⁶⁵ EL. p. 324.

⁶⁶ Adelson et al. vol. 2 (2015), p. 800.

⁶⁷ EL. p. 492.

⁶⁸ ECB. Cashbook, p. 9.

⁶⁹ ECB. Cashbook, p. 21. Mrs Broadhurst of Old Cavendish Street, London, purchased two black single-actions (nos. 1326 and 1328), and a yellow double-action (no. 1388) in 1821.

⁷⁰ ECB. Cashbook, p. 21. A Mr Stevenson of 18 Margaret Street, Cavendish Square, hired a harp, (no. 1402) type unknown for four months from 2 July 1823.

⁷¹ EL. p. 83.

⁷² EL. p. 84.

numbers denoting octaves) on 30 January 1822.⁷³ It is noteworthy that the Sharps did not buy a harp during the ledger period, suggesting that one had been purchased before. Mrs Broadhurst of Old Cavendish Street, London, purchased two black single-actions (nos. 1326 and 1328), and a yellow double-action (no. 1388) in 1821, the quantity suggesting that she was a teacher;⁷⁴ Mr Stevenson of 18 Margaret Street, Cavendish Square, hired a harp, (no. 1402) type unknown for four months and three weeks from 2 July 1823.⁷⁵ In 1822, a guinea was paid for 'Harmonic Institute' tickets,⁷⁶ and -/10/6 for a concert given by a Mr Pilotti,⁷⁷ Pilotti, also a customer, bought a 'leather cover with plated furniture' on 2 June 1821,⁷⁸ a second-hand, black double-action harp (no. 1089) two weeks later,⁷⁹ and a 'portable desk and stool to correspond with brass claws and candlestick' on 23 June,⁸⁰ together his purchases perhaps represent a starter package for a new player. In 1823, Mr Stevenson's further benefit cost them £1 (four tickets at -/5/-);⁸¹ and Miss Sharp's, 3 guineas (six tickets at -/10/6).⁸² In 1824, three tickets for the French theatre cost -/18/- (-/6/- each),⁸³ and five tickets for Miss Sharp's third benefit were £2/11/6.⁸⁴ In all, the Erats recorded expenditure (1821-1824) of £12/16/- on entertainment, which was mostly related to the business.

Louisa Sharp was the daughter of Jacob's executor, George. It may be that the Erats felt bound to attend the performances of a friend's daughter, though it is likely that they were willing attendees; the esteem in which she was held as a harpist made their association mutually beneficial. A brief biography of her in *The Ladies Monthly Museum* (September 1823) revealed that she was born in 1801, was taught to play by her father, and gave her first public performance at eight years old. Her progress swift and her playing sought after, the Sharps moved from Bedford to London in

⁷³ EL. p. 154.

⁷⁴ EL. pp. 21, 248.

⁷⁵ EL. p. 398.

⁷⁶ ECB. Cashbook, p. 45.

⁷⁷ ECB. Cashbook, p. 47. Mr Pilotti, his address give as 'at Col. Marsack nr. Reading' bought a second-hand double action (no. 1089) costing £35 on 16 June 1821.

⁷⁸ EL. p. 57.

⁷⁹ EL. p. 58.

⁸⁰ EL. p. 56.

⁸¹ ECB. p. 80.

⁸² ECB. p. 81.

⁸³ ECB. p. 127.

⁸⁴ ECB. p. 525.

1810, where she performed regularly and, like her father, gave harp lessons.⁸⁵ An accompanying engraving depicts Louisa as a fashionable young lady, wearing a lace-trimmed satin gown, her hair styled in ringlets and dressed with flowers (Figure 5.5).⁸⁶ An anonymous painting – conceivably of Louisa Sharp – depicts a harpist, also dressed in satin, her hair in ringlets, playing an Erat double-action harp (Figure 5.6), the decoration of whose capital matches those of c1820 (Figure 5.7).⁸⁷ Caroline and Mary-Ann, Erat’s daughters, were close in age to Louisa, and although we have no clothing accounts for them, those for their younger sisters suggest similar attire.

5.2.5: Clothing

Clothing for the younger children was charged to the company. In 1822, Miss Perrin, a ‘Mantua maker’, was paid £3/9/-;⁸⁸ clothing valued at £9/1/6 for William,⁸⁹ and £2/12/- for Martha, was bought from a Mr Hoskins;⁹⁰ G. Cooper, shoemaker, was paid £25/2/5 (the number of pairs not recorded);⁹¹ £6/10/- was ‘paid for cloth’ (type not noted);⁹² and hat makers R. & W. Puzey’s bill for £7/19/6 (covering 1821-1822) was settled;⁹³ a total of £54/14/5. The clothing bill for 1823 fell by 50% to £27/-/7, as no shoes were bought. Miss Perry (presumably a variant of Perrin), now a ‘dressmaker’, was paid £7/4/-;⁹⁴ clothes for William cost £9/14/4;⁹⁵ silk for Martha (presumably to make a dress), costing £4/7/3, came from a Mr Ince;⁹⁶ beaver bonnets at £2/1/-, and pelisses £3/14/-, were bought for Georgiana and Julia.⁵⁰ Clothing purchased in 1824 totalled £31/15/6: as in 1822, Miss Perry was paid £3/9/-, suggesting renewal of the same items;⁹⁷ Mr Hoskins

⁸⁵ ‘Miss Louisa Sharp’, *The Ladies Monthly Museum* (London: Dean and Munday, 1823), p. 121.

⁸⁶ *The Ladies Monthly Museum* (1823), p. 120.

⁸⁷ Christies Interiors, sale no. 5714, Portrait of a young lady, half-length, in a white dress playing the harp, a landscape beyond, 25 May 2010.

⁸⁸ EL. p. 253. The mantua, a court dress first popularized in the seventeenth-century and was, by 1822, very unfashionable. By the nineteenth century, ‘Mantua maker’ also meant dressmaker.

⁸⁹ EL. pp. 272, 419.

⁹⁰ EL. p. 299.

⁹¹ According to Riello, the price of women’s shoes ranged from 25 to 60 pence; men’s shoes averaged between 80 and 100 pence. Giorgio Riello, *The Boot and Shoe Trades in London and Paris in the Long Eighteenth Century* (PhD Thesis, University of London, 2002), pp. 111-115. The Erat’s payment to their shoemaker could be viewed as an extravagant expression of wealth.

⁹² EL. p. 212.

⁹³ EL. p. 325.

⁹⁴ EL. p. 350.

⁹⁵ EL. pp. 372, 406

⁹⁶ EL. p. 383.

⁹⁷ EL. p. 493.

supplied clothing for William at £12/18/-,⁹⁸ and Mr Tutton silk frocks, costing £12/8/6, for Georgiana, Julia and Martha.⁹⁹ In all between 1821 and 1824, £113/17/6 was spent on clothing.



Figure 5.5. Portrait of Louisa Sharp, *The Lady's Monthly Museum* (1823).

⁹⁸ EL. p. 515.

⁹⁹ EL. p. 524.



Figure 5.6. Anonymous portrait of harpist, perhaps Louisa Sharp. Photo used with the kind permission of Christie's, London.

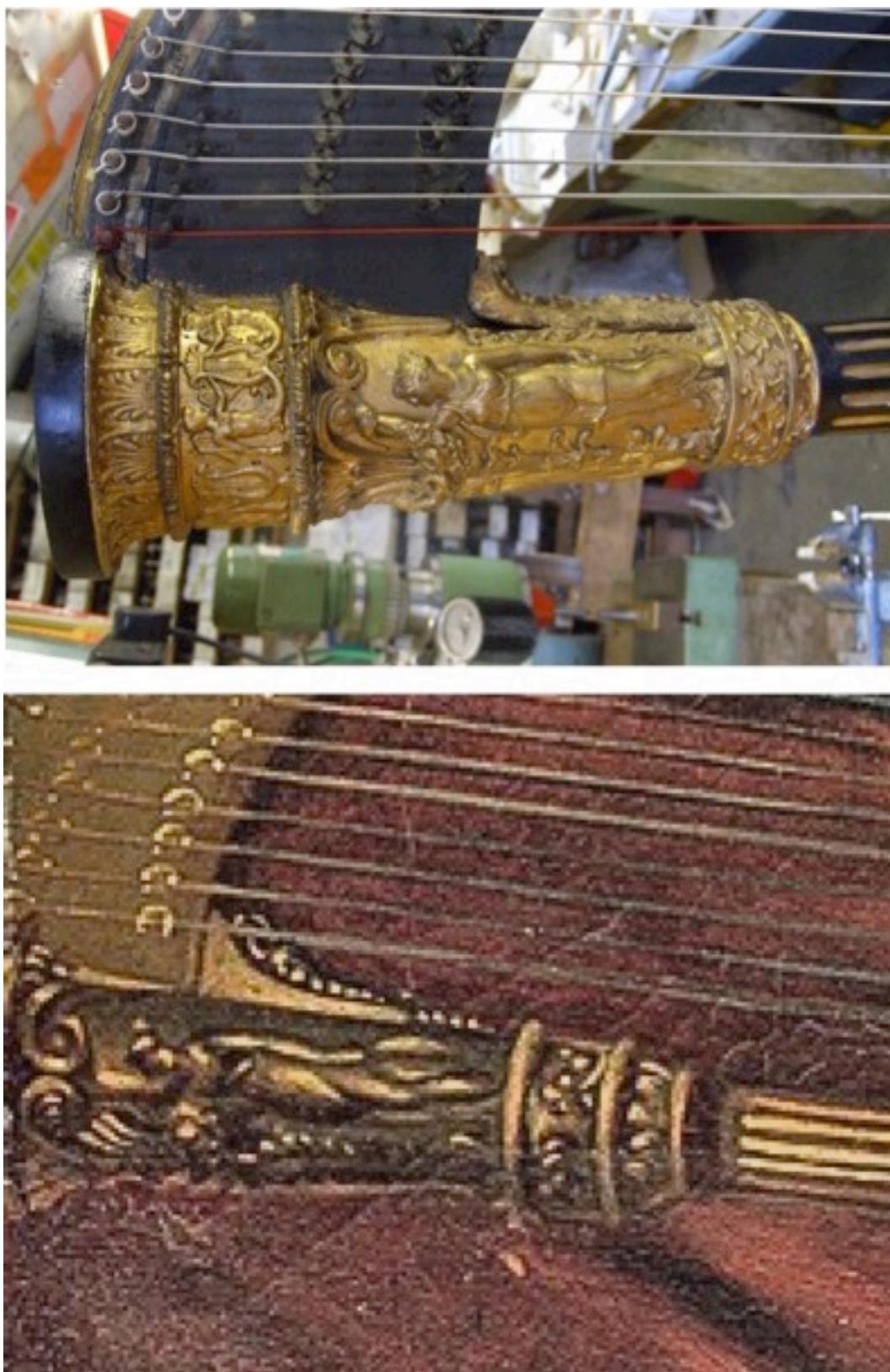


Figure 5.7. Anonymous portrait of harpist, perhaps Louisa Sharp (see Fig. 5.6); detail (below) showing decoration on an Erat harp, compared with that of an extant instrument (above).

5.2.6: Religious affiliation

For ‘a pew at church’, the Erats paid £4/10/- in 1821 (£1/2/6 per quarter),¹⁰⁰ and £2/5/- 1822 (for six months only).¹⁰¹ In 1823 they paid £5/12/6 ‘for a pew at chapel’ (comprising five quarters, perhaps to cover monies owed from the previous year),¹⁰² falling to £2/5/- in 1824;¹⁰³ £14/12/6 in all. The terms ‘church’ and ‘chapel’ may have been used interchangeably here. It is just possible that they indicate differing family worship practices. Baptismal records show that the Erats attended St James, Westminster. Whether, as previously hypothesised, Jacob was a Huguenot, and whether he continued in the faith or adopted Anglicanism is unknown. That there were seven French Huguenot places of worship within the parish of St. Anne’s, Westminster, all referred to as ‘chapels’ and not ‘churches’, may indicate attendance at both.¹⁰⁴

5.2.7: Expenditure, income, and social class

Family spending was presumably covered by income, and is therefore illustrative of earnings. Between 1821 and 1824, the Erats’ expenditure totalled £2178/-/9, an annual average of £637/9/3.¹⁰⁵ (Appendix 5.1). This places the family in Colquhoun’s ‘third class’ with an income of between £300 and £2,600, associating them with, ‘Dignified Clergy, Persons holding considerable employments in the State, elevated situations in the Law, eminent Practitioners in Physic, considerable Merchants, Manufacturers upon a large scale, and Bankers of the first order with their families.’¹⁰⁶

¹⁰⁰ EL. p. 48, 113.

¹⁰¹ EL. p. 212.

¹⁰² EL. p. 349, p. 455.

¹⁰³ EL. p. 504.

¹⁰⁴ La Patente Street Chapel (est. 1689), Les Grecs Hog Lane or Crown Street Soho (est. 1700), Monmouth House Chapel, Soho Square (est. 1690), Berwick Street Chapel (est. 1690), Ryder’s Court Chapel, St Ann’s, (est. 1700), West Street Chapel, Soho (est. 1706), Little Chapel Street (date of establishment unknown).

¹⁰⁵ Conservatively assuming that the Erats’ income exactly matched their household expenditure suggests a monthly average income of £53/5/3¾. Monthly calculation: £2178/-/9 ÷ 41 (months in the ledger) = £53/2/5¼. Annual calculation: £53/2/5¼ × 12 = £637/9/3.

¹⁰⁶ Patrick Colquhoun, *A Treatise on the Wealth, Power, and Resources of the British Empire Explained* (London: Mawman, 1814), pp. 106-107.

5.3: Jacob Erat's death

Information about the events around and directly following Jacob Erat's death add further insight to our understanding of family wealth. Although the cause of his death on 20 February 1821 is not known, that he revised his will six days before, shows that it was anticipated and planned for.¹⁰⁷ He was buried on 27 February in St Marylebone churchyard. The burial record gives his age at death as 68, indicating that he was born in 1758.¹⁰⁸ Although the precise arrangements of Erat's funeral do not survive, records of payment for it do: £30 was paid for his grave on 14 July 1821;¹⁰⁹ the undertaker, Mr More, was paid £71/12/- on 5 January 1822;¹¹⁰ In 1822, R. Chalkly received £9/18/6 for a tomb stone on 13 February;¹¹¹ Mr Child's bill of £12/7/- for William Erat's mourning was paid on 6 May;¹¹² and Mr Challis (an employee) was paid £6 for 'making up his mourning and extra attendance,' on 28 June.¹¹³ Legal fees of £310/13/-, the balance of Jacob's account for attaining probate, were paid to a Mr Hamilton, also on 28 June 1822,¹¹⁴ and £47 was paid on 14 July 1822 for 'Doctors fees during Mr Erats illness, settled subsequently to his decease'.¹¹⁵ The undertaker's costs and associated burial payments, £111/10/6, suggest that Erat's funeral was a lavish affair. In 1811, the cost of city merchant, Edward Comely's funeral was only £18/18/6.¹¹⁶ By contrast, the Earl of Chatham's funeral in September 1835 totalled £218/2/5, with an additional £130/17/2 charged to close Westminster Abbey for the service.¹¹⁷ Erat's funeral costs were just over six times that of Comely, and around half of the Earl of Chatham's.

¹⁰⁷ TNA. C110/99, Jacob Erat's Last Will and Testament.

¹⁰⁸ St Marylebone Burial Records, Ancestry.co.uk [Accessed 3 September 2016].

¹⁰⁹ EL. p. 78.

¹¹⁰ EL. p. 139.

¹¹¹ EL. p. 150.

¹¹² EL. p. 214.

¹¹³ EL. p. 227.

¹¹⁴ EL. p. 292.

¹¹⁵ EL. p. 77. Erat's doctor is named in the ledger as J. W. Newby on 31 December 1822, when another bill for 1821-1822 was settled. EL. p. 325.

¹¹⁶ 'The Funeral of Mr Edward Comely 1811', <http://janeaustenslondon.com/tag/georgian-undertakers/> [accessed 9 May 2015]. Amongst the items listed on the bill for Comely's funeral were 'a Strong Elm Coffin covered with fine Black Serge close drove with double Rows of the best Japanned Nails on a Double Flowered Plate & Urn. 6 large Cherubim Escutcheons with wrought handles set off and decorated with enriched ornaments chas'd and Blk Japanned in the best manner. Lined and furnished. £5/10/-; a fine crape Mattress -/12/-; a fine Crape Shroud Cap and Pillow -/18/-; the use of a Handsome velvet Pall -/7/-; a hearse and mourning coach with pairs [of horses] each -/12/-; 2 Porters in proper dresses to stand at the door and walk in procession -/12/-; 4 men to Bear the Corpse -/10/-.'

¹¹⁷ TNA. PRO 30/8/370 f 156, Miscellaneous papers of the 2nd Earl of Chatham, deeds, bills &c.

5.3.1: The last will and testament of Jacob Erat

Through a series of bequests in his will (Appendix 5.2),¹¹⁸ Erat attempted to ensure the financial and domestic security of his wife and children, seven of whom were under the age of twenty-one, and his instructions made provision for the continuation of his business. Three executors were named: John Broadwood, the renowned pianoforte maker of Great Pultney Street; George Sharp, the aforementioned ‘professor of music’ of Berners Street; and Martha Erat, Jacob’s wife. The revision was undertaken so soon before Erat’s death that Broadwood, despite predeceasing him by nine years, was not replaced. Firstly Erat bequeathed the family home and its contents to Martha:

Whereby in the first place I give and bequeath to my dear wife the sum of fifty pounds for mourning and also all of the plate silver china glass, household goods and furniture and all other property and effects to which were in or about my messuage or dwelling house in Park Street Camden Town in the said County of Middlesex to and for her own absolute use benefit and disposal.

He instructed his executors to buy £2000 of navy five-percent bank annuities,¹¹⁹ the dividends and annual proceeds of which were to be given to his wife, together with the ‘rents, sums and profits’ from his house in Perry Street, so long as she remained his widow. On her death or remarriage, any remnants were to be redistributed as part of his residuary estate. The surviving executors received £50 each for their ‘trouble’. Sharp appears frequently in the Erat ledger, purchasing harp strings and other accessories, his address given as 42 Berners Street.

Erat left £25 to each of his children for mourning,¹²⁰ and instructed his executors to invest £200 on behalf of William, the dividends, annual proceeds, and interest arising

¹¹⁸ TNA. PROB 11/1640/206, Will of Jacob Erat, Harp Maker of Saint Marylebone, Middlesex.

¹¹⁹ Navy five percent bank annuities, also known as Navy five percents, were government stocks issued by the military in order to raise funds. Between 1810 and 1821, the returns were set at five percent, reduced to 4% by Act of Parliament passed in 1822. From 1823 existing five-percent certificates were replaced with those demarking the lower return.

<https://www.immediateannuities.com/annuitymuseum/annuitycertificatesofthebankofengland/> [Accessed 19 January 2015].

¹²⁰ Mourning practices, if rigorously followed, dictated twelve months in mourning for a husband or wife (six in full mourning followed by the same in half mourning), while children were expected to observe a period of six months. Employees were not obliged to mourn an employer, though they might choose to do so out of respect.

to be paid to him on his twenty-first birthday. Bequests totalled £4,700. Compared to those of contemporary instrument makers for whom legacies are known, Erat's were the fifth largest, behind the pianoforte makers, James Shudi Broadwood (£205,800), John Broadwood (£47,577), and Robert Stodart (£15,470), and the harpsichord maker, Burkat Shudi (£5,895).¹²¹ Turning to his business, Erat left his:

[...] leasehold messuage and premises in Berners Street aforesaid and all my monies, stocks, funds and securities for money, goods, chattels, stock in trade, books, debts and all and singular other the estate property and efforts [...] unto my friends John Broadwood of Great Pultney Street in the parish of Saint James, Westminster, pianoforte maker, George Sharp of Berners street in the parish of St. Mary le bone in the said county of Middlesex, musician, and my said wife, Martha [...] subject to the powers, provisors and declarations hereinafter expressed.

Jacob's executors were instructed:

to [...] permit and suffer my said wife and under their direction and superintendent to conduct and carry on my said trade or business of a harp maker from and after my demise until my son Jacob Erat shall attain his age of twenty-five years.

Erat apparently chose his executors because of the support they could offer to his wife. The Broadwoods had bought Johann Andreas Stumpff's harp business, stock-in-trade, and workshop in Henry Street, London, on 17 April 1812.¹²² Already organised for harp making, the premises would have been suitable for constructing pianofortes too. However, that they also bought Stumpff's stock, presumably including materials, tools, and harps in various stages of manufacture, suggests that the Broadwoods had planned to make them; John Broadwood's death on 17 July 1812 (three months later) perhaps prevented this expansion of their pianoforte business. Had John Broadwood not died before Jacob Erat, his technical and business skills would have been of great help to Martha and her sons. George Sharp, in his capacity as a professor of music and harp teacher, brought a musical perspective to the Erats' business. The will permitted the appointment of new executors, should one or both wish to be released from their

¹²¹ Marie Kent, *Exposing the London Piano Industry Workforce: 1765-1914* (PhD Thesis, London Metropolitan University, 2013), p. 121.

¹²² A lease (4 October 1812) held at the Surrey History Centre, shows that James and Thomas Broadwood bought Stumpff's premises at Henry Street on 17 April 1812. SHC. 2185/JB/9/, Property owned or leased by John Broadwood & Sons: deeds and related papers.

duties or die. That Broadwood had not been replaced was unfortunate and would later pose problems for the family and business. In directing Martha to continue his business, Jacob demonstrated his confidence in her abilities to manage the family, albeit with guidance. She may have already been an active partner. Martha was certainly present in the business during the move from Wardour Street to Berners Street, a year before Jacob's death. In his diary (19 April 1820), Robert Willis writes that soot from a dismantled chimney 'spoilt [...] Mrs Erats cloak & bonnet in the parlour'.¹²³ Nex found that womens' involvement in business varied, from maintaining accounts and the promotion of instruments to female clients, to making components or managing a business on the death of their husband. Childcare, typically the preserve of women, was a barrier to extra-curricular work, particularly where business and domestic settings were separate.¹²⁴ As the Erats' accounts demonstrate, Jacob's and Martha's daughters were initially educated at home, but later sent to a boarding school. It is likely that Martha, released from her immediate child-care obligations, became more involved in the day-to-day running of the business. Parkinson identifies four stereotypes of women in business during the nineteenth century:

1. The inheriting widow, past her prime and likely to reduce the business in size and diversify or to sell it off.
2. The reluctant widow-caretaker of a deceased husband's business, keeping the business ticking over until her eldest son came of age and could take over the mantle.
3. The supporting sisters forced into a public marketplace by necessity.
4. [...] the distressed gentlewoman, sometimes labelled 'failed', 'redundant', 'distressed' or 'superfluous' by her contemporaries. A businesswoman not by choice but by necessity.¹²⁵

Although it was uncommon for women to own or manage a business at this time, it wasn't unheard of. In 1788, Alice Hepplewhite, trading as A. Hepplewhite & Co. Cabinet Makers, published her late-husband, George Hepplewhite's book, *The Cabinet-Maker & Upholsterer's Guide*.¹²⁶ That new editions were made in 1789 and

¹²³ WD, p. 64.

¹²⁴ Nex (2013), pp. 126-129.

¹²⁵ Alison Parkinson, *'Marry - Stitch - Die - or do worse'? Female self-employment and small business proprietorship in London c1740 - 1880* (PhD thesis, University of Oxford, 2002).

¹²⁶ Gloria Breeskin Peck, 'Alice and George Hepplewhite's Cabinet-Maker & Upholsterer's Guide', *Woman's Art Journal*, 8, 2 (Autumn, 1987 - Winter, 1988), pp. 25-27.

1794 indicates that she did not conform to Parkinson's reluctant stereotype. In his autobiography, William Lovett, a cabinetmaker who arrived in London from Cornwall in 1821, states his wife's desire to open and manage a business:

For two years after my marriage I was in good employment, at a cabinet-maker's in St. Paul's Churchyard. Having now got all our little household comforts about us, and a few pounds in our possession, my wife was desirous of getting into some small way of business that she herself could manage; in the hopes of making some little provision for the sickness that might happen, and for the old age and infirmities sooner or later almost sure to overtake us.¹²⁷

Mrs Lovett leased a small shop in May's Buildings, St Martin's Lane, where she traded as a pastry-maker and confectioner. Low sales and the cancellation of a favourable contract with a supplier resulted in debt and early closure:

We left this wretched place as soon as we conveniently could, but not before we had exhausted all our own little means, and had involved ourselves in debt; the hopes of its improvement having allured us on.¹²⁸

Colquhoun lists 126 jobs for men, but only 46 for women,¹²⁹ and musical instrument making, classified as a mechanical trade, appears in the list for the former but not the latter. It is conceivable that Martha, perhaps a reluctant 'widow-caretaker' supervised the business, attended to customers, and managed the financial accounts, leaving a foreman to oversee harp making, although it is possible that she supervised that too.

Next, Erat decreed that his wife should be paid £800 a year (80 times the amount that they were paying their servant, Jane Higton) from the business for the maintenance and education of their children, and for their household and other family necessities until Jacob reached twenty-five.¹³⁰ He instructed that Jacob and James should each receive an eighth of his residuary estate 'for his absolute use and benefit'. Another eighth was to be invested for William, the interest and proceeds thereof to be 'applied for or towards his maintenance and advancement.' On his 25th birthday, Jacob and his

¹²⁷ William Lovett, *Life and Struggles of William Lovett* (London: Bell, 1876), pp. 40-41,

¹²⁸ Lovett, p. 41.

¹²⁹ Patrick Colquhoun, *A Treatise on Indigence* (London: Hatchard, 1806), pp. 167-171.

¹³⁰ The figure of £800 suggests that the calculation of income (£637/9/3), based on family expenditure (£2178/-/9), is reasonable.

younger brother James were directed to take over the business as joint partners. Erat instructed that two valuations of 'my stock in trade, utensils and instruments necessary and used by me in conducting and carrying on my said trade or business' should be undertaken, one on behalf of the brothers, the other for his trustees (see 1824 inventory in Chapter 6). Erat's remaining estate was to be divided into five equal parts and invested on behalf of his daughters, Catherine, Mary-Ann, Martha, Georgiana, and Julia. He enjoins them to seek his wife's permission and approval prior to marriage, and stipulates that upon marriage, the trustees should pay 'any sum not exceeding the sum of five hundred pounds' to the daughter, and instructs that his trustees should, as they thought necessary, 'purchase so much stock in the three percent consolidated bank annuities as will serve to such daughter a net annual income of fifty pounds a year at least.' Before the *Married Women's Property Act 1882*, a woman's property passed into her husband's ownership upon marriage.¹³¹ Recognising his daughters' limited rights to property, Jacob takes steps to prevent any future husbands' attempts to control their inheritance and financial independence:

[The] effects or the produce thereof or the stocks, funds and securities' should be reinvested or placed in trust 'during the term of her natural life for her maintenance and aduration during her minority and afterwards for her own solo and separate use and benefit [so that she] shall not be subject or in any name liable to the debts control or engagements of any husband.

He wills that on the death of any of his daughters, their share of his estate should be divided amongst their remaining children (Jacob's future grandchildren). The redistribution of his bequeathed wealth, should any of them die, to their descendants was designed to ensure that the monies and investments remained within the family's blood line.

Finally, Erat provided for a decline in family and company fortunes:

[...] I do hereby also further authorise and empower my said trustees and trustee for the time being to discontinue my said trade or business and to prevent my said wife from carrying on the same if found to be unprofitable and absolutely to sell and

¹³¹ According to John Edward Bright, *Treatise on the Law of Husband and Wife as Respects Property*, vol. 1 (London: Benning, 1849), p. 34, 'marriage is an absolute gift to the husband of the goods, personal chattels, and estate of which the wife was actually and beneficially possessed at the time of her marriage in her own right.'

dispose of all or any of my leasehold and other property and personal estate whatsoever and whensoever [...]

The will was proven on 3 March 1821, and administration was granted to George Sharp and Martha Erat who both swore to administer the power originally reserved to John Broadwood.

5.3.2: Legal action by an executor

In 1825, George Sharp brought a legal case against the Erat family. The wording in the *London Gazette* suggests that the business was in debt and that consequently Sharp invoked the power given to him by Erat to liquidate assets:

Pursuant to a Decree of the High Court of Chancery made in a Cause wherein George Sharp is the plaintiff and Martha Erat, Widow, and others are defendants, the Creditors of Jacob Erat late of Berner's-Street, Oxford-Street, in the Parish of Saint Mary-le-Bone, in the County of Middlesex, Harp-Maker (who died in the month of March 1821), are forthwith to come in and prove their debts before Francis Paul Stratford, Esq. one of the masters of the said Court, at his Chambers, in Southampton-Buildings, Chancery Land, London, or in default thereof they will be excluded the benefit of the said Decree.¹³²

Two years later, a similar notice appeared, again in the *London Gazette*, suggesting that the family had managed to stall the earlier action.¹³³ Although the details of the case are unclear, in 1831 the Erats lost the case, and the sale of their leasehold properties on Park Street, Perry Street and Berners Street was ordered:

To be peremptorily sold, pursuant to an Order of the High Court of Chancery; made in a cause of Sharp versus Erat, with the approbation of Francis Paul Stratford, Esq. one of the Masters of the said Court, at the Public Sale-room of the said 'Court, in Southampton-Buildings, Chancery-Lane, London, on Tuesday the 22d day of March 1831, in three lots; Sundry leasehold messuages and premises, situate in Berners-Street, Oxford-Street, and in Park Street, Camden-Town, and Perry-Street, Somers'-Town, in the County of Middlesex, held for long terms of years, at ground rents, the property of Mr. Jacob Erat, deceased. Printed particulars whereof maybe had (gratis) at the said Master's Chambers, in Southampton-Buildings aforesaid; -of Mr Sabine,

¹³² *London Gazette*, 18,174, 10 September 1825, p. 1662. Erat's date of death is incorrectly cited in the announcement.

¹³³ *London Gazette*, 18,359, 8 May 1827, p. 1015.

Solicitor, 21, John Street, Bedford-Row; and of Mr. Hamilton, Solicitor, Berwick-Street, Soho.¹³⁴

The Erats were clearly financially embarrassed. Whether this resulted from a downturn in the harp industry, or a failure on the part of the trustees and the brothers to run the business successfully, is unclear (company finances are discussed in Chapter 6). Presumably the family, and more particularly Martha in her role as joint executor, did not agree with this course of action. Although the Park and Perry Street leases were sold, the Erats retained the Berners Street premises. Subsequent references suggest that the family relocated to an apartment there in what must have been a humiliating move after two decades at a grander address. Although they may have regretted Erat's failure to appoint a replacement for John Broadwood, who may have been more supportive than Sharp, in forcing the liquidation of assets, Sharp may have ultimately saved the family and business from ruin.

Erats preparation, albeit rushed, was wise, and reveals him to be an astute businessman. He would have been aware of the financial difficulties encountered by fellow harp makers during the second decade of the nineteenth century. The Érarads had struggled following the collapse of their French business and apparently excessive research, development, and patent costs.¹³⁵ Despite the ignominy suffered by the Erat family, they were fortunate to be able to settle their debts. Shortly after Erat's death, Schwieso and Grosjean were declared bankrupt,¹³⁶ and when, in 1831, Schwieso was declared bankrupt for the second time, with no assets left, he entered the Fleet debtor's prison, an act taken in prelude to bankruptcy proceedings:

JOHN CHARLES SCHWIESO, of No. 79, Wimpole-Street, Cavendish-Square, in the County of Middlesex, Harp-Maker (and now a prisoner in the Fleet Prison), that he is in insolvent circumstances, and is unable to meet his engagements with his creditors.¹³⁷

¹³⁴ *London Gazette*, 18,781, 4 March 1831, p. 426.

¹³⁵ Adelson et al. vol. 2 (2015), pp. 541-554. Letters in 1814 from Pierre to Sébastien Érad show problems with cash flow in the London business. Pierre begs for money from Sébastien, reports that they are struggling to pay suppliers and wages, that they have borrowed money, and that he intended to lay off some men.

¹³⁶ *London Gazette*, 17,689, 17 March 1821, p. 638.

¹³⁷ *London Gazette*, 18,806, 24 May 1831, p. 1012.

5.3.3: The last will and testament of Jacob Erat junior

Jacob Junior died in April 1837 aged only 37, and was buried on 3 May in St Marylebone churchyard. By comparison with that of his father, his will, written on 24 July 1835, is brief (Appendix 5.3).¹³⁸ Consisting of little more than a page, he named his wife Ann Caroline, and friend Robert Wilberfoss of Somerset Place, Cannon Street, as executors, and bequeathed comparatively small sums of money to his immediate family and friends. After the minutia of his father's bequests, Jacob junior's will is surprisingly devoid of detail. It highlights a significant change in the financial position of the family and their business; the latter is not even referred to. Whereas, his father had sole control of the company, Jacob shared ownership with his brother and, as such, had no right to bequeath company assets:

I give and bequeath to my mother Martha Erat widow the sum of nineteen guineas I also give and bequeath the life sum of nineteen guineas a piece to each of my sisters hereinafter named to Catherine the wife of Mr Thomas Bird surveyor to Mary Ann the wife of Mr James Rufus Tutton professor of music to Mrs Martha Hoskins widow to Georgiana Erat spinster and to Julia Erat spinster I likewise give and bequeath to my two brothers James and William Erat the sum of ten guineas each and I give to Mr Robert Wilberfoss of Somerset Place Cannon Street Road Whitechapel accountant the sum of twenty five guineas free of legacy duty as a small token of my friendship for him.

Unlike his father's, Jacob junior's will records no property leases. A single investment is bequeathed to his niece in a later codicil addressed to his wife (17 November 1836):

My dear Caroline, I wish you to present Martha Hoskins my sister after my decease with [£]50 which sum I wish to be invested for the benefit of her daughter

¹³⁸ TNA. PROB 11/1879/468, Will of Jacob Erat, Harp Manufacturer of No 23 Berners Street Oxford Street, Middlesex.

5.3.4: The last will and testament of Ann Caroline Erat

Coinciding with the 1825 court case instigated by George Sharp, Jacob junior's marriage to Ann Caroline Holtzapffel was financially opportune. Ann Caroline, a daughter of the successful tool and lathe manufacturer, John Jacob Holtzapffel, would have brought with her a substantial dowry, which perhaps enabled the family to retain the lease of 23 Berners Street following the conclusion of the court case in 1831. After her death in March 1838, she left £4,000 (a third share of £12,000) in her will (Appendix 5.4) inherited from her father three years earlier:

I the said Ann Caroline Erat in pursuance and by virtue of and in exercise of the said power or authority so given to me as aforesaid by the said will of my said late father deceased and of every other power or authority in any wise enabling me in the this behalf do by this my last will and testament in writing bequeath and dispose and also appoint all that the said one equal third part or share of and in the said sum of twelve thousand pounds sterling and the stocks funds and securities in or upon which the same may be invested.¹³⁹

The largest portion of her substantial estate was distributed amongst her brothers and sisters. As in Jacob junior's will, the Erat sisters each received 19 guineas, and William and James Erat 10 guineas each; the latter, her husband's partner in the harp business, also received her double burner lamp, presumably something he'd admired.

5.4: The Erats and the Society of British Musicians

In 1834 the Erats were instrumental in the establishment of the Society of British Musicians, formed to 'counteract the apparent malaise in British compositional activity.'¹⁴⁰ Where, between 1821 and 1824, housekeeping accounts recorded the Erats' attendance at concerts given by their customers, this new society elevated their status by associating them with some of the most notable musicians and composers of the day.

Following the first concert, William IV, the Duchess of Kent, and Princess Victoria, awarded royal patronage. The society was initially successful:

¹³⁹ TNA. PROB 11/1947/60, Will of Ann Caroline Erat, Widow of Berners Street Oxford Street, Middlesex.

¹⁴⁰ John Cannelley, *George Smart and Nineteenth-Century London Concert Life* (Woodbridge: Boydell, 2015), p. 207.

What this national society has done already has had a most beneficial effect, for it has acted as a stimulant on both the old and young professor: and the consequence is new compositions are pouring in from all quarters, both vocal and instrumental, for the purpose of being tried over, and of being selected for public performances when considered of sufficient merit, but the Committee must be firm, and not suffer name to take precedence of talent, not interest to shut out merit.¹⁴¹

Regular recitals were given, initially at the Hanover Square Rooms and later at 23 Berners Street. On 10 July 1835 J Erat [Jacob] was named in the *Morning Post* as the society's treasurer:

The Subscriber to the Concerts of this Society are respectfully informed that the TICKETS for the ensuing SEASON are ready for delivery and may be obtained on application to Mr. J. Erat, Treasurer, 23 Berners-street.¹⁴²

At a general meeting in April 1836, the membership of 350 included the composers Thomas Atwood (1765-1838), John Barnett (1802-1890), the flautist-composer Charles Nicholson (1795–1837), and the pianist-composer Charles Salaman (1814-1901), who later founded the Musical Society of London.

In December 1836, the Society postponed a planned concert to January 1837 in the hope that they might attract new subscribers to protect the members from financial loss.¹⁴³ Their initial success was waning. Five months later, the *Morning Chronicle* reported that the Society had 'departed from their absurd rule which excluded all music except the compositions of members of the society', noting that the inclusion of work by others had added something of interest to the concerts.¹⁴⁴ Presumably attendance was falling and they hoped that this inclusion of music composed by outsiders would widen interest and attract new members.

In December 1838, the *Era*, announced that only three concerts (rather than the normal six) would take place in that season, and that the cost of tickets had been reduced to one guinea for two admissions to the series. The reporter was concerned

¹⁴¹ 'Musicals' *The Morning Post*, 19,922, 14 October 1834.

¹⁴² 'Society of British Musicians', *Morning Post*, 20,152, 10 July 1835, p. 2.

¹⁴³ 'British Musicians', *Morning Post*, 20,590, 5 December 1836.

¹⁴⁴ 'Society of British Musicians', *Morning Chronicle*, 21,011, 14 March 1837.

that, as far as the Society of British Musicians was concerned, this would 'depreciate the respectability of the concerts'.¹⁴⁵ On 7 July 1839 the *Era* reported that following a meeting of the Society, its membership had been reduced to eighty, and associates decreased to twenty: 'when this hundred is further reduced one-half, we shall have some hopes of the society, as a membership will then be at a premium instead of at a discount, and all the lukewarm partisans will be out of the society'.¹⁴⁶ The paper later announced that after another meeting, three resolutions were passed. One of which introduced the performance of foreign music, somewhat undermining the original role of the Society.¹⁴⁷

The Morning Post of 27 June 1840 published two letters from the Society to Queen Victoria; one, dated 4 May 1840, was addressed from the committee rooms at 23 Berners Street, and was signed by the musicians and composers George Alexander MacFarren (1813-1887), W. Sterndale Bennett (1816-1875), James Calkin (1786-1862), Charles Lucas (1808-1869), J. Henry Griesbach (1798-1875), and the aforementioned William Erat, here in his capacity as a harpist and representative of the Erat business. It implored 'your Majesty to command a performance of the Society of British Musicians, at the Hanover-square Rooms, on any evening that shall best suit your Majesty's pleasure and convenience to be present'.¹⁴⁸ The attendance of the Queen at a concert would have certainly attracted favourable attention to the society and its members, in particular the Erat harp manufactory through William Erat.

On 1 December 1841, a half-yearly general meeting was held at the 'harp-warehouse' of Messrs. Erat', Henry Lincoln, H. Jarrett, Henry Lazarus (clarinetist and composer), Mr Macfarlane, T. Edgar, T. Westrop, Joseph Barnett, Mr. Carte, the bassoon player, C. Keating, H. Wild, Miss Cubitt, and Miss Conne were elected new members, and two candidates were black-balled. Attendance continued to fall. By October 1842 the Society had moved their concerts from the Hanover Square rooms to 'Erart's [sic]

¹⁴⁵ [Society of British Musicians], *The Era*, 1, 14, 30 December 1838, p. 165.

¹⁴⁶ 'British Musicians', *The Era*, 1, 41, 7 July 1839, p. 483.

¹⁴⁷ 'Miscellaneous', *The Era*, 2, 63, 8 December 1839, p. 128.

¹⁴⁸ 'Her Majesty and the British Musicians', *Morning Post*, 21,660, 27 June 1840, p. 5.

harp saloon,¹⁴⁹ the incorrect spelling of the name shows that there was already confusion between the Erats and Érards. A month later they recognised James Erat's contribution to the organisation:

The Society of British Musicians, at a general meeting held on Thursday, presented its honorary treasurer, James Erat Esq., of Berners Street, with an elegant silver salver, as a token of esteem and gratitude for his unwearied exertions to promote the interest of the institution.¹⁵⁰

The *Morning Post* of 10 February 1844 praised the excellence of the third meeting of that season during which a Mr R. Barnett accompanied the vocal music (presumably upon the piano), and William Erat directed.¹⁵¹ Five days later it reported: 'It is to be regretted that the Society of British Musicians is not enabled to return to its primitive custom of having a full orchestra for symphonies, concertos, &c.', a result of the smaller performance space at 'Erat's saloon'.¹⁵² It is likely that the Erats' showroom was reorganised in order for the performance to take place. On 15 June, Mendelssohn attended a private performance of works by English composers there, where he improvised on themes composed by members C. E. Horsley, G. A. Macfarren, and James Calkin.¹⁵³ The Society's fortunes appeared to be improving when on 6 November 1845, the *London Evening Standard* noted that it 'will probably give a series of six concerts at the Hanover Rooms, with a grand orchestra, in place of the usual second series of Chamber Concerts',¹⁵⁴ but at a later general meeting, the planned concerts were cancelled due to lack of patronage. Although the committee of management resigned, presumably including James Erat, it was immediately re-elected.¹⁵⁵ In 1846 the Society was described in the *Morning Post* as a 'highly interesting and meritorious institution'.¹⁵⁶

¹⁴⁹ 'Musical Chit-Chat', *Morning Post*, 22,386, 18 October 1842.

¹⁵⁰ 'Musical Chit-Chat', *Morning Post*, 22,422, 29 November 1842.

¹⁵¹ 'Musical', *Morning Post*, 22,801, 10 February 1844, p. 6.

¹⁵² 'Musical', *Morning Post*, 22,806, 15 February 1844, p. 6.

¹⁵³ 'Mr. Walter Macfarren', *The Musical Times and Singing Class Circular*, 39, 659 1 January 1898, pp. 10-15.

¹⁵⁴ 'Musical Gossip', *London Evening Standard*, 6,637, 6 November 1845, p. 3.

¹⁵⁵ 'Musical', *Morning Post*, 22,529, 17 February 1846, p. 6.

¹⁵⁶ 'Society of British Musicians', *Morning Post*, 22,850, 3 November 1846, p. 5.

The *Era*, however, was less supportive:

if the members will eschew unworthy rivalry, and persue strenuously and earnestly the true objects of the society there is no doubt that much good will flow from this association, and English musical art attain a name and station of which few at present have an idea or entertain a hope.¹⁵⁷

James Erat's generosity was noted in the *Morning Post* on 23 November 1855 when Mr Cheshire, who had played 'an etude on the harp in imitation of the mandoline' and a 'fantasia on native airs', both by Parish Alvars, was given the harp on which he had played.¹⁵⁸ Cheshire, apparently a young harpist was 'much admired, and he seems to have obtained a firm tone [perhaps a comment on the Erat's harp], and considerable mastery over this delicate instrument.'¹⁵⁹

Whilst helping to promote their business, their involvement with the Society of British Musicians indicates that music was important to the family. Being of continental European origin, affiliation with such a nationalistic organisation served to root them as first generation British, and to continue the Anglicisation started by Jacob senior. William Erat took over as treasurer of the society on James's death in 1858, and continued in the position until his decease in 1863.

5.5: Jacob Erat's children

Of the Erat children who survived into the Victorian era, only three were connected with the business: James Erat became its sole director following his brother's death in 1837; Julia Erat never married and lived at 23 Berners Street, possibly working in administration; and William Erat taught music (presumably the harp). That James Erat did not appear in the 1841 census, suggests that he was not present at 23 Berners Street when the records were collected. In 1851 he was living there with his sister Julia Erat, Julia Wapping, an assistant (both aged 37), and Ann Davis, a servant.¹⁶⁰ James died of diabetes in January 1858, and was buried on 15 January at

¹⁵⁷ 'Society of British Musicians', *The Era*, vol. 9, 424, 8 November 1846, p. 10.

¹⁵⁸ 'Erat's Harp Saloon, Berners Street', *Morning Post*, 25,550, 23 November 1855.

¹⁵⁹ 'Society of British Musicians', *Morning Advertiser*, 20,102, 23 November 1855.

¹⁶⁰ James Erat, 1851 Census, Class: HO107; Piece: 1486; Folio: 771; Page: 45; GSU roll: 87811-87812, Ancestry.co.uk, [Accessed 9 September 2016].

Highgate Cemetery.¹⁶¹ His estate was initially valued at under £5,000 but was later revised up to under £6,000, probably following the auction of the effects in the Erat harp manufactory.¹⁶²

Julia Erat is difficult to find in the 1861 census, her name being incorrectly indexed. She was living at 42 Frederick Place with Julia Weippert, a music teacher; the 1871 census shows that both had moved to 16 Harrington Street, St Pancras where they were lodging,¹⁶³ Weippert's name incorrectly recorded as Wappel. Ten years later both were still lodging there (Julia Wappel's name now recorded as Weippert).¹⁶⁴ Julia Erat died on 3 April 1889. Her will reveals that sometime between 1881 and her death she had moved to 41 Mornington Road, Regent's Park. Her personal estate, valued at £108/6/5, was left to Ann Caroline Harrison, her niece, next-of-kin, and daughter of Jacob Erat junior.¹⁶⁵

The 1841 census records William Erat, 'Professor of Music', at Camden Road Villas with his sister Martha Hoskins and her daughter of the same name.¹⁶⁶ Ten years later he was still there but with his wife, Caroline, and Elizabeth Lock, their servant,¹⁶⁷ and in 1861 he was living with a Mary Anne Neville (possibly a widowed sister) and Elizabeth Tomlin, servant;¹⁶⁸ presumably his wife had died. William Erat appears to have prospered. An undated lithograph suggests Camden Road Villas was a

¹⁶¹ James Erat, England & Wales, Civil Registration Death Index, 1837-1915, Ancestry.co.uk [Accessed 9 September 2016]. James's death certificate, requested by Robert Henderson, his great-great-nephew, cites diabetes as his cause of death and states that he suffered with a fever for 10 days prior to death. James Erat, Burial Record, DL/T/063/017, ACY [Accessed 9 September 2016].

¹⁶² 'Messrs Debenham, Storr, and Sons,' *Morning Advertiser*, 20,836, 29 March 1858, p. 8.

¹⁶³ Julia Erat, 1871 Census, Class: RG10; Piece: 201; Folio: 68; Page: 44; GSU roll: 824591 [Accessed 9 September 2016]. It is likely that Julia Weippert, Julia Wapple, and Julia Wapping were the same person, probably a relation of John Michael and John Erhard Weippert, the renowned harpist who were both customers of the Erat company during the 1820s, and indicates that they drew employees from their customer network.

¹⁶⁴ Julia Erat, 1881 Census, Class: RG11; Piece: 178; Folio: 29; Page: 17; GSU roll: 1341038. ACY [Accessed 9 September 2016].

¹⁶⁵ Julia Erat, England & Wales, National Probate Calendar (Index of Wills and Administrations), 1858-1966, ACY [Accessed 9 September 2016].

¹⁶⁶ William Erat, 1841 Census, Class: HO107; Piece: 683; Book: 2; Civil Parish: St Pancras; County: Middlesex; Enumeration District: 2; Folio: 14; Page: 22; Line: 12; GSU roll: 438799, ACY [Accessed 9 September 2016].

¹⁶⁷ William Erat, 1851 Census, Class: HO107; Piece: 1498; Folio: 392; Page: 42; GSU roll: 87831, ACY [Accessed 9 September 2016].

¹⁶⁸ William Erat, 1861 Census, Class: RG 9; Piece: 120; Folio: 4; Page: 2; GSU roll: 542577, ACY [Accessed 9 September 2016].

handsome address. He died on 10 May 1863,¹⁶⁹ and was buried at Highgate Cemetery six days later.¹⁷⁰ The probate record shows that he left an estate of less than £5,000.¹⁷¹

According to Robert Henderson, who has undertaken a full genealogical study of the Erat family, Catherine Erat married Thomas Bird (a surveyor) on 21 April 1821, just two months after her father's death, and had six children; Catherine died in 1861, aged 56. Mary Ann married James Tutton (a music teacher) on 4 April 1822 and had four children; she died on 13 February 1847, aged 48. Martha married William Hoskins on 3 May 1827, but her husband died just six months later before the birth of their daughter, also Martha, on 14 February 1828; Martha senior died on 31 January 1873. Georgiana married Daniel Brown (a silversmith) on 31 August 1837 and had five children; she died on 21 March 1863.¹⁷²

5.6: Summary

Jacob Erat, like many of his London instrument making contemporaries, was of European (probably French or German) origin, and whilst a family story suggests that he was Jewish, a range of documents indicate that he was protestant. Although his reasons for moving to London can only be speculated at, the presence of French and German craftsmen in the vicinity was as influential as the availability of workspace, suppliers, and customers. Jacob initially trained as a clockmaker; a trade that would have been particularly useful in the development and manufacture of harp mechanisms. Confusion between the Erats and Érards has arisen due the similarity of their names; there is no evidence to support a familial connection.

The family and business were closely intertwined and their fortunes rose and fell together. Initially prosperous, money enabled them to lease business and residential

¹⁶⁹ William Erat, England & Wales, Civil Registration Death Index, 1837-1915, ACY [Accessed 9 September 2016].

¹⁷⁰ William Erat, burial record, DL/T/063/020, ACY [Accessed 9 September 2016].

¹⁷¹ William Erat, England & Wales, National Probate Calendar (Index of Wills and Administrations), 1858-1966, 1973-1995, Ancestry.co.uk [Accessed 9 September 2016].

¹⁷² My thanks to Robert Henderson whose genealogical research has been instrumental in tracing Jacob Erat's children.

properties in new, fashionable areas of London, and to live separately from their workshops. Family spending reveals that they enjoyed a comfortable life-style. Their attendance at concerts given by customers indicates socialisation for business advancement, and their connection with the Society of British Musicians, placed them amongst musical high society, serving to advertise their instruments and services. The Erats conformed to the societal norms of the upper-middle classes, within Colquhoun's third class, associating them with 'considerable Merchants [and] Manufacturers upon a large scale.'¹⁷³ Following Jacob Erat's death, when Martha became more involved in running it, the business appears to have declined. It is likely that the temporary cost of running two workshops simultaneously, added to their financial burden.

Erat's will made provision for its continuation contingent on continued success, or closure should it decline. Bequests to his children, in particular his daughters, were aimed at providing them with financial independence. The wills of Erat's son and daughter-in-law reveal that family fortunes had declined by the 1830s. Legal action by George Sharp endangered both company and family wealth but, despite losing two houses, the Erats retained their business premises. As the century progressed and family members died, their estates show a decline in wealth. The business closed following James Erat's death in 1858.

¹⁷³ Colquhoun (1814), pp. 124-126.

Chapter 6: The Erat manufactories and business

In this chapter, the properties leased by the Erat family and business are identified and investigated. Where Chapter 5 examines their company accounts in relation to the family, here, together with maps, drainage plans, leases, insurance policies, diary accounts, and later photographs, they are analysed to describe the Erats' first manufactory at 100 Wardour Street, and subsequent one at 23 Berners Street. The reasons for the company's relocation are discussed. The materials, stock and tools used in harp making identified, and changes in workshop layout and contents are traced through two inventories pertaining to 23 Berners Street (21 February 1821 and 9 December 1824), and an end-of-year stock account (31 December 1822).¹

6.1: The Erats at 100 Wardour Street

The Erat business was established at 100 Wardour Street by 1798,² probably housing both family and business during the early years. A lease for a building plot at 20 Park Street, Camden Town of 5 June 1812 suggests that the family moved there soon after, separating their domestic and working environments (Figure 6.1). Park Street, also referred to as Britannia Lane in the lease, 'being part of a field called the Britannia Field', was bounded to the north, east, and west by the field. A drawing on the lease shows a building plot (shaded pink) with garden (in green) to the rear. This move to a new, edge-of-city, parkland setting, close to John Nash's Regent's Park development indicates that the Erats were doing well;³ although similar in size to 100 Wardour Street, the family had sole use of the property. Another house, 7 Perry Street, Somers Town (now lost beneath St Pancreas railway station) was leased, probably as an investment, on 27 August 1816 (Figure 6.2).

¹ TNA. C110/99, Erat ledger; cashbook; inventory of harp manufacturers stock; inventories for Wardour Street, Soho; Park Street, Camden Town; and Perry Street, Somers Town.

² An advertisement places Jacob Erat at 100 Wardour Street in 1798. 'The Musical Repository', *The Times*, 3 January 1798.

³ John Nash worked on the Regent's Park development from 1812 until George IV's death in 1830. Ken Allinson, *London's Contemporary Architecture* (Oxford: Elsevier, 2006), p. 89. Park Street (now Parkway) runs from the northwest corner of the Regent's Park to Camden Town, the Erats' property at 14 Park Street would have been approximately where the Odeon cinema now stands.

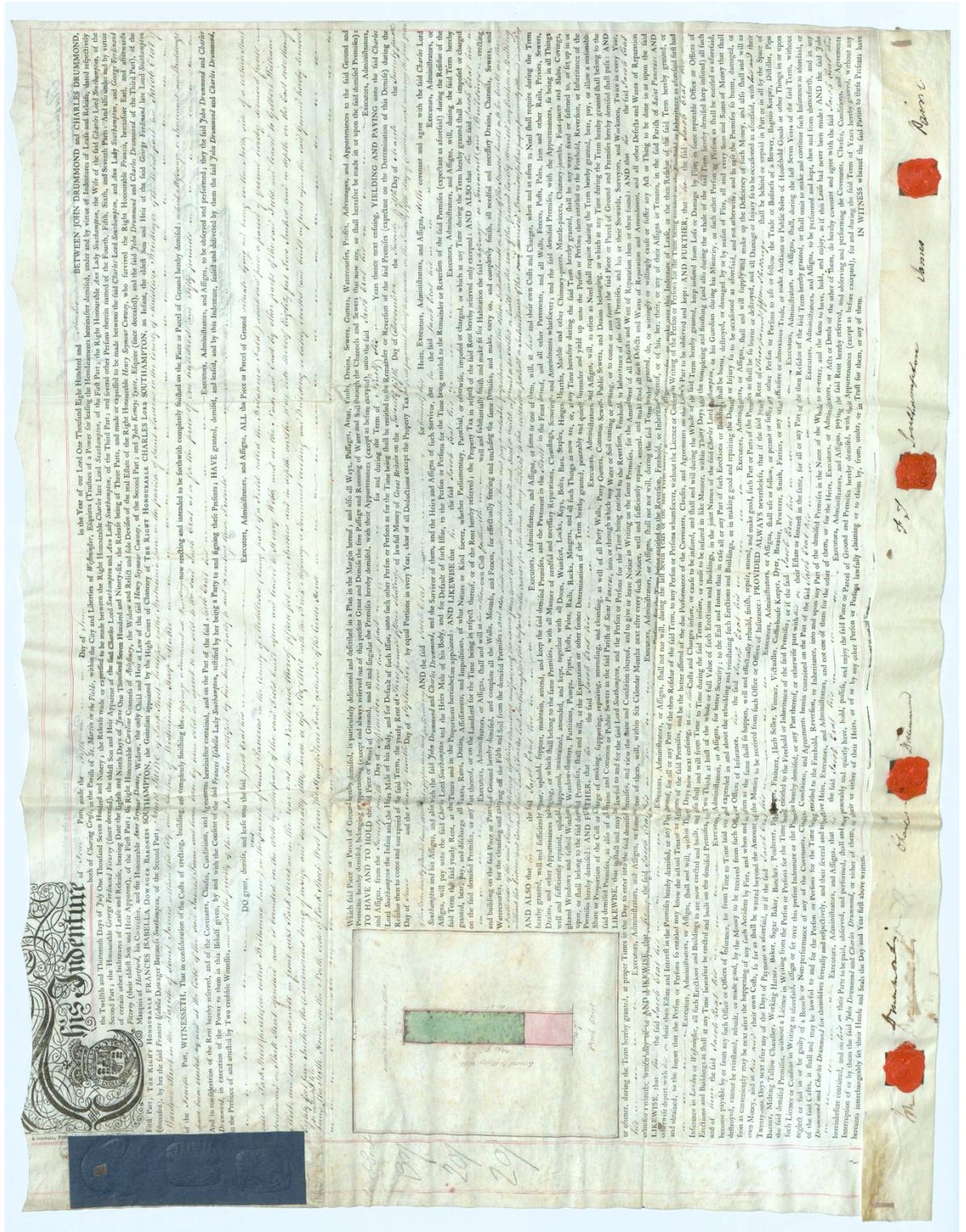


Figure 6.1. Park Street lease.

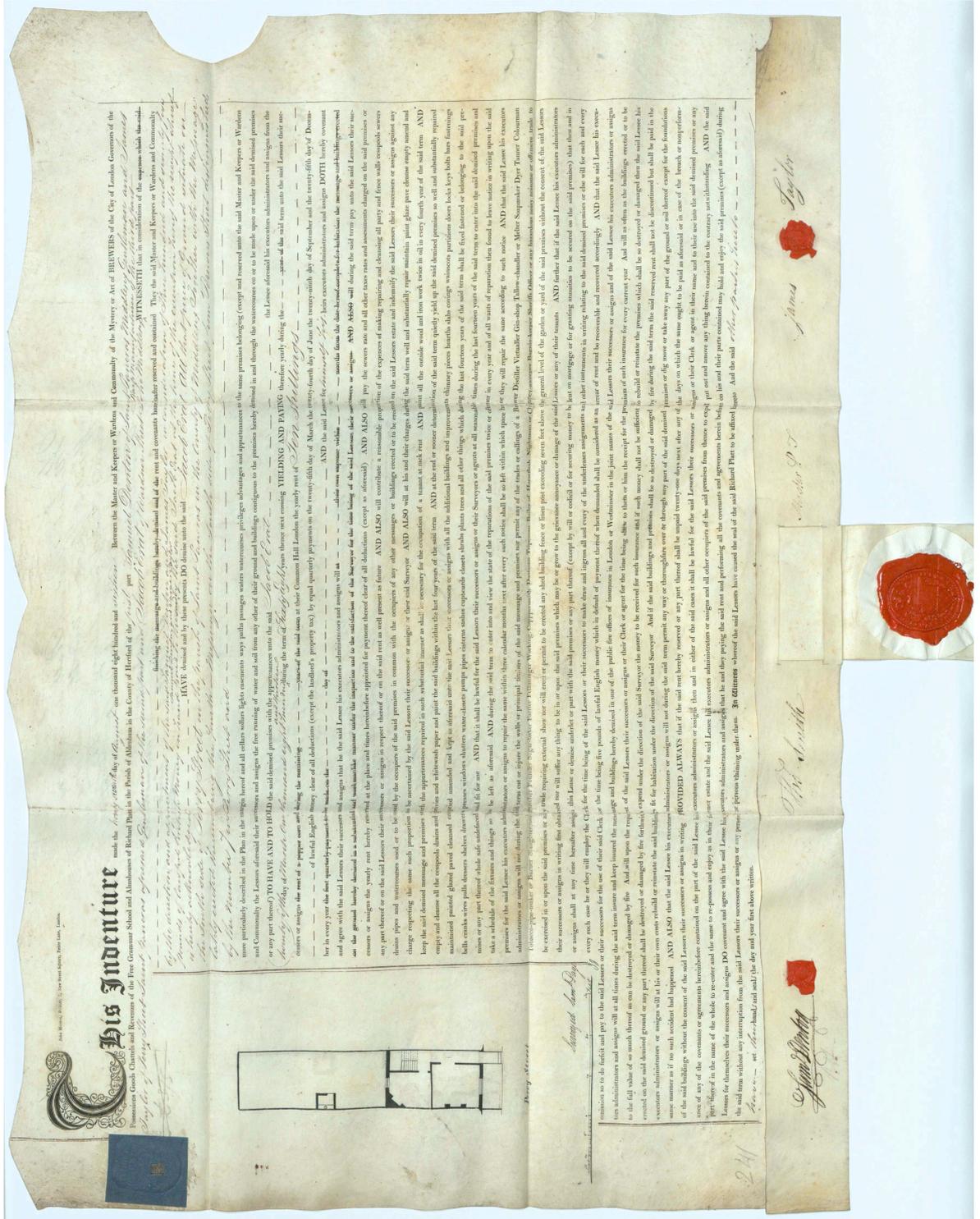


Figure 6.2. Perry Street lease.

Erat's house at 100 Wardour Street is shown in Richard Horwood's Map (1796-99), the shaded area behind the house shows that it had been extended over the rear yard, probably to create a workshop (Figure 6.3).⁴

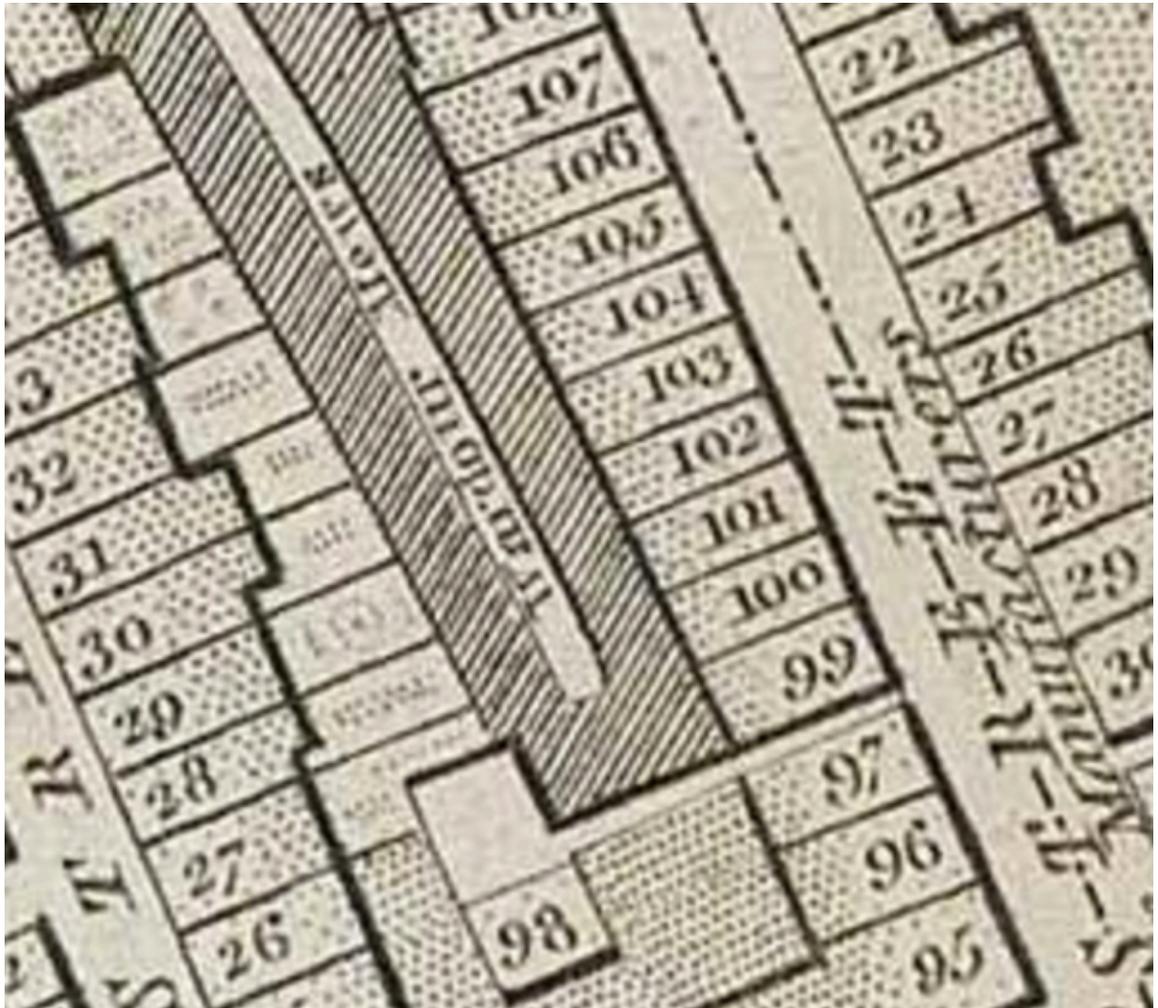


Figure 6.3. 100 Wardour Street, building over garden, and mews to the rear. Horwood's map (1796-1799).

⁴ Richard Horwood, *Plan of the Cities of London and Westminster* (London: Horwood, 1792-1799).

John Tallis's *London Street Views* (1838-40) (Figure 6.4) and a photograph taken shortly before demolition in around 1960 (Figure 6.5) reveal a two-bay, four-story house, with a shop front, and stucco applied up to the second floor.⁵



Figure 6.4. 100 Wardour Street, from John Tallis, *Street Views of London* (1839).

⁵ LMA. SC/PHL/01/543-35, Black and white photograph of 151-165 Wardour Street (1960).



Figure 6.5. 100 Wardour Street c1960 (stuccoed house to the left).

The layout of 100 Wardour Street is described in a lease of 1 September 1821 (Figure 6.6):

Front kitchen chimney slab cupboard. Back kitchen water laid on by pipe and cock. Front parlor cupboard with lock and key and key to door. Back parlor stone chimney piece. Front room first floor Marble chimney piece and two cupboards with locks and keys to door. Back room stone chimney piece. Second floor front room wooden chimney piece and two cupboards with locks and keys locks and keys to door. Third storey wooden chimney piece one cupboard with lock and key locks and keys to doors. Passage lock and key and fastenings to street door.⁶

Although it is likely that there would have been rooms for metal and woodworking, forging, storage, and display (all were necessary for the business), we do not know where there were located within the building. In his diary, Robert Willis recorded an accident that took place there on 14 February 1820, hinting at room layout:

[...] in coming out of the factory [I] slipped and fell from the top of the ladder to the bottom & down the next flight of steps onto the landing so to come seated against the press with my legs up against the woodshop door a most dangerous and awkward fall but I most providentially escaped with a slight bruise on my elbow.

This suggests that the 'factory' was located at the top of the building, and the woodshop on the first floor. Willis doesn't tell us whether there was a basement, although this would have been an obvious location for a forge. He continues:

Beasmore once fell down the same steps & over them onto the landing but came on his feet unhurt so got down before Hutton who was descending before him. The potgirl fell down some time since with two pots of beer in her hand & was very much hurt. Rose fell down them & came head foremost & hurt himself a little and James Erat fell from the top against the wood shop door three weeks ago all which might be prevented by a rope.⁷

⁶ All punctuation added. TNA. C110/99, Lease for 100 Wardour Street.

⁷ WD. p. 46.

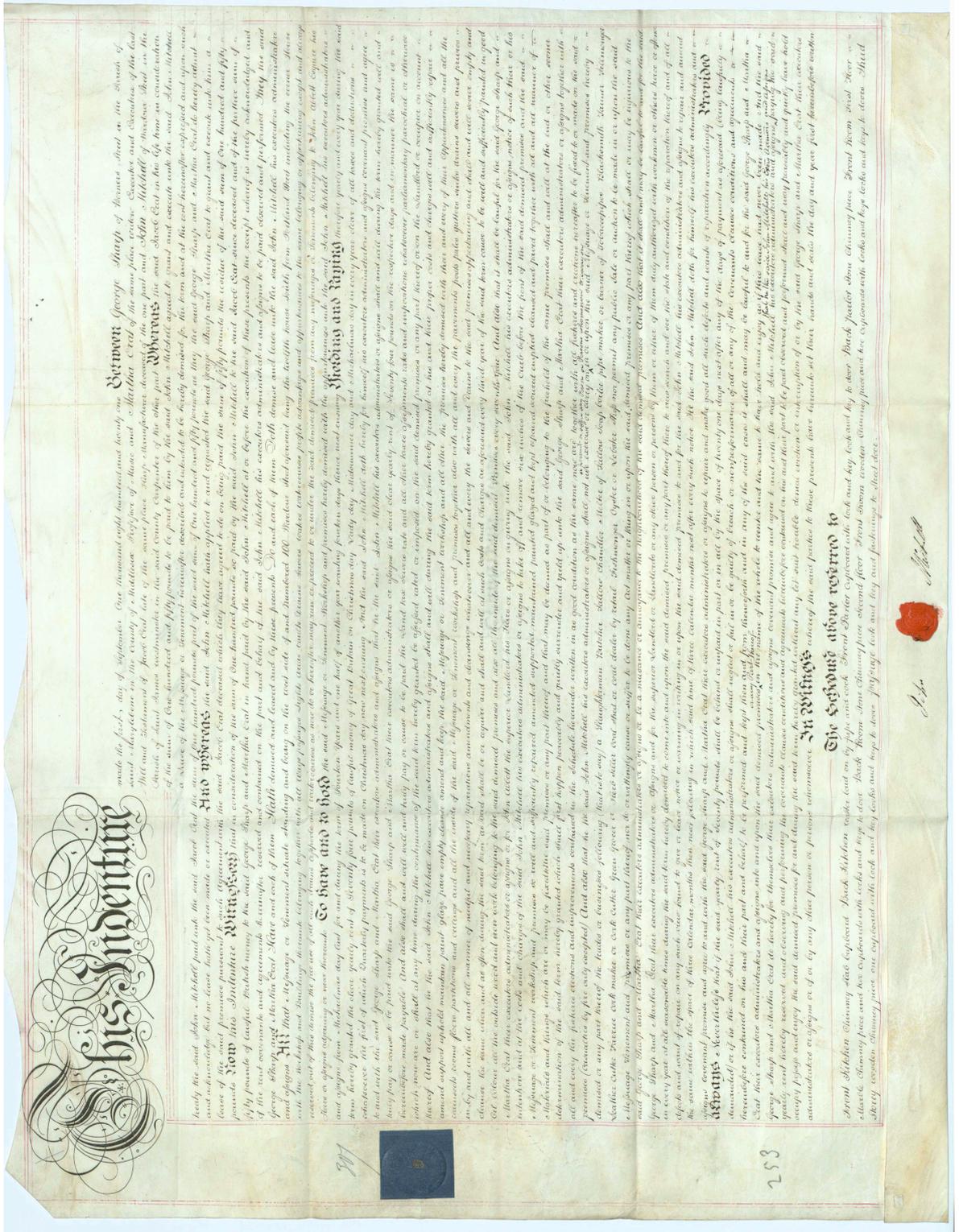


Figure 6.6. 100 Wardour Street lease (1821).

Beasmore's acrobatics aside, one gets a sense of a disorganised and unsafe working environment. Clearly the building was old and at full capacity, necessitating the company's relocation to more capacious premises. Two months later Willis recorded another accident; in doing so, he alluded to room locations. Without giving notice to the inhabitants, bricklayers began pulling down the chimney sending 'a torrent of soot down into all the rooms which put Maunders fire out [presumably at the top of the house on the third floor] almost poisoned Draycott [on the second floor] - covered the harps with soot in the showroom [on the first floor] & Mrs Erats cloak & bonnet in the parlour [on the ground floor] & spoilt the porters dinner which was preparing in the kitchen [in the basement - adding a fifth storey to the four shown in Tallis's *Street Views of London*].'⁸ That all of the rooms in the house were accounted for indicates that the factory, the woodshop, and a possibly forge, were in a rear extension. Although not comprehensive (finishing rooms are not mentioned), the layout of 100 Wardour Street can be drawn thus (Figure 6.7).

⁸ WD. p. 39.

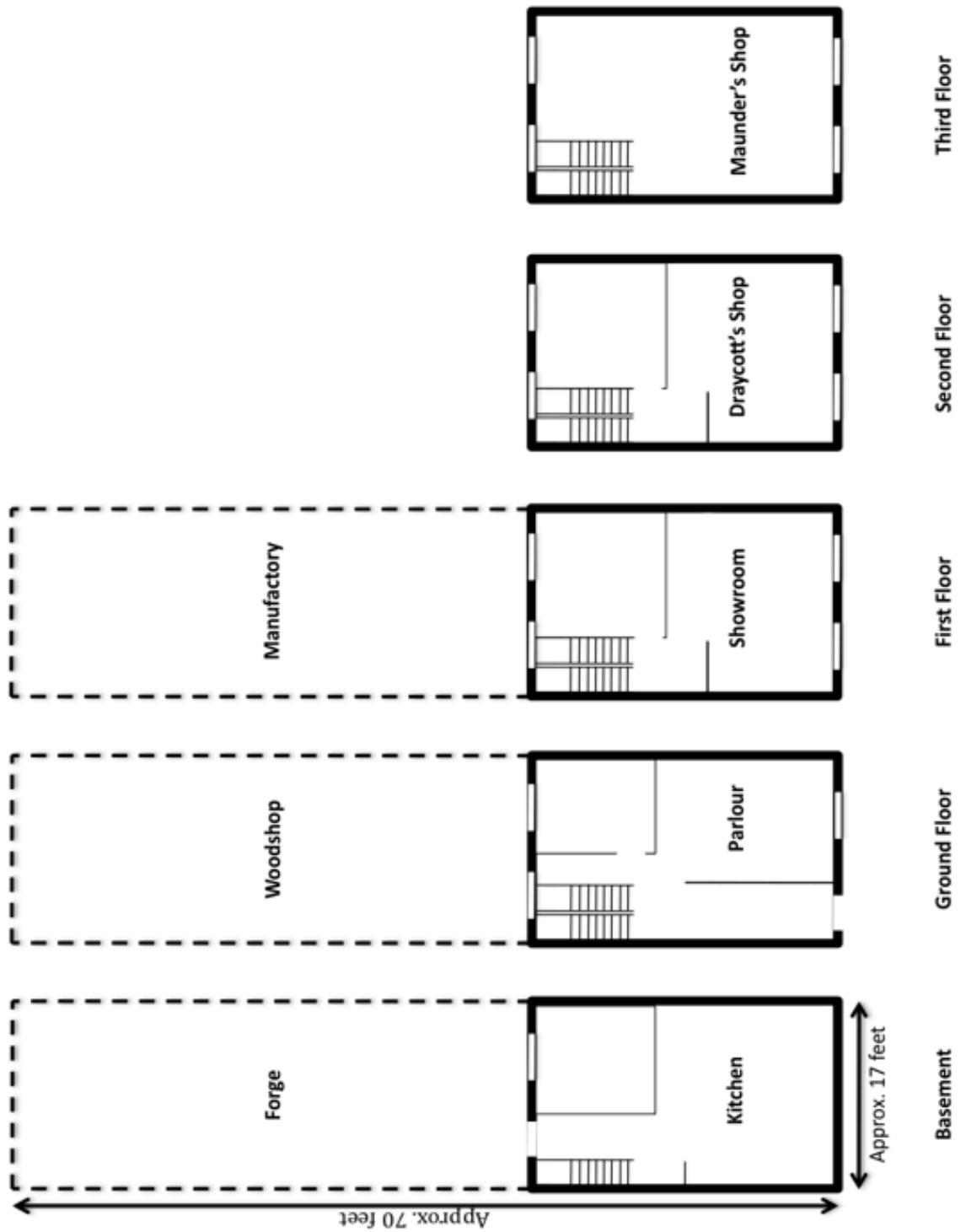


Figure 6.7. Proposed layout of 100 Wardour Street in April 1820.

A lease shows that Erat agreed to sublet the house to a John Mitchell for £150 shortly before his death.

The said John Mitchell hath applied to and requested the said George Sharp and Martha Erat to grant and execute unto him a lease of the said premises pursuant to such agreement with the said Jacob Erat deceased which they have agreed to do on being paid the sum of fifty pounds the residue of the said sum of one hundred and fifty pounds now.⁹

Mitchell's pavement and land tax payments (recorded in the ledger) indicate he had taken possession by June 1820.¹⁰

Following the Building Act (1774), houses were rated according to value and size. The lease valuation and description of 100 Wardour Street suggest that it was a third-rate house.¹¹ That no workplace is mentioned in the description of Mitchell's lease suggests that Erat temporarily retained their workshops there, perhaps those in the rear extension, while the new premises at Berners Street were prepared.

End of year accounts, entered in the Erat Ledger on 31 December 1821, 1822 and 1823 (detailed examination of which can be seen in Chapter 7) name suppliers who were on Wardour Street. William Cairncross (a cabinet maker), who appraised the Erats' household furniture and supplied timber and veneers, was trading at no. 17 in 1810;¹² Daniel Stewart, an ivory and hardwood turner, was at 15 Wardour Street in 1812;¹³ and, on 4 July 1816, Christian Wilhelm Mertens, who on 27 July 1809 was apprenticed to Jacob Erat 'in the art of working composing and finishing the iron and brass parts of or pertaining to a Harp',¹⁴ insured 99 Wardour Street (directly adjacent

⁹ TNA. C110/99, Lease for 100 Wardour Street. In the Erat ledger, Mitchell's name is also spelt 'Michel'.

¹⁰ EL. p. 9.

¹¹ Third Rate Houses were located on principal streets, occupied 350-500 square feet and were valued between £150-£300.

¹² LMA. Sun Insurance Policy, MS11936/453/ 844466, insured: William Cairncross, 17 Wardour Street, Soho, cabinetmaker, 14 October 1810. Cairncross was originally located on nearby Ship Yard. He was declared bankrupt on 7 February 1795, but appears to have continued trading at 17 Wardour Street until 1812 when he was insured at 11 Hollen Street. LMA. Sun Insurance Policy, MS11936/459/873587, insured: William Cairncross, cabinetmaker, 9 September 1812.

¹³ LMA. Sun Insurance Policy, MS11936/459/867830, insured: Daniel Stewart, 15 Wardour Street, Ivory and Hardwood Turner, 11 March 1812.

¹⁴ Christian Wilhelm Mertens' Indenture of Apprenticeship is used by kind permission of the estate of William James Southwood and executor Richard Heaton.

to the Erat manufactory).¹⁵ Thus, suppliers and workforce were located close to Erat's manufactory.

By 1819, Erat was searching for a new manufactory. On 8 January, Pierre Érard wrote to Sébastien:

Erat went to see the house on Marlboro [Great Marlborough Street] where Horn and his wife are still living. He will be annoying because of the resemblance of the name [and presumably proximity to the Érard manufactory] [...] I am sure to have an advantage over any other price offered £300! Last year Erat sold 60 harps, can he spare £300 for a house?¹⁶

Érard's interest in Horn's house reveals a hitherto unknown kind of competition between two makers. That he adds that the stables could be rented for £50 and would be suitable for his business suggests that Erat previously had considered using these for his new manufactory. Although the house number is not given, it was clearly close enough to the Érard business to be of concern. Erat did not purchase the property but instead leased 23 Berners Street in 1820, and was trading from the new address at the time of his death in February 1821. Between 1821 and 1824, the business is advertised at both 100 Wardour Street and 23 Berners Street, and from 1825 onwards at only Berners Street.

¹⁵ LMA. Sun Insurance Policy, MS11936/471/919658, insured: Christian Wilhelm Mertens, 99 Wardour Street, Soho, Gent, 4 July 1816. Stodart, the pianoforte makers, had previously occupied 99 Wardour Street. LMA. Sun Insurance Policy, MS11936/382/588803, insured: Matthew and William Stodart, 99 Wardour Street, pianoforte makers, 21 September 1791.

¹⁶ Adelson et al. vol. 2 (2015), p. 699.

6.2: Erat at 23 Berners Street

Erat's premises at 23 Berners Street were significantly larger than those at Wardour Street; a photograph (c1950) taken shortly before demolition and whilst in use by the woodwind maker Rudall, Carte & Co, shows a three-bay, four-storey, first-rate house with grand, classical-revival portico (Figure 6.8).



Figure 6.8. 23 Berners Street (c1950).

Although descriptions of the premises do not survive, an article in the *Morning Post* (1848) on a concert held there by the Society of British Musicians, reports that it was 'gloomy'.¹⁷ The Horwood map (1796-1799) shows a house with a garden and mews to the rear (Figure 6.9).¹⁸

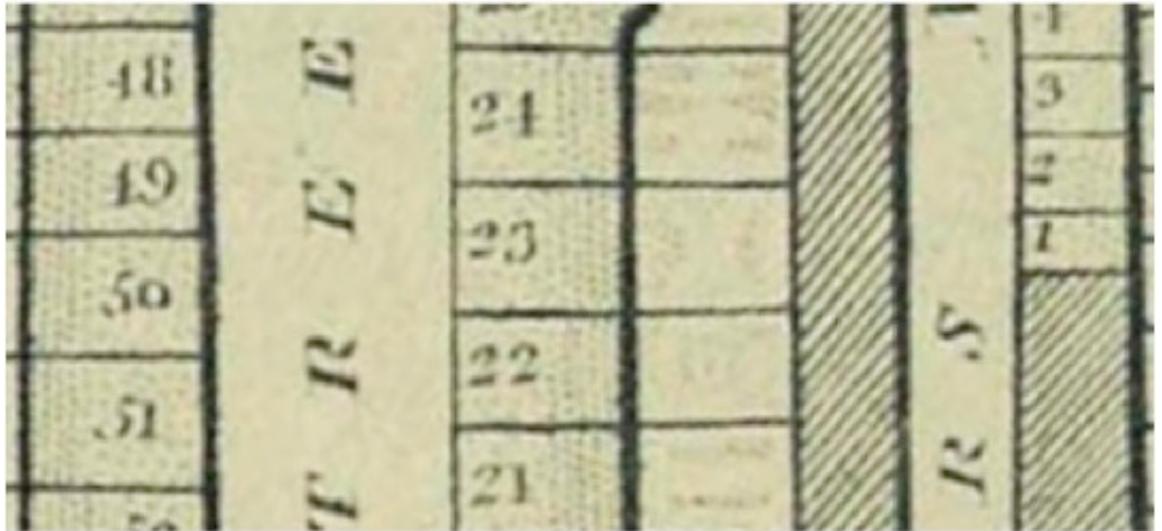


Figure 6.9. 23 Berners Street, Horwood's map (1796-1799).

An 1887 ground-floor plan (Figure 6.10), and the Goad fire insurance map of 1889 (Figure 6.11),¹⁹ show that the building had been extended backward to cover all but a small yard, the fire map illustrating five skylights to the extension. A later ground-floor plan (1919) shows changes to the workshop and further extension over the yard (Figure 6.12);²⁰ and a drainage plan of 8 October 1935 reveals the layout of the basement (effectively a fifth storey), and coal vaults under the pavement to the front (Figure 6.13). That the Berners Street site (30ft by 100ft: a total of 3000ft²) was considerably larger and grander than that at Wardour Street (approximately 17ft by 70ft: 1190ft²) confirms that move was motivated by growth of the business and suggests advancement in social status.²¹

¹⁷ 'The Society of British Musicians', *Morning Post*, 23,381, 14 November 1848, p. 3.

¹⁸ Richard Horwood, *Plan of the Cities of London and Westminster* (London: Horwood, 1792-1799).

¹⁹ BL. Goad Fire Insurance Plans of London (1885-1955), sheet 232 (1889).

²⁰ Floor plans of 23 Berners Street (1887 and 1919) used with the kind permission of the Survey of London.

²¹ Early twentieth-century drainage plans note that the building's footprint measured 30 feet, 3 inches wide by 101 feet deep. CWA, WDP2/0349/06, Drainage plans of 23 Berners Street, W1, 1950;

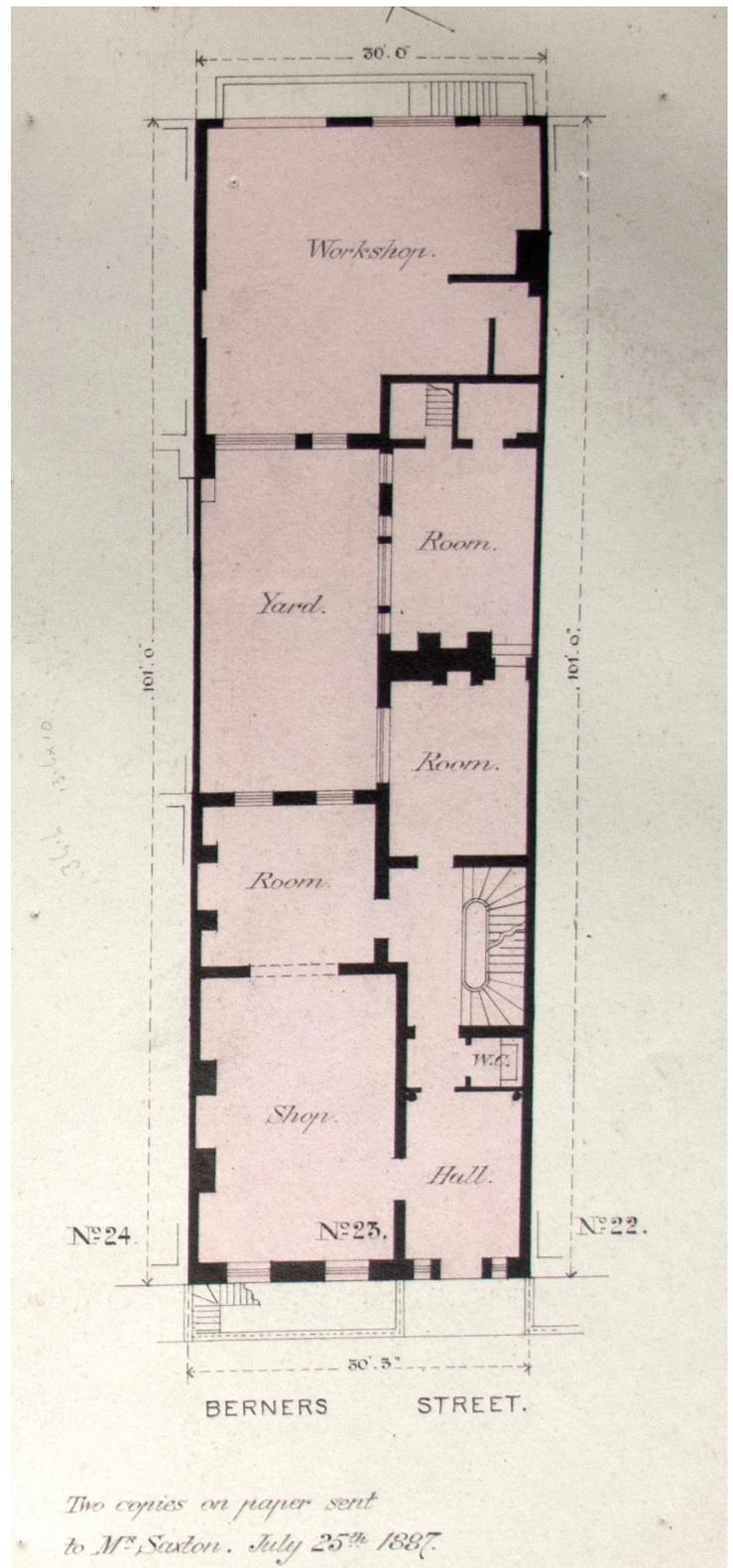


Figure 6.10. Ground-floor plan (1887), used with the kind permission of The Survey of London.

WDP2/0349/06, Drainage Plan of 22, 23, 24 Berners Street, W1, 1960; WDP2/0349/06, Drainage Plans of 22, 23, 24 Berners Street, W1, 1961. The dimensions of 100 Wardour Street have been calculated by measuring the frontage of 163-165 Wardour Street (formerly 105 (Thomas Sheraton's business premises) and 106), from which a scaled-down measurement was plotted on the footprint of the building shown on Horwood's map.

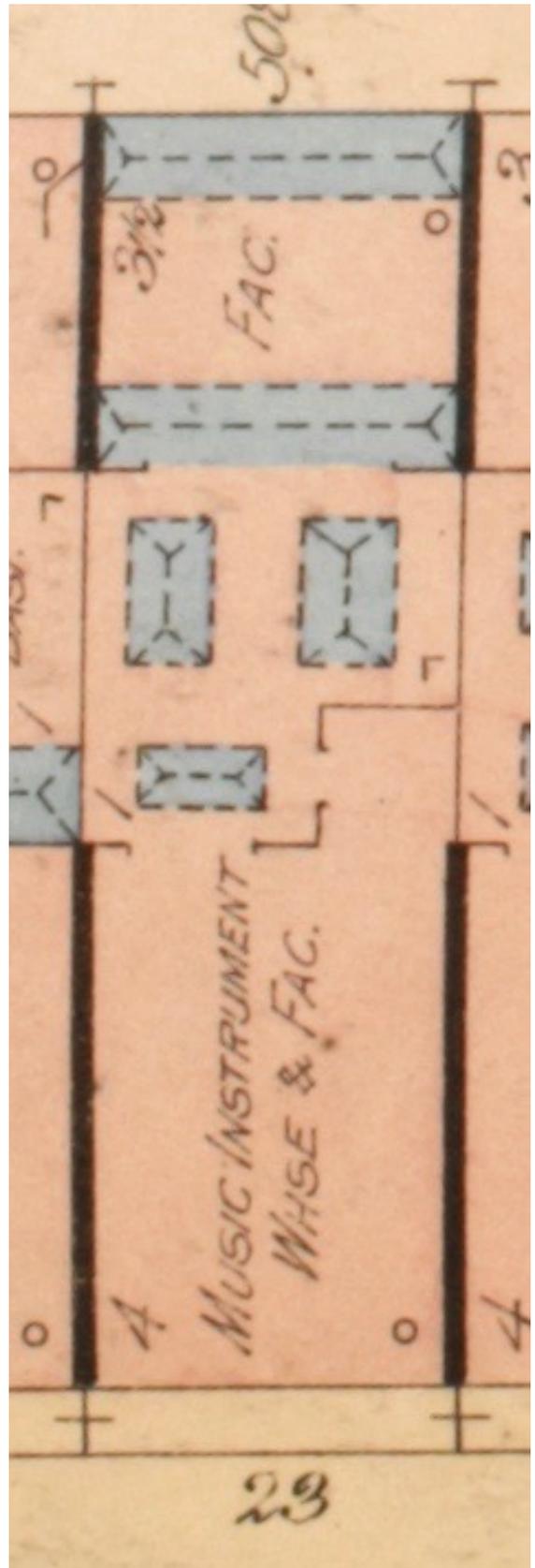


Figure 6.11. 23 Berners Street from Goad's Fire Insurance Map (1889).

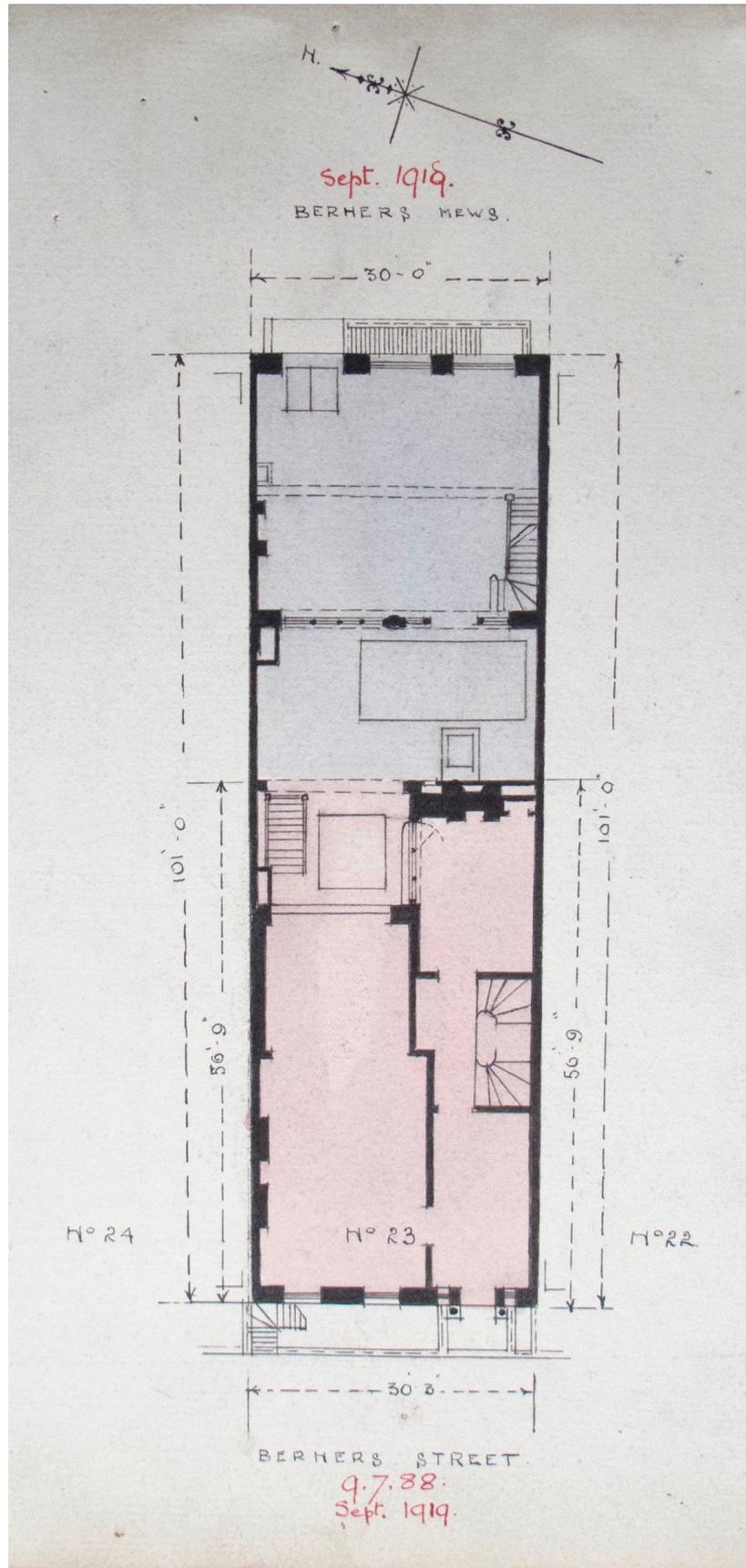


Figure 6.12. Ground-floor plan (1919), used with the kind permission of The Survey of London.

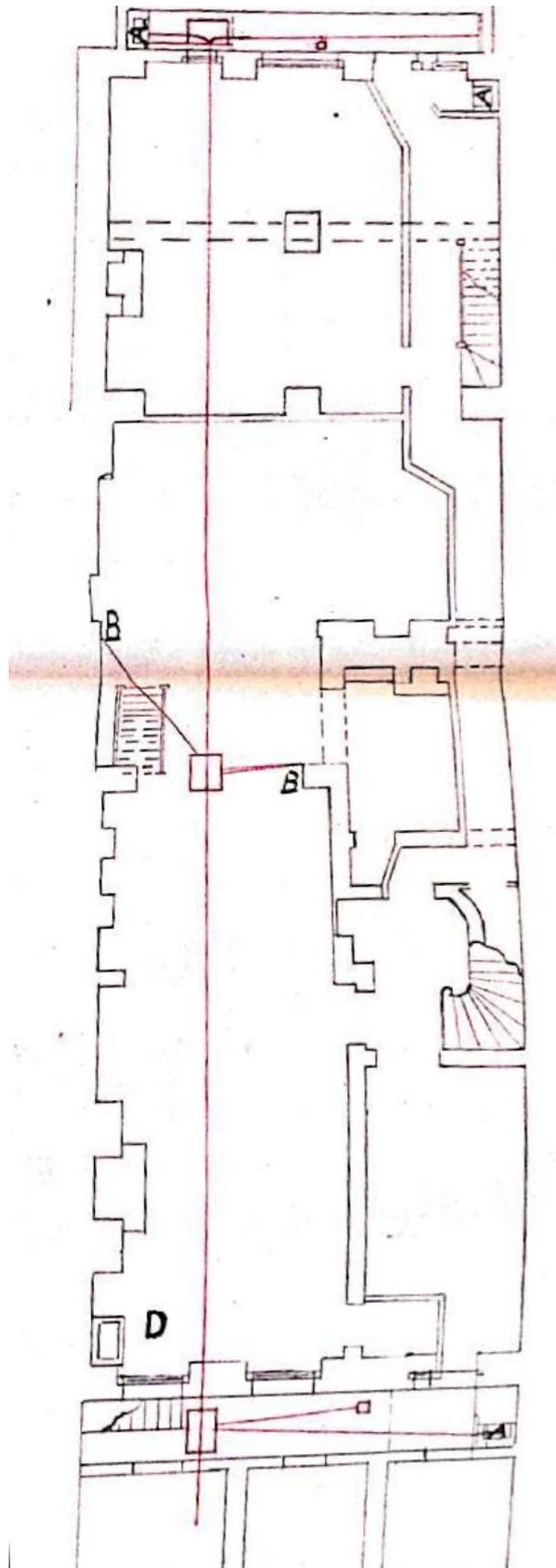


Figure 6.13. Drainage Plans (1935), used by kind permission of The Survey of London.

According to Willis, Jacob Erat paid the settlement for the lease of the house on 28 January 1820 and intended to 'write [engrave] Berners Street on the harp now in hand' the following day.²² Two weeks later, Willis had hoped to show Erat his latest harp development but 'he having been laying out his shops &c in Berners St was too tired to care about it'.²³ On the 16 April, the Erats spent their first night in their new house, revealing that they had moved there from Park Street.²⁴ Perhaps this was a temporary relocation as the business quickly grew to fill the house.

Household repairs undertaken between 1821 and 1823, recorded in the Erat Ledger show that the Erats continued to modify the building. Repairs to a water closet are noted, and unusually water was laid on to all floors. Glazing of windows and skylights reveal that the workshops were well lit, and a staircase, in which repairs to the sash and frame were made, demonstrates that the manufactory was arranged over more than one floor.²⁵

In 1821 Erat's neighbours on Berners Street included Dodd and Sons (harp makers) at number 3, Richard Evans and Benjamin Salkill (wheelwrights) at number 14, Charles Charlton and his wife, maternal aunt to Charles Dickens (pianoforte string maker and land-lady of a boarding house) at number 16, and David Taylor (a cabinet maker) at number 26.²⁶ The architect Thomas Hardwick Junior, a contemporary of Sir John Soane, lived at number 55.

²² WD. p. 41.

²³ WD. p. 45.

²⁴ WD. p. 64.

²⁵ EL. p. 110.

²⁶ Dickens, in 'Where we stopped growing,' an essay on his childhood memories and the important of preserving a sense of wonder published in *Household Words*, recalls a character he encountered during his childhood visiting Berners Street. He writes, 'Another very different person who stopped our growth, we associate with Berners Street, Oxford Street; whether she was constantly on parade in that street only, or was ever to be seen elsewhere, we are unable to say. The White Woman is her name. She is dressed entirely in white, with a ghastly white plaiting round her head and face, inside her white bonnet. [She] went simpering mad on personal grounds alone no doubt because a wealthy Quaker wouldn't marry her. This is her bridal dress. She is always walking up here, on her way to church to marry the false Quaker.' Charles Dickens, 'Where We Stopped Growing' *Household Words*, 6, 145, 1 January 1853, pp. 361-363.

6.2.1: Sun Fire Office insurance policies

On 14 February 1821, a week before his death, Jacob Erat purchased a Sun fire insurance policy for the first time.²⁷ The building and contents at 23 Berners Street were insured for the total of £7,200 for an annual premium of £11/15/-. The house, with 'a stove in the basement,' was insured for £2,500, and household goods (including clothing, books and plate) for £1,800 confirming that the Erats were indeed living there, and that the house was expensively furnished. Cover, totalling £2000, was purchased for the 'stock and utensils,' and £100 for china and glass. The 'manufactory behind, stoves therein secured by high fenders and cradles' (perhaps for heating and metalworking) was insured for the surprisingly small amount of £300 (perhaps it was still being built), and its 'stock and utensils' for only £500, significantly less than the inventory valuation calculated in 1821. The apparent under-insurance of the manufactory and higher amount for the house reflects the storage of materials and harps throughout 23 Berners Street (not just in the rear workshop extension) and the stock presumably held in the retained workshop at 100 Wardour Street that was absent from this insurance cover.²⁸

A later policy arranged by Erat's executors on 2 March 1825 (coinciding with a court case between the family and George Sharp, an executor) insured the house and manufactory for the lesser sum of £6,400.²⁹ The house was again insured for £2,500, the contents for the only £600 (£1,200 less than in 1821), the china and glass were insured for £1,500 (a rise of £1,400), and the manufactory for £500. The insurance valuation of the 'stock and utensils' had similarly increased from £500 to £1,300, reflecting the completed transition from 100 Wardour Street to 23 Berners Street. That the insured value of household goods fell from 25% in 1821 to only 9% in 1825 suggests that the house was initially lived in but by 1825 some or all of the family had left. Similarly, that the insured amount of the stock and utensils in the house fell

²⁷ LMA. Sun Insurance Policy, MS11936/488/976442, insured: Jacob Erat, 23 Berners Street. Harp Maker, 14 February 1821.

²⁸ A policy insuring 7 Perry Street, St. Pancras and 20 Park Street, Camden Town for £300 each was also purchased (LMA. MS11936/488/976443). Although the exact date of Erat's death is unknown, purchase of the insurance policy on 14 February 1821 and the commencement of the Erat Ledger on 21 February, seven days later, suggest he died between these dates.

²⁹ LMA. Sun Insurance Policy, MS11936/504/1028246, insured: The Executors of Jacob Erat, 23 Berners Street. Harp Maker, 2 March 1825.

from 20% to nothing, and that of the manufactory rose from 7% to 20%, indicates that by 1825, the house was considered part of the manufactory and its contents insured with those in the latter. The insurance policies name two specific locations: the basement and the manufactory to the rear. The cover purchased by the Erats was considerably higher than that bought by some other harp makers.

In 1822, John Charles Schwieso & Co. insured two properties, 11 Soho Square for £2000 (£1500 for the building 'no manufactory therein', and £500 for the contents),³⁰ and 95 Wardour Street (five doors south of the building recently vacated by the Erats) for £1800 (again £1500 for the building but only £300 for 'their household goods wearing apparel printed books and plate in their now dwelling house only and workshop all communicating two stoves therein').³¹ Schwieso had been declared bankrupt two years earlier;³² the purchase of these policies (perhaps an attempt to protect against more risks to his livelihood) indicates that he was back in business. Whilst harps of this date by Schwieso & Grosjean are engraved '11 Soho Square', a genteel address where they clearly had their showrooms, the workshop and home were on the less salubrious but nearby Wardour Street. Where the Erats chose one grand address for their workshops and showrooms, Schwieso and Co., chose two locations, one smart and the other less so. This may have been motivated by a wish to control costs; together, both properties were insured for £3,800, £3,400 less than Erats' cover for the previous year.

³⁰ LMA. Sun Insurance Policy, MS11936/493/007044, insured: John Charles Schwieso & Co., 11 Soho Square. Harp makers and dealers in musical instruments, 17 October 1822. The recorded name suggested that Schwieso had altered his name, perhaps to make it more Italian sounding. It is also conceivable that the change was an attempt to avoid debtors; his later financial difficulties saw him become a resident in the Fleet Prison.

³¹ LMA. Sun Insurance Policy, MS11936/493/995045, insured: John Charles Schwieso & Co., 11 Soho Square. Harp makers and dealers in musical instruments, 17 October 1822. That this policy was recorded against the Soho Square address but pertained to 95 Wardour Street indicates that the former was Schwieso's main business location. Schwieso's Wardour Street premises had previously been occupied by Bates & Co. pianoforte makers, further evidence of successive use of one location by different instrument makers. Margaret Debenham, *London Directory Entries for Musical Instrument Makers in the years 1763, 1793 and 1794*. <http://www.debenham.org.uk/personal/MD%20Extracted%20directory%20entries.pdf> [accessed 31 December 2016].

³² 'Bankrupts to surrender at Guildhall,' *Public Ledger and Daily Advertiser*, 60, 18,556, 8 November 1820.

On 29 May 1828, James Delveau gave evidence in a court case against a Thomas Maddocks, an apprentice of a Delveau's gilder, Mr Jennings of Berwick Street. Maddocks was accused and later convicted of stealing a harp worth £50 from Delveau's home. In his evidence, Delveau explained that he occupied the first floor of 28 Conduit Street in his capacity of executor to the estate of John George Boehu, and that the house belonged to Boehu's orphaned children. Returning home at eleven o'clock on 8 May, he found that the harp was gone. Elizabeth Davis, a neighbour's servant, reported that Maddocks had come to the house to see Delveau who was out. On arrest, Maddocks confessed to the theft and the harp was recovered from Rose Street, Long Acre. Maddocks, aged only 17 years old, was found guilty and condemned to death, but was 'recommended to mercy by the jury and prosecutor on account of his character.'³³ Just two months later Delveau insured his 'stock utensils and goods in trade at 28 Conduit Street, containing 'a lathe for turning metal but no manufactory therein,' for £500, probably in response to the theft.³⁴ The location of his workshop is not known. That a lathe is recorded indicates that Delveau turned machine parts at home.

Thus far, insurance documents have revealed that harp makers' domestic and business arrangements were somewhat entangled, and that they either lived above their workshops, or worked in their home. According to Nex, this was common of musical instrument makers during this period.³⁵

On 26 October 1831, following the death of Sébastien Érard, proprietor of the Érard Harp Manufactory, his nephew Pierre insured his business at 18 Great Marlborough Street.³⁶ He purchased £6,000 of cover 'on his stock utensils in his manufactory stoves therein and in his sheds communicating situate no. 3 Little Portman Street Marylebone brick and timber.' There is no mention of any domestic arrangements or accoutrements. That the insured amount was lower than that of the Erats 1821 policy (£7,200) is somewhat misleading as the Erats bought £1,800 of cover for

³³ *Thomas Maddocks, theft from a specified place*, OBOL, t18280529-18, 29 May 1828.

³⁴ LMA. Sun Insurance Policy, MS11936/521/1078546, insured: James Delveau, 28 Conduit Street, Bond Street, Dealers in Musical Instruments, 18 July 1828.

³⁵ Nex (2013), p. 181.

³⁶ LMA. Sun Insurance Policy, MS11936/533/1130018, insured: Pierre Érard, 18 Great Marlborough Street, harp maker, 26 October 1831.

domestic goods: deducting this from the total reveals that the Erats' business was insured for £5,400, only £600 less than that of the Érards, indicating that their premises were of a similar scale. The next insurance record pertaining to the Érard business occurs on 1 November 1837.³⁷ Included in the cover of £10,000 (a rise of £4,000 in six years, indicating significant business growth) are 'seven stoves therein the length of pipe not exceeding three feet,' and the addition of the adjacent property, 'no. 17 same street in his own occupation private.' Pierre's sale of his uncle's collection of old master paintings in 1831 would have made him exceedingly wealthy.³⁸ His purchase of this additional house would have been motivated by business expansion. Whilst he appears to have been living there in 1837, 17 and 18 Great Marlborough Street were later remodelled to extend the business, and it is possible that this insurance was purchased to cover it during this expansion. On 7 November 1838, by when the manufactory contained fourteen stoves (an increase of seven on the previous year), Pierre purchased £14,000 of cover for both houses and adjacent buildings.³⁹

Although caution is needed in the analysis of amounts insured as the purchaser assessed the values of their own properties, the policies sometimes reveal a considerable amount beyond valuation. The insurance of property coincides with company and family crisis; Erat's first policy was purchased during Jacob's final illness, the second during a Chancery court case between the Erat family and George Sharp. Schwieso & Co. were recovering from bankruptcy when they bought insurance; Delveau purchased his directly after the theft of a harp from his home; and those bought by Pierre Érard immediately follow Sébastien's death, and significant building reorganisation and expansion in 1837.

³⁷ LMA. Sun Insurance Policy, MS11936/564/1259840, insured: Pierre Érard, 18 Great Marlborough Street, harp and piano forte maker, 1 November 1837.

³⁸ Following Sébastien's death, Pierre sold his uncle's important collection of old master paintings. Three catalogues (between which there is some duplication) were published, the first in 1831; Sébastien Érard, *Catalogue des tableaux italiens, flamands, hollandais et français, des anciennes écoles, qui composent la magnifique galerie de M. le Chevalier Érard* (Paris: 1831); a second edition was published the following year; and in 1833, an English edition was released for a sale at Christies & Mason, London; *A Catalogue of Fifty Capital Pictures, the property of the late Chevalier Sebastian Érard* (London: Christies & Manson, 1833).

³⁹ LMA. Sun Insurance Policy, MS11936/565/1286202, insured: Pierre Érard, 18 Great Marlborough Street, harp and piano forte maker, 7 November 1838.

That these harp makers bought fire insurance during times of family and company risk may not be coincidental. Fire was a very real threat to the residents of London. Perhaps the worry of additional peril to businesses (and hence families) at such times motivated the purchase of fire insurance, affording some protection from unforeseen calamity. More cynically, it is plausible that at times of hardship the deliberate destruction of an insured business by fire was a quick way to liquidate assets, assuming the conflagration appeared accidental. Further research is needed to test this hypothesis.

The contents of the Erat manufactory, whilst protected against fire, were not covered for burglary or theft. On 4 February 1823 an entry in the cashbook records the purchase of 'ointment for the dog' costing 8d (indicating that a dog was kept and suggesting that it was injured or unwell).⁴⁰ Between 3 April and 13 June 1823, further payments are made for straw for the dog and more ointment,⁴¹ and on 13 June, Mr. Sullivan (an employee) was paid -/2/- to drown and bury the dog.⁴² The keeping of a dog, despite its demise, illustrates concerns about security. Another dog was acquired, and numerous subsequent payments refer the keeping of one,⁴³ and a 'new padlock for [the] coal vault', costing -/2/6, was purchased on 1 December.⁴⁴ Indoor security is also addressed: on 14 April 1824 -/1/- was paid for 'mending [the] lock belonging to the iron room,'⁴⁵ a secure location within the house, probably for the keeping of money; and on 17 July 1824, -/2/6 is paid for a lock for a cupboard.⁴⁶

6.2.2: The 1821 inventory

On 21 February 1821 Jacob's executors opened a ledger, initially to detail monies owed and due, and later to record sales, wages and purchases. Lease valuations of

⁴⁰ ECB. p. 74.

⁴¹ ECB. pp. 79, 80, 126.

⁴² ECB. p. 86.

⁴³ ECB. pp. 103-144.

⁴⁴ ECB. p. 103.

⁴⁵ ECB. p. 120.

⁴⁶ ECB. p. 129.

three of Erat's four London houses are recorded. Although 100 Wardour Street is not valued in the ledger, the associated lease reveals that it was purchased for £150.⁴⁷

House and premises in Berners' Street No. 23 held for an unexpired term of 67 years from Lady day next subject to a Ground rent of £15 p annum.	£2850
House situate No. Park Street [Camden] Town held for an unexpired term of 86 years from Michaelmas next subject to a ground rent of £3/15. p annum.	£350
House situate No. 7 Perry Street [Somers] Town held for an unexpired term of 60 years from Michaelmas next subject to a ground rent of 10s per annum.	£350 ⁴⁸

The first of two extant inventories (21 February 1821) comprising 154 entries pertaining to harps and associated accessories, values the stock and contents of the manufactory at £2574/16/6 (Appendix 6.1).⁴⁹ It is divided into five sections: 'shop fixtures and utensils in trade', 'articles for the manufacture of harps', 'harps on hire', 'stock of harps at home', and 'string account.' Six rooms are recorded, three 'shops' bearing the names of employees: Smith's, Draycott's, and Maunder's; and three named according to intended use: a forge, a woodshop, and a storeroom. Mr Draycott is recorded in the cashbook purchasing gold leaf and size, pigments, and tools related to finishing;⁵⁰ however the tools in the shop bearing his name suggest it was used for metalworking. The contents, valued at £3/11/-, include an anvil and bellows at £1/5/- and -/10/- respectively, a grindstone at £1/5/-, a vice at -/8/- and two hammers at -/3/-.⁵¹ Although Draycott appears to have been a finisher, it is possible that the stock in his room was temporarily stored there, and perhaps that finishing continued at 100 Wardour Street during the move. That fewer rooms are named in this inventory than in later sources (discussed below), suggests that the new manufactory was not fully operational.

⁴⁷ TNA. C110/99, Wardour Street lease.

⁴⁸ EL. p. 9.

⁴⁹ EL. pp.10-11.

⁵⁰ Payments recorded in the Erat Cashbook are made to Mr Draycott for gold, size and turpentine, hair tools, brushes and white lead, all of which suggest Draycott was responsible for gilding. ECB. pp. 1, 5, 6, 11, 16, 34, 44, 53, 67, 89, 96.

⁵¹ EL. p. 10.

The contents of Smith's shop are valued at £8/10/-. Three workbenches (implying a maximum of three employees) are valued at £1 each, woodscrews (the quantity unrecorded) at £2/10/-, a stove and pipe (for heating and perhaps gluing) at £3, and four unfinished poles (harp pillars) and eight unfinished bodies at £1 each.⁵²

The inventory of Maunder's shop records 'ten unfinished harps Draycott's shop' valued at £40 (£4 each), revealing these were actually in the former (their inclusion in the contents of Maunder's shop perhaps a scribing error) and further confirming the temporary use of Draycott's as a storeroom. The low valuation suggests that these were undecorated and unmounted (without mechanism). That Maunder's shop contained unworked metal valued at £23/17/3: cast brass at £3, 242 sheets of 17oz brass at £18/7/3, and square steel wire at £2/10/-, again suggests storage and perhaps initial processing.⁵³

The forge comprised two rooms: a workshop and a store. Raw metal and metalwork in various states of completion suggest machine assembly and reveal a relationship with Maunder's shop. Files, the quantity of which is not recorded, are priced at £6/10/-. Sets of components (possibly cut in Maunder's shop) indicate batch production: nine 'sets of solid arbours, pillars and cylinders' (for the manufacture of mechanisms) are priced at £1/10/- per set; three sets of fork pins (nominally 84 per single-action or 168 per double-action harp) are priced at £1/19/-; five sets of slide screws are valued at £1/6/8; and four sets of adjusting screws at £1/17/4. Ninety-seven pedal screws (not in sets, suggesting they were standard screws) are priced at -/7/-; and 'six machines for double motion finished' are priced at £42 (£7/7/- each). A small quantity of steel plate (possibly for mechanism links) is valued at -/5/-, brass (possibly for machine plates) at -/17/6, and brass wire (for fork pins) at -/15/-. That an anvil (related to forging) and grindstone were in Draycott's shop, while no tools are recorded in the forge or Maunder's shop, suggests that these were yet to be used.⁵⁴

⁵² EL. p. 11.

⁵³ EL. p. 11.

⁵⁴ EL. pp. 10-11.

The woodshop contained one unfinished 'double harp' and 21 necks, poles and bodies. That the harp was valued at £40 suggests that it was assembled but awaiting final finishing and perhaps stringing. Erat sold single-action harps between £42 and £81/18,⁵⁵ and new double-action harps between £44 for a second-sized instrument, and £115/10/- for a full size richly ornamented one.⁵⁶ That the necks, poles and bodies, valued at £84 (averaging £4/2/- per harp), are one entry suggests they were for one kind of harp, either single-action or double. A stove and pipe, valued at £1/10/-, provided heat and, in the absence of reference to other means, may have been used for gluing.⁵⁷ It is likely, as no hand tools are valued, that Erat's employees provided and maintained their own.

The 'storeroom', which appears to refer to multiple locations around the manufactory, contained a 'stock of wood comprehending in all about the manufactory' (valued at £60) and 'seventeen unfinished harps in white', in the back attic (valued at £68).⁵⁸ That these harps averaged 4 guineas each, while the unfinished ones in Draycott's shop were valued at £4, suggests a later stage of production, the additional work valued at -/4/-.

A limited number of tools are noted but their location is not given. Eleven vices are valued at £6/12/- (-/12/- each), six stakes at £1/10/- (-/5/- each), two planes at £1 and -/10/- each, a spinning wheel at 1 guinea, and another stove and pipe at £2. Four lathes, valued at £20 (£5 each) were presumably for metalwork.⁵⁹ Erat's workshop accounts reveal that the manufacture of poles (forepillars) was subcontracted.⁶⁰

⁵⁵ 'A variegated blue single-action decorated in oil gold with double gold vignettes' (no.1344) sold to a Mr Beavan of Cullum Street, London, on 14 September 1821, for £42, the cheapest new single-action harp noted in the ledger. EL. p. 96. The most expensive, 'A rosewood single-action decorated with burnished gilding and elegantly ornamented with painting' (no.1403), was sold to Messrs. Higgins of London Street, London on 12 March 1823, for £81/18/-. EL. p. 356.

⁵⁶ EL. p. 155, 12 January 1822. On 12 January 1822, 'a 2nd sized variegated blue double-action decorated in oil gold with Egyptian borders' (no.1354), was sold to a Mr Weaver of 26 Edgware Road, London, for £44, and on 18 May 1824, 'a rosewood double-action decorated with burnished gilding and a white front ornamented with gold borders' (no.1474) was purchased by Mr Birchell of Percy Street, London, for £115/10/- (EL. p.531).

⁵⁷ EL. pp. 10-11.

⁵⁸ EL. p. 11.

⁵⁹ The records of Charles Holtzapffel and Company confirm that they supplied Jacob Erat; on 1 January 1811, the balance of his account was -/7½; payment was made on 15 January 1811. (Records of Charles Holtzapffel and Company, University of Edinburgh Centre for Research Collections (UOE), Ledger F, 879F, f90). On 7 February 1815, Erat bought 'a stamp E' costing -/1/-, and '7 letters' a week

Strings, comprising 302½ bundles (a bundle containing approximately 22 to 24 strings),⁶¹ are valued at £87/13/3. That first octave strings (those corresponding to the highest notes at the top of the harp) are the most common (117½ bundles) suggests they were the most frequently purchased, and presumably the ones that broke most often.⁶² Twenty bundles of ‘the best firsts’ are valued at -/5/- each; 44 bundles of ‘firsts’ (suggesting lesser quality), 5½ bundles of ‘no. 1 blue’ (*F* strings) and 5 of ‘no. 1 red’ (*C* strings) are -/3/6 per bundle; and 12 bundles of ‘thin firsts’ are -/3/- each. The valuation of 31 bundles of foreign strings, also at -/3/6 per bundle, suggests these were also first octaves. Sixty-three bundles of second octave strings are valued between -/4/- and -/6/-: seven bundles of ‘seconds’ are -/6/- each, 30 bundles of the same at -/5/-, and 12 bundles, -/4/-; eight bundles of ‘no. 2 blue’ are valued at -/5/-, and six of ‘no. 2 red’ at -/4/6. Third octave strings, of which 35½ bundles are recorded, range from -/5/6 to -/8/-: 12 bundles of ‘thirds’ are valued at -/8/-, 11 bundles of the same and 8½ bundles of ‘no. 3 blue’ at -/7/-, and four bundles of ‘no. 3 red’ at -/5/6. Valued between -/7/6 and -/11/-, 26½ bundles of fourth octave strings are listed: four bundles of ‘no. 4 red’ at -/7/6 each, six and a half bundles of ‘no. 4 blue’ at -/10/-, and 16 bundles of ‘no. 4’ at -/11/-.

Twenty-three bundles of fifth octave strings range from -/12/- to -/15/-: 20 bundles of ‘no. 5’ are valued at -/12/- each, two of ‘no. 5 red’ at -/13/-, and one of ‘no. 5 blue’

later for -/10/6. (Records of Charles Holtzapffel and Company, UoE, Gen880F f95). On 10 February 1819 ‘Messrs J Erat & Son bought ‘2 sets of figures’ at -/11/-, and on 23 February, a 9d broach. (Records of Charles Holtzapffel and Company, UoE, Gen881F, f380). On 19 September 1820, ‘Mr Errat’ was charged £6/3/6 ‘To repairing the wood frame’. A payment of £6/1/6 is noted in red ink on 14 February 1821 (Records of Charles Holtzapffel and Company, UoE, Gen881F f99), recorded in the Erat Ledger under the heading ‘the Estate of Jacob Erat to sundries’, seven days later. (EL. p. 10).

Two entries in the Holtzapffel Register of Lathes, 1794-1928 (LMA. CLC/B/121), dated 22 March and 11 April 1811, record Érad (Erat’s closest competitor) purchasing two 5-inch common lathes for £27/18/- and £36/10/-. On 4 August 1819, Stumpff (another harp maker) also purchased a 5” common lathe, this time for the intermediate price of £12/12/-.

⁶⁰ G. Wakelin supplied harp poles costing -/3/9 each. In 1821, the Erats purchased 28: four on each of 22 March, 20 April, 3 June, 7 July, 5 October, 16 November, and 7 December (EL. p.143). In 1822, he supplied 38: four on 26 January, 14 February and in April 1822 (date not recorded); two on 5 June; and four on 16 and 26 July, 5 September, 3 and 30 October, and 18 November (EL. p.304). A further 42 were supplied in 1823: four on 15 January, 4 March, 28 April, 5 and 13 May, 24 July; one on 9 October; four on 25 October, nine on 29 October, and four on 19 December (EL. p.477).

⁶¹ The number of strings in a bundle is not noted. This is calculated by dividing the value of a bundle of strings (e.g. a bundle of C10 costing -/6/-), by the price of a single string of the same note (-/6). When this calculation is repeated for bundles and single strings of known value, a range of 22 - 24 strings per bundle is calculated.

⁶² Of all strings on the harp, first octaves are the thinnest and the most likely to break hence they require regular replacement.

at -/15/-. Nineteen bundles of sixth-octave strings are described as small (denoting short) valued between -/5/- and -/10/-,⁶³ or thick (denoting gauge) between -/13/- and -/15/-: two bundles of 'small bass' strings are valued at -/5/-, one at -/6/6, two at -/7/4, one each at -/8/- and -/9/-, and two bundles at -/10/-. Four bundles of 'thick bass' strings are valued at -/13/-, and five at -/15/-.⁶⁴

Supplier accounts in the Erat Ledger (more fully discussed in chapter 7) record annual purchases of strings. In 1821, 159 bundles of all octaves, costing £55/12/8, were purchased from J. Bockhorn, including those described as 'best', 'thick', and 'large white' and 'small'.⁶⁵ Siems & Tracey supplied 219 bundles at £57/4/-, described as 'large' and 'large white', 'small', 'best' and 'seconds', and 'thin'.⁶⁶ Eight sets of 'silver' strings, and one 'A', four 'B's', four 'c's' and two 'D's', valued at £14/12/2, were supplied by a Miss Anstey.⁶⁷

Ten 'harps at home' (at Berners Street), four double actions and six singles, are valued at £260. Three double-action harps are listed at £40 each, and a 'second-hand unfinished double harp' (suggesting incomplete repair or refinishing) was £15. Single-actions varied in price from £5 (for second-hand one) to £30.⁶⁸ That the valuations of harps in the inventory are lower than ledger prices suggests that the former are at cost. Harps listed in the inventory are later noted in the ledger: a second-hand instrument (no. 1319) was sold to Mr Lillycrop of Exeter for £50 on 9 November 1822;⁶⁹ a new patent yellow harp with lines in front (no. 1320), was bought by Mrs Hoffman of 426 Strand, London for £66 on 10 April 1821;⁷⁰ and a second-hand purple harp (no. 1302 later changed to no. 1392), was sold to Mr Pilbrow of Fore Street, Exeter for £50 on 12 November 1823.⁷¹ Three of the singles are valued in the inventory at £20: a small harp with swell and patent stops (no. 928), was sold to Mr W. Loder, the musical instrument retailer of Milsom Street, Bath on 5

⁶³ String gauge is described in the inventory as thin or thick. 'Small' sixth-octave strings were perhaps used on smaller double-action harps or standard single-action.

⁶⁴ EL. p. 13.

⁶⁵ EL. pp. 140-141.

⁶⁶ EL. pp. 139-140.

⁶⁷ EL. pp. 139. It has not been possible to identify who Miss Anstey was or where she was located.

⁶⁸ EL. pp. 11-13.

⁶⁹ EL. p. 280.

⁷⁰ EL. p. 31.

⁷¹ EL. p. 451.

October 1821 for £28;⁷² one with swell and patent stops (no. 514) was sold to Hallet Esq. of 66 Frith Street London on 31 March 1821, for £30;⁷³ and a purple and double-gilt new harp (no. 1295) was sold to a Mr Jopson on 10 April 1821, for £55.⁷⁴ Of two singles, valued in the inventory at £30, one second-hand black one (no. 1309) was sold to a Miss Byerley on 28 February 1821 (sale price not recorded);⁷⁵ although the inventory does not give the serial number the other, recorded as sold to J. Prince in the inventory, a ledger entry for one sold to J. Prince of Tonbridge [sic] Wells, Kent suggests this was a new, green, double-gilt and elegantly ornamented single-action, with swell and patent stops.⁷³

Sixty-eight hire harps, located in customer's homes and not the manufactory, are valued at £1449. Serial numbers are recorded though descriptions are not. The ornamentation and decoration of new harps accounted for a significant portion of sales price. Decoration did not affect the cost of hire and was therefore not recorded in either the inventory or ledger. Four harps, their valuations suggesting that they were French single-actions, are £6, £8, £10 and £15. Forty-four harps with a higher valuation of £20 each are probably English single-actions, and fifteen harps at £30 each and two at £40 apiece are probably double-actions.

'Household furniture from Wardour Street' (apparently recently moved to Berners Street) is valued at £66/9/-, and that taken with the house on Berners street is £190 (more than double that at Wardour Street), a total of £256/9/-. The substantial increase in the furniture valuation, corresponding with the move to larger premise, again suggests advancement in family and business fortune.⁷⁶

6.2.3: An inventory in the 1822 end-of-year accounts

Consisting of 119 entries over 3½ pages, the 1822 end-of-year accounts value the contents of the manufactory at £1602/5/- (Appendix 6.2).⁷⁷ Seven locations are noted: Smith's, Draycott's and Maunder's shops appear again, along with a woodshop,

⁷² EL. p. 109.

⁷³ EL. p. 21.

⁷⁴ EL. p. 31.

⁷⁵ EL. p. 7.

⁷⁶ EL. p. 14.

⁷⁷ EL. pp. 326-329.

an attic, 'first-floor', and storerooms (indicating more than the one listed in 1821).⁷⁸ The forge is not mentioned. String boxes, covers, cases, music desks and stools, presumably stored somewhere in the manufactory, are also listed. Unlike the 1821 inventory, this document is concerned solely with products and manufacturing materials; fittings, fixtures and tools are not valued.

Only two entries, totalling £13/15/-, relate to Smith's Shop: two unfinished double machines are valued at £5 each, and three pedals (the value suggests that these were sets) at £1/5/- each. That the shop had contained unfinished harp bodies and poles in 1821 indicates a change of use. The Wood Shop contained only 12 unfinished bodies valued at £1 each, the absence of other items suggesting that they alone were made there. In 1821, one unfinished 'double harp' and 21 necks, poles and bodies were recorded, suggesting harps were then assembled there. That the Erat Ledger reveals an increase in production of new harps from 41 in 1821 to 67 in 1822 suggests that this apparently smaller stock was due to materials moving through the business and not due to a decline in orders. As in Smith's and the wood shop, stock in Maunder's changed between 1821 and 1822: where the earlier inventory recorded unfinished harps and unworked metal, the 1822 end-of-year accounts record '19 bodies and seven poles at £2 each'. The contents of Draycott's shop are valued at £52: thirteen bodies and poles (possibly paired and awaiting necks) are each £4.

Whereas in 1821 Draycott's shop was used for storage, a year later it was used for making the wooden harp parts. Comparison of the valuations of bodies and poles in Maunder's and Draycott's shops reveals three stages of production: those in the wood shop (£1) were 'in the white' (unfinished), those in Maunder's shop (£2) had been further worked upon, and those in Draycott's shop (£4) were finished and awaiting assembly.⁷⁹ Between 1821 and 1822, Smith's, Maunder's, Draycott's and the wood shops all saw changes of use, indicating that the manufactory was reorganized following the initial move from Wardour to Berners Street, and perhaps that items were only gradually moved from one address to the other; apparently stock was initially placed for convenience of storage rather than manufacturing.

⁷⁸ Year-end accounts were compiled in the Erat Ledger on 31 December in 1821, 1822 and 1823: only the 1822 accounts record the contents of the manufactory.

⁷⁹ EL. p. 326.

The 1821 and 1822 end-of-year accounts record payments for building work and repairs at 23 Berners Street. On 1 October 1821, two men were paid -/13/2 to 'alter the ceiling of work shop'; and on 11 May, -/14/6 was paid for the repair of the 'sash and frame in the shop stair case' and -/6/3 for 'cutting out brick work'.⁸⁰ On 21 September 1822, -/13/3 was paid for '12 knotts in new sash for shop, painting sash, and 1 square of crown glass for yard door', and on 4 December 1822 -/10/6 was spent on '1 sash glazed for work shop, 3 squares of glass for ditto';⁸¹ on 18 October 1822 a bricklayer and labourer received for -/4/5 for 'fixing stove [and] building [a] fender in shop', and on 10 December for 'repairing slating and laying fillets' costing -/9/6, the materials, '30 slates and nails, 1 hod of lime and hair', costing -/15/10. Seven days later -/3/10 was paid for 'making good brickwork in shop stove'.⁸² Building work at 23 Berners Street, presumably including construction or alterations to house a manufactory there, explains the changes in workshop organisation between 1821 and 1822 and the movement of stock between rooms.

A storeroom, the stock of which was valued at £104/4/-, contained 60lbs of steel wire at -/2/- per pound (perhaps used for pedal rods which were called 'wires'), and 4lbs of the same at -/6/- per pound (presumably indicating that this was of a lighter gauge, perhaps for riveting mechanism linkages). The values of some materials, components and tools were 'estimated': unspecified quantities of cast, plate, and crank brass were £10, £40 and £5 respectively; files (their number not recorded) were estimated at £5, and arches, screws and staples at £7; and the value of wood 'in sundry shops' at £30.⁷⁹ Three bodies and poles (£4 each, indicating that they were finished) were stored somewhere on the first floor, and a further eight bodies (£2, so part-finished) were in the attic. It is noteworthy that while 55 bodies and 23 poles, in various states of completion were valued in the manufactory and house, no necks were listed.⁸³

⁸⁰ EL. p. 115.

⁸¹ EL. p. 320. Sash rope was sold by 'the bunch, knott or piece (i.e. 12 yards)'. Hentie Louw and Robert Crayford, 'A Constructional History of the Sash-Window, c1670-c1725 (Part 2)', *Architectural History*, 42 (1999), 173-239, (p.220). '12 knotts in new sash for shop' at two weights per window, each weight operated by two knotts, implies three windows.

⁸² EL. p. 314.

⁸³ EL. p. 326.

The valuation of 361½ bundles of strings at £91/5/1 is corrected in the ledger to £93/1/9. Of these, 166 were first-octave, comprising 114 bundles foreign first at -/4/9 per bundle (their total price altered from £26/11/6 to £27/1/6), 12 bundles of blue firsts at -/4/-, 33 bundles of English firsts at -/3/6, and six bundles of red firsts and one of blue also at -/3/6 (this price suggesting they too were English). Eighty-three bundles of second-octave strings were valued at between -/4/- and -/5/- per bundle: 54 bundles of foreign seconds at -/5/- (the total altered in the ledger from £13/2/6 to £13/12/6), 13 bundles (probably foreign) also at -/5/-, three bundles of red and five of blue 'no. 2' at -/4/6, and eight bundles of seconds at -/4/-. Third-octave strings, of which 27½ bundles are listed, were valued between -/5/6 and -/12/-: a bundle of foreign thirds was valued at -/12/-, 11 bundles of 's' thirds (the 's' perhaps denoting short) at -/8/-, 15 of the same at -/7/-, and half a bundle of 'no. 3' at -/5/6. That the price of the foreign strings is greater suggests higher quality and presumably includes the additional cost of importation.

Six bundles of red fourth-octave strings are valued at -/8/-, and four and a half of blue at -/10/- (a total of 10½ bundles). Two parcels of one and a half bundles of 'no. 5' strings (fifth octave) are valued at -/15/- and -/12/-. Fifty and a half bundles of sixth-octave strings are inventoried: 33 'silver strings' are valued at -/1/8 each priced individually; four bundles of 'second bass' (second perhaps denoting a lesser quality) are -/12/- each; eight of 's. bass' ('s' indicating second or small)⁸⁴ at -/10/-; and five and a half bundles of 'thick bass' are -/15/-. Strings in a further group are less clearly described: five bundles of mixed English firsts and seconds are valued at -/4/-, another four, firsts, seconds and thirds, at -/6/-, and 13 bundles of 'sundries' also at -/6/-⁸⁵

Three string suppliers are identified in the end-of-year accounts in the same ledger. In 1822, Miss Anstey supplied bass strings costing £6/15/4, comprising two 'A's' and two 'B's' at -/7/4, four 'copper C's & D & E' at 10/-, one lower 'E' at -/2/-, and eight 'sets of harp strings' at £1/9/- per set.⁸⁶ Siems and Co. supplied 110½ bundles of 1sts, 2nds, 3rds, 4ths, 5ths, white, blue and red gut strings, and sixth-octave bass

⁸⁴ In 1821, bass strings are described as both 'second' or 'small'.

⁸⁵ EL. p. 327.

⁸⁶ EL. p. 300.

strings at £37/17/3, described as 'small', 'large', 'thick' and 'thin',⁸⁷ and J. Bockhorn supplied 148½ bundles of gut strings at £55/12/6 spanning all octaves, some described as large and best.⁸⁸

Sixteen harps 'at home' (in the manufactory) were valued at £399; the types (single or double-action) are not recorded but are identifiable in the Erat Ledger by serial number. A second-size, black single-action (no. 1151) valued at £42 was later sold to a Mr. Chatterton of Green Row, Portsmouth for £30, a loss of £12.⁸⁹ Two second-hand, double-action harps were valued at £40: one, a patent harp (no. 1368) was sold to Mrs Luden of Hanover House, London for £57 on 23 December 1823,⁹⁰ the other (no. 1395) decorated in crimson, was sold to Mr Lovekin of Kensington Gravel Pits on 28 June 1823 for £60,⁹¹ profits of £17 and £20 respectively. Five harps were valued at £30 each; Mr Hammans of Cirencester Place hired one (no. 1257, type not recorded) a on 17 April 1822;⁹² two second-hand single-action harps (nos. 1381 and 557) were sold to a Mr. Humphuys of Dover for £40 on 1 April 1824,⁹³ and to a Mr. Viner of Bath for £30 on 15 August 1821 respectively;⁹⁴ a new single-action rosewood harp, elegantly ornamented with painting and burnished gilding (no. 1403) was sold to Messrs Higgins of London Street for £81 on 12 March 1823,⁹⁵ and a second-hand, double action (no. 991) also sold to Mr. Chatterton of Portsmouth for £47 on 28 June 1823.⁹⁶ Two undescribed harps (nos. 153 and 359) were valued at £22 and £25; two more (nos. 11 and 439), valued at £20 each, were hired to Mr. Dale of Poultry, London on 17 April 1822, and Mr. Poole of Buckingham Street, London on 23 July 1823.⁹⁷ An instrument with no serial number was valued at £15, two (nos. 120 and 201) at £10 each, and another (no. 12) at £5.⁹⁸ Fifty-nine undescribed harps, worth £1203/5/-,

⁸⁷ EL. pp. 310-311.

⁸⁸ EL. p. 315.

⁸⁹ Chatterton, perhaps a harp or music teacher acting on Erat's behalf in Portsmouth, purchased four harps during 1822 and 1823, two double-actions and two singles for a total of £153/15/-. That one of these was sold for less than its valuation indicates this discount was in lieu of commission. Although commission payments are listed in the ledger for others, none are recorded for Chatterton.

⁹⁰ EL. p. 464.

⁹¹ EL. p. 390.

⁹² EL. p. 190.

⁹³ EL. p. 520.

⁹⁴ EL. p. 86.

⁹⁵ EL. p. 356.

⁹⁶ EL. p. 21.

⁹⁷ EL. pp. 21, 398.

⁹⁸ EL. p. 329.

were priced between £5 and £55 each. Those valued at £30 or more (13 instruments) were probably double-actions; those worth less (46 instruments) were probably single-actions.⁹⁹

Harp accessories, valued at £58/19/-, were listed. Fourteen square string boxes with locks were valued at -/12/- each, five long boxes at -/8/6, and two tin boxes at -/15/.¹⁰⁰ A crimson cover was valued at £2/10/-, a brown one at £2, and another of moreen (a ribbed fabric made of wool or cotton) at £1. A new timber packing case was appraised at £2/8/-, one lined with tin at £2, a mahogany case at £3, and five second-hand cases at £1/5/- each. Five music desks on hire, and three 'in white' or unfinished, were valued at £1 each, with five second-hand desks at -/14/- apiece. A new stool was £2/10/-, four japanned stools and three second-hand stools were -/15/- each; five second-hand stools were appraised at -/10/-, and three white stools (this time painted) were valued at £1/5/-. Entries in the Erat ledger demonstrate that accessories were often finished and decorated to match customer's harps.¹⁰¹

6.2.4: The 1824 inventory

In his last will and testament, Jacob Erat instructed that a valuation of his business be undertaken on his eldest son's 25th birthday by 'two indifferent persons, one of those to be chosen by my said trustees or trustee and the other by them my said sons'. Two harp makers were appointed, Thomas Dodd of 3 Berners Street (probably on behalf of the Erat brothers), and Alexander Barry of 17 Frith Street, probably on behalf of Erat's executors.¹⁰² It opens:

An inventory of the stock in trade, fixtures in workshop and counting house, together with utensils used in the manufactory, belonging to the Estate of Jacob Erat late of Berners decd. Taken Decr, 8th 1824.¹⁰³

⁹⁹ EL. pp. 328-329.

¹⁰⁰ EL. p. 327.

¹⁰¹ EL. p. 328.

¹⁰² That Dodd's manufactory was located at 3 Berners Street and a number of extant Erat and Dodd harps share a unique gesso decoration (paired lions passant applied to the pillar base plate) perhaps suggesting the sharing of a mould and indicating that both were acquainted.

¹⁰³ EINV. p. 2.

With 221 entries over 16 pages, this is the most detailed of the three documents (Appendix 6.3). Where only six rooms were named in the 1821 inventory, and seven in the 1822 stock account, in 1824, twelve (six in the house and six in the manufactory, and a back yard) are recorded. By 1824, the business had expanded to fill all available space in the house and manufactory: a storeroom on the ground floor; back, middle and front rooms, all on the first floor; and a back second-floor room and counting house (possibly at the front of the second floor) were in the house. The manufactory comprised Smith's and Maunder's shops, a gilder's and a varnisher's rooms, a woodshop, and a forge.

The contents of a storeroom are valued at £302/16/10. Twelve completed double machines are valued at £12/7/- each,¹⁰⁴ and four finished single-machines at £4/15/- apiece.¹⁰⁵ That the singles were assessed to be worth £7/12/- less than the doubles is indicative of the additional work and materials required to make the latter.¹⁰⁶ Rolled brass valued at £12/11/-,¹⁰⁷ cast brass at £6/17/5,¹⁰⁸ pedal steel for pedal cranks at £5/16/10,¹⁰⁹ square steel at £5/2/4,¹¹⁰ and flat steel for machine linkages at £10/16/- are also inventoried.¹¹¹ Components for the manufacture of harps include 65 gross of screws valued at £2/8/9 (9d per gross) their exact use unknown, 10 gross of pegs for soundboards at £5 (¾ of a farthing per peg or -/2/11¾ for a 43 string harp), 26 brass feet for pedal boxes at -/13/- (-/2/- for a set of four), and 240 sets of springs at £27/10/- (-/2/3½ for a set of eight). Forty damaged tuning forks are valued at 6d each; that these were retained suggests that the damage did not affect their pitch, or that the metal from which they were made was to be recycled. Thirteen vessels and three pans for gluing, and sand and emery paper are valued at -/13/- and -/8/- respectively. Strings, comprising 188 bundles and 71 silver strings valued at £54/17/6, are also listed in the storeroom, the first time their location has been identified. Ninety-nine bundles of first octave strings are valued between -/3/-

¹⁰⁴ Serial nos. 1497, 1498, 1499, 1502, 1503, 1505, 1510, 1511, 1512, 1513, 1518, and 1519.

¹⁰⁵ Serial nos. 1509, 1515, 1516 and 1517.

¹⁰⁶ New single-action harps were priced from £42 to £81/18/- their machines representing between 11% and 5.8% of the instrument's value. Double actions were priced from £44 to £155/10/-, the machines being between 28% and 8% of sale price.

¹⁰⁷ 1 cwt. 2 qr. 13½ lbs.

¹⁰⁸ 3 qr. 13lbs.

¹⁰⁹ 1 cwt. 1 qr. 25 lbs.

¹¹⁰ 1 cwt. 1 qr. 7 lbs.

¹¹¹ 2 qr. 16lbs.

and -/5/-: nine bundles of 'English best' are valued at -/5/, 52 bundles of 'foreign 1sts' at -/4/9, 'three of English no. 1' at -/3/6, and eight described as 'common 1sts' at -/3/-.¹¹²

Second octave strings are described as foreign, English, or large: eight bundles of 'large 2nds', eight of 'foreign 2nds' and three of 'English no. 2 blue' are valued at -/5/-. Four bundles of 'English no. 2 red' are valued at -/4/6,¹¹³ and two, described only as '2nds' at -/3/6, a total of 25 bundles. Two bundles of 'sundry strings' (possibly first or second octave) are valued at -/3/6. Third octave strings, of which 38 are inventoried, are valued at either -/5/6 or -/7/- suggesting two gauges or qualities: 20 bundles of 'large 3rds' and seven and a half of 'English no. 3' are valued at -/7/- per bundle. Two bundles of '3rds', two and a half of 'English no. 3', and six of 'thin 3rds' are valued at -/5/6. Only one and a half bundles of fourth, and one of fifth octave strings are listed: half a bundle of 'English no. 4 blue' are valued at -/10/-, and one of 'English no. 4 red' at -/7/6. One bundle of 'English no. 5 blue' is valued at -/17/-. Seventy-one sixth octave 'silver' strings are valued at -/3/6 each, and half a bundle of 'thick bass' at -/15/6 per bundle: 10 bundles of '2nd size bass' are valued at -/12/-, and nine bundles of 'small bass' and four of '2nd size bass' at -/10/-.¹¹⁴

Compared to the 1821 inventory, when the storeroom contained only unfinished harps valued at £128, and 1822, when it stored only metalwork at £104/4/-, by 1824 it is better organised. This later inventory gives an impression of careful stock keeping with harp machines grouped by type, metalwork, perhaps arranged on shelves or in racks, and strings by the bundle.

The contents of Smith's shop, now apparently set up for the assembly of machines, are valued at £220/19/6 (£208/14/6 more than in 1822, and £212/9/6 than in 1821).¹¹⁵ Eight similarly equipped workbenches, are valued at £5 each with 'files, screw drivers etc. at -/7/6 each,' 1 vice at 1 guinea apiece, 'sundry drills, taps etc. in

¹¹² EINV. p. 2.

¹¹³ The different in valuation between English second octave strings in blue and red may indicate a higher dyeing cost of the former.

¹¹⁴ EINV. p. 3.

¹¹⁵ EINV. pp. 4-7.

drawer,' at -/5/- per bench and a 'hand vice, pliers, dividers and tap' also valued -/5/-. A ninth bench, located in the middle of the room, is equipped with the aforementioned files, a screw wrench at -/4/-, two planes at -/10/6 each, a planing bench and block valued at -/5/-, two vices at £1/1/- each and a broken vice valued -/10/-. Two completed double-action machines on bench 2 (nos. 1520 and 1521) and two single-action machines (nos. 1522 and 1523) on bench 3 are worth £12/7/- and £4/15/- respectively. Metal for work in hand is noted on benches 1, 4, 5 and 7. Wages, totalling £25/16/4, 'paid on acct of work in hand' are recorded against benches 1, 4, 5, 7, 8. Bench 6 is not in use. The number of benches in use suggests a workforce of seven men in Smith's shop. Travel expenses in the Erat cashbook name Messrs Maunder,¹¹⁶ Challis,¹¹⁷ Sullivan,¹¹⁸ Samuel,¹¹⁹ Bradley,¹²⁰ 'a boy,¹²¹ Jacob,¹²² and James Erat visiting customers to undertake regulation, tuning and minor repairs.¹²³ Expenses and inventories identify Mr Draycott,¹²⁴ and cashbook entries for wages paid name Mr Brown (a gilder)¹²⁵ and Augustus:¹²⁶ a total of eleven employees.

A stove, pipes and pan, for melting glue, are valued at £1/16/-. Plate brass for machine plates (2cwt, 1qr, 10lbs at 155s per cwt) is valued at £18/2/6, cast brass possibly for pedal fulcrum blocks (2qr at -/1/5 per lb) at £3/19/4, flat steel for pedals (15lbs at -/3/- per lb) valued at £2/5/- and square steel (1qr, 3lbs at 78s per cwt) valued at £1/1/8. Wire in three materials (brass, iron and steel) is listed. Four unidentified bar lathes (valued at £4/10/-, £9/9-, £10 and £16) and a bed lathe (valued at £8) are also situated in the smith's shop. Wood, comprising inch thick sycamore (950 feet) for laminating fore-pillars is valued at £16/12/-, cube sycamore (35 feet) possibly for pedal boxes at 10 guineas 'per load' is valued at £7/6/-, sawing

¹¹⁶ ECB. p. 196.

¹¹⁷ ECB. pp. 16, 75, 80, 82, 86-87, 101, 112, 146, 147.

¹¹⁸ ECB. pp. 78-80, 82, 84-99, 103-107, 110-112, 114-115, 119-122, 124-125, 127-136, 138, 140-142, 144.

¹¹⁹ ECB. pp. 1, 5, 7-8, 10-14, 16-17, 19, 22-30, 32-35, 38, 41-42, 44, 47-48, 50-69, 73-77.

¹²⁰ ECB. p. 127.

¹²¹ ECB. pp. 29, 145.

¹²² ECB. pp. 7, 20, 35, 44, 65, 77.

¹²³ ECB. pp. 1, 8, 19, 24, 28, 30, 34-35, 40-41, 45, 48, 51, 56, 59-61, 63, 65, 67, 69, 78, 80, 82, 93, 96, 102-103, 108, 112.

¹²⁴ ECB. pp. 1, 5, 6, 11, 16, 34, 44, 53, 67, 89, 96.

¹²⁵ ECB. pp. 2, 8.

¹²⁶ ECB. p. 107.

planks (1167 feet) at -/9/- 'per hundred' are listed at £5/5/2 and 550 feet of veneer (type unknown) is valued at £2/9/6. Trucking wood, worth -/5/- is also stored in Smith's shop, and a spinning machine for silver wire is valued at £1, suggesting the Erats had the capacity to wind bass strings. 'Sundry saws, tools etc.' are valued at £3.

In Maunder's shop (the contents totalling £50/14/6)¹²⁷ 'sundry old belly wood' is valued at £5, and 53 sounding boards at -/4/- each. Harp necks are not recorded in the inventory though 220 feet of ½ inch sycamore, valued at -/2/- per foot, could have been used to make these. Veneer, 120 feet at £1/5/-, for laminating bodies, and sundry wood for gluing up, at £1/10/- are noted. Two gross of harp pins at -/10/- per gross are listed. Two 'damaged' harps used for experimentation (one with the serial number 1257, the other not recorded) are valued at £1 each, a spoiled mechanism (corresponding to no. 1257) is worth -/16/-, and two 'harps in white' come to £6/8/- apiece.

Harp action parts are inventoried: 22 sets of long wire (known as pedal rods in modern harp construction) are valued at £2/16/6 or -/2/6¾ per set, two double sets of screws and five single sets (machine back screws) are priced at -/13/4 and -/9/- per set respectively, six swell cranks at -/3/- each, two sets of arches at -/2/- apiece and four set of uprights at -/1/- each, all components of the swell action, are valued. A bench, worth -/8/-, a cupboard at -/10/-, and a tin box, and two old string boxes and drawers, priced together, are valued at £1/7/-. A Dutch clock, the only clock in the inventory, suggests the location of a foreman or supervisor.

The contents of the forge are valued at £5/10/-. Two hammers and benches are valued at -/5/-, a vice and anvil at -/10/- each, a grindstone at £1/5/- and a bellows, pipe and back at £3.¹²⁸ That the wood shop contained only three benches, each valued at 1 guinea, compared to the nine in Smith's shop confirms that the manufacture of machines was more laborious and required a larger workforce and workshop than that of the wooden parts of the harp. A stove, pipe and pan and two glue pots are valued at £2/10/- and £2 respectively. Two presses (valued at -/5/-)

¹²⁷ EINV. pp. 10-11.

¹²⁸ EINV. p. 12.

and five moulds (at -/10/-) taken together with 57 associated wood screws (-/1/6 each) and four iron screws (-/3/-) were used in the manufacture of harp bodies. Twelve harps in white are listed at £5/13/- each (a total of £67/16/-); the price (more than a single-action but less than a double) suggests they were undecorated. Sundry pieces of beech, deal and sycamore are valued at £3. Sycamore, the principal timber used in harp manufacture, is recorded in two thicknesses: 88 feet of one inch valued at -/4/- per foot, and 103 feet of Inch and a half at -/6/- per foot (the only sycamore of this thickness recorded in the 1824 inventory). Taken with aforementioned inch and a half sycamore, a total of 220 feet of half inch and 1073 feet of one inch are inventoried in 1824. In total, the contents were valued at £90/7/4.¹²⁹

Six double-action harps, valued at £230, were displayed in the first-floor drawing room, the premier location in the house indicating that it was the premier showroom. One (no. 1400), a second-hand instrument valued at £30, was finished in black and oil gold; five new ones were £40 each: a second-sized rosewood harp (no. 1484), one in oil gold (no. 1492), a smalt blue one (no. 1496), a grey harp (no. 1496), and one in green (no. 1504). Three harps each with the 'common machinery' (single-action) were located in the first-floor middle room, a showroom solely for single-actions. Two (nos. 1824 and 8000) were valued at £4, and the third (1825) was £8; the high serial numbers indicate that these harps were not by Erat, and their low valuations suggest that they were old, possibly French.¹³⁰

Instruments in the first-floor back room are valued at £199/12/- comprising twenty-four harps in white at £6/8/- each, and six double-action harps 'in white mounted' at £7 each; mounting, the application of gesso decoration, accounts for the valuation difference suggesting that this process cost -/12/-). Two French harps are listed at £2 each, the serial number of one given as no. 10,000; whilst still popular in France, the French harps were considered outdated and were no longer in popular use in England hence their low price.¹³⁰

¹²⁹ EINV. pp. 9-10.

¹³⁰ EINV. p. 4.

The contents of the room at the rear of the second floor are valued at £13/11/10/. Ninety-seven belly boards were valued at -/1/10 each; that these are worth less than those in Maunder's shop (-/4/-) suggests they were stored here whilst seasoning and had yet to be thickened. Sixteen leaves of air-wood (maple) veneer are valued at -/4/- each listed, and a large tin box for strings was £1/10/-.¹³¹

Although not specified, the counting house may have been located in the second floor front room, the only one not accounted for in the house. Cumulatively valued at £34/15/-, its contents included a desk and shelf for books valued at £1/10/-, a second hand single-action harp (no. 727) at £20, and three brass and three wooden moulds, probably for making composition ornaments, listed at -/20/- and -/10/- each respectively.¹³² Nine packing cases 'at home and lent' are valued at £4/10/-. Five square string boxes (four new valued at £2/8/-, and one second-hand at -/7/-) were noted. Two second hand harp covers (material not recorded) were valued at -/16/-, and one of moreen at -/14/-.¹³³

In the varnisher's room, two benches (suggesting two finishers) were valued at -/5/- each. A stove and pipe were £1/10/-; a cupboard and stone bottles (the contents of which are not given), -/5/-; a gallon of varnish, £1/12/-; sundry brushes were -/7/6; eight quires of paper, probably used for sanding and polishing, -/12/- (-/1/6 each); and 13 copper plates for borders, -/20/- (-/1/6 each). Sundry engraved borders, probably printed onto paper for later application to harps, were valued at £1. Two harps 'mounted in white' were £7 each. Eight harps 'under varnish' were appraised at £8/3/-, the price again suggesting these were double-actions, the varnishing cost of which was £1/3/- (the difference between the valuation of harps in white and those under varnish). Another harp, 'varnished and gilded without machine,' was 12 guineas, suggesting that the gilding process was £3/17/-. A harp 'taken in exchange from Cothay' is valued at £5, repairs on two others are estimated at £4, and a second-

¹³¹ EINV. p. 13.

¹³² Of the composition moulds surviving from the Érard company one, a boxwood lion, is peculiar to harps made Erat between 1805 and 1825, may have been purchased by the Érard Company when the Erat business closed in 1858. The contents of the Erat business and effects belonging to Jacob Erat, all taken from 23 Berners Street, were sold by Puttick and Simpson in May 1858. It has not been possible to locate a copy of this auction catalogue.

¹³³ EINV. p. 13.

hand single-action (no. 1481) was valued at £22. Ten single desks in white were appraised at -/16/- each, two second-hand double desks at £1 each, and 11 second-hand stools in white at -/13/- each. The refinishing of second-hand products suggests that these were repaired before resale. Nine sets of steel pin and tuning keys were £1 per set. The tuning pin holes would have been reamed, and the pins fitted, prior to varnishing but removed during the finishing process. That a tuning key accompanied each set may suggest that each was adjusted to fit a particular batch of pins. Seven dozen C tuning forks at £3/17/- (-/11/- per dozen), and 57 string gauges at £6/3/6 (-/2/2 each) suggest that each was allocated to finished harps during the finishing process. One set of feet 'in wood' was valued at -/10/-.

Eight quires of paper (probably for use in the finishing process) were valued at -/1/6 each, totalling -/12/-. Some decoration was applied during varnishing; thirteen copper plates for the borders for harps are listed at £20. Surviving harps are decorated with a range of borders, some simpler than others. The complexity of decoration would have been reflected in the cost of the finished instrument. The contents of this room was valued at £187/17/6.¹³⁴

The gilder's room contained a harp 'varnished and in oil gold without machine' valued at £10/3/6. The comparative valuation of the harp in this room with the varnished and gilded harp in the varnisher's room suggests the latter was a single-action. Two benches were valued together at -/10/-. A lead lined trough and veneers in the yard (possibly soaking in the trough prior to bending to make bodies) were £1/6/-.¹³⁴

Twenty-five harps on hire (eighteen single-action and seven double-actions) were valued cumulatively at £528. Of these, fifteen single-actions were £20 each,¹³⁵ and two small ones (with the common machinery) were £4 each.¹³⁶ Another harp, also with the common machinery, was £10, the higher valuation denoting larger size:¹³⁷ double-actions were valued at £30 each.¹³⁸ As before, the decoration is not described.

¹³⁴ EINV. p. 12.

¹³⁵ Serial nos. 439, 842, 838, 1090, 1045, 1031, 1238, 1401, 1409, 1427, 1447, 1466, 1495, 1506, 1508.

¹³⁶ Serial nos. 12 & 13.

¹³⁷ Serial no. 120.

¹³⁸ Serial nos. 1088, 1417, 1449, 1463, 1465, 1468.

Serial numbers suggest both old and new instruments; a small single-action (no. 12) on hire to Mr Dell is likely to date from Erat's first year of production. All hire harps were recorded as second-hand, and it is possible that those taken in exchange and made by other makers were also included in the hire fleet.¹³⁹

The inventory closes:

We the undersigned having examined the Stock and Effects contained in the foregoing Inventory do value the same at the sum of Eighteen hundred and ninety three Pounds, fifteen shillings, and eight pence.

Dated this 9th day of December 1824

Alex ^r Barry	on the part of the Ex ^{ors} of the late Jacob Erat dec ^d
T Dodd	on the part of Mess ^{rs} Jacob & James Erat. ¹⁴⁰

6.2.5: Spatial arrangement of 23 Berners Street

By comparing room names, locations, and changes between the 1821, 1822, and 1824 inventories with the aforementioned floor and drainage plan, it is possible to reconstruct the spatial arrangement of rooms within the business. The order of rooms in the 1824 inventory suggests locations. That a ground-floor storeroom appears first suggests that it was at the front of the building, adjacent to the entrance. Named locations, a back room (storing unfinished harps), a middle room (displaying single-action harps), and a front room (with completed double-actions), were all on the first floor. On the second floor were a 'back room' (in which 'belly-boards' were stored), and a counting house. The manufactory comprised Smith's shop (with nine workbenches set up for assembling harp 'machines'), Maunder's shop (with belly-wood and sycamore), a gilder's and a varnisher's room, a woodshop (with more unfinished harps, three benches, and tools); and a forge (now set up for forging). Although the locations of these rooms are not specified, their contents suggest their size: while the nine benches in Smith's shop (eight about the periphery and one centrally placed) suggest that it was the largest. The woodshop, by comparison, had

¹³⁹ EINV. pp. 14-15.

¹⁴⁰ EINV. p. 16.

only three benches, suggesting that fewer people worked here, but that it also housed 103ft of 1½", 88ft of 1" sycamore, and 12 incomplete instruments indicates that it was also a large space. Although the locations of the gilder's and varnisher's rooms are not recorded, the processes undertaken in each could only have been carried out in a clean, dust-free space, and it is likely that they were located together, away from the woodshop.

Household repairs, summarised at the end of each year, sometimes shed light on the location of rooms. Those in 1821 included a square of 'crown glass' for the yard door,¹⁴¹ and another for the 'back parlour' in 1823 (the first record of this room).¹⁴² Payments for 'a new back to the parlour stove', a guard, and bottom (presumably for the same stove) reveal another room.¹⁴³ The parlour and back parlour were most commonly located on the ground floor. A record for '8 square knott skylight over kitchen [sic]' in 1823,¹⁴⁴ shows that the kitchen was not in the front basement but in a one-storey extension beneath the rear yard, and this is confirmed by skylights in the Goad map.¹⁴⁵ The location of the kitchen may indicate that the gilder's and varnisher's rooms were in the basement-front and middle rooms of the house. The gilder's room, containing two benches and one harp in 1824, was probably in the smaller of the rooms; the varnisher's, also with two benches but 'two harps in the white mounted' and 'eight harps under varnish' could have been located in the larger of the two.

In 1823, £22/8/8 was spent on substantial building and repair work. Accounts show that water and sewage were plumbed throughout the house. Repairs to the 'closet in [the] shop', presumably a W.C., are noted.¹⁴⁴ In 1823, 27 squares of glass were fitted in an 'old sash' and 131 'in [a] new skylight'. Timber purchases reveal this skylight covered an area of 65 square feet.¹⁴⁶ Hardware and labour costs suggest that it was a new addition to the building. Located on the first-floor of the manufactory, its size suggests it crowned the largest workshop, perhaps that named after Smith; natural

¹⁴¹ EL. p. 320.

¹⁴² EL. p. 483.

¹⁴³ EL. p. 148.

¹⁴⁴ EL. p. 483.

¹⁴⁵ BL. Goad Fire Insurance Plans of London (1885-1955), sheet 232 (1889).

¹⁴⁶ EL. p. 479.

light would have been necessary for the assembly of harp machines. The rear manufactory appears to have been a two-storey building with a basement; possibly converted from - or replacing - an original mews. That the forge was located in the basement, and Smith's shop on the first floor suggests that the woodshop was on the ground floor. On 11 March 1823, the parlour blinds were repaired and a 'box staple to [the] attic door and fixing ditto' was paid for;¹⁴⁷ on 8 April repairs in the washhouse were recorded,¹⁴⁸ and the 'iron room' lock was repaired on 14 April 1824.¹⁴⁹ The rooms recorded in the Erat ledger, cashbook, and inventory can be plotted thus (Figure 6.14).

¹⁴⁷ EL. p. 480.

¹⁴⁸ EL. p. 483.

¹⁴⁹ ECB. p. 120.

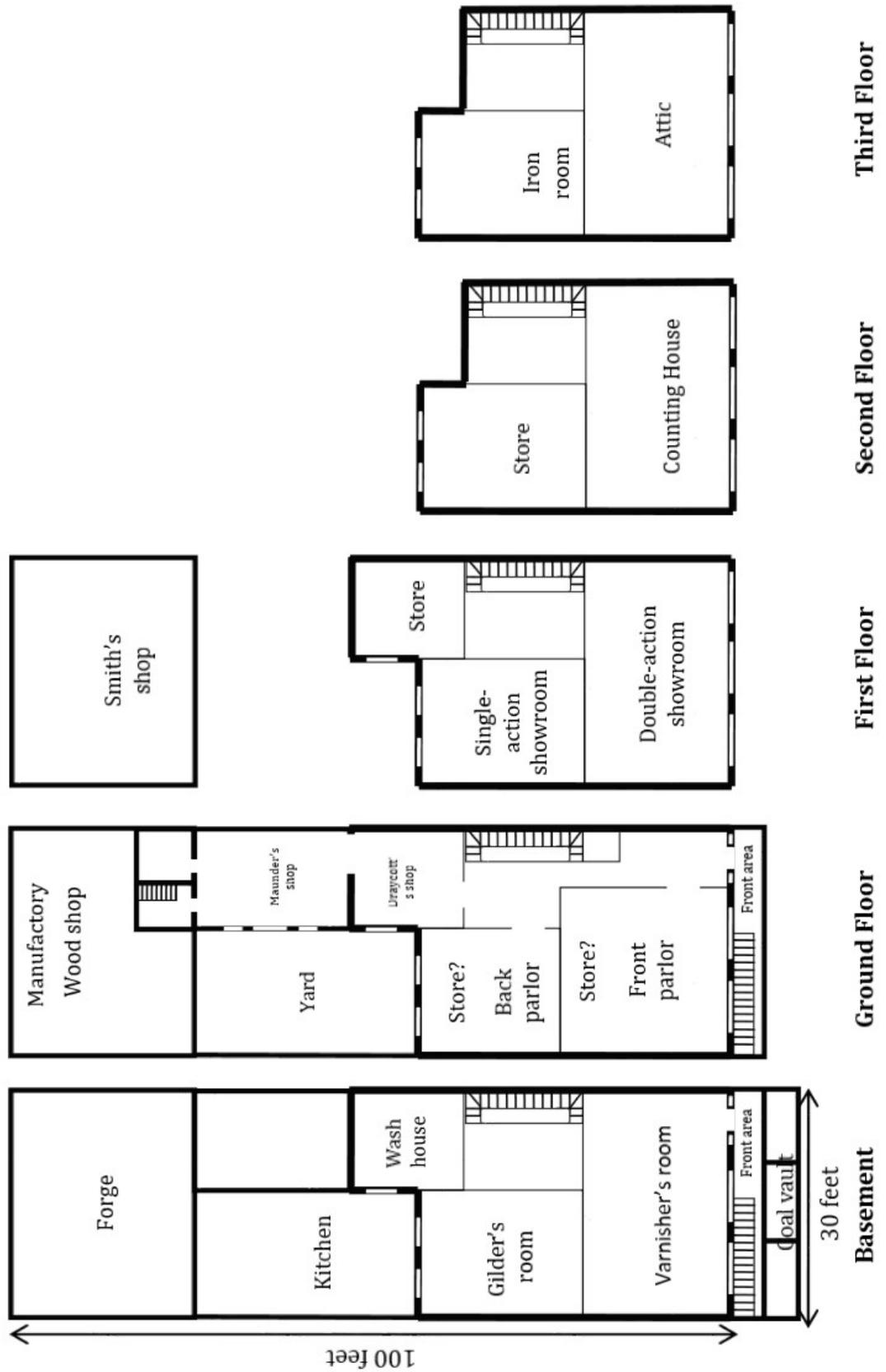


Figure 6.14. Proposed layout of 23 Berners Street, December 1824.

6.2.6: 23 Berners Street: 1858 auction of contents

On 30 March 1858, after James Erat's death, the contents of 23 Berners Street were sold at auction by Debenham, Storr, and Sons. The catalogue is now lost but an advertisement in the *Morning Advertiser* describes James as 'a maker of the highest standing' and lists some of the stock:

[...] 30 beautiful Gothic and Grecian harps of full compass; 11 microchordon and cottage pianofortes, of 6¼ and 6½ octaves, in walnut and rosewood cases; music stools and stands, harp implements, the large unfinished stock, in various stages, seven turning lathes, tools, models, and benches; also the capital furniture, a noble chimney glass 88 inches by 58 inches, a regulator, office furniture, china, glass, silver plate, and plated items and effects.¹⁵⁰

The number of harps and the unfinished stock indicates that manufacture had continued until James's death; presumably the workforce was dismissed afterwards. That pianofortes were present shows that the company had diversified in its later years, though whether they made or just sold these is unknown. The additional lathes (three more than in 1824) indicate an increase in mechanisation, and suggest that the company were turning a larger number of components or objects. The premises, described as 'spacious [...] with workshops in the rear' were advertised for rent.

¹⁵⁰ 'Messrs Debenham, Storr, and Sons', *Morning Advertiser*, 20,836, 29 March 1858, p. 8.

6.3: Summary

Following their move to Park Street, Camden Town (c1812) the Erats' separated their family and business lives. Accidents, described by Robert Willis, show that their 100 Wardour Street manufactory occupied the majority of the house, that it had been extended to the rear, and that it was in a dilapidated state. The house had a small footprint, typical for its date, type, and location. Workshops were arranged in a vertical manner with the stairs forming a central spine through which products, materials, and people were moved.

After considering relocation to Great Marlborough Street, close to Éradard (perhaps, as Pierre Éradard has earlier claimed, wishing to trade on the similarity in name), Erat bought the lease for 23 Berners Street in 1820. The transition there from Wardour Street, during which the new premises were extended, started almost immediately. Trade on Wardour Street and Berners Street was largely craft based although residents at the latter (including notable artists, musicians, and architects) suggest that this was not just a larger house, but also a grander address.

The material and labour costs of a harp varied depending upon finish, making calculation complicated. However, inventory valuations enable approximation. Before the addition of a profit margin, single- and double-action harps were £30 and £40 respectively; single machines were £4/15/-, and double ones £12/7/-; necks, poles, and bodies averaged £4/2/- per harp; the soundboard only -/4/-; and a set of tuning pins with key £1. The material costs of a single-action harp (excluding strings) were therefore £10/1/-, and labour was £19/19/-. To make a simply decorated double cost £17/13/- with labour of £22/7/-. As much as £3/17/- could be spent on gilding alone for more ornate instruments. Components were made in separate workshops but assembly was undertaken in one; the various of construction states, before completion, were referred to as 'unfinished (in an early stage of assembly)', 'in the white' (awaiting decorating), 'mounted' (with the machine fitted), and 'under varnish'.

The contents and uses of rooms at 23 Berners Street changed over time. Disorganised in 1821 and 1822, by 1824, when it had been expanded to house 16 rooms (five more than in the earlier workshop), it was orderly and functional, indicating that building work had finished. The offices of the business, depending on their use, were variously located to maximise light for working, to protect against fire, for optimum workforce management, to maintain a clean finishing environment, and for security, and status. According to the number of benches noted in the 1824 inventory, the metal shop was considerably larger than the woodshop, suggesting that more men were employed in the former than the latter.

Following James Erat's death in 1858, when the business closed, the lease and contents of the manufactory were sold at auction.

The harp in early nineteenth-century Britain:
innovation, business, and making in Jacob Erat's
manufactory

Mike Baldwin

Two Volumes

Volume 2: Chapters 7 - 10 and Appendices

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Chapter 7: The Erat harp

The Erat accounts, analysed in regard to the family (Chapter 5) and to the manufactories (Chapter 6), are examined here for evidence of customers, sales, products, and suppliers. Sales of harps and accessories are analysed, revealing trends over time, and consumption is assessed in relation to social class, gender, and the geographical distribution of the company's customers. Records of sales reveal the rich palette of colours, gilt types, and painted decorations offered, affording particular evidence of decoration (considered in general in Chapters 2 and 3) of the instrument. Suppliers of materials and services are identified, and by comparison of income and expenditure, the success of the company is assessed.

7.1: The Erat accounts

The Erat ledger opens with a list of monies, totalling £1106/17/11, owed by 'the estate of the late Jacob Erat' to 47 individuals and suppliers (Appendix 7.1).⁴⁸ The largest single amount (£138), owed to Thomas Bird the future husband of Erat's daughter, Catherine, perhaps formed part of her dowry. Two further instalments, each of £100, recorded on 30 November 1821 and 14 February 1822,⁴⁹ were paid to Catherine 'in part of £500 which was to have been advanced to her on the day of her marriage'. Two commission payments (£5 and £23/16/-) were due to the harpists John Taylor and Madame Boom respectively, probably for introductions resulting in sales to students. Some of the suppliers, such as Holtzapffel & Co. (tool manufacturer of 64 Charing Cross),⁵⁰ to whom Erat owed £6/1/6 (approximately the cost of a lathe), and Kirkman (pianoforte manufacturer of 13 Charles Street)⁵¹ who was owed £3, are well known; and others can be identified through year-end lists of monies paid to them.

Legacy payments to the family, totalling £500, confirm those already listed in Jacob's will (Appendix 7.2).⁵² Monies owed by customers are listed next; that the 301 credit

⁴⁸ EL. pp. 1-2.

⁴⁹ EL. p. 25 and p. 174.

⁵⁰ *Kent's Original London Directory* (London: Henry Kent Causton, 1823), p. 171.

⁵¹ *Kent's Original London Directory* (London: Henry Kent Causton, 1823), p. 197.

⁵² EL. p. 2.

accounts total £4833/16/3, nearly four times more than the monies owed by the company, indicate that the business was very profitable at the time of Jacob's death (Appendix 7.3).⁵³ Together with the company assets (investments, leases, contents, and harps on hire), the business was valued at £18,307/12/11.⁵⁴

Customer accounts reveal the status and gender of customers: 57% were male, and 43% female; 48% were titled Mr, 21% Mrs or Madame, 18% Miss, 4% used the nominal suffix Esquire, and 3% were entitled Lady; those entitled captain, colonel, general, major, doctor, reverend, countess, earl, or sir made up the remaining 6%. Assessed by social group, 87% held common titles (Miss, Mrs, Mr, or Madame); those with profession titles (doctor, esquire, and reverend) 5%; accounts held by aristocrats (Countess, Earl, Lady, and Sir) also made up 5% of the total; and military ones (Captain, Colonel, General, and Major) 3%. Notable clients included Mary-Ann Wallop (née Hanson), Countess of Portsmouth,⁵⁵ who owed £16/14/6; Elizabeth Vane (nee Russell), Countess of Darlington, who owed £1/4/6; Charles Stanhope, second Earl of Harrington,⁵⁶ who owed £7/5/10; and Sir Walter Roberts (1776-1828), second Baronet of Glassenbury and Britfieldstown, who owed £1/18/-.⁵⁷

Various musicians also held accounts: the harpist brothers 'Mr John Weippert' (John Erhardt) and 'Mr. M. Weippert' (John Michael) owed £65/12/9 and £1/13/8 respectively;⁵⁸ 'Mr P. Meyer' (Philippe-Jacques), another renowned harpist, teacher and composer, owed £7/19/6;⁵⁹ Mr J. Parish (probably John Parish, father of Elias Parish Alvars) £141/4/8;⁶⁰ Mr Challoner (probably Neville Butler Challoner, violinist, harpist, composer and tenor) owed £170/-/8.⁵⁹

Of the customers who owed money, 136 (45%) owed less than £5 each, totalling £312/1/9 (6% of the total due); 44 (15%) customers owed between £5 and

⁵³ EL. pp. 2-9.

⁵⁴ EL. p. 14.

⁵⁵ John Burke, *A General and Heraldic Dictionary of the Peerage and Baronetage*, 5th edition (London: Colburn, 1828), p. 772.

⁵⁶ Barak Longmate, *Stockdale's Peerage of England*, vol. 1 (London: Stockdale, 1810), p. 124.

⁵⁷ Sir Walter Roberts, www.thepeerage.com/p55997.htm [accessed 9 April 2016].

⁵⁸ EL. pp. 5, 8.

⁵⁹ EL. p. 4.

⁶⁰ EL. p. 5.

£9/19/11, totalling £320/9/0 (7 % of the total due); 21 (7%) owed between £10 and £14/19/11, totalling £250/18/2 (6 % of the total due); and 18 (6%) owed £15 to £19/19/11, a total of £317/18/5 (also 6 % of the total due). By contrast, the most money was owed by only 52 (17%) customers, who had spent more than £20, a total of £3632/8/11 (75% of monies owed), including the largest amount, £181/1/-, owed by a Mr Phillips.⁶¹

The monthly accounts that follow in the ledger are categorised by type, sections typically include ‘sundries drawn to’ harp sales, harp hire, and to the repair of harps; strings, covers, music desks and stools (and the hire thereof), wrest pins, etc.; portage and carriage, and petty cash (cash sales). The income from credit accounts is recorded as ‘cash drawn to sundries’, and expenditure as ‘sundries drawn to cash’ (including wages, rates, and housekeeping), ‘discount &c drawn to sundries’, and commission. The year-end accounts (December 1821, 1822, and 1823) list payments made to suppliers throughout the year, revealing purchases of materials, components and services.

7.1.1: ‘Sundries drawn to harp sales’

Monthly ledger entries describe the new harps sold (second-hand ones, as in the inventories, are less frequently described), record the prices paid, name customers, and give their addresses (Appendix 7.4). Instruments are listed variously as ‘with the single-action’ or ‘with the common machinery’ (an alternative description of the single action), harps ‘[with the] swell and patent stops’ (applied to both single and double-actions, ‘swell’ referring to the shutters, and ‘patent stops’, the fourchettes), ‘patent harps with the double-action’ (probably referring to Erat’s 1813 patent), and ‘second-size, suggesting a smaller instrument. No further detail is given about second-sized harps though Erat was not alone in making smaller models. An early twentieth-century photograph show a smaller than standard single-action harp; the base of the forepillar has three sections characteristic of the French maker, Challiot (Figure 7.1).

⁶¹ EL. p. 5.



Figure 7.1. Small single-action harp in an early 20th-century group scene. Full size 41-string Chailiot single-action (inset) showing the same characteristic three-step forepillar base. Private collection.

The Erat sales records start in February 1821 following Jacob death, and are initially lower than in subsequent years, perhaps reflecting a family in mourning and company in transition. Of 275 harps sold between 1821 and 1824, 134 were newly made and 141 were second-hand; 140 sales (39 new, and 100 second-hand) were of single-actions (51%) and 132 (94 new, and 36 second-hand) of double-actions (48%). Only three harps (1%) did not have pedals or an action. In 1821, nearly twice as many single than double actions were sold; in 1822 double sales exceeded singles; in 1823 1824, the two types were sold in almost equal proportion (Figure 7.2). Although Érard patented his double action in 1810 and stopped making singles in 1819, Erat's sale figures show that the earlier harp continued to be popular. Analysed by month, harps sales for 1822 to 1824 show peaks in February–April and September–December but they decline during the summer months (June–August), probably reflecting society's summer exodus from London (Figure 7.3). An atypical peak in July 1821 may suggest late delivery of harps ordered earlier in the year but delayed due to Jacob Erat's death.

Harp sales totalled £14,833/4/- during the ledger period (for monthly totals see Appendix 7.5.1). Figures for the 11 months recorded in 1821 show an income of £3,814/2/- from the sales of 77 harps (made up of 50 single-actions and 27 double-actions); sales in 1822 totalled £4,377 from the sales of 75 harps (comprising 28 singles and 47 doubles); and in 1823, sales of £4,257/7/- were generated from 79 harps (40 singles and 39 doubles). The final six months of the ledger, January to June 1824, show sales of £2,384/15/- from 45 harps (22 singles, 20 doubles, and three with no action).

New single-actions ranged in price from £42 (for a variegated blue one, number 1344, in oil gold with double gold vignettes, sold to Mr Beavan of Cullum Street, London, on 14 September 1821)⁶² to £84 (paid by W. Bury Esq. of Rippon, Yorkshire on 15 October 1823, for a black one with swell and patent stops).⁶³ Second hand single-actions sold for between £15/15/- (paid by Mr Phillips on 19 May 1821 for

⁶² EL. p. 96.

⁶³ EL. p. 439.

number 13)⁶⁴ and £60 (paid by Miss Yeoman of Hackney for a black one, number 1384, sold with a packing case lined with tin on 18 May 1824;⁶⁵ packing cases sold for 4 guineas.⁶⁶

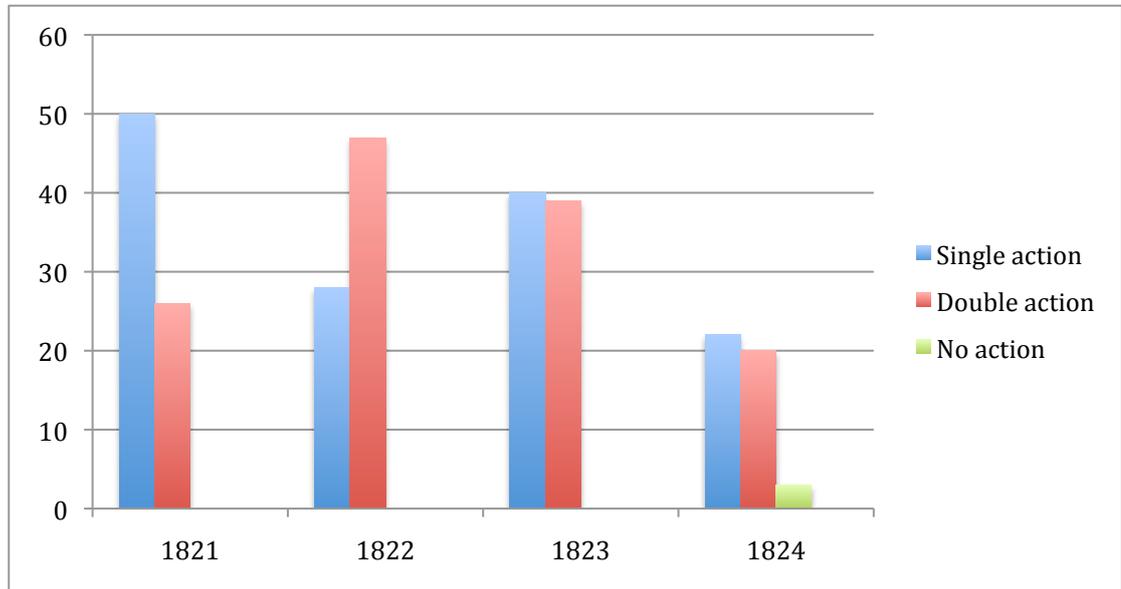


Figure 7.2. Harp sales by action type for the period 1821-1824.

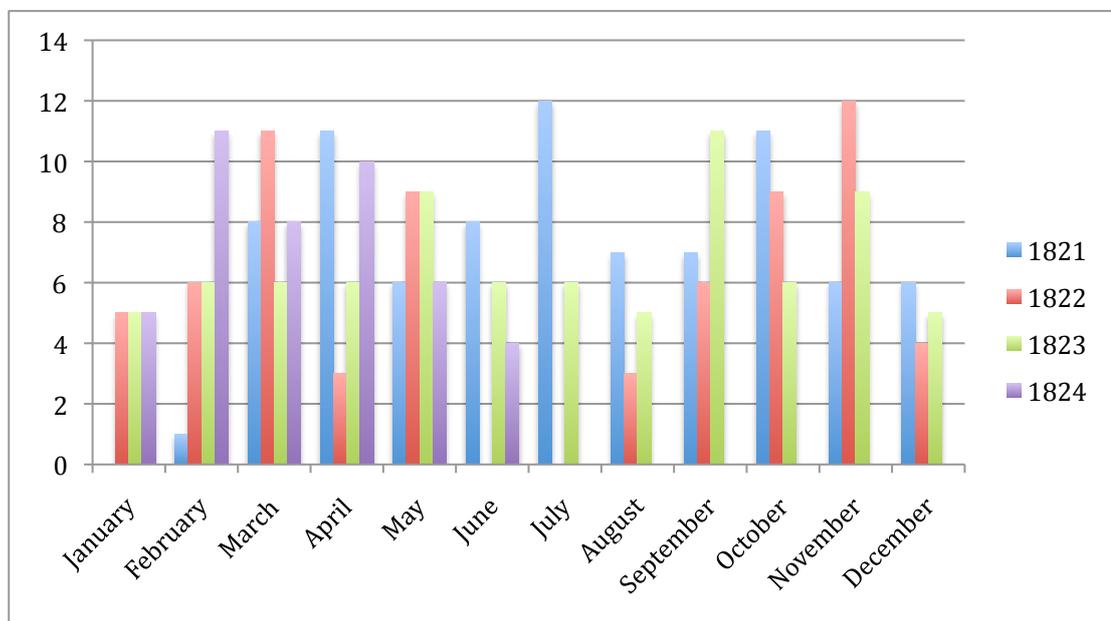


Figure 7.3. Harp sales by month for the period 1821-1824.

⁶⁴ EL. p. 50.

⁶⁵ EL. p. 531.

⁶⁶ EL. p. 186. A packing case lined with tin, costing 4 guineas, was sold to Lord Burghersh on 20 February 1822.

New double-action harps were priced between £40 (paid by Mr Taylor of Aberdeen on 12 November 1823 for one with burnished gilding, decorated in oil gold),⁶⁷ and £115/10/- (a rosewood one with burnished gilding, and gold lines in front, bought by John Walmsley Esq. of Rochdale on 4 July 1821).⁶⁸ Second hand doubles were ranged in price from £35 (paid for a black harp decorated in oil gold bought by Mr Pilotti on 16 June 1821),⁶⁹ to £72 (paid for number 1332, a 'freshly ornamented' one, suggesting it had been redecorated prior to sale, purchased by Mrs Brown of Winifrid House, Sion Hill, Bath on 9 October 1821).⁷⁰

Customer titles recorded against harp sales reveal further information about gender and class. Whilst the female adoption of the harp during the early nineteenth century is undeniable, analysis of the sales of the Erat Company reveal a more complex picture. Apart from 25% sold to music warehouses and other retailers, those entitled Mr, Mrs and Miss purchased 59% of harps; those with the designation Doctor, Captain, Right Honourable, and those using the nominal suffix Esquire accounted for 4%; and those using honorific titles such as Earl, Lord, Lady or Sir, accounted for 1% of customers.

Titles are not recorded against 11% of customers. Men accounted for 74% of purchases, and women 20%; gender was not recorded against 6%. On the examination of lower value sales, such as harp hire, the balance alters considerably; men accounted for 48% of harps hired, women 37%, with gender unspecified against 15% of entries. This pattern is repeated for strings and accessories. It would appear that purchasers of high value items, such as harps, were predominantly male, probably purchasing on behalf of wives and daughters, but that women, perhaps more likely to play the harp, had more freedom with lower value purchases. On analysing Érard's early double-action sales, Nex found that the largest proportion were sold to untitled customers, but that 64% were female, significantly higher than was the case with the Erat company.⁷¹

⁶⁷ EL. p. 451.

⁶⁸ EL. p. 71.

⁶⁹ EL. p. 58.

⁷⁰ EL. p. 108.

⁷¹ Nex (2013) pp. 109-110.

7.1.1.1: Erat customers

Although the Erats' customer base was London centric, it is likely that harps belonging to those of the landed class were moved between their town houses and country seats. Sales as far as Edinburgh to the north, the Isle of Wight to the south, Norwich to the east, and Aberystwyth to the west are recorded (Figure 7.4 and Figure 7.5). International sales were uncommon though included the delivery of harps to Ludwig Lenhold in Moscow, music stools and desks to a Mr Lentz in Boulogne, and strings to a Mr French in Jamaica. Harps on hire were mostly loaned within London although dispatch as far as Birmingham to the north, Eastbourne to the south, Ramsgate to the east, and Teignmouth to the west is noted (Figure 7.6 and Figure 7.7). Harps were dispatched by caravan,⁷² boat,⁷³ and ship.⁷⁴ Repeat customers accounted for 59% of harp orders. John Watlen, proprietor of a Music Warehouse in Leicester Place, London, purchased eight single-action harps priced between £35 and £36/15/-, and 9 double-actions, priced between £65 and £70. Watlen inflated these prices, advertising the availability of new double-actions, originally priced at £120, reduced to 80 guineas, and single-actions, reduced from 75 to 45 guineas,⁷⁵ making profit of more than £10 per harp.

⁷² ECB. p. 91.

⁷³ A payment for the hire of a Pickford's boat from Regent's basin is made to Mr John Shaw Manby. EL. p. 269.

⁷⁴ ECB. p. 98.

⁷⁵ 'Capital Pianofortes and Pedal Harps,' *The Morning Chronicle*, 17,465, 8 April 1825, p. 1.



Figure 7.4. British distribution of Erat's harp sales, 1821-1824

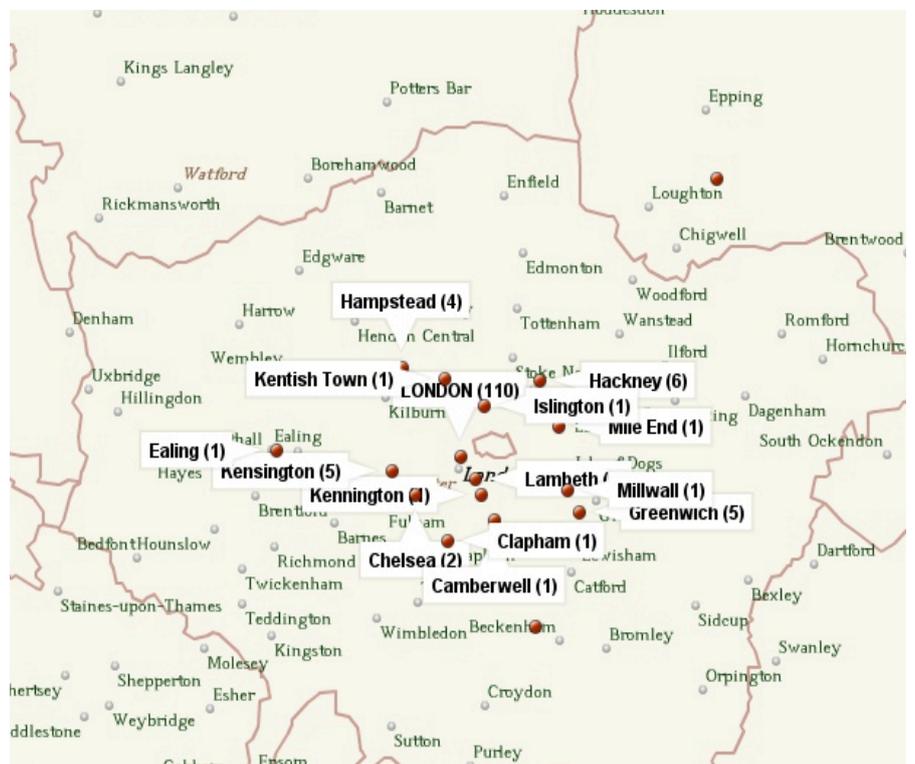


Figure 7.5. London distribution of Erat's harp sales, 1821-1824.



Figure 7.6. British distribution of Erat's harp hire, 1821-1824.

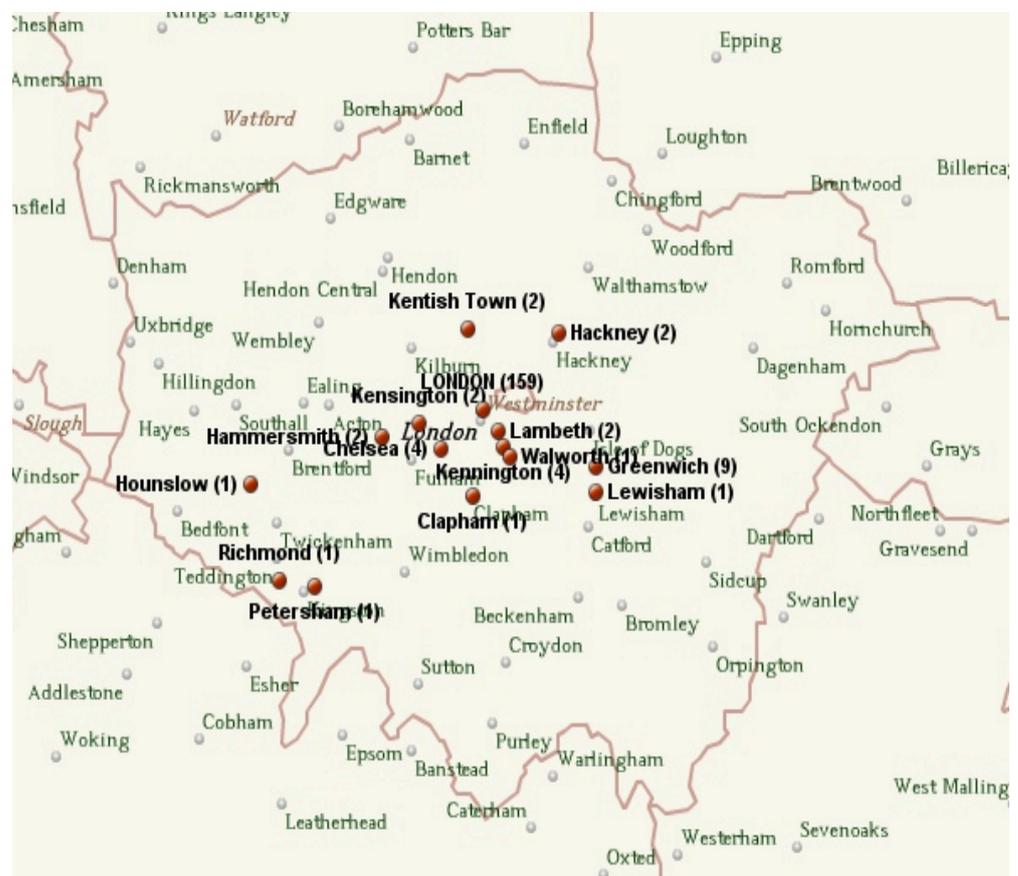


Figure 7.7. London distribution of Erat's harp hire, 1821-1824.

The Erats supplied three Music Warehouses in Bath which, by the late eighteenth century, had become a fashionable resort for the upper classes and those with aspirations. In doing so, they placed their instruments within easy reach of wealthy customers. Messrs A & J Loder of Milsom Street purchased seven harps; Mr Packer of Orange Grove, and Mr Patton of St. Andrews Terrace, purchased four each. Harp teachers who ordered harps on behalf of students received commission payments in return: for example, Mr Parish of South Moulton Street (London), received £16 of the £60 sale price of a single-action harp sold to a Mrs Gould.⁷⁶ (As single-actions were valued at £30 in Erat's lists of harps newly made, the Erat Company would have retained a comfortable profit of £14). Eli Parish (1808-1849), later known as the composer Elias Parish Alvars, arrived in London in 1820 to study the harp with Nicholas Charles Bochsa.

Grosjean's double-action harps were sold (c1838) for between £94/10/- and £152/5/, and single-actions from £63 to £68/5/-, illustrating a significant price rise since the prices in Erat's ledger, some 16 years earlier. A seven-octave Swiss or Gothic harp, indicating decorative style, in 'rosewood, or any other wood ornamented' was the most expensive; a six-and-a-half octave Swiss or Gothic harp in 'imitation rosewood, or any other colour, plain' (not decorated) could be bought for £136/10/-; six octave 'double small' ones (probably Grecian) were available in blue, green, or red, painted with 'Raphael's Arabesks' [sic] for £120/5/-; real rosewood, mahogany, and zebra ones, with white fronts and burnished gilding, for £115/10/-; those in real rosewood, mahogany, and zebra with plain white fronts, or imitation ones (presumably a grained finish) and burnished gilding, could be bought for £110/10/-; and for £110/15/- Grosjean's customer could buy a harp in dark blue, green, or red with double gold vignettes, and burnished gilding, or in black with front, side, and back borders, also decorated in burnished gold; £105/- could buy one in imitation rosewood, zebra, or king-wood; or £99/15/- could be paid for one coloured with transparent grey or yellow (stained) with coloured gilding, or another, black with single gold vignettes, referred to as plain.

A second size double-action 'for young ladies' referred to as 'nos. 1, 2 or 3, probably

⁷⁶ EL. p. 379.

referring to finish, was £94/10/-. An ornamented single-action could be bought for £73, a plain one for £68/5/-, and a second sized one for £63.⁷⁷ The 15 colours and finishes advertised by Grosjean (ultramarine, blue, dark blue, green, red, black, transparent grey and yellow, and imitation rosewood, zebra, and king-wood) are comparable to the 15 revealed in the Erat Ledger.

7.1.1.2: Harp colours

The Erat ledger records the colour of 185 harps (67.3%) and indicates that the firm produced them in black (Figure 7.8), blue (Figure 7.9), variegated blue, smalt (a cobalt blue colour made of ground potassium glass), red (Figure 7.10), crimson, green (Figure 7.11), variegated green, grey, lilac, salmon, purple, variegated purple, yellow and imitation rosewood (Figure 7.12). The colour of 90 harps (32.7%) is not noted. Additionally, the company sold second-hand instruments for which colour was only occasionally recorded.⁷⁸ Black harps (70) and rosewood harps (29) constitute the largest colour groups in the journal accounting together for 36% of total sales (or 53.5% of those for which the colour is noted). Black, rosewood, variegated blue, variegated green, green, purple and yellow harps remain popular with sales recorded annually throughout the journal period. Sales of blue harps are only noted in 1822 and 1823; grey harps in 1822, 1823 and 1824, and crimson in 1821, 1823 and 1824. One salmon coloured, one variegated purple and one lilac harp (the only harps in these colours sold during the journal period) are recorded in 1821, 1823 and 1824 respectively.⁷⁹ Red and smalt harps are recorded in 1821, 1822 and 1823.

⁷⁷ 'Grosjean Catalogue', Bodleian Library, Oxford, John Johnson Collection: Musical Instruments, 3 (28).

⁷⁸ Journal entries record harps taken in exchange for new instruments. Although makers' names are not recorded, it is likely that some instruments were by other London-based makers such as Érard, Dodd, Schwieso and Stumpff.

⁷⁹ A salmon coloured harp 'double gilt and elegantly ornamented' (no. 1332) was sold to a Mr Love of Bond Street London on 14 November 1821 for £80/8/- (EL. p. 120); a variegated purple one with burnished gilding and elegantly ornamented (no. 1455) was sold to a Mr Welch, his address not recorded, on 29 December 1823 for £78/15/- (EL. p. 463); and a lilac instrument, double gilt and ornamented with gold lines (no. 1431) was sold to a Mrs James of Albion Cottage, Hampstead, on 7 February 1824 for £80 (EL. p. 498).



Figure 7.8. Black and gilt Erat single-action no. 382 (photo by the author, used by kind permission of Bonham's, London).

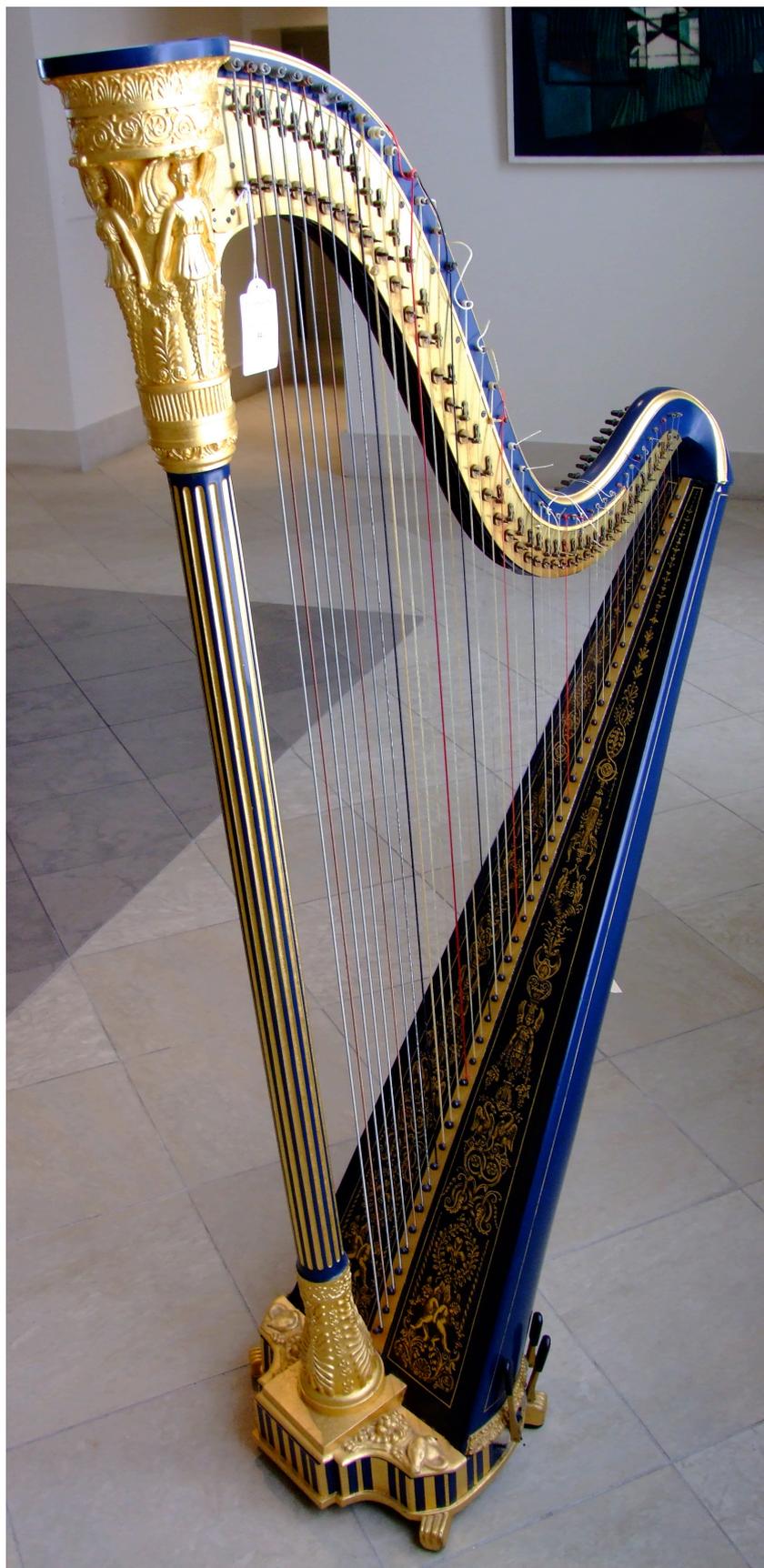


Figure 7.9. Blue and gilt Erat single-action no.1210 (photo by the author, used by kind permission of Bonham's, London).

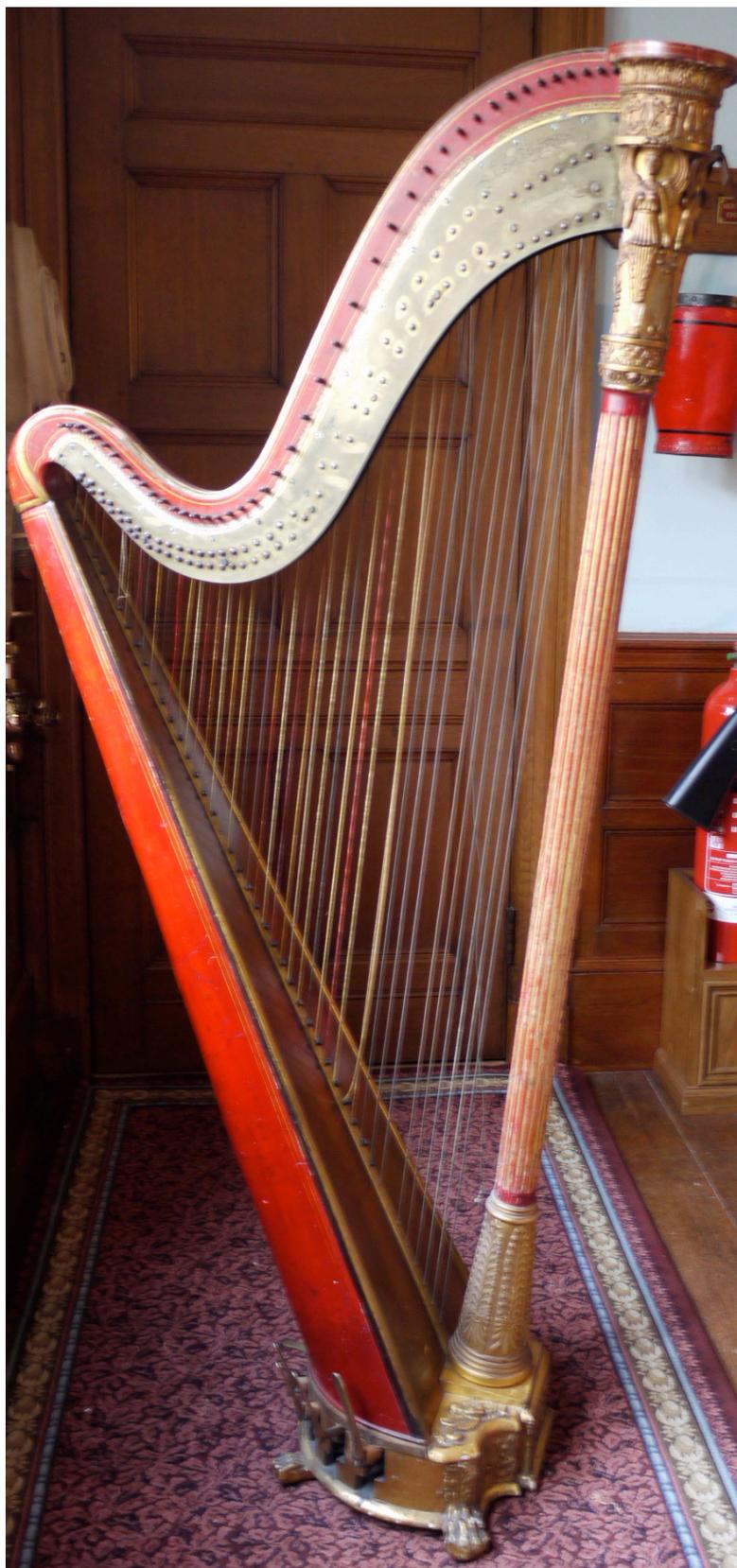


Figure 7.10. Red and gilt Erat & Son double-action harp no.1352 (photo by the author, used by kind permission of the National Trust at Lanhydrock).



Figure 7.11. Green and gilt Erat single-action harp no.1357 (photo by the author, used by kind permission of the Parker Harp Collection).

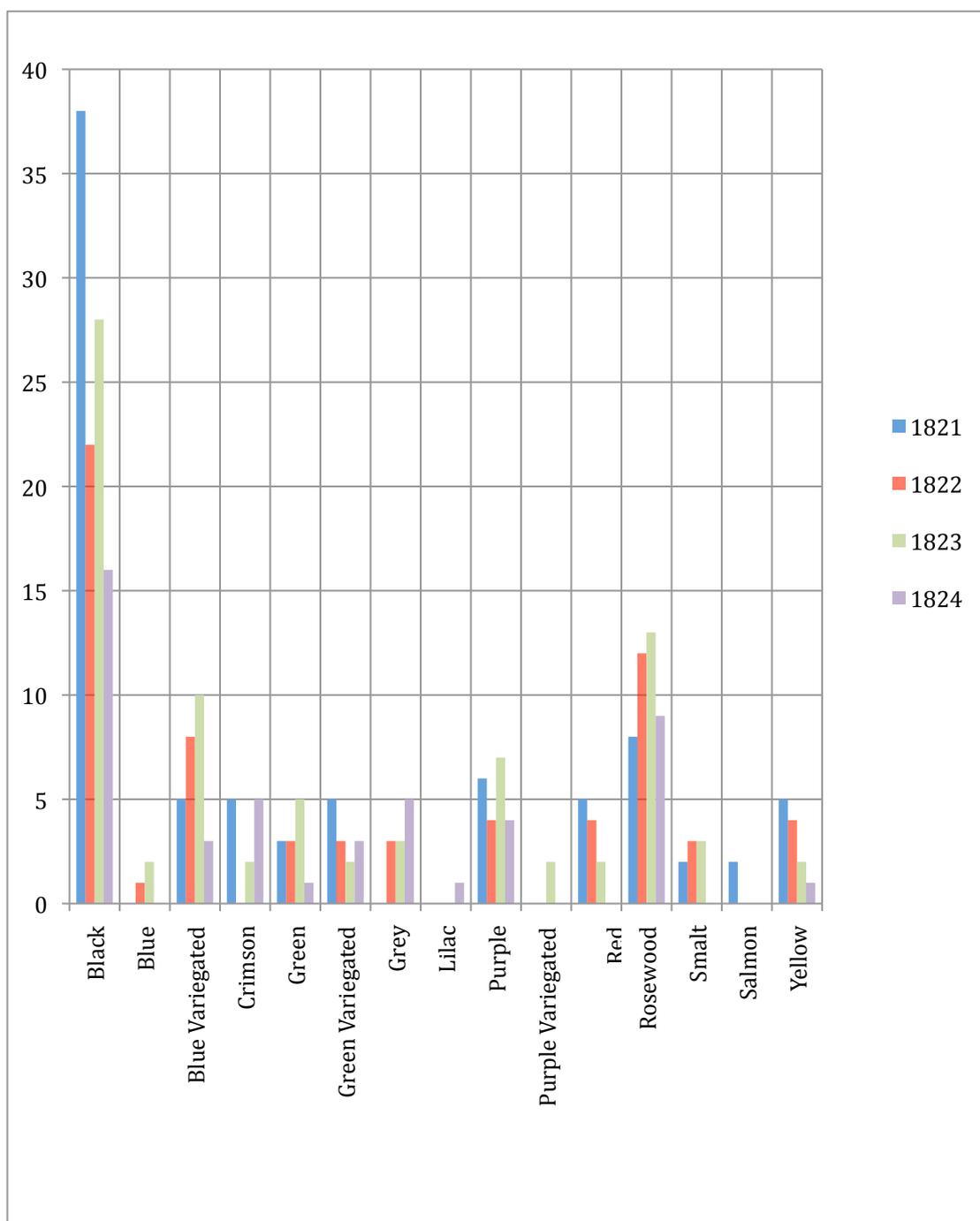


Figure 7.12. Harp sales by colour for the period 1821-1824.

7.1.1.3: Pigments

Comprising different shades of eight colours, 26 pigments are recorded in the cashbook (Table 7.1). Black pigments account for 20.7% of pigment purchases: ivory black (8%), lead black (6.9%), Japan black (3.4%) and black (precise pigment not recorded, 2.3%). It is difficult to assess the exact quantities bought as, with rare exceptions, weights and volumes are not recorded, and the only indication of relative quantities is the price. Two entries list purchase by unit of weight: 1lb of ivory black costing -/2/- on 9 August 1823,⁸⁰ and 2lbs of the same pigment costing -/6/- on 30 June 1824 (perhaps the latter purchase was of higher-quality material);⁸¹ and one by unit of volume: 1 gill (a quarter of a pint) of best Japan black purchased for -/9/-, also on 9 August 1823.⁸⁰ For the most part the vendors of these pigments are not identified, but in the case of the gill of best Japan black, proximity in the cashbook to gold size bought from Mr Draycott (the Erat's finisher, and the only supplier of gold and gold size listed elsewhere in the journal), suggests that he may also have supplied this pigment.⁸²

Red pigments account for 17.2% of pigment purchases: pink rose (8%) and vermilion (4.6%), while crimson lake, dragon's blood, red lead and an unspecified red pigment each account for 1.1%. White pigments also account for 17.2% of pigment purchases: white lead (10.3%), Nottingham white (3.4%), white flake (2.3%) and flat white (1.1%). White harps are, however, not recorded in the sales journal. These pigments would have been mixed with other colours; 34 harps are recorded with white fronts (soundboards).⁸³ Lead white, the only white oil colour available until the discovery of titanium white (titanium dioxide), produced a warm hue with yellow-red undertones.⁸⁴

⁸⁰ ECB, p. 92.

⁸¹ ECB, p. 127.

⁸² That a room was named 'Mr Draycott shop' in the inventory, and that a Mr Draycott supplied gold leaf, brushes, white lead, and other finishing materials (ECB, pp. 1, 5, 6, 11, 67) may indicate that an employee supplied these, or that Mr. Draycott was subcontracted to by the Erats in the finishing of their instruments.

⁸³ 'White front' may denote an unpainted or unvarnished timber finish. The term 'in the white' occurs in the 1824 inventory as a description for unfinished harps.

⁸⁴ The element titanium was discovered in 1791. Titanium dioxide was first analysed in 1821 and patented as a pigment in Norway in 1913. Production began in 1919. C. Mc Crone, 'Polarized Light

Blue pigments account for 13.8% of pigment purchases: Antwerp blue, Prussian blue and smalt 3.4% each, cobalt blue (2.3%) and an unspecified blue pigment (1.1%). Prussian blue, an accidental discovery of the early eighteenth century and in popular use by the nineteenth, supplied a vivid ultramarine colour to artists.⁸⁵ Although Prussian blue was sometimes used as an alternative to smalt, the Erat cashbook demonstrates both were in use. Antwerp blue was derived from Prussian blue with the addition of a white pigment.⁸⁶ Cobalt blue, expensive though very stable, produced a vivid, ultramarine colour.⁸⁷ Green pigments account for 11.5% of pigment purchases: copperas (6.9%) and verdigris (4.6%).⁸⁸ Yellow pigments account for 9.2% of pigment purchases: King's yellow (5.7%), Turkey saffron (2.3%) and Dutch pink (1.1%). King's yellow, a synthetic, arsenic-based pigment, was used on nine harps during the journal period.⁸⁹ Turkey saffron or saffron yellow was made from the crimson stamens of the saffron crocus (*Crocus sativus*) and suggests more than one yellow finish was used. Turkey saffron may have been used to colour varnishes to produce translucent finishes.⁹⁰ Dutch pink, a hue of yellow (the word pink was frequently associated with the colour yellow prior to the nineteenth century) produced from buckthorn berries (*Rhamnus cathartica*).⁹¹

Both saffron yellow and Dutch pink were fugitive colours, not light fast and prone to fading over time. One brown pigment, stone ochre accounts for 2.3% of pigment purchases. Stone ochre would have been used to tint varnishes and may have been used in combination with some red pigments when producing an imitation rosewood finish.

'Microscopy in Conservation: A Personal Perspective', *Journal of the American Institute for Conservation*, 33, 2, (1994), 101-114 (p. 110).

⁸⁵ Alexander Kraft, 'On the discovery and history of Prussian blue', *Bulletin for the History of Chemistry*, 33, 2 (2008), 61-67 (p. 61).

⁸⁶ Nicholas Eastaugh, Valentine Walsh, Tracey Chaplin, and Ruth Siddall, *Pigment Compendium* (London: Elsevier, 2008), p. 26.

⁸⁷ Contemporary entries in the Énard Ledgers record ultramarine harps possibly decorated with a Prussian or cobalt blue pigment.

⁸⁸ Copperas was available in red copperas, an earthy orange colour, blue copperas, a vibrant, light blue and green copperas, a light, pale green. The precise colour is not defined in the cashbook.

⁸⁹ Eastaugh et al, p. 218.

⁹⁰ Eastaugh et al, p. 337.

⁹¹ Eastaugh et al, p. 150.

Three generic terms are used to describe and account for 6.9% of pigment purchases: colours (3.4%); paint (2.3%); and lead (1.1%). Whilst black, white and red lead pigments may account for this final term statistically accounting for 10.3% of pigment purchases, white lead is the most likely.

Five entries note the purchase of varnish, one each in 1821, 1822 and 1823 and two entries in 1824, totalling -/18/10 and averaging -/3/9 per purchase. Lacquer (also spelt 'lacker'), the preferred finishing method, is bought on 214 occasions, totalling £8/19/3 and averaging 10d per purchase; unfortunately, quantities and vendor are not recorded.

	Pigment	No. of purchases	Total by colour	% of pigment within colour	% of total purchases	% of colour
Black	Ivory black	7	18	38.9	8	20.7
	Lead black	6		33.3	6.9	
	Japan black	3		16.7	3.4	
	Black	2		11.1	2.3	
Red	Pink rose	7	15	46.7	8	17.2
	Vermilion	4		26.7	4.6	
	Red	1		6.7	1.1	
	Crimson lake	1		6.7	1.1	
	Dragon's blood	1		6.7	1.1	
	Red lead	1		6.7	1.1	
White	White lead	9	15	60	10.3	17.2
	Nottingham white	3		20	3.4	
	White flake	2		13.3	2.3	
	White	1		6.7	1.1	
Blue	Antwerp blue	3	12	25	3.4	13.8
	Prussian blue	3		25	3.4	
	Smalt	3		25	3.4	
	Cobalt blue	2		16.7	2.3	
	Blue	1		8.3	1.1	
Green	Copperas	6	10	60	6.9	11.5
	Verdigris	4		40	4.6	
Yellow	King's yellow	5	8	62.5	5.7	9.2
	Turkey saffron	2		25	2.3	
	Dutch pink	1		12.5	1.1	
Brown	Stone ochre	2	2	100	2.3	2.3
Grey	Duncan grey	1	1	100	1.1	1.1
Unspecified	Colours	3	6	50	3.4	6.9
	Paint	2		33.3	2.3	
	Lead	1		16.7	1.1	
Total		87	87			

Table 7.1. Pigment purchases for the period 1821–1826.

7.1.1.4: Gilt types

Of the 275 harps sold, 139 (50.5%) are described as gilded (Figure 7.13). Four gilt finishes are recorded: 'burnished', 'double', 'gilt' and 'oil'. 'Burnished' must be water gilding; 'double' apparently indicating the greater (but not necessarily literally double) thickness of the gold used, may refer to water or oil gilding (it is not clear which); and 'gilt' (without 'double', hence single) probably indicates unburnished gilding of normal thickness (thinner than 'double'), although it may also simply be a generic term for *any* gilding. 'Burnished & oil' gilding are explicitly recorded in combination on only one harp (a red single-action with a white front, sold to Kitchiner, and recorded in the journal on 14 November 1821),⁹² but surviving instruments suggest that the combination was more widespread. Burnished gilding is applied to 26.2% (51.8% of those for which the type of gilding is noted) and double gilt accounts for gilding on 14.5% of harps (28.8% of those for which the type of gilding is noted). Oil gold accounts for 6.2% (12.2% of those for which the type of gilding is noted), and gilt or single gilt accounts for 3.3% (6.5% of those for which the type of gilding is noted).

In 1821, burnished gilding is recorded against 58.5% of harps, falling to 36.8% in 1822. This rises to 45.7% and 77.3% in 1823 and 1824.⁹³ Double gilt is recorded against 17.1% of harps in 1821 peaking in 1822 at 39.7% before falling to 37% and 22.7% in 1823 and 1824. Single gilt appears in 1821 and 1822 accounting for 4.9% and 11.8% consecutively; and oil gilt is recorded in 1821, 1822 and 1823, accounting for 17.1%, 11.8% and 17.3%.

Some extant harps have burnished gilt bands on the pillar that, standing proud, would have been prone to wear.⁹⁴ Here the use of thicker leaf would have improved durability. 'Oil gilding' and 'gilt' (single gilt) would have been applied using an oil-

⁹² EL. p. 120.

⁹³ This figure is artificially high as only six months of sales (January to June) are recorded in 1821; sales from 28 June 1824 to 31 December 1824 are not represented.

⁹⁴ Restoration of an Erat single-action harp (no. 690) by the author revealed burnished gilt bands on the harp capital. Single-gilt would have worn through suggesting that double-gilt was used.

based size and the cashbook records purchase of gold size on 17 occasions between April 1822 and October 1823.

Whilst the sample range is relatively small, it is possible to detect decorative trends in which particular gilt types are applied only to certain colours (Figure 7.14). Black harps, uniquely, were sold in all gilt types. Variegated blue, variegated green and rosewood harps were decorated in burnished, double or oil gold. Burnished gilt was the only type of gold leaf applied to crimson and variegated purple instruments. Green, grey and red harps were finished in double or burnished gold, while purple and yellow harps were available in burnished, double or single gold. Double or single gold was applied to blue harps. Smalt harps were gilded in double or oil gold. One lilac and one salmon coloured harp were decorated in double gilt.

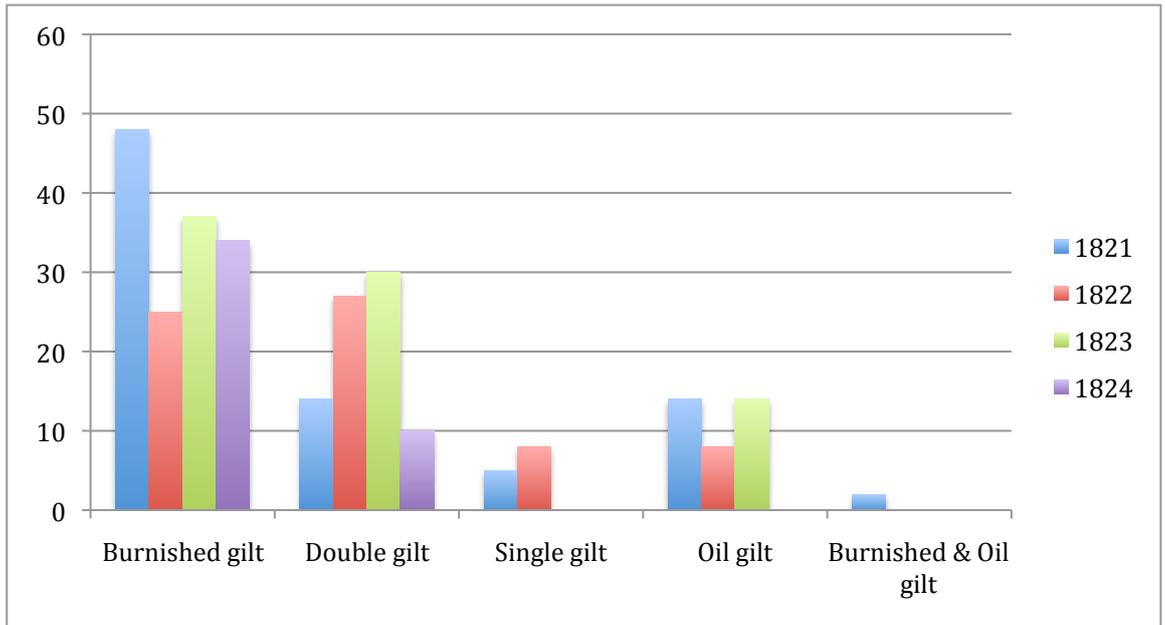


Figure 7.13. Harp gilding by type for the period 1821-1824

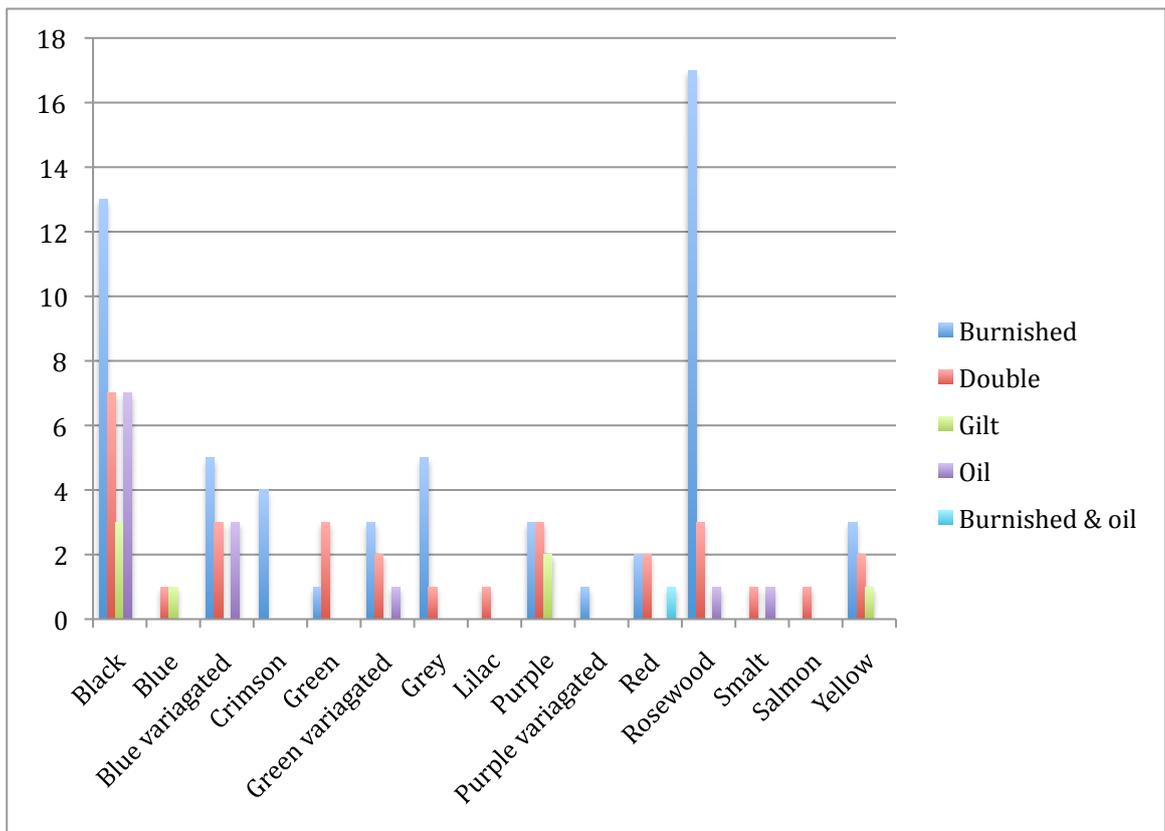


Figure 7.14. Colour against gilding type by year for the period 1821-1824

7.1.1.5: Gilding supplies

Purchases of gold leaf are recorded on 60 occasions between 1821 and 1824, and while quantities are rarely noted, the price of $\text{-}/1/6$ per book suggests that 297 books of gold leaf were bought over a 41-month period.⁹⁵ Size, costing $\text{-}/1/\text{-}$ per gill, is recorded on 26 occasions. Frequently purchased in $\frac{1}{2}$ or $\frac{3}{4}$ gill, a total of $26\frac{1}{2}$ gills was purchased. As the cashbook entries become less frequent in 1825 and 1826, purchases of gilding and size are not recorded (Figure 7.15).

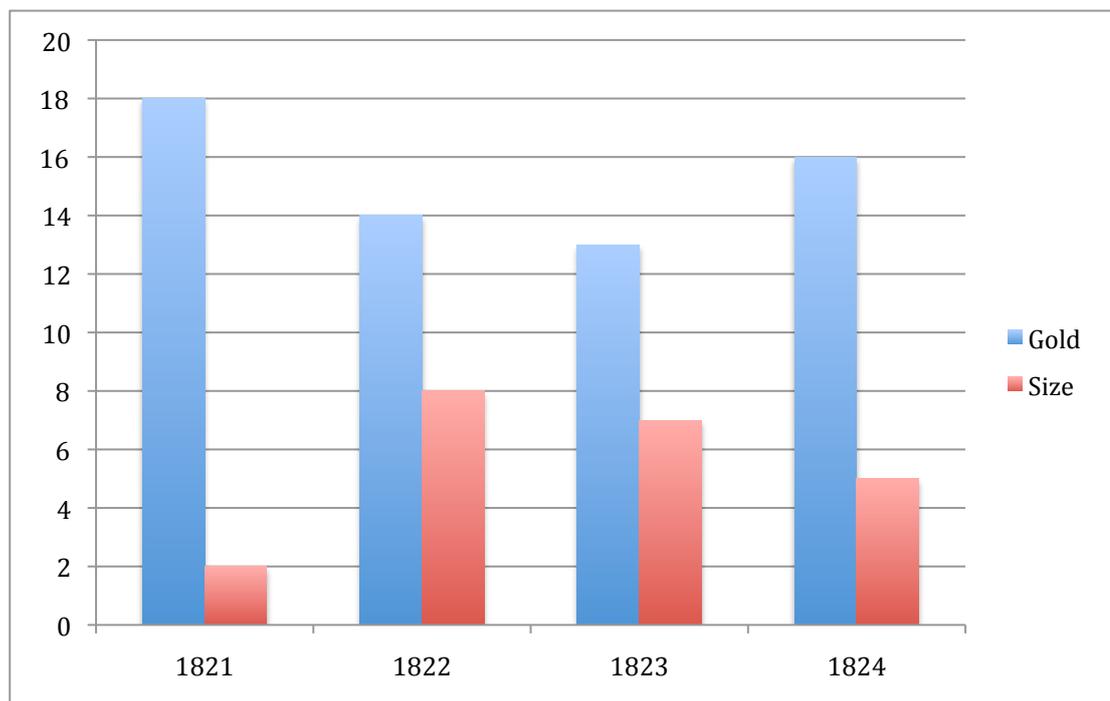


Figure 7.15. Gold leaf and size purchased by year for the period 1821-1826

⁹⁵ The price of a single book of gold is recorded in the cashbook on 11 October 1821 (ECB, p. 137).

7.1.1.6: Harp ornamentation

A total of fifteen ornamental schemes are listed in the journal.⁹⁶ A sixteenth, 'elegantly ornamented' is ambiguous and is treated separately (Table 7.2). 'Gold borders' may encompass 'grape borders' as these, for the most part, were applied in gilt. For the purposes of this survey gilding data has been classified according to the descriptions recorded in the journal. Of 275 sold, the ornamentation of 139 harps (50.5%) is not recorded and 40 harps (14.5%) are described as 'elegantly ornamented.' However, pre-restoration photographs of a single-action harp, number 1357, for which no ornamentation scheme is recorded, reveal a neo-gothic, fleur-de-lis ornamental scheme (Figure 7.16 and Figure 7.17). Care is therefore needed when assessing the journal and it is possible that a wider ornamental range was available than that actually recorded. Some schemes are applied only to harps of a particular colour or range of colours.

Black lines or borders, for example, are only applied to yellow harps, while grape borders are only recorded on green or rosewood harps with burnished gilding.⁹⁷ Green or rosewood harps with single or double gilt are ornamented variously with gold lines or borders, or 'Raphael's arabesques'.

Raphael's arabesques (sometimes spelt 'arabesks') describe interlocking foliate patterns with trophies and natural motifs (Figure 7.18). Extant instruments suggest that more than one arabesque design was used during the journal period. Application methods include painting and decoupage. Arabesques were applied as soundboard and sound box borders and as more detailed soundboard designs with mirror images on either side of the string bar. Raphael's arabesques were applied to 7.6% of harps sold, or 21.9% of those for which the type of ornamentation is noted.

⁹⁶ I have used the term 'ornamental' in reference to painted or applied decoration. 'Decorative', applied to the overall scheme, is used in discussion of combinations of paint colour, ornament and gilt type.

⁹⁷ Grape borders are also noted on a purple harp, though the gilding type is not recorded.

	No. of harps	%
Raphael's arabesques	21	7.6
White front with gold lines	12	4.4
Gold borders	10	3.6
Vignettes	9	3.3
White front with painting	9	3.3
Gold lines	7	2.5
White front	6	2.2
White front with gold borders	5	1.8
Egyptian borders	4	1.5
Painting	4	1.5
White front with grape borders	3	1.1
Black lines	2	0.7
Grape borders	2	0.7
Gold & black lines	1	0.4
Lines in front	1	0.4
Elegantly ornamented	40	14.5
No decoration recorded	139	50.5
Total	275	

Table 7.2. Harp ornament by type (Erat Ledger, Feb. 1821 - June 1824).



Figure 7.16. Fleur-de-lis ornaments on the pillar of Erat single-action no.1357 (pre-restoration photographs taken by the author in 1994, courtesy of the Parker Harp Collection).



Figure 7.17. Fleur-de-lis ornaments on the neck of Erat single-action no.1357 (pre-restoration photographs taken by the author in 1994, courtesy of the Parker Harp Collection).



Figure 7.18. Raphael's Arabesques on Erat double-action harp, c1835 (photo used with the kind permission of Sylvain Blassel).

Vignettes, decoupages or paintings of Grecian figures holding drums, tambourines or trumpets, account for 3.3% of decorative finishes (9.4% of those for which the type of ornamentation is noted). Derived from the same root as the word vine, vignettes may also describe vine-leaf borders though, as these are separately defined, the former is assumed.

Gold lines account for 2.5% of ornamental finishes (7.3% of those for which the type of ornamentation is noted), black lines account for 0.7% (2.1% of those for which the type of ornamentation is noted), and a combination of black and gold lines account for 0.4% of ornamentation (1% of those for which the type of ornamentation is noted). Lines in front, probably gold, also accounts for 0.4% of ornamental finishes (51.8% of those for which the type of ornamentation is noted). Four harps with Egyptian borders account for 1.5% of sales (4.2% of those for which the type of ornamentation is noted).

Painting accounts for 1.5% of ornament (4.2% of those for which the type of ornamentation is noted). Although unspecific, this may refer to trophies and figurines (vignettes) painted directly onto the harp soundboard. The vignettes resemble those decorating the Etruscan room at Osterley Park in West London by the architect Robert Adam (1728–1792); Arabesques resemble those used in interior design and stucco ornamentation by Adam, and also fragments of mouldings and friezes collected by Sir John Soane (1753–1837), displayed at the Sir John Soane Museum, London. It is possible that Erat's ornamental designs were reproduced from pattern books but these do not survive.

Whilst some soundboards were painted to match the neck and sound box, others were painted white. In total, white soundboards with and without ornament, account for 12.7% of harps sold during the journal period. White fronts with gold lines account for 4.4% of soundboard decoration (12.5% of those for which the type of ornamentation is noted); white fronts with painting comprise 3.3% of ornamentation (9.4% of those for which the type of ornamentation is noted). Unornamented white fronts account for 2.2% of finishes (6.3% of those for which the type of ornamentation is noted) and white fronts with gold borders account for

1.8% of soundboards (5.2% of those for which the type of ornamentation is noted). White fronts with grape borders are applied to 1.1% of harps (3.1% of those for which the type of ornamentation is noted).

Grape borders account for 0.7% of harps sold (2.1% of those for which the type of ornamentation is noted). An extant fragment of soundboard on a harp, currently being restored by Rainer M. Thureau, illustrates use of gold leaf and purple paint (Figure 7.19). Grape borders are also evident in a portrait of a young woman playing the harp (private collection) by Robert Home (1752–1834); consequently, the harp depicted in this painting may be by Erat.



Figure 7.19. Detail of grape borders on an Erat soundboard, double-action harp no.1872, c1830, under restoration (photo used by kind permission of Rainer M. Thureau of Thureau Harps, Wiesbach, Germany).

7.1.2: 'Sundries drawn to harps on hire'

Ledger entries relating to harp hire record the customer's name, their address, the length of hire, the serial number of the harp, and the amount charged, but rarely a description of the instrument (for monthly totals see Appendix 7.5.2). The type, single or double action, may sometime be differentiated by serial number or the amount charged. Those with numbers under 1000 mostly indicate single-actions; those over may have been either. Singles were hired at 1 guinea per month, and doubles at 2 guineas. The relative cost of hiring, when compared to high purchase prices, made the harp affordable for the middle-classes, allowed customers try the harp without committing to buy one, and made instruments available to harpists who visited London, or when they're own instrument was unavailable or being repaired. Deductions and additions to these amounts can be explained by customer discounts, periods short or in excess of a month, and additional items within the hire cost such as music desks. During 1821, 80 harps were hired generating £577/1/-; 65 harps were hired in 1822 producing £595/5/7; income from 62 the harps hired in 1823 was £426/1/11; and the 37 harps hired between January and June 1824 produced £171/0/7; a total of £1,805/9/1. Hire costs, quoted in Grosjean's catalogue, diminished the longer the hirer continued the contract. Double-actions could be hired for one or two months at 2 guineas per month (the same prices charged by Erat), reducing to £1/15/- for three or more months. Single-actions were £1/11/6 per month for the first two months, and £1/6/- thereafter.⁹⁸ Monies paid for hire could later be deducted against the purchase of a harp.⁹⁹

7.1.3: 'Sundries drawn to the repair of harps'

For the 1821-24 period, repairs to harps totalled £988/16/6, comprising £217/-/6 in 1821, £326/5/10 in 1822, £340/3/8 in 1823, and £105/6/6 for the six months recorded in 1824 (for monthly totals see Appendix 7.5.3). Income from those

⁹⁸ 'Grosjean Catalogue', Bodleian Library, University of Oxford: John Johnson Collection: Musical Instruments 3 (28)

⁹⁹ On 10 April 1821, Miss Somers received a discount of £10 against a new, crimson double-action harp decorated with Raphael's arabesques (no. 1300) in lieu of one hired. On 26 November 1822, 14 months hire was deducted against a second-hand double action (no. 1303) purchased by Mr Green of Teignmouth.

undertaken to the woodwork of the harp, including repairing necks and bodies, and replacing soundboards, totalled £416/14/11 (for example, the making and fitting of a new soundboard, costing 5 guineas, for a Mrs Dampier, on 12 January 1822);¹⁰⁰ finishing, including varnishing, gilding, and the complete redecoration of harps, £212/6/6 (such as new gilding and varnishing, costing £1/10/-, for a Miss H. A. Symonds of South Moulton Street, on 27 November 1821);¹⁰¹ repairs to the metal work of the harp, for example repairing or making new pedals, fitting new springs, forks, cranks, and rivets to the machine, £133/1/- (the swell of a harp belonging to Mrs Lawrie of 1, New Cadogan Place, Chelsea, was repaired, the machine and pedals regulated, a new strings fitted for £1/3/- on 2 May 1823).¹⁰² Regulation, undertaken either in the workshops (such as that done on 21 May 1832 for Col. Campbell of 18 Clifford Street costing -/5/-)¹⁰³ or at the customer's home (such as that carried out for Medley Esq. of Uxbridge on 8 July 1822, costing £1/5/-, the additional £1 applied for travel costs)¹⁰⁴ totalled £89/15/7; repairing of harps, a general term encompassing all repairs, £47/16/-; stringing, from replacing one to a complete set, £34/4/-, often done in conjunction with regulation and tuning (such as that done for Miss Lieltzke of Tavistock Square for -/5/-);¹⁰⁵ cleaning the machinery, £23/4/6 (like that done for Mr Adams of 16 Northumberland St, New Road, who was charged 2 guineas on 23 January 1823);¹⁰⁶ and tuning, £11/5/6 (such as that done in the workshop for Mrs Bainbridge of Queen Square, Bloomsbury, on 3 January 1823, for -/3/6,¹⁰⁷ or that carried out for the Countess of Darlington in her home at St. James' Square on 12 June 1823, for -/7/-).¹⁰⁸ Repairs of woodwork, when examined by type, were the most common, followed by those undertaken to the finish, repairing the machine, and regulation (Table 7.3).

¹⁰⁰ EL. p. 122.

¹⁰¹ EL. p. 118.

¹⁰² EL. p. 376.

¹⁰³ EL. p. 27.

¹⁰⁴ EL. p. 233.

¹⁰⁵ EL. p. 510.

¹⁰⁶ EL. p. 331.

¹⁰⁷ EL. p. 344.

¹⁰⁸ EL. p. 388.

Category	£	s	d
Woodwork	416	14	11
Finishing	212	6	6
Repairing machine	133	1	
Regulation	89	15	7
Repairing of harps	47	14	
Stringing	34	4	
Cleaning	23	4	6
Tuning	11	5	6
Repairing covers	8	7	
Replacing ornaments	4	1	
Examining	3	7	
Repairing music stools	1	9	
Repairing music desks	1	2	6
Leatherwork		15	6
Repairing string boxes		14	
Packing		6	6
Tuning piano		5	
Repairing guitar		3	
Total income	988	16	6

Table 7.3. Value of repairs by category.

7.1.4: 'Sundries drawn to strings'

The income from strings was £246/7/1 in 1821, £267/13/1 in 1822, £274/11/3 in 1823, and £82/3/9 for the six months recorded in 1824, totalling £880/15/2 (for monthly totals see Appendix 7.5.4). Sold singly, by the 'ring' (a coiled length of string),¹⁰⁹ and in bundles (apparently 20 strings),¹¹⁰ strings were classified by octave, material, for example gut or silver (referring to the surface colour), gauge and length, and were sometimes recorded by origin, English, Italian or foreign.¹¹¹ Mr Mills of Woodford, Essex paid £2/12/6 for a set of the best Italian harp strings double from the middle,¹¹² and Viscount Bernard was charged £1/18/- for a set of harp strings double from the middle (indicating double in length from the middle of the range) also in oil papers, the lower price indicating that they were English;¹¹³ Italian strings, occasionally referred to as Roman, were of a higher quality than standard English strings, and hence more expensive. Although string diameters are not listed, it is possible to deduct the prices per string for both single and double-action harps. Some strings are individually priced in the ledger and others can be calculated by dividing the amount paid by the number purchased. A set of single-action strings, such as those purchased by Mr Marshall of Dalston, could be bought for £1/18/-.¹¹⁴

Etherington, who owned a single action,¹¹⁵ paid -/2/6 for half a bundle of first octave strings (3d each assuming 20 strings per bundle);¹¹⁶ Mr Ollive paid -/7/- (4d

¹⁰⁹ Miss Bush purchased 6 rings of first octave strings for -/3/- (6d each). (EL. p.363). That first octave strings ranged from 2½d to 3d suggests that a ring was longer than a single string and possible double in length.

¹¹⁰ N. Gow and Sons were charged -/5/- for half a bundle of F21s (-/10/- per bundle) (EL. p. 411). Mr Owen paid -/1/5 for three F21 strings (6d each) indicating that there were 20 strings in a bundle (6d x 20 = -/10/-) (EL. p. 103). Miss Hoffman paid -/3/6 for half a bundle of first octave strings (-/7/- per bundle) (EL. p. 484). That Miss Child paid 8d for two A5 strings (4d for one) confirms that there were 20 strings in a bundle. (-/7- ÷ 20 = 4d) (EL. p. 288).

¹¹¹ In 1798, Muzio Clementi wrote to Messrs Pica, Toffani & Co, in Rome, requesting harp, violin, and bass strings. Two years later, Clementi & Co. advertised Roman strings for sale. David Rowland, 'Clementi's Music Business', in *The Music Trade in Georgian England*, ed. by Kassler, pp. 125-158 (p. 135). Whether the Erats also imported strings or just bought them from a London-based company is not known.

¹¹² EL. p. 102.

¹¹³ EL. p. 508.

¹¹⁴ EL. p. 26.

¹¹⁵ EL. p.42. Etherington of Petersham paid £36/15/- for a black single-action (no. 1120) with swell and patent stops, decorated in burnished gilding, with Raphael's arabesques, and a baize cover and tuning key, on 12 May 1821.

each) for a bundle of second-octave strings;¹¹⁷ Mr Owen paid -/1/3 for three 'no. 17[s]' (third octave C) (5d each), and -/2/4 for four fourth octave strings (7d each); Mr Sharp bought five fifth octave strings for -/3/6 (8¼d each);¹¹⁸ and Mr Weippert purchased two sets of silver strings, listed at -/2/6 per string, for £2.¹¹⁹

Double action harp strings were more expensive than those for the single action instrument, although it is unclear whether this difference related to thicker, higher tension strings, represented their additional length, or perhaps different quality. Mr Mills of Woodford paid £2/12/6 for a set.¹²⁰ Mr Phillips paid -/6/- for a bundle of mixed firsts (3½d each based on 20 string per bundle) and -/8/- for another of mixed seconds (4¾d each);¹²¹ Mr Etherington paid -/6/6 for half a bundle of third octave strings (-/13/- per set or 7¾d each);¹²² two fourth octaves were purchased by Miss Talma for -/1/4 (8d each);¹²³ George Sharp bought five no. 32 strings (fifth-octave B) for -/3/10 (9d each);¹²⁴ and two sets of silver strings (8 to the set) sold to Mr W. Bathic for £2/16/- (-/3/6 per string).¹²⁵ String prices from the Erat Ledger can be used to project the cost of those not listed (Table 7.4).

Grosjean's catalogue (c1840) suggests that strings were priced by quality not harp type; a set of Italian strings could be bought for £2/12/6, and a set of English ones for £1/11/6 – prices were very similar to those charged by Erat nearly twenty years earlier. That Grosjean price silver strings separately to gut ones indicates that these sets were gut only. A set of improved patent metallic strings was 3 guineas, and a set of 'silk silver' ones (wire wound on silk) was £1/11/6.¹²⁶

¹¹⁶ EL. p. 91.

¹¹⁷ EL. p. 117.

¹¹⁸ EL. p. 127.

¹¹⁹ EL. p. 178.

¹²⁰ EL. p. 307. 'One set of Italian strings double from the middle in oil paper' sold to Mr Mills of Woodford.

¹²¹ EL. p. 92.

¹²² EL. p. 396.

¹²³ EL. p. 103.

¹²⁴ EL. p. 128.

¹²⁵ EL. p. 485.

¹²⁶ 'Grosjean Catalogue', Bodleian Library, University of Oxford: John Johnson Collection: Musical Instruments 3 (28)

String no.	Material	Note	Projected prices of single-action strings			Projected prices of double Action Strings			
			£	s	d	£	s	d	
1	GUT	E			3			3½	1st Octave
2		D			3			3½	
3		C			3			3½	
4		B			3			3½	
5		A			3			3½	
6		G			3			3½	
7		F			3			3½	
8		E			4			4¾	2nd Octave
9		D			4			4¾	
10		C			4			4¾	
11		B			4			4¾	
12		A			4			4¾	
13		G			4			4¾	
14		F			4			4¾	
15		E			5			7¾	3rd Octave
16		D			5			7¾	
17		C			5			7¾	
18		B			5			7¾	
19		A			5			7¾	
20		G			5			7¾	
21		F			5			7¾	
22		E			7			8	4th Octave
23		D			7			8	
24		C			7			8	
25		B			7			8	
26		A			7			8	
27		G			7			8	
28		F			7			8	
29		E			8¼			9	5th Octave
30		D			8¼			9	
31		C			8¼			9	
32		B			8¼			9	
33		A			8¼			9	
34		G			8¼			9	
35		F			8¼			9	
36	SILVER	E		2	6		3	6	6th Octave
37		D		2	6		3	6	
38		C		2	6		3	6	
39		B		2	6		3	6	
40		A		2	6		3	6	
41		G		2	6		3	6	
42		F		2	6		3	6	
43		E		2	6		3	6	
Total			1	15	10¾	2	7	3	

Table 7.4. Projected prices of English strings based on those in the Erat Ledger.

7.1.5: 'Sundries drawn to harp covers'

Fifty-two covers were sold during the ledger period, generating an income of £106/5/-, comprising £35/8/6 in 1821, £25/18/- in 1822, £25/8/- in 1823, and £19/-/6 in 1824 (for monthly totals see Appendix 7.5.5). Brown leather ones with plated lock and key ranged in price from £2/10/- (such as that sold to Mrs Lott on 10 September 1821)¹²⁷ to 3 guineas (as to Mrs Rothwell of Clapham on 7 May 1824),¹²⁸ probably reflecting two different sizes, one for the single-action harp, and the other for the double-action, but also small discounts given to some customers. Leather ones were available in a range of colours, probably to match harps. A purple embossed one with plated furniture was sold to Mr Huxtable of Barnstaple for £4 on 18 February 1823,¹²⁹ and a similar one in blue was purchased by Mr Binfield of Reading for £3/10/- on 28 June 1824.¹³⁰ Baize covers were available from -/10/- (as sold to James Birchall on 31 December 1821)¹³¹ to -/15/- (for a green one lined with brown holland sold to Miss Fanning of 15 Somerset Street on 10 June 1822),¹³² and silk covers could be bought for £1 to 1 guinea (such as one, the colour not recorded, bought by Jacob's executor, Mr Sharp of 42 Berners Street on 28 August 1821,¹³³ and a yellow one, purchased by Mrs Polhill of 30 York Place on 10 June 1822).¹³²

By comparison, Grosjean offered covers in four prices: for 5 guineas one could buy a red, purple, or green leather one, lined with calico, with plated lock and button, suggesting that prices had increased significantly since those sold by Erat; a brown leather one, without a lock, was £3/10/-; one in purple or green moreen could be bought for £2; and for -/18/- a buyer could have a cover in green baize or brown holland.¹²⁶

¹²⁷ EL. p. 400.

¹²⁸ EL. p. 530.

¹²⁹ EL. p. 345.

¹³⁰ EL. p. 541.

¹³¹ EL. p. 133.

¹³² EL. p. 221.

¹³³ EL. p. 84.

7.1.6: 'Sundries drawn to music desks'

A total of £188/3/- was charged for new, second-hand, and hired music desks. The eight sold in 1821 brought in £28/3/-; £54/2/6 was made from 12 in 1822; 22 in 1823 sold for £62/1/6 (including two cases for music desks at -/5/- each); and in 1824, 12 sold for a total of £43/16/- (for monthly totals see Appendix 7.5.6). Desk were priced from £1/15/-, for a second hand desk bought by Mr Clarke of Lewisham on 20 February 1822,¹³⁴ to 5 guineas, such as the smalt coloured double japanned music desk with brass claws and candlesticks such as that bought by Mrs Polhill of York Place on 31 December 1822.¹³⁷ A mahogany music desk with brass candlesticks was sold to John Watlen of Leicester place for 2 guineas, on 29 April 1823.¹³⁵ That Mrs Dyer, of 67 Lombard Street, bought a mahogany one without candlesticks, costing £3 on 10 September 1821,¹³⁶ suggests that Watlen, a repeat customer and owner of a music warehouse, received a discount. On 31 December 1821 Mrs Flowerdew of Blackheath paid £3/13/6 for a japanned rosewood music desk with brass claws and candlesticks;¹³⁷ on 10 September 1821 Miss Somers of Triangle, Hackney paid 4 guineas for a crimson double desk with brass claws and candlesticks, decorated in burnished gilding;¹³⁸ and Mr Auldjo of Finsbury Square paid £4/14/6 for a yellow japanned one, also with claws and candlesticks on 11 January 1822.¹³⁹

The Érards made stands in various shapes (Figure 7.20 and Figure 7.21), and Grosjean offered four stands in three prices. The cheapest at 6 guineas (again marking a significant rise in price between 1824 and c1840) was available in dark blue, red, green, yellow, grey, or black to match a similarly decorated harp. For 7 guineas a customer could buy a French-polished rosewood, mahogany, or zebra-wood stand, or another in ultramarine blue, dark blue, red, or green, painted with Raphael's Arabesks and burnished gilding, also to match a harp; and those made to correspond to his Swiss or Gothic harps was 8 guineas.¹²⁶

¹³⁴ EL. p. 168.

¹³⁵ EL. p. 367.

¹³⁶ EL. p. 95.

¹³⁷ EL. p. 302.

¹³⁸ EL. p. 94.

¹³⁹ EL. p. 156.



Figure 7.20. Érard music desk, c1810. V&A, museum no. W.17&-2, 3-1966.



Figure 7.21. Érard black and gilt music double music desk. Christie's, sale 1186, lot 124, 18-19 September 2013.

7.1.7: 'Sundries drawn to string boxes'

Sales of string boxes totalled £103/15/- comprising £28/15/6 in 1821, £31/3/11 in 1822, £35/18/1 in 1823, and £7/18/- in 1824 (for monthly totals see Appendix 7.5.7). Priced between -/2/- for a common japanned string box, such as that sold to John Heynes & Co. of Liverpool on 21 September 1821,¹⁴⁰ to £2/6/-, such as the round tin one bought by Messrs. Williams of Poultry on 29 April 1823,¹⁴¹ they are listed in four colours (black, blue, red, and crimson, but presumably, like Erat's harps, any colour a customer wanted), three timber finishes (mahogany, rosewood, and deal), three shapes (long, square and round), and two materials (timber and tin). Long, japanned string boxes sold for 1 guinea (Figure 7.22); square japanned ones for £1/11/6; and round tin ones for £2/6/-; a replacement key could also be purchased, such as that bought for -/1/- by Wildman Esq. of Cleveland Street, St James, on 4 July 1821.¹⁴² That accessories were bought to match a harp is indicated by the 'blue string box to correspond with [a] harp', bought by Mrs Dowden on 14 November 1821.¹⁴³ Of those described, 65 were japanned, and only six were tin; 24 were round, and 28 square.

Grosjean offered three string boxes, but also two additional packages. For 7 guineas a customer could have a square box with a tuning key and fork, and string gauge, and with a set of gut and silver strings, in light or dark blue, green, or red, painted with Raphael's arabesks; for 6 guineas could buy the same in any fine wood, decorated with lines, and with a draw; a black one, less ornamented and unfurnished (without tuning key, fork, string gauge or strings) was £2/12/6; a plain long one, also with square lines was £1/11/6; and for -/18/- a common long one with square lines could be bought.¹⁴⁴

¹⁴⁰ EL. p. 84.

¹⁴¹ EL. p. 367.

¹⁴² EL. p. 71.

¹⁴³ EL. p. 120.

¹⁴⁴ 'Grosjean Catalogue', Bodleian Library, University of Oxford: John Johnson Collection: Musical Instruments 3 (28)



Figure 7.22. Long black and gilt harp-string box, maker unknown. NT. Snowhill Manor, NT 1332294.

7.1.8: 'Sundries drawn to music stools'

Sales of music stools (such as that illustrated in Figure 7.23) during the ledger period totalled £50/17/-: in 1821 £12/2/6 worth of music stools were sold rising to £19/6/- in 1822, before falling to £12/1/6 in 1823, and 7 guineas in 1824 (for monthly totals see Appendix 7.5.8). The cheapest one, a second-hand mahogany stool, costing £1/11/6, was sold to Mr Craven of Theobalds Road, on 17 June 1822;¹⁴⁵ and the most expensive, a purple japanned one with brass claws, costing £4/14/6, was bought by Mrs Rothwell of Clapham on 7 May 1824.¹⁴⁶ Another, with a purple top, was sold to Mr Orchard of Kings Street, Soho, for £2/12/6 on 7 February 1824;¹⁴⁷ and one with brass claws, an iron screw, and morocco top was bought by Key Esq. of Denmark Hill, Camberwell on 29 April 1823, for 4 guineas. Packing cases for music stools could be purchased for -/5/-, such as that bought by Lieutenant Colonel Murray of Edinburgh on 29 May 1821.¹⁴⁸



Figure 7.23. Anon, Alice at the harp (1838), 25 x 23cm, pencil on paper, private collection.

¹⁴⁵ EL. p. 220.

¹⁴⁶ EL. p. 530.

¹⁴⁷ EL. p. 498.

¹⁴⁸ EL. p. 44.

Grosjean's stools, all of which had an iron screw and brass cap by which the seats could be raised or lowered, were priced between 4 and 8 guineas. The cheapest was made of mahogany or rosewood, with a common leather seat; 5 guineas could buy one, also in mahogany or rosewood, but with a Turkey leather seat; one in dark blue, red, green, yellow, grey, or black, with gold lines, or another in light or dark blue, green or red, both to correspond with harps, could be purchased for 7 guineas; and for 8 guineas a stool to match a Swiss or Gothic harp could be had. As was the case for covers, string boxes and music stands, Grosjean's prices were considerably more expensive than Erat's, suggesting that either material or labour costs (or both) had increased.

7.1.9: 'Sundries drawn to string gauges'

Thirty-nine string gauges, totalling £10/5/-, were sold in three prices, -/5/-, -/6/-, and -/7/- suggesting three types, though how they differed is unknown, comprising £4/17/- in 1821, £1/19/- in 1822, £2/13/- in 1823, and -/16/- in 1824 (for monthly totals see Appendix 7.5.9). Presumably other makers sold similar string gauges; the Érards' ones, like other accessories sold by the company, were commonly branded (Figure 7.24).



Figure 7.24. Érad string gauge (after 1829), private collection.

7.1.10: 'Sundries drawn to tuning keys'

The income from tuning keys was -/19/6 in 1821, £1/8/6 in 1822, £1/3/9 in 1823, and £1/6/6 in 1824, totalling £4/18/3 for the 27 tuning keys sold (for monthly totals see Appendix 7.5.10). That prices ranged from -/2/3 to -/14/-, suggests that more than one size or finish were sold: Mr Simcock of the Covent Garden Theatre paid -/2/6 for a tuning key on 4 July 1821;¹⁴⁹ Mr Gear of Tom's Court, Manchester Square, paid -/3/- for one on 31 December 1821;¹⁵⁰ an unknown person, presumably a passing customer, paid -/4/- for another on 17 May 1822;¹⁵¹ Lady Arabella Vane of St. James' Square paid -/5/- for one on 27 July 1822;¹⁵² and Mr Figg, of 5 Church Street, Paddington, paid -/14/- for a 'large size tuning key' on 15 March 1824,¹⁵³ whether the tuning head or the key itself was large is unknown. The relatively small number of tuning keys sold indicates that they were normally provided with harps. A tool for levering string pins from the soundboard, useful when fitting new strings, was commonly integral to tuning keys (Figure 7.25).



Figure 7.25. Nineteenth century harp tuning key, maker unknown. private collection.

¹⁴⁹ EL. p. 71.

¹⁵⁰ EL. p. 133.

¹⁵¹ EL. p. 206.

¹⁵² EL. p. 234.

¹⁵³ EL. p. 510.

7.1.11: 'Sundries drawn to tuning forks'

Tuning forks generated an income of £8: £4/4/6 in 1821, only -/3/- in 1822, £3/2/- in 1823, and -/10/6 in 1824 (for monthly totals see Appendix 7.5.11). They could be purchased singly or in sets. The Countess of Darlington, Elizabeth Russell (c1777–1861), of St. James' Square, bought a set of tuning forks in a mahogany stand for £2/12/6 on 10 September 1821.¹⁵⁴ A cheaper set in a mahogany case was purchased by Miss Montefiore, of Kennington Lane, for £1/5/-,¹⁵⁵ and a single E flat tuning fork (the only fork whose musical note was recorded) could be purchased between -/2/6 and -/4/- perhaps denoting quality or possibly size (pitch). Whilst tuning forks supplied by the Erats are unidentifiable, those by the Érards are (Figure 7.26), suggesting that the former did not stamp their name on their accessories.



Figure 7.26. Érard tuning fork, date unknown, private collection.

7.1.12: 'Sundries drawn to music'

Although little money was generated by music (only £6/14/-) it is worth noting the limited sales (for monthly totals see Appendix 7.5.12). An entry for April 1822 shows sales of £1/12/4.¹⁵⁶ A further entry in October 1823 records sales of £5/1/8.¹⁵⁷ Composers such as Bochsa, Dizi and Rousseau are recorded (Appendix 7.5.13).

¹⁵⁴ EL. p. 95. Elizabeth Russell married the Earl of Darlington on 27 July 1813. *The Royal Kalendar and Court and City Register* (London: Suttaby, 1833), p. 32.

¹⁵⁵ EL. p. 120.

¹⁵⁶ EL. p. 197.

¹⁵⁷ EL. p. 437.

7.1.13: 'Cash drawn to sundries'

The cash income of the Erat business is the largest income stream generating £15,307/8/½ over the period of the ledger, £3683/6½ in 1821, £5316/-/10 in 1822, £4204/10/11 in 1823, and £2103/10/3 in 1824 (for monthly totals see Appendix 7.5.14). Whilst some entries, listing payee name, clearly relate to credit accounts, others are recorded as person unknown, suggesting passing trade.

7.2: Articles for the manufacture of harps

End-of-year accounts recorded in the ledger in December 1821, 1822 and 1823 list suppliers and the monies owed or paid to them (Appendix 7.6). Materials purchased are recorded by month.

7.2.1: Suppliers in 1821

In 1821 metal supplied by J. Bauchamp [sic] of Grafton Street, Soho,¹⁵⁸ a dealer in tools and metals (presumably a miss-spelling of J. Beauchamp who supplied metal in later years), totalled £61/11/6½. The Erats paid £6/6/2½ for crank brass (presumably for machine cranks), £21/12/3 for harp brass (for machine plates, probably ordered in sheets), and £7/18/- for harp plate. That they paid -/170/- (£8/17) per unit for both (the unit not recorded) suggests that harp brass and plate were the same. A further £2/2/9 was paid for pedal steel (as its name suggests it was used to make pedals), £1/3/1½ for cast steel (probably for pedal fulcrum blocks from which the pedals pivoted), £1/2/11 for steel (the type not noted), -/19/7 for sheet steel, -/15/1½ for square cast steel, and -/3/2 was spent on drawn steel (the uses of these unknown). Beauchamp also supplied steel wire, priced by the ounce, in six gauges: -/1/8 was spent on wire at 4d per ounce, -/17/6 on wire at 5d per ounce, -/7/3 on 11d wire, -/3/8 on -/2/9 wire, £1/5/2 on -/3/6 wire, -/1/8 on that at -/4/- per ounce, £1/1/11½ on wire at -/5/- per ounce, -/15/9½ on -/6/- wire. Rivets would have been cut from this wire to rivet the machine links into trains, for the semitone forks, and for riveting the pedals.

¹⁵⁸ EL. pp. 142-143. J. Beauchamp's address is noted in 'Correspondence,' *The Mechanic's Magazine*, vol.4 (London: Knight and Tracey, 1825), p. 384.

Various metal-working tools were also purchased, including 25 equalling files at -/8/9½ (4d each) and two more at -/11/- (5½d each) suggesting these were larger; two sets of files (the number in each set not noted) were purchased for -/5/10 (-/2/11 each); 8 saw files at -/2/10 (4¼d); and one pair of nippers at -/2/3. Materials for finishing the metal work included six quires of emery paper (at -/1/8 each quire), bought in batches of two; rotten stone for fine polishing (suggesting that the harp plates were bought unfinished), at 2½d, the quantity not noted; and three brushes at -/1/6. Drawn cast steel costing £9/6/10, and tilted drawn cast steel at £4/11/6,¹⁵⁹ was bought from a W. Hoole,¹⁶⁰ and metalwork, costing £17/12/9, the type not recorded, was purchased from Botten & Co., founders, of 62 Shoe Lane, Fleet Street.¹⁶¹ Botten & Son (brass founders) also supplied Énard. Pierre listed them amongst suppliers to whom monies were owed, two payments of £25/6/8 and £25/6/4, falling due on 15 February 1815, and another, also £25/6/4, the following month,¹⁶² the amounts suggesting that the same materials and quantities were ordered repeatedly.

Harp poles (forepillars) were supplied by George Wakeling, an ‘oval and round turner’ of 29 Silver Street, Golden Square.¹⁶³ Although the accounts do not record whether Erat or Wakeling was responsible for supplying and laminating the timber for these, that Erat paid -/15/- for a batch of four (-/3/9 per pole), a relatively small sum, indicates that he provided and prepared the wood. Wakeling delivered seven batches (28 poles) in 1821, one each in March, April, June, July, October, November, and December. Although there is insufficient data to identify a relationship between the number of poles and trends in harp production, it is possible to suggest that less took place in August and September of that year. Wakeling also supplied parts for music stools and desks: in May he provided six music stools pillars with iron screws

¹⁵⁹ Cast steel is drawn under a tilt hammer to achieve a similar effect to that achieved on iron by a forge hammer. Its texture is firmer and it can be drawn into convenient forms for use. ‘Tilted Steel’, *Encyclopaedia Britannica*, ix (Edinburgh: Archibald Constable and Company, 1823), p. 300.

¹⁶⁰ EL. p. 148. A W. Hoole, together with his business partners John Lockyer, metal tool, steel and wire merchants, dealers, and chapmen of Saint James’ Walk, Clerkenwell, was declared bankrupt in December 1847. It is likely that this W. Hoole, or a descendant thereof, was Erat’s supplier of cast steel. *London Gazette*, 21,206, Tuesday, May 6, 1851, p. 1209.

¹⁶¹ EL. p. 151. Botten & Gillman are listed in *Kent’s Original London Directory* (London: Henry Kent Causton, 1823), p. 42.

¹⁶² Adelson et al. vol. 2 (2015), p. 548.

¹⁶³ EL. pp. 143-144. Wakeling’s address is noted in *Johnstone’s London Commercial Guide* (London: Johnstone’s, 1818) p. 449.

and nuts costing a guinea (-/3/9 per stool) and another identical batch was delivered in December; six runners for music stools, at -/1/6 (3d each) were supplied in October; six '2 divisions music desks' at -/3/- (6d each), with six slides and runners, also -/3/- were purchased in November, and pillars for these, costing -/6/- (-/1/- each), in December. A 'set of drafts men', costing -/2/- was also bought in December though it is not clear what these are, or how many constitute a set. In 1821 Erat paid Wakeling a total of £7/1/6. Erat paid a total of £5/13/- to one J. Young, his address and business details unknown, who upholstered music stools. French stuffing in red or purple leather with brass nails varied from -/16/- to -/18/-, -/6/- was charged to replace the top of a stool, and -/9/- to pipe one in red leather.¹⁶⁴

Three harp covers costing £2/4/-, and a cheaper one, at £2, were purchased from W. George, also unknown, totalling £8/12/-.¹⁶⁴ Another eight, also £2 each, were bought from J. Newbury, a leather gilder and maker of leather covers, of 54 Upper Mary-le-bone Street.¹⁶⁵ J. Bryan also supplied small and large string boxes (-/10/- and -/12/- respectively) in five colours, grey, purple, black, scarlet and blue. A round one, costing only -/2/- was purchased in August, and a repair costing 6d was undertaken on another. Bryan also undertook repairs, for example mending a lamp in March 1821, and lining and soldering the top of a harp case in April of that year.¹⁶⁶

W. H. Freeman, a composition ornament and frame maker of Princes Street, Westminster, supplied Erat's composition ornaments.¹⁶⁷ Of him, Martin writes:

The best plasterer in this line [composition making] was the late Mr. Thorp of Princes-street, St. Ann's; and the work appears now to be equally well performed by his successor Freeman. It is at least 80 per cent cheaper than carving, and in many cases equally well calculated to answer every purpose to be derived from it.¹⁶⁸

¹⁶⁴ EL. p. 148.

¹⁶⁵ EL. p. 144. Newbury's address is given in Donald Cuthbert Coleman, *Courtaulds: An Economic and Social History* (California: Clarendon Press, 1969), p. 57.

¹⁶⁶ EL. pp. 141-142.

¹⁶⁷ EL. pp. 149-150.

¹⁶⁸ Martin (1813), p. 491.

Ornaments costing £3/4/4 were bought in 1821.

Erat paid a total of £8/6/- to Barak Longmate, an engraver of 4 Seymour Place, Camden Town. Twenty-three patent (double-action) harp plates were engraved in March 1821, costing £5/3/6 (-/4/6 each), and 24 common (single-action) ones were delivered in December at £2/8/- (-/2/- each). As each harp requires two plates and only one was engraved, these represent 46 double-actions and 48 single ones. A further -/2/- were paid to engrave a replacement plate for one broken, and -/12/- to engrave the king's arms on a double-action.¹⁶⁹

Two printers supplied marketing paraphernalia. Sawyer and Son, engravers and printers of 43 Dean Street, supplied 400 trade cards, printed on both sides totalling £1; 200 cards printed on one side only at -/7/-; 277 catalogues at 1 guinea; and 300 bills of parcels costing -/4/6, a total of £2/12/6.¹⁶⁹ F. P. Farques, a copper plate printer of 47 Berwick Street, supplied a pack of cards at 8d, eight packs at -/3/-, and cards with gold borders costing £5/5/7½, paid for in four lots, the quantities not noted, a total of £6/7/8.¹⁷⁰

Gut strings, costing £57/4, were purchased from Siems & Tracey,¹⁷¹ and coloured ones (red and blue), totalling £55/12/6, were bought from J. H. Bockthorn.¹⁷²

That suppliers of timber are not noted is surprising. It is possible that all of the timber required for the year was purchased before Jacob Erat's death in February 1821, and so not recorded in this new ledger. It is also possible that the company held a sufficient stock of wood, as indicated in the probate inventory compiled at the beginning of the ledger. In 1821, suppliers were paid a total of £266/17/4½.

¹⁶⁹ EL. p. 144.

¹⁷⁰ EL. p. 148. Farques' address is noted in *Johnstone's London Commercial Guide, and Street Directory* (London: Johnstone, 1818) p. 40.

¹⁷¹ EL. p. 139.

¹⁷² EL. p. 140. J. H. (John Henry) Bockthorn was recorded variously in the Erat ledger as Bockhorn and Bockthorn.

7.2.2: Suppliers in 1822

In 1822, the Erats ordered metal to the value of £123/3/2½ from J. Beauchamp including £10/1/- of crank brass, £84/2/3 of plate brass, £4/15/10 of pedal steel, £2/5/4 of steel wire, and £1/10/- of spring steel wire, presumably for making pedal springs. Finishing materials, costing -/5/6, included emery paper and rotten stone, were also ordered, and £4/7/5½ was spent on metalworking tools, including round, crossing, square, and equalling files.¹⁷³

Botten & Co. supplied brass worth £9/3/6,¹⁷⁴ and William Hoole provided more metal, costing £16/18/1, delivered in 'bundles' and comprising 45lbs of bright cast steel in three sizes at £7/2/6 (-/3/2 per pound), 56lbs of black cast steel costing £5/12/- (-/2/- per pound), and 118lbs of rolled cast steel, shaped to patterns at £4/3/7 (8½d per pound).¹⁷⁵

George Wakeling provided 30 harp poles (two more than in 1821) costing -/3/9 each. Erat paid £1/10/- for the repair of eight harp heads (-/3/9 each), and -/3/6 for another. Repairing a harp head (top of the capital), despite costing the same as a new pole, saved money as complete redecoration was avoided. Six music stand pillars, costing -/1/- each, another turned in two parts at -/3/-, a pillar with a 'screw to pattern' at -/1/-, six music stand slides and runners at 6d each, and six stool pillars, bored with iron nuts fitted for assembly at -/2/6 each, were also purchased.¹⁷⁶ A total of £8/-/10 was paid to Wakeling.

As in 1821, J. Bryan supplied and repaired string boxes and harp cases totalling 18/3/11. Seven harp cases were lined costing 8 guineas (£1/4/- each), the same number (probably the same ones) was soldered for -/10/6 (-/1/6 each), and one was repaired costing -/12/-. A purple string box, and another scarlet one, were bought for £1/10/- (-/15/- each), three square ones were purchased for £1/16/- (-/12/- each), three long ones at £1/5/6 (-/8/6 each), and six black string boxes for £2/11/- (-/8/6 each suggesting that they were also long). A round tin box was

¹⁷³ EL. pp. 322-323.

¹⁷⁴ EL. pp. 318-319.

¹⁷⁵ EL. p. 303.

¹⁷⁶ EL. pp. 303-304.

bought for -/1/2, and two more round ones, made 'to order', presumably different from ordinary ones, were bought for -/2/6 (-/1/3 each). Two string boxes were repaired for -/1/9, one was repaired and japanned for -/4/-, and -/1/6 was paid for repairing old jobs, perhaps suggesting that they were initially not up to the Erat's standards.¹⁷⁷ John Newbury supplied 18 harp covers at £2 each, and undertook four repairs, two costing -/5/-, one at -/4/-, and another at -/1/-, a total of £36/15/-.¹⁷⁸

W. H. Freeman supplied £2/10/8 worth of composition ornaments, comprising 134 feet of small strap at 1½d per foot (used to decorate the harp neck), 88 feet less than in 1821, perhaps suggesting a new ornament had replaced it; 104 feet of bottom moulding (for the bottom of the sound box), at 3d per foot, roughly the same quantity as in the previous year; and 51 feet of pine ovala (for the transition between the capital and pillar) at 2d per foot, seven feet more than in 1821. Two rams heads (used on some single-action capitals) were bought at 6d each. Prices remained unchanged from 1821.¹⁷⁹ Henry J. Pratt, his address and business not known, supplied three dozen claws with ball, presumably feet for music stools or desks, at £5/8/- (-/3/- each).¹⁸⁰ Further decoration, this time borders totalling £2/18/-, were purchased from Dixon & Son, copper plate printers of 29 Tottenham Street, made up of 32 borders of two plates at -/5/4 (2d each), 69 borders of sundry plates at £1/4/8 (4¼d each), and 84 borders of sundry plates at £1/8/- (4d each).¹⁸¹ Although the borders are not described in the supplier accounts, lists of harps made show that various ones were applied, including Egyptian, grape, and simple gold borders.

Sawyer and Son were paid £2/3/10 to print more marketing materials comprising 100 cards, printed on both sides at -/5/-, 200 cards printed on one side at -/7/-, 672 bills at -/9/2, and 72 fly leaf quarters, printed both sides, and 144 quarters printed both sides with list of articles, presumably a sales list, at £1/2/-.¹⁸² Longmate

¹⁷⁷ EL. p. 311.

¹⁷⁸ EL. p. 309.

¹⁷⁹ EL. pp. 312-313.

¹⁸⁰ EL. p. 303.

¹⁸¹ EL. p. 313. Dixon and Son are identified from *Kent's Original London Directory* (London: William Kent Causton, 1823), p. 100.

¹⁸² EL. p. 318.

undertook £19/16/6 worth of engraving. Twenty-two common plates (single-action) were engraved with the royal arms for £19/6/6 (-/17/6³/₄ each -/5/6³/₄ more than in 1812), a replacement for a broken one was charged at -/2/-, and one was repaired for -/8/-. Although a further 23 patent (double-action) harp plates with royal arms, and two without are noted, the price that the Erat's paid is omitted, having already been entered in the accounts on 31 December 1821.¹⁸³

Various new suppliers are added in 1822. Daniel Stewart, supplied 41½ gross of harp string pins, costing £24/6/- (-/12/- per gross) the wood type not recorded, thirteen-dozen coco wood pins at -/10/10 (10d per dozen), and four dozen at £2 (-/10/- per dozen). Two ebony vases were also purchased at -/10/- each. The Sun Fire Insurance records place Stewart, an ivory and hardwood turner, at 15 Wardour Street from 1807 to April 1817;¹⁸⁴ a new policy, dated December 1817, shows that he had moved to 349 Oxford Street.¹⁸⁵ It is likely that the Erats had purchased pins from the turner when they were also located on Wardour Street.

J. Michel, a carpenter, was known to the Erat's having leased their house at 100 Wardour Street in September 1821.¹⁸⁶ He supplied boxes totalling £62/3/-: eight harp cases lined with baize were £2/8/- each; a further ten, unlined, were the same price, perhaps larger than the lined ones; and eight unlined cases, were £1/14/- each, the lower price suggesting that they were smaller; single and double-action harps would have required different sizes. Two cases, made to order, were charged at -/4/- and -/5/6 each, suggesting these were much smaller than the standard ones, and one with extra lining was bought for £2/12/-. The Erats also purchased one set of leather harp covers, suggesting that it was made of more than one part, and eight sets of leather straps, presumably to hold harps securely in their cases, at -/3/- each.¹⁸⁷

¹⁸³ EL. p. 314.

¹⁸⁴ LMA. Sun Fire Policy, MS11936/459/867830, insured: Daniel Stewart, 15 Wardour Street, ivory and hardwood turner.

¹⁸⁵ LMA. Sun Fire Policy, MS11936/476/936163, insured: Daniel Stewart 349 Oxford Street ivory and hard wood turner.

¹⁸⁶ TNA. C110/99, Lease of 100 Wardour Street.

¹⁸⁷ EL. pp. 304-305.

Timber is recorded in the supplier accounts for the first time. Hansler & McKenzie, dealers in timber and musical wood (also brandy merchants) of New Round Court, Strand, supplied 192 feet of fine air veneer at £8 (10d per foot) for which -/2/6 was charged for carriage, and 64 feet of air wood veneer (not fine) at £1/14/6 (6½d per foot). Two batches of 'Swiss (sorted) bellyboards' were purchased; the first lot of 50 was bought for £6/5/- (-/2/6 per board), and the second of 51 for £7/-/3 (-/2/9 each), the price difference suggesting a difference in size or perhaps quality. That the boards were 'sorted' suggests that each had been specifically chosen. Although they were described as Swiss, it is unknown whether this refers to country of origin, to the type of timber (presumably spruce), or to a particular quality. A charge of -/7/- was paid for loading and carriage, the total payable to Hansler and McKenzie being £23/9/3.¹⁸⁸ John Bamford, a timber merchant of 23 Wardour Street, supplied wood costing £7/15/6, including 56½ feet of 1½ inch beech at £1/3/7 (5d per foot), 17½ feet of 1¼ beech at -/5/10 (4d per foot), 73¼ feet of 1¼ inch sycamore at £2/15/2 (9d per foot), 100 feet of inch sycamore at £2/15/- (6½d per foot), and 32 feet of blackwood at -/16/- (6d per foot). Deal, totalling £1/5/7, was purchased from J. Turner, comprising 26 feet of 3 inch at £1/-/7 (9½d per foot), and 12 feet of ½ inch at -/5/- (5d per foot).¹⁸⁹

William Cairncross, a cabinetmaker of 11 Hollen Street Soho, was paid £21/14/7 for wood, but also for processing it. The Erats paid £1/4/- for 3 inch deal in six lengths of 8 foot (6d per foot); £2/10 for 3 inch xana in six lengths of 14 foot (-/1/½ per foot) and -/2/10 for 21 cuts in it (4¾d per cut);¹⁹⁰ -/2/10 for 8½ feet of inch beech (4d per foot); £1/10/2 for 80½ feet of 1½ sycamore in eight pieces (4½d per foot); £9/9/- for 54 feet of 2 inch sycamore in four pieces (-/3/6 per foot); £2/2/9 for sawing 484 feet of sycamore plank, and -/4/- for eight cross-cuts in the same; £2/13/8 for sawing 608 feet of plank and veneer, the timber type not recorded; -

¹⁸⁸ EL. p. 303. The Sun Fire insurance records lists John Jacob Hansler and Stephen McKenzie, wine and brandy merchants and dealers in timber and musical wood, at New Round Court Strand between 1816 and 1826. (LMA. Sun Fire Policy. CLC/B/192/F/001/MS11936/471/915920). In 1827 Hansler alone is insured there as a wine merchant (LMA. Sun Fire Policy. CLC/B/192/F/001/MS11936/515/1065033), and in 1829 he had moved to 12 James Street, Haymarket (LMA. CLC/B/192/F/001/MS11936/522/1094879). Hansler also supplied timber to Erard, Clauss & Co (guitar makers), and Shudi (piano forte makers). Nex (2013), p. 295.

¹⁸⁹ EL. p. 309-310. John Bamford is identified in *The Poll Book, for Electing Two Representatives in Parliament* (London: J.J. Stockdale, 1818), p. 208.

¹⁹⁰ Xana is unidentifiable.

/8/4 for sawing 100 feet in boards, and £1/1/6 for 21½ feet of rosewood veneer in eight lengths (-/1/- per foot).¹⁹¹ Siems & Co. supplied strings to the value of £37/17/3 with J. Bockthorn providing a further £56/12/6.¹⁹² The cost of supplies ordered in 1822 totalled £460/15/8½.

7.2.3: Suppliers in 1823

In 1823 J. Beauchamp supplied metal and tools to the value of £44/1/10, only a third of that spent by the Erats the previous year, comprising £11/19/- of crank brass, £22/-/9½ of harp plate, -/11/7 of cast steel, -/9/3 of pedal steel, -/2/5½ of sheer steel, and £1/5/7½ of steel (the type not recorded). A total of £2/9/7½ was spent on tools, including edge, hand, saw and crossing files, and -/11/10 on brass and steel wire, of which only two gauges are noted (-/2/9 and -/3/6 per ounce), and only 4d on finishing materials (flour emery).¹⁹³ By contrast, the amount spent with W. Hoole nearly doubled to £32/12/9. Hoole supplied flat drawn steel, costing £4/19/9, flat cast steel 'to pattern' at £7/11/6 (perhaps a template for the neck of the harp or similar), flat drawn wire at £7/10/-, flat cast steel wire at £7/13, and cast steel for pedals at £4/18/6; a total of £32/12/9.¹⁹⁴ Screws, costing £2/6/6 were bought from Joshua Reynolds.¹⁹⁵

Timber, as in 1822, was purchased from J. Cairncross and Hansler & Co. (formerly Hansler & McKenzie) and W. Viney, a new supplier. Viney supplied 240 feet of inch sycamore at £4, 24 feet of 1½ sycamore at -/12/-, and 188 feet of sycamore veneer at £2/-/5, a total of £6/12/5.¹⁹⁶ Cairncross provided eight pieces of 1½ inch beach (35 feet, 4½ inches long) at £1/11/10½, 77 feet of black pear veneer at £1/19/6, 13 feet of 1⅓ inch best yellow deal (including three cuts) at -/8/4, six pieces of 3 inch

¹⁹¹ EL. p. 303. Between 1796 and 1819 Cairncross took out six insurance policies with the Sun Fire insurance company at 11 Hollen Street, Soho. LMA. Sun Fire Policy. Insured: William Cairncross, 12 November 1796, MS11936/407/660235; 9 January 1805, MS11936/431/76998; 9 September 1812, MS11936/459/873587; 11 June 1817, MS11936/476/931358; 14 October 1819, MS11936/482/958495. An 1810 policy places him briefly on Wardour Street. LMA. Sun Fire Policy, MS11936/453/844466, insured: William Cairncross, 14 April 1810.

¹⁹² EL. p. 315.

¹⁹³ EL. pp. 477-478.

¹⁹⁴ EL. p. 472.

¹⁹⁵ EL. p. 478.

¹⁹⁶ EL. p. 476.

best white deal (13 feet long) at $-/1/1\frac{1}{2}$, and 31 cuts in this at $-/7/10\frac{1}{2}$, totalling $\text{£}4/7/8\frac{1}{2}$.¹⁹⁷ Two bundles of air wood, totalling 249 feet long, at $\text{£}9/6/9$, and one 18 foot bundle of belly wood at $\text{£}2/9/6$, were purchased from Hansler & Co, a total of $\text{£}11/16/3$.¹⁹⁸

George Wakeling supplied 42 harp poles ($-/15/-$ each), and ten at $\text{£}1/17/6$ ($-/3/9$ each) suggesting that the Erats were developing or making a new, perhaps smaller, harp. A pillar and slide for a music desk, costing $-/1/6$, and a block for the base of the same, at 6d, brings the total spent to $\text{£}7/19/6$.¹⁹⁹

The Erats paid Barak Longmate $\text{£}32/9/6$ for engraving, comprising $\text{£}32/3/-$ for 42 machine plates with the royal arms, $-/2/-$ each for replacement plates for harps numbered 509, 580, and 657, and 6d for a mug engraved with the initials T.C.B., the recipient unknown.²⁰⁰ Decorative borders, costing $\text{£}4/7/9$, were ordered from J. Dixon and Son in three batches: $\text{£}1/10/9$ was paid for 102 borders at $3\frac{1}{2}$ d each; $\text{£}2/2/8$ was paid for 125 borders at 4d each; and $-/14/4$ was paid for 23 borders at $7\frac{1}{4}$ d each.²⁰¹

Sawyer and Son received $\text{£}3/8/9$ for printing: $-/3/-$ was paid for 100 cards printed on one side, $-/6/-$ for the same number printed on both sides, and $-/2/6$ for 100 large cards, presumably with less print than the standard ones being cheaper; 1452 bills of parcel, at $\text{£}1/1/9$, and 148 catalogues, at $\text{£}1/2/-$ were also ordered together with four hundred direction cards, costing $-/14/-$.²⁰²

Forty string boxes were ordered from J. Bryan totalling $\text{£}20/6/2$, including six black ones at $-/8/6$ each; a purple one at $-/12/-$; two round common ones at $-/1/2$ and $-/1/4$ respectively; two green square boxes, one blue one, and one uncoloured, with gold borders, at $-/15/-$ each; a large japanned strong box with latch and key at $-/16/-$, and another large one at $-/1/9$; two round tin 'packing boxes' at $-/1/6$, and

¹⁹⁷ EL. p. 478.

¹⁹⁸ EL. p. 479.

¹⁹⁹ EL. p. 477.

²⁰⁰ EL. p. 476.

²⁰¹ EL. p. 480.

²⁰² EL. p. 479.

two round tin ones at -/1/2 and -/1/3 respectively; six 'round top' (arched tops) ones in green, blue, and black, at -/17/- each, two scarlet ones at -/11/-, a round topped rosewood one at -/9/-, and one in black with grape borders at -/8/6 (the prices suggesting a variety of sizes); six square boxes (presumably also in a range of sizes) in green, blue, black, and rosewood at -/15/- each), three in black at £1/1/-, a black one at -/14/-, and another at -/8/6; and one square tin box, the cheapest of the range, at -/3/-. Bryan also charged £5/2/- for lining four packing cases with tin and soldering the same.²⁰³

H. George (presumably a relative of W. George who had done this before) made and repaired leather covers costing £20/15/6. Eleven were purchased for £1/16/- each, including five embossed leather ones with plated locks and fastenings. Repairs totalled -/14/6, -/2/6 was paid for the fitting of a new lock, and the same for an alteration.²⁰⁴ Covers totalling £5/-/3 were bought from John Newbury, comprising two at £2 and £2/18/- respectively, and -/2/3 was paid for the repair of another and a new key.²⁰⁵ Cases, costing a total of £33/14/- were purchased from John Mitchell: ten, lined with baize, were ordered at £2/8/- each; and four, 'for tinning and straps' (suggesting that Mitchell didn't offer this service) at £1/17/- each. Of those made to order (i.e. non-standard), one was bought for -/7/8, two for -/4/8 each, and one for -/6/-, and -/3/- was paid for a set of harp straps. An alteration, costing -/16/- was undertaken, a repair at -/4/-.²⁰⁶

From the account of monies owed to J. Young, we learn a little more about accessories. Young, as in 1821, upholstered and repaired music stools. The Erats paid £3/8/- for the upholstery of new stools, comprising two French stuffed ones covered in black velvet and finished with cord at -/16/-; -/17/- for one, also with French stuffing, covered in red leather and finished with tufts; and -/18/- for another, similarly stuffed, covered in red morocco leather and finished with brass nails. A further £6/13/- was spent on reupholstering. Two stools were ripped, re-stuffed, and re-covered in red leather for -/10/-, one finished with brass nails, and -

²⁰³ EL. p. 474.

²⁰⁴ EL. p. 472-473.

²⁰⁵ EL. p. 482.

²⁰⁶ EL. p. 479.

/12/- was charged for a third, also with brass nails. The frames of five loose seats were recovered for -/6/6 each; the top of another was ripped, re-stuffed and brass-nailed for -/8/6; and three were re-stuffed, covered in red leather, and finished with brass moulding for £1 each, the brass moulding apparently adding significantly to their price.²⁰⁷ In all, the Erats paid Young £10/1/-.

Daniel Stewart was paid £5/7/4 for harp pins. Eight gross (1,152 – a gross being 144) of pins were purchased at -/10/- per gross; two gross (288) of pins with spots (probably ivory inlaid in ebony) were bought for -/11/-, and two dozen of the same for -/1/- per dozen; a gross, commonly known as a square dozen, should have cost -/12/- suggesting that the Erats were given a discount of -/1/- for buying in bulk. Two harp pins, at 2d each, were ‘made to measure’, and -/1/- was paid for two ivory knobs, their use unknown.²⁰⁸ In 1823, suppliers were paid £240/19/5½.

Examined by year (and categorised by use), purchasing trends can be assessed (Appendix 7.6.1). In 1821 the largest expense was the metalwork for making harp machines followed by strings, accessories (such as string boxes, which would have included their cost of manufacture), other materials for harp making (excluding timber), advertising, and decorative materials (composition ornaments etc.). The following year, metalwork remained the largest purchase followed by again by strings, accessories, materials for harp making (excluding timber), timber (a relatively small amount despite being used in the largest quantity as the raw material didn’t yet include manufacturing costs), decorative materials, and advertising. Figures for 1823 show that the largest expenditure was strings. That less metalwork was bought may indicate that the Erats retained stock from the previous year. Next were accessories, other materials for harp making, timber, and finally advertising.

7.3: Profit and loss

Comparison of credit extended to customers (sales) with income and monies owed to suppliers initially indicates that the Erats were making a loss (Table 7.5):

²⁰⁷ EL. p. 473.

²⁰⁸ EL. p. 478.

	1821	1822	1823	1824	Total
Value of sales	-4614/16/11	-5465/12/9	-5493/13/4	-2589/-/4	-18602/17/-
Income from sales	3683/6/½	5316/-/10	4204/10/11	2103/10/3	15307/8/-
Expenditure (materials and services)	-266/17/4½	-460/15/8½	-240/19/5½		-968/12/6½
Profit (loss)	-1198/8/3	-610/7/7½	-1530/1/10½	-485/10/1	-4264/1/6½

Table 7.5. Sales against income (February 1821 – June 1824).

However, these sales figures include costs (of manufacture and of purchasing of goods for resale) and a profit margin. Although the profit margin for most of the products is unknown, that for harps can be calculated at about 44%.²⁰⁹ If the profit margin on all other (non-harp) sales is conservatively assumed to be 10%, the apparent loss is reduced, even allowing for the cost of wages (discussed in Chapter 8 in relation to working practices) (Table 7.6).

It is noteworthy that a profit margin of 160% would have had to be added to non-harp sales for the company to become profitable. Nineteenth century businesses often operated on extended credit terms. According to Jerry White, this was essential and was often given without any security. In London, appearance was everything, and could be maintained or enhanced by borrowing money.²¹⁰ We do not know how much of one year's debt was recovered during the following one – the account ledger doesn't record this. That the company continued to operate indicates that its cash flow was sufficient to enable workforce and suppliers to be paid.

²⁰⁹ The average price of new single- and double-action harps during the ledger period was £63. The 1824 inventory indicates cost prices of £30 and £40 respectively: an average of £35. Thus the average profit margin per harp was £28 or 44%.

²¹⁰ Jerry White, *London in the Nineteenth Century* (London: Bodley Head, 2007), p. 216. In 1825, William Godfrey fraudulently posed as a wealthy gentleman in order to buy harps on credit from Erat, Delveau, and Dodd, demonstrating that appearance rather than security underpinned credit (Appendix 7.7).

	1821	1822	1823	1824	Total
(a) Total sales (monies owed by customers)	-4614	-5465	-5493	-2589	-18161
(b) Harp sales only, including profit	-3814	-4377	-4257	-2384	-14832
(c) Sales less harps (a minus b)	-800	-1088	-1236	-205	-3329
(d) 44% profit margin on harp sales (44% of b)	-1678	-1926	-1873	-1049	-6526
(e) Harp sales only, less 44% profit margin (b minus d)	-2136	-2451	-2384	-1335	-8306
(f) [Assumed] 10% profit margin on sales other than harps (10% of c)	-80	-109	-124	-21	-333
(g) Sales less harps minus profit margin (c minus f)	-720	-979	-1112	-185	-2996
(h) Total sales less profits (d plus f)	-2856	-3430	-3496	-1520	-11302
(i) Expenditure – Materials and services	-266	-460	-240		-966
(j) Expenditure - Wages	-1727	-1933	-2198	-1107	-6965
(k) Income - Cash received	3683	5316	4204	2103	15306
Profit (loss) (h + i + j + k)	-1166	-507	-1730	-524	-3927

Table 7.6. Income from the Erats' sales less profit margins (to nearest £).

The Erats may have borrowed to maintain their business and lifestyle using the leases for 23 Berners Street and their houses at Park and Perry Street as security. Losses clearly continued and it is likely that the legal action, instigated in 1825 by George Sharp, resulted from these losses; Jacob had made provision in his will for the sale or closure of the company should it become unprofitable. The court case lasted six years during which the Erats managed to postpone a final judgement; they would have been able to argue that as their sales outstripped their losses, and recovery of monies owed would have resulted in profitability. The court case culminated in an order to sell the leases for 23 Berners Street, 20 Park Street (the family home), and 7 Perry Street. However, the Erats managed to retain their business premises, although the other properties were sold by auction.²¹¹

²¹¹ In 1825, only a year after the ledger finishes, the Erats were instructed to prove their debts in the Courts of Chancery. *London Gazette*, issue 18,174, 10 September 1825, p. 1662. Two years later, the family was again ordered to prove their debts, indicating that the initial action had been postponed or cancelled. *London Gazette*, 18,359, 8 May 1827, p. 1015. In 1831, the sale of the Erat's properties was ordered (*London Gazette*, 18,772, 1 February 1831, p. 200) and a sale date and location was announced the following month (23 March 1831 at the public sale room of the Courts of Chancery, Southampton Buildings, Lincoln's Inn). *London Gazette*, 18,781, 4 March 1831, p. 426.

7.4: Summary

The acquisition of the harp, played predominantly by young women (see Chapter 2), was dominated by the monetary conventions of a patriarchal society. Although the Erats served mostly the wealthy, upper-middle class, a quarter of their harps were bought by trade customers (music warehouses and harp teachers), incentivised by discounts and commission payments. At the time of Jacob Erat's death (1821), three fifths of monies then outstanding were owed by men, and between 1821 and 1824 three quarters of harps were sold to men. That lower-priced accessories (strings, music desks, etc.) were bought in nearly equal numbers by women and men indicates a limited purchasing power on the part of women.

Between 1821 and 1824, new and second-hand harps, and single- and double-action ones were sold in similar quantities. Singles-action harps ranged in price by as much as £69 (£15/15 to £84), and doubles by £80 (£40 to £115/10). The two types could be hired at 1 or 2 guineas per month respectively, bringing at least the single within reach of the middle class; it is noteworthy that the single-action instrument remained popular with Erat's customers after Érard stopped making them in 1819, and was still offered by Grosjean in c1840.

Harp sales fluctuated, falling during the summer exodus of London society, throughout the period of the ledger. Hired harps were mostly used in London, reflecting proximity, transport cost, and the typically brief term, in which novelty and expense were doubtless factors: some customers would have wanted to try the instrument before making a large commitment.

Harps were available in a wide decorative palette of colours, gilt types, and painted schemes, for which accessories and services were available. They could be refinished – perhaps explaining the limited colour range today – or repaired. Strings available, which could be bought individually (by 'ring') or by 'set', differed in quality and price according country of origin, Italian or foreign being of higher quality than English. Harp covers differed in price according to the various

materials and colours offered; and music desks, stools, and string boxes were decorated to match the harps.

Both of the Erats' manufactories (100 Wardour Street and then 23 Berners Street) were close to their main suppliers, suggesting that this proximity influenced their locations. Raw materials bought were processed in the workshops, but some components were purchased from specialist suppliers and subcontractors.

The value of sales increased markedly between 1821 and 1822, stalled in 1823, and declined during the first six months of 1824 (the ledger ends on 26 June). Income was less than sales. Monies owed to suppliers in 1822 were almost double those for 1821 and 1823). Each year, even before the addition of wages (discussed in Chapter 8), expenditure was greater than income resulting in annual losses.

Chapter 8: Making the harp

This chapter, building on analysis of the Erats' workshops (Chapter 6), sales, suppliers, and materials (Chapter 7), examines together the harp making workforce and the processes involved. Erat's employees are identified, their roles within the company are revealed and discussed, and change in the workforce is traced. Wages, working conditions, and relationships between the proprietors and their employees are scrutinised, and compared with those prevailing in the related field of cabinetmaking. The competences needed of Erat's men are illuminated by reference to contemporary descriptions of harp making and, supplementing these from the wider literature concerning cognate trades, of several of the specialised processes and skills needed in their manufacture.

8.1: Erat's workforce

A diary written by Robert Willis, a young, aspiring harp innovator, shows how Jacob Erat's workforce was arranged shortly before his death, naming those who worked for him.¹ In an appendix to his diary, Willis identifies ten distinct roles in Erat's manufactory, some requiring more than one man. In a table whose two columns represent two states, about eleven months apart (one probably in March 1819; the other dated 14 February 1820), he identifies the members of the workforce. In 1819, bodies were made by Frederick, who moved to Dizi's two months later, and Shorland; poles, necks, and stools were made by Fryer (Freyer), who had recently been fired by Pierre Érard,² and Schrader; single-machines were made by Shultz, who left later in March, and Greenfield; double-machines by Hutton and Beasmore, while a third such position was vacant. Gregory, who also left two months later, and Merton made pedals; Graham is named as 'coarse smith 2', while the course smith 1 position was vacant; Joyce was responsible for fitting outside work; Maunder and Erat's two sons, Jacob and James Erat, were finishers; and two varnishing positions were vacant.³

The February 1820 column shows how individuals had moved between specialism: bodies were made by Shorland (still) and Fryer (formerly on poles and necks); Strang

¹ WD. p. 121.

² Adelson et al. vol. 2 (2015), p. 722.

³ WD. p. 121.

(a new employee) made poles, necks, and stools (Willis notes that Schrader, who had done this, had died); Greenfield continued on single machines, while Beasmore had moved from double ones to the simpler single ones (perhaps a demotion); and Hutton, continuing on double ones, was joined by Graham, who had been promoted from 'coarse smith 2'; Merton, still making pedals, had been joined by Rose (a new man); Joyce continued the outside work; 'Jim the boy' (also new) was the new Course Smith 2; and Maunder and the younger Erats continued finishing.

Movement between departments indicates that some of the men were multi-skilled. Having been apprenticed to make either the wooden or metal parts of the harp, they would have been able to do more than one job. That some positions remained unfilled indicates that there was sufficient leeway in production for others temporarily to fill vacant roles. Movement between makers, whilst showing that skills were transferable, was not always smooth. In a letter of 4 July 1819 Pierre Érard writes:

We need at least seven workers, even eight, in order to get ahead, because Frayer, whom I had fired, was in his time the seventh and he did the work of two. But what a cobbler! I am angry with myself that I did not fire him two years earlier, all the poor work that he messed up would have come out at Erat's workshop, where he has taken refuge. They deserve each other, those two.⁴

Like Erat, Érard was short staffed, apparently having been dissatisfied with the quality but not the quantity of Freyer's work. Such problems were not new. On 26 October 1815 Érard laments that Wilhelm and his wife are always ill and that they would be an 'irreparable loss...because there is nobody in the workshop who you can trust, because Schwiasso [Schwieso] has been behaving so badly recently that I was obliged to ask him to find lodging elsewhere.'⁵ He adds, 'I think that since all the cabinet makers speak German or French, the worker who replaced Wilhelm might perhaps do; I find him a man of great integrity. Wilhelm brought a good sense of order to the firm and keeps it that way. If he were to return to Paris as his health requires, we would absolutely need someone to replace him'. Érard recognised that Regency Soho was awash with immigrant workers from France and Germany.

⁴ Adelson et al. vol. 2 (2015), p. 722.

⁵ Adelson et al. vol. 2 (2015), p. 616.

Despite Érard's dissatisfaction, Schwieso continued to work for the Érards until 1819, when Pierre writes: '23 March 1819 Schwieso, the woodworker who went to Dodd when I got rid of him, has just formed a partnership with a young man named Meyer, a German, and his brother-in-law, who tuned and regulated harps for Dizi.'⁶ Clearly Schwieso had been fired sometime earlier.

The Erat workforce was small compared with that of Érard. Although we do not know how many men the latter employed, that they sold 180 harps in 1821,⁷ compared to Erat's 77 (41 new and 36 second-hand), suggests that their workforce would have been considerably larger.⁸

Pierre Érard's letters contain valuable information about his and other makers' industrial relations. On 16 December 1817 he reemployed a cabinet-maker, Rider, who had previously worked for Sébastien Érard for eight years. He reports that Rider had recently left Dodd, a competitor who was laying off workers. 'If what Rider says is true, they are desperate! Dizi and Dodd are fighting constantly. Their harps are all sent back within 2 or 3 days.'⁹ On 18 September 1815, Pierre asks Sébastien to return James Delveau (then an employee but later a competitor) from France. Of Delveau he writes, 'I am wasting a great deal of time trying to replace him [...] so no harp leaves [the] workshop unless it's the way it should be.'¹⁰ By 21 August 1818, the Érards owed Delveau £250, which was paid with a three-year bond;¹¹ and by 9 February 1819 the amount had risen to £550,¹² a large sum. On 2 July 1819, Pierre comments that he could replace Delveau with Siegling, as the former constantly threatens to leave, but that he preferred the calm Delveau.¹³ By 6 February 1822, true to his word, Delveau had left. Pierre's frustration with his former employee, who seems to have risen above his station, is evident: 'I learned that 'LORD DELVEAUX' is requesting a patent.'¹⁴

⁶ Adelson et al. vol. 2 (2015), p. 711.

⁷ RCM. GB 1249 Érard, Érard Ledgers, pp. 166-185.

⁸ EL. pp. 21-280.

⁹ Adelson et al. vol. 2 (2015), p. 672.

¹⁰ Adelson et al. vol. 2 (2015), p. 613.

¹¹ Adelson et al. vol. 2 (2015), p. 688.

¹² Adelson et al. vol. 2 (2015), p. 706.

¹³ Adelson et al. vol. 2 (2015), p. 721.

¹⁴ Adelson et al. vol. 2 (2015), p. 787.

Willis, in his diary (1819-1821), notes instances of indiscipline among Erat's workforce: drunkenness, sulkiness, unexplained absence, and a practical joke (see Chapter 9).

8.1.1: Wages

Wages recorded in the Erat ledger (Appendix 8.1) are mostly in four or five instalments each month, indicating weekly payment. Occasionally, three or six instalments are noted, perhaps indicating that cash flow in sometimes resulted in deferred payment (Figure 8.1). That folio numbering in the wage book is not always consecutive suggests that not all pay was entered into the ledger. In 1821 a total (for the nine months entered) of £1727/3/2½ was paid to the men. Assuming that all 18 positions noted by Willis were filled, payments averaged £10/13/2¾ per man per month, or £2/13/3½ per week. The wage bills for 1822 and 1823 were £1933/16/8½ (an average of £8/19/½ per man per month or £2/4/9 per week) and £2198/10/2 (averaging £10/3/6 per man per month or £2/10/10½ per week), respectively. For the five months recorded in 1824, the wages totalled £1107/12/3 (averaging £12/6/1½ per man per month or £3/1/6¼ per week). This figure, higher than before, might indicate that the workforce then was larger. In all, £6967/2/4 was paid in wages during the ledger period.

Individual salaries are not recorded. Whilst the mean monthly wage suggests that the men, who mostly would have served an apprenticeship, were very well paid, it does not account for a hierarchical structure in which the Erat brothers, and possibly other family members, drew the largest salary, a foreman (or foremen) and the most skilled metal and woodworkers, finishers, and other specialists an intermediate one, and yet others, such as 'Jim the boy',¹⁵ the least. It is likely that fluctuations in the wage bill over the four years indicate flexible employment practices; men were hired or laid off in response to demand. The wages paid to Broadwood's men ten years later (1834), following modest inflation, an average of £2/19/- per week, were remarkably

¹⁵ WD, p. 121.

similar.¹⁶ Having risen during the Napoleonic wars, food prices, and consequently wages, fell soon afterwards.¹⁷ This might account for near-parity in the average paid to Erat's and Broadwood's men, ten years apart.

Other employees, not listed by Willis, are recorded in the Erat cashbook: Samuel first appears on 17 March 1821,¹⁸ Challis on 12 May,¹⁹ and Merrit on 27 October;²⁰ Sullivan is noted for the first time on 19 March 1823,²¹ Augustus on 15 December,²² and Bradley on 26 June 1824.²³ It is unclear whether they filled new positions, perhaps indicating expansion, or replaced those who had left.

¹⁶ SHC. Broadwood wages sheets, 2185/JB/74/1. I am indebted to Marie Kent for sharing her rigorous analysis of this source.

¹⁷ Throughout the eighteenth century, inflation was low (averaging 0.32% for consumer goods, and 0.26% for producer goods). During the Napoleonic Wars, agricultural prices (and hence those for food) rose by as much as 10% (considerably more than average inflation at 0.84%), before falling by 4.9% afterwards (1814-1825). Roger Lloyd-Jones and Merv Lewis, *British Industrial Capitalism Since the Industrial Revolution* (London: Routledge, 1998), p. 21. By 1821, the 'maximum attainable wages', at least at the Bank of England and probably in other workplaces, were also falling, before climbing again during the early 1830s. Helen MacFarlane and Paul Mortimer-Lee, Inflation Over 300 Years, *Bank of England Quarterly Bulletin* (May 1994), 156-162, p. 158.

¹⁸ ECB. p. 1.

¹⁹ ECB. p. 7.

²⁰ ECB. p. 24.

²¹ ECB. p. 78.

²² ECB. p. 107.

²³ ECB. p. 127.

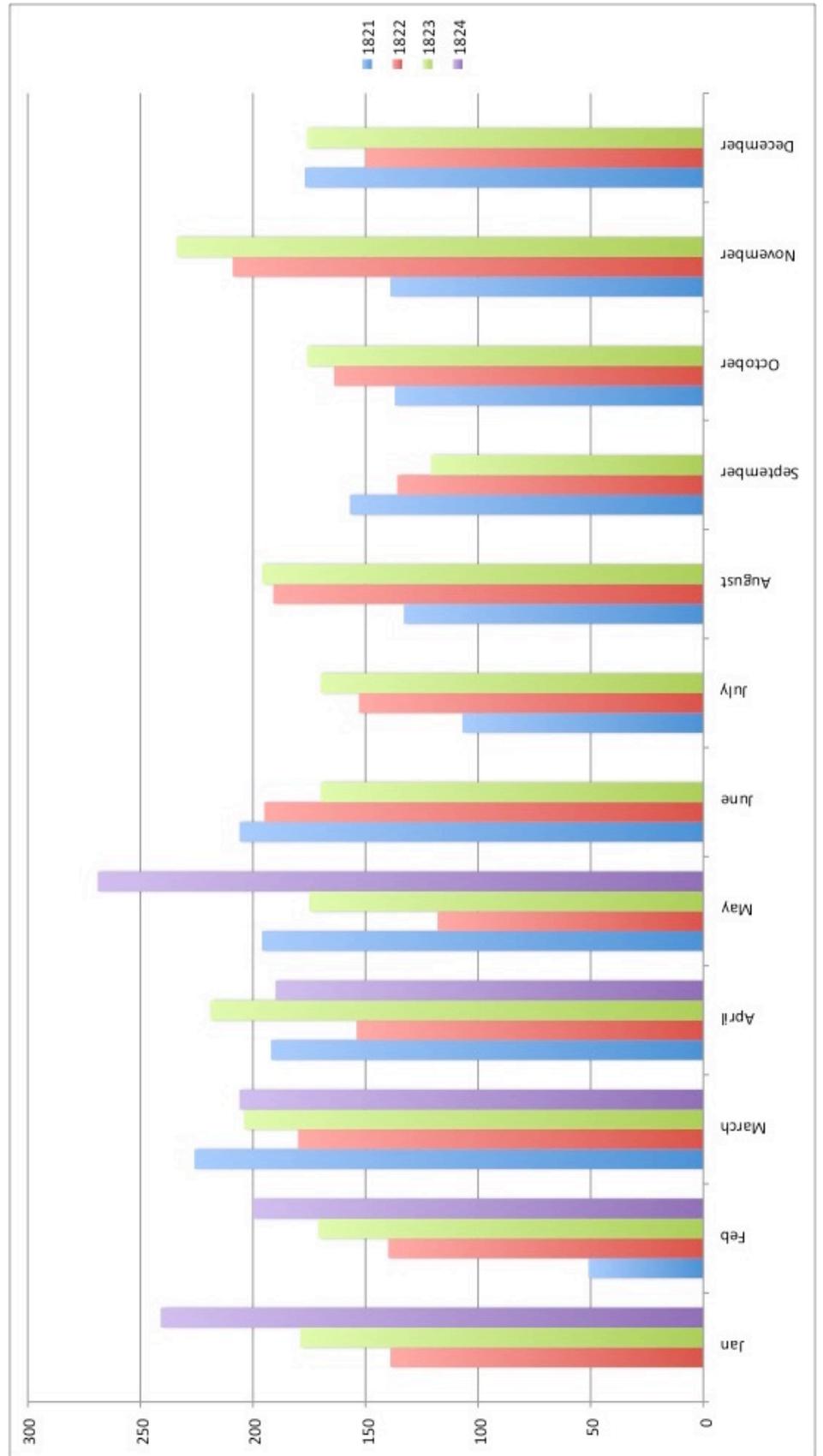


Figure 8.1. Monthly wages paid by Erat Company 1821-1824.

Like others in similar industries, the Erats employed journeymen in addition to contracted employees. Ledger entries show that Dockree received two payments in 1821 (£2/16/- on 6 June,²⁴ and £1/5/- on 10 November)²⁵ and a further two in 1822 (£3 on 3 September,²⁶ and £2/13/- on 9 December);²⁷ Ward received one payment (£2 on 2 October 1821),²⁸ and a single payment for a 'Mr Brown the gilder' is recorded in the cashbook (£1 on 21 April 1821).²⁹ That an external gilder was employed only once, so soon after Erat's death, suggests that Jacob had undertaken gilding, and that his sons and executors had yet to find a permanent replacement. The first appearance of Challis in the cashbook, a just month later, perhaps indicates that he took on this role.³⁰ The monthly fluctuations in total wages paid suggest that the number of employees rose and fell, probably in response to the number of customer orders.

Although harp making required specialist knowledge, craftsmen from other related industries were sometimes employed. Pierre Érard, writing to his uncle Sébastien on 26 October 1815 states that all of the cabinet makers speak either German or French,³¹ and on 16 December 1817 he announces the return of a cabinet maker, named Rider, having left Dodd, who had worked for Sébastien some eight years earlier.³² The Erats, like their competitors, also hired cabinetmakers: 'To HARP or CABINET-MAKERS. - Wanted some MEN in the above Trades. Apply at No. 23, Berners-street, Oxford-street.'³³ Anderson states that cabinetmakers depended on 'capital, labour force, suppliers, and access to markets' for success. These were equally important to harp makers;³⁴ She identifies a need for 'training, skill, and

²⁴ EL. p. 59.

²⁵ EL. p. 124.

²⁶ EL. p. 261.

²⁷ EL. p. 299. That Dockree formed his own harp manufactory is indicated by a later advertisement for sale of a second-hand 'Splendid Harp by J. Dockrees, London [...] unredeemed: a bargain. - John Eaton, Snighill.' 'Splendid Harp,' *Sheffield Evening Telegraph*, no. 624, 11 June 1889, p. 4.

²⁸ EL. p. 285.

²⁹ ECB. p. 2.

³⁰ The name of Delveau's visiting gilder, William Henry Jennings, is revealed in the transcript of an Old Bailey Court Case. Thomas Maddocks, theft from a specified place, OBOL, t18280529-18, 29th May 1828

³¹ Adelson et al. vol. 2 (2015), p. 616.

³² Adelson et al. vol. 2 (2015), p. 672.

³³ 'To Harp or Cabinet Makers,' *The Morning Advertiser*, no. 13,491, 24 June 1834, p. 1.

³⁴ Jennifer L. Anderson, *Mahogany: The Costs of Luxury in Early America* (Cambridge, MA: Harvard University Press, 2012), pp. 39-40.

creative intuition to be able to conceive, replicate, or adapt designs to his particular intentions and to translate them into finished objects using his available materials and technology' and the 'intimate knowledge' of materials in order to produce a finished product. A cabinetmaker with such knowledge and skills would have been a useful addition to any harp manufactory.

The workforce appears to have been well provided for. Purchases 'for the men' included cakes,³⁵ rum,³⁶ gin,³⁷ 'spirits',³⁸ and beer,³⁹ and 17 of a total 37 payments made to an unnamed charwoman in 1825 and 1826, also include payment for beer;⁴⁰ perhaps one of her duties was to collect this. The men sometimes undertook extra jobs for additional money.

8.1.2: Apprenticeships

In 1563, the Statute of Artificers (an Act of Parliament often called the Statute of Apprentices) was introduced to 'to banish idleness, advance husbandry, and yield unto the hired person a convenient proportion of wages.'⁴¹ The act set maximum wages, regulated training, and tied the apprentice to his master for the duration of his apprenticeship. Despite not being regulated by the act, having been established later, harp making and other trades, such as a cabinet making, adopted this model of training. Although it was repealed in 1814, following the decline of apprenticeships through the seventeenth and eighteenth centuries, harp makers continued to seek and employ apprentices throughout the nineteenth century.⁴² On 27 April 1798, Nathaniel Polly was apprenticed to George Fröschle, a musical instrument maker, of St James, Westminster, for seven years – Fröschle received £30 in payment;⁴³ on 18 July 1799, James Jacobs was apprenticed to John Hobart, a harp maker of Rathbone

³⁵ ECB. p. 6.

³⁶ ECB. p. 2.

³⁷ ECB. pp. 12, 13, 144.

³⁸ ECB. p. 21.

³⁹ ECB. p. 150.

⁴⁰ ECB. pp. 149-153.

⁴¹ Statute of Artificers (5 Eliz. 1 c. 4).

⁴² The wages clause of the Statute of Artificers was replaced with the Wages of Artificers Act (53 Geo. 3, c. 40) in 1813; the apprentice's clause was replaced with the Apprentices Act (54 Geo. 3, c. 96.) in 1814.

⁴³ TNA. PRO IR 1/37, folio 17, Nathaniel Polly apprenticed to George Fröschle, 18 July 1798.

Place, St Marylebone, also for seven years, but for the lesser sum of £10;⁴⁴ and on 29 December 1800, John Jennings was apprenticed John Bond, of Cumberland Street, St Pancras, also a harp maker, this time for six years, Bond receiving £40.⁴⁵ The various lengths of apprentice may have related to the learning of different skills.

Masters often charged apprentice's families large sums of money that might be reduced or waived for family members or friends of the family. Where the parish arranged 'pauper apprentices', little or no money was paid. From the age of 14 years, boys were apprenticed for seven years, during which time their masters became responsible for their training, moral and physical wellbeing. Apprentices and masters did not always see eye-to-eye.⁴⁶

In 1806, an unnamed apprentice harp maker of Wardour Street was brought before a magistrate for refusing to 'carry home some work.' The master, also unnamed, was probably Jacob Erat, the only harp maker on Wardour Street at this date. 'The defendant persisted before the magistrate that he had no right to carry a load, having been apprenticed to learn a trade.' The Master (Erat) stated that his employee was rarely asked to 'take home the work' but that he always refused. Although the magistrate explained the apprentices' duties, 'he suffered himself to be committed rather than advised.'⁴⁷ The relationship between Erat and his employee was clearly beyond saving. Could it be that Erat had placed onerous requirements upon him and had neglected his training, and was this intransigence indicative of working conditions in Erat's workshops? That he should prefer imprisonment rather than accept direction perhaps suggests that the working and/or living conditions at 100 Wardour Street had become unacceptable. It is conceivable that the employee was a bad worker, and that his refusal to carry work home was one of multiple complaints.

On 7 July 1809, Wilhelm Mertens of Wardour Street was indentured to Jacob Erat 'to learn his art and with him acquire the Manner of an Apprentice [...] unto the full end

⁴⁴ TNA. PRO IR 1/38, folio 34, James Jacobs apprenticed to John Hobart, 18 July 1799.

⁴⁵ TNA. PRO IR 1/38, folio 139, John Jennings apprenticed to John Bond, 29 December 1800.

⁴⁶ Kirkham (1988), pp. 40-41.

⁴⁷ 'An apprentice to a harp-maker', *The Public Ledger*, 46, 14,054, 4 February 1806.

and term of five years' (Figure 8.2). The terms of the apprenticeship, set out in an indenture, listed the obligations of those involved.⁴⁸ Wilhelm, son of George Mertens, a Cabinet Maker also of Wardour Street, agreed to faithfully 'serve his [master's] secrets [and] keep his lawful commands everywhere'. He promised not to 'waste the Goods of his said Master nor tend them unlawfully to any [...] he shall not commit fornication nor contract Matrimony within the said term he shall not play at cards dice tables or any other unlawful Games whereby his said Master may have any loss'. Furthermore, 'he shall not haunt taverns or Playhouses nor absent himself from his said Masters' service day or night unlawfully'. In return, Erat promised to 'teach and instruct or cause to be taught and instructed the Art of working composing and finishing the Iron and Brass part of or pertaining to the harp by the best means he can.' Erat also agreed to supply Merten with 'Sufficient Meat Drink and lodging ~~and all their necessities~~ during the said term'. That the agreement to supply 'all their necessities' was redacted, suggests a certain degree of flexibility in an otherwise standard document. On this occasion George Mertens (Wilhelm's father) promised 'to find and provide suitable and necessary apparel washing and other necessaries for the said apprentice arising for said term.' Curiously Erat did not request payment from George. As both were on Wardour Street, it is possible that this was an agreement between friends. A Christian Wilhelm Mertens insured the house adjacent to Erat's 100 Wardour Street manufactory in 1816, the proximity indicating that he and the Wilhelm Mertens named in the indenture were the same.⁴⁹ That Mertens was able to afford the lease on this house confirms that harp makers were well paid.

The terms of apprenticeship changed little during the nineteenth century. On 1 November 1891, Arthur Wright of Kentish Town was apprenticed to Joseph John Morley, pianoforte and harp maker of South Kensington. Although the training period had reduced from the five served by Mertens, to three years and nine months, Wright's contract required him to make the same promises. The Morley/Wright indenture, however, reveals the fundamental change in the relationship between

⁴⁸ The Indenture of apprenticeship between Jacob Erat and Wilhelm Mertens is used by kind permission of the estate of William James Southwood, and his executor Richard Heaton, descendants of said Mertens.

⁴⁹ LMA. Sun Fire Policy, MS11936/471/919658, insured: Christian Wilhelm Mertens, 99 Wardour Street Soho, 14 July 1816.

Master and apprentice. Morley, who promised to teach the 'Act of Pianoforte finishing & Harp Repairing', was not responsible for board and lodging. Instead, wages were set at the 'sum of fifteen shillings per week for the first year, and seventeen shillings for the remainder of the term'. Wright, an 'outdoor' apprentice, probably lived with his family. Where working hours were unregulated in the Erat/Mertens indenture, Wright's working week was fixed at fifty-two hours.⁵⁰

⁵⁰ 1891 Apprentice Agreement between J George Morley and Arthur R Wright, used with the kind permission of Clive Morley. [Accessed 14 August 2011].

8.1.3: Trade organisations and the Harp Makers' Society

We do not know whether Erat's men were supported by a trade organisation. Kirkham notes that by the early eighteenth century, groups of London journeymen had begun organisations to protect and improve working conditions, and to support those who became sick or unemployed.⁵¹

In his 1876 autobiography, William Lovett (1800-1877), the Newlyn-born cabinetmaker (later president of the Cabinet Makers' Society and a notable chartist), records his arrival in London during the summer of 1821. He sought work with a cabinetmaker on Cromer Street in Somers Town:

I was requested to come [...] and to bring what tools I had with me. [...] [I] had begun to accumulate a few tools, and should have added others had I been paid my wages regularly.⁵²

Lovett was unfortunate in his choice of employer who soon owed him between six and seven pounds:

One Saturday evening, when pay-time came, he astounded us all by informing us that he should have to go into the Fleet Prison the following week for debt. He assured us, however, that he would pay us all the money he owed us when the work was finished which was then in hand, especially if we would go and help to finish it in a workshop which he had taken within the rules of the prison.⁵²

Lovett and his colleagues agreed to this only to be dismissed without pay once the work was finished. He parted with his erstwhile master by punching him, attracting the intervention of a thankfully sympathetic officer of the Fleet Prison. Lovett hoped to become a member of the Cabinet Makers' Society but, not having served an apprenticeship or worked for five years in the business, was initially rejected. His next employer, despite being a cabinet-maker to the King, was not a Cabinet Makers' Society shop. Contracted for a year and paid a guinea per week (significantly less than an Erat employee), he describes his colleagues as 'very drunken [with]

⁵¹ Pat Kirkham, *The London Furniture Trade, 1700-1870* (Leeds: Furniture History Society, 1988), p. 147.

⁵² William Lovett, *Life and Struggles of William Lovett* (London: 1876), p. 28. The absence of tools in the various Erat inventories suggest that Erat's employees, and probably harp makers in general, were expected to provide their own tools.

dissipated habits', who 'talked of setting Mother Shorney' at him (meaning the theft of his tools and damage of any work he'd undertaken, with the expressed purpose of having him dismissed). Lovett, who planned to call a shop meeting, explains the means of doing so. Firstly, he needed to supply a gallon of ale; then to strike his hammer and holdfast together to assemble the men. Finally a chairman was to be appointed and the complainant (in this case Lovett) was called upon to state his business.⁵³ Although he was able to make some of the men friendly towards him by appealing to their sense of justice, others continued their animosity, demanding alcohol and imposing fines against him of seven or eight shillings per week.

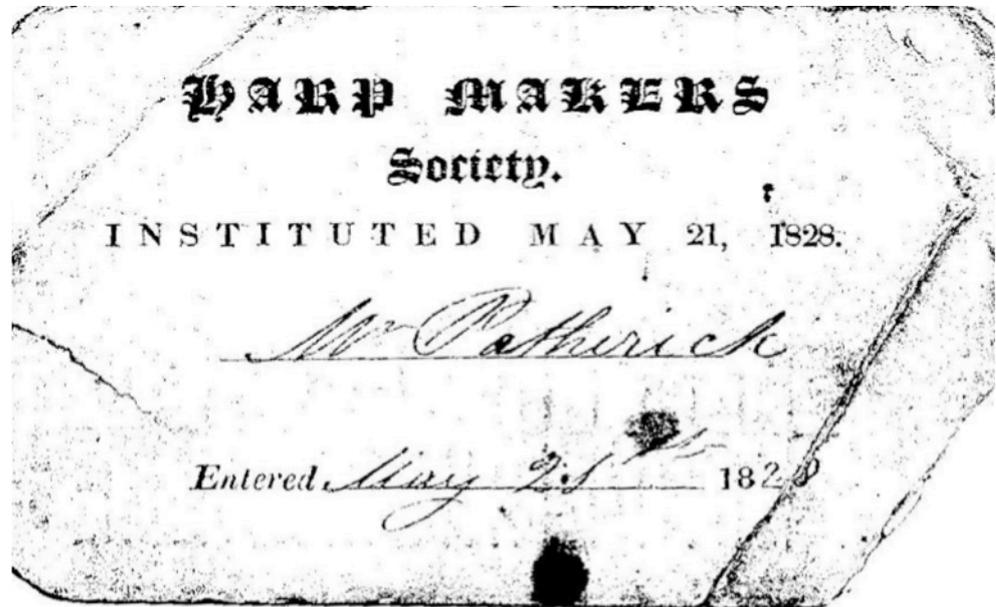
Over the next year Lovett worked in two more shops before finding employment with a cabinetmaker on Castle Street, Oxford Market, close to Erat's Berners Street premises. There he was able to gain sufficient experience to be elected a member of the Cabinet Maker's Society, later becoming its president. He writes that one of the society's objectives, the 'affording of subsistence to their members when out of employment', was worthy of imitation by others.⁵⁴ These societies grew out of earlier guilds. Harp making, in earnest, had only begun in London during the last decade of the eighteenth century and, as such, was not affiliated to one. Furthermore, that Lovett associated 'very drunken dissipated habits' with non-society shops, and that drinking and poor behaviour were features of the Erat employees [see chapter 9], suggests that the Erat workforce was also not affiliated to a trade society.

A surviving trade card shows that a Harp Makers' Society was inaugurated on 21 May 1828 (Figure 8.3).⁵⁵ The members met monthly, at least from 1828 to 1834, and it is likely, although its rules of membership are now lost, to have functioned in a similar way to the various cabinetmakers societies that operated in London and elsewhere. Meeting dates, printed on the back of the card, show that quarterly nights were distinguished from monthly ones, perhaps the society's business was discussed at these times, or maybe these were occasions during which members could raise problems encountered in their workplaces.

⁵³ Lovett (1876), p. 31.

⁵⁴ Lovett (1876), p. 33.

⁵⁵ Harp Makers Society trade card (used by kind permission of the late Clive Morley).



CALENDAR,
 of the Meeting Nights, from 1828 to 1834.

	1828	1829	1830	1831	1832	1833	1834
January ..	*28	27	26	*25	23	22	
February ..	25	24	*23	22	20	*19	
March	25	*24	23	21	*20	19	
April	*22	21	20	*18	17	16	
May	20	19	*18	16	15	*14	
June	17	*16	15	13	*12	11	
July	*15	14	13	*11	10	9	
August ..	*13	12	11	*10	8	*7	*6
September.	10	9	*8	7	5	*4	3
October ..	8	*7	6	5	*3	2	1
October ..					31	30	*29
November .	*5	4	3	*2	28	*27	26
November					30		
December .	3	2	*1	28	*26	25	24
December .	31	*30	29				

N.B. Those marked [*] are Quarterly Nights.

Figure 8.3. Harp Makers' Society membership card.

8.2: Making the harp

By the time of Érard's 1794 harp patent, traditional crafts had been combined with precision engineering to make a complex and beautiful instrument. According to Martin, musical instrument makers required the 'aid of other mechanics': the joiner, turner, cabinet-maker, and wire-drawer.⁵⁶ The machine of the mechanised harp required greater manufacturing accuracy than did the pre-mechanised instrument, and whilst a narrow margin of error could be addressed through regulation, exactitude was essential in both wood and metal.

Except for Willis's diary, no known narrative source describes how harps were made. Contemporary treatises in related fields, such as those by Martin (1813),⁵⁷ Clarke & John (1817),⁵⁸ and Whittock (1828),⁵⁹ discuss the skills and materials used by cabinetmakers, finishers, and composition ornament makers. Three volumes on turning by Charles Holtzapffel (1806-1847),⁶⁰ and a further two by his son John Jacob Holtzapffel (1836-1897),⁶¹ give specific information about specialised harp-making machinery, about forming the harp body, and making the harp machine. As Ann Caroline Holtzapffel (sister of Charles and aunt of John Jacob) married Jacob Erat Junior, their account is likely to be based on observation in Erat's manufactory.⁶²

⁵⁶ Thomas Martin, *The Circle of the Mechanical Arts* (London: Richard Rees, 1813), p. 448.

⁵⁷ Martin (1813).

⁵⁸ Hewson Clarke and John Dougal, *The Cabinet of Arts* (London: T. Kinnersley, 1817).

⁵⁹ Nathaniel Whittock, *The decorative painters' and glaziers' guide* (London: Isaac Taylor Hinton, 1828).

⁶⁰ Charles Holtzapffel, *Turning and Mechanical Manipulation*, vol. 1 (London: Holtzapffel & Co., 1843); vol. 2 (1846); vol. 3 (1850).

⁶¹ John Jacob Holtzapffel. *Turning and Mechanical Manipulation*, vol. 4 (London: Holtzapffel & Co, 1879); vol. 5 (1884).

⁶² Holtzapffel's mechanical and tool making business was established in London in 1794 soon after John Jacob Holtzapffel (1768-1835) arrived from Strasbourg. Initially a partnership with Francis Rousset, and later Johann Georg Deyerlein, it became Holtzapffel and Co. when Charles Holtzapffel joined the business in 1827, following Deyerlein's death. <http://www.holtzapffel.org/biographies.html> [accessed 7 March 2016].

8.2.1: Woodwork

Where French harp makers had built staved bodies, their English counterparts, following Érard's 1794 patent, laminated veneers to form stronger curved ones, which were supported internally by laminated struts. Advances in machinery were directly and indirectly taken advantage of. Pierre Érard, in a letter (10 April 1818) to Sebastien, commented on an innovative veneer-cutting saw:

Yesterday I was in a sawmill (for the veneer on harps), something that really surprised me. The saws are circular, one of them was 19 feet in diameter, turning on the same axle, and set in motion by an engine with the force of 16 horses. [...] The machine is by someone called Brunel, a Frenchman.⁶³

Harp bodies were formed around a mould, known as a caul. Martin treats caul making in general, from solid pieces of wood or of straight pieces 'bent to the proper form by means of saw curfs', as a cabinet making skill.⁶⁴ The caul was oiled to prevent the veneers sticking to it, and heated, presumably to extend working time by keeping the glue fluid. The veneers were screwed to the caul to drive out superfluous glue and to cause them to lie close to the form. Holtzapffel's account of later fitting of the soundboard to an already formed harp body sheds light on the kind of caul used:

When the objects to be glued are curved, the cauls, or moulds, must be made of the counterpart curve, so as to fit them; for example, in glueing [sic] the sounding board upon the body of a harp, which may be compared to the half of a cone, a trough or caul is used of a corresponding curvature, and furnished all along the edge with a series of screws to bring the work into the closest possible contact.⁶⁵

There can be little doubt that the hollow, trough-like caul used for this purpose was the female counterpart of a matched pair, the male former of which would previously have been used to force the veneers, from within, against the lining of the trough when laminating skin of the conoidal body, prior to insertion of the laminated transverse struts (Figure 8.4).

⁶³ Adelson et al. vol. 2 (2015), p. 677.

⁶⁴ Martin (1813), p. 115

⁶⁵ Holtzapffel (1843), p. 62.

The neck and pole (pillar) were made from sycamore. Necks were laminated in three layers, each comprising two or three abutted pieces, arranged to strengthen the weaker short grain (where the curve of the neck is at the greatest angle from the prevailing grain direction) in the outer layers (Figure 8.5). That these were not of standard lengths suggests that off-cuts were used and the locations of the joints altered accordingly. Although the Erats apparently bought poles, it is likely that the vendor, G. Wakelin, was a wood turner, and that they were first prepared and laminated in the Erat workshop to ensure the necessary precision in the cutting of the central shaft that was essential to the successful operation of the pedals (Figure 8.6 and Figure 8.7).⁶⁶

Some makers cut the curved walls of the pedal box from several square, butt-jointed segments of timber, while others bent and laminated thinner pieces. The walls of pedal box of Erat's single-action no. 690 (c1810) sandwich a thick core layer between two thinner ones, bent in a continuous curve (Figure 8.8), while Stumpff's no. 1008 (c1830-1837) is composed of blocks (Figure 8.9).

⁶⁶ 103 feet of inch and a half thick sycamore, 1038 feet of inch, and 220 feet of ½ inch were recorded in the 1824 inventory. EINV. pp. 8 and 10.

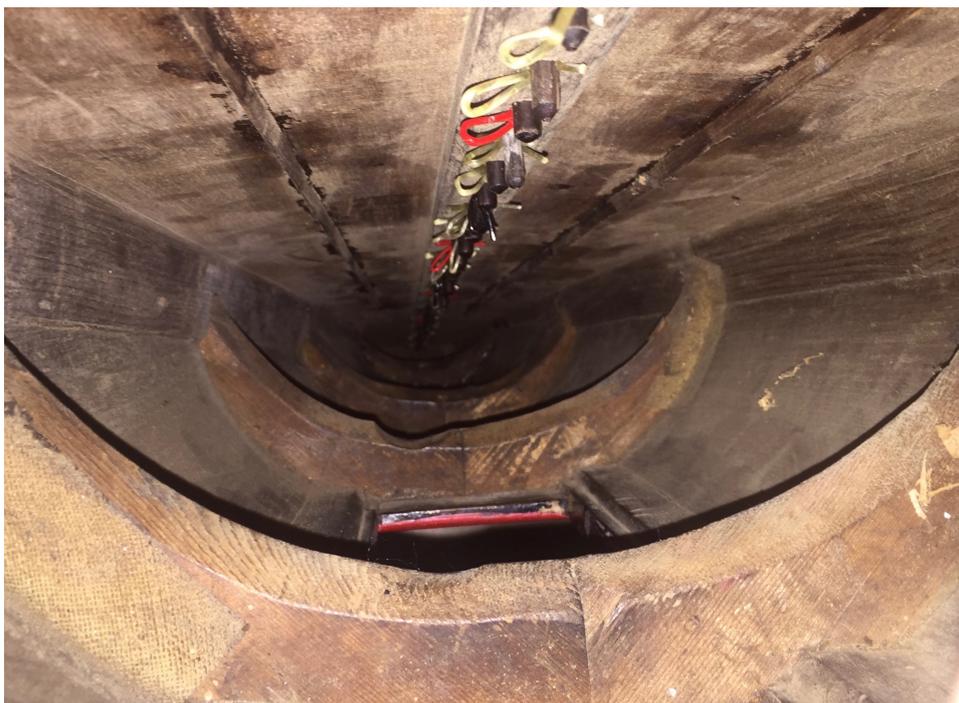


Figure 8.4. Interior of body. Erat single-action (no. 696), c1810, private collection.



Figure 8.5. Portion of harp neck. Erat single-action (no. 696) c1810, showing abutted joints, private collection.



Figure 8.6. Pole showing central shaft and laminations. Stumpff double-action harp (no. 1008) c1830, during restoration, private collection.



Figure 8.7. Top of capital showing pole laminations. Stumpff double-action harp (no. 1008) c1830, during restoration, private collection.



Figure 8.8. Three layered pedal box walls. Erat single-action (no. 690) c1810, during restoration, private collection.



Figure 8.9. Pedal box, walls made wooden blocks. Stumpff double-action harp (no. 1008) c1830, during restoration, private collection.

The processes and tools used to make the timber parts of the harp were common to cabinetmaking too. Although few woodworking tools are listed in the Erat inventories, information about materials indicates those needed. Timber was purchased in standard commercially sawn sizes in half-inch increments of thickness. The best saws were made of tempered steel ‘ground bright and smooth’ which are stiffer and finer than ‘those of iron [that are] only hammer-hardened.’⁶⁷ Martin describes a number of hand saws, most of which would have been essential to the harp maker: the tenon saw, ‘with its back to keep it from bending’, used for joinery; and the compass saw, used for cutting curves, ‘hence the edge made broad, and the back thin, that it may have compass to turn in’.⁶⁸ It is likely that the bow saw was used to shape the tighter curve of the neck.

Two planes, the type not recorded, are listed in the 1821 and 1824 inventories. A jackplane, for coarse work, would have been used to remove large amounts of wood, a jointing plane for flattening surfaces, such as those of the pieces that made up the neck, and a smoothing plane used for fine work. Again, harp makers could have taken advantage of technological advances: Mr Bramah’s newly invented machine plane produced ‘straight, smooth, parallel surfaces, and curvilinear surfaces on wood, and other materials, requiring greater accuracy, in a more perfect and expeditious manner than can be done by hand [and could be] worked by animal, elementary or manual force.’⁶⁹ The timber was cut by ‘a great number of cutting instruments’ mounted in a horizontal wheel which revolved around a fixed, vertical axis.⁷⁰ The wood (or other material) was placed on a moveable frame that could be moved under this cutting wheel.⁷¹

⁶⁷ Thomas Mortimer, *A General Dictionary of Commerce, Trade, and Manufactures* (London: Richard Phillips, 1810). See section on saws.

⁶⁸ Martin (1813), p. 523.

⁶⁹ Martin (1813), p. 481.

⁷⁰ Baron Charles Dupin, *Mathematics Practically Applied to the Useful and Fine Arts* (London: Tait, 1827), p. 106.

⁷¹ Bramah’s ingenuity was such that his machine could even plane iron with a revolving cutter. Robertson Buchanan, *Practical Essays on Mill Work and Other Machinery* (London: John Weale, 1841), xlii.

8.2.2: Metalwork

The division of labour amongst Erat's workforce shows that making the metal parts of the harp required a different set of skills from the wooden ones. It is likely that the course smiths worked in the forge, and were responsible for processing raw materials to make forged components such as pedals. Cast components, such as pedal fulcra, may have been bought in. The men who made the harp machine, a more skilled job, probably both made and assembled its components. The 1824 Erat inventory lists four lathes, their type not recorded. Other harp makers used lathes made by Holtzapffel: in 1810, Érard purchased two, one number 4, and one number 5.⁷² The 1847 Stumpff auction catalogue indicates that he too had a Holtzapffel lathe, but doesn't record which model.⁷³ Holtzapffel, a leading tool and lathe maker, probably supplied Erat's lathes, conceivably of the same types as Érard's. One was described in an 1834 newspaper advertisement:

TO AMATEUR TURNERS. – A Gentleman's TURNING LATHE to be SOLD, of the most modern construction, with iron bearer, triangular bar, screwwork and overhead motion, with two oak packing cases, with arrangements for readily packing all the different parts for travelling, &c. Also a Mahogany Cabinet with 200 turner's tools, and a mahogany bench with joiner's tools. Apply at 23 Berners-street, Oxford-street.⁷⁴

Of lathes Martin writes:

The lathes used by wood turners are generally made of wood, in a simple form, and are called bed-lathes, the same kind will serve for turning iron, or steel but the best work in metal is always done in iron lathes, which are usually made with a triangular bar, and are called bar-lathes.⁷⁵

The triangular bar of the lathe sold by Erat confirms that it was for turning metal; that the Erats bought harp poles (forepillars) confirms that turning was restricted to metal parts of harp machines. We do not know why the Erats sold this machine. It may be

⁷² LMA. CLC/B/121/MS09475, Register of lathes made by Holtzapffel (1798-1928). These purchases coincided with Érard's patent for double-action harp indicating that they were arranging the workshops for manufacture, and that no. 4 and no. 5 lathes were necessary to make them.

⁷³ Johann Andreas Stumpff, *Auction catalogue of Johann Andreas Stumpff's effects* (1847), bound with letters and papers relating to the ownership of Mozart quartets, British Library, Ms. Add. 37766, ff. 1, 3.

⁷⁴ 'To Amateur Turners,' *The Morning Post*, 19,804, 29 May 1834, p. 1.

⁷⁵ Martin (1813), p. 548.

that they had bought a new one, or it may indicate a contraction in demand for harps and consequently in the size of their business.

Charles Holtzapffel noted that 'In the manufacture of harps there is a vast quantity of small drilling'. He describes a lathe-mounted 'harp maker's drilling machine', equipped with an adjustable depth stop that could drill multiple pieces simultaneously. This was certainly used for drilling holes in the mechanism plates, and possibly for the timber parts of the harp too. The workman operated a lever with his back, guided by a template for precision,⁷⁶ leaving his hands free to manoeuvre the work.⁷⁷ Where a square or rectangular hole or mortise was needed in sheet metal, a harp maker's punch was used to enlarge a drilled hole (Figure 8.10).⁷⁸

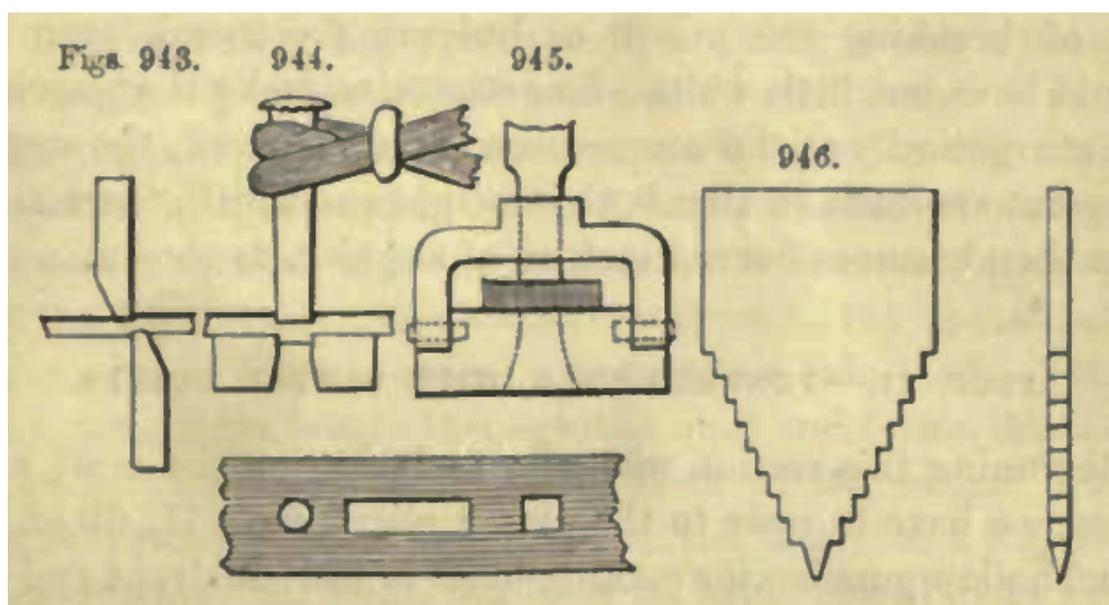


Figure 8.10. Holtzapffel's harp-maker's punch (drawing no. 946), Holtzapffel (1850).

Holtzapffel described the precision with which the harp plates were made. First they were planed and scraped, then the mechanism was fitted and the axels ground into their holes, presumably these were drilled before the initial planning and scraping. Next they were planed again and polished, first with charcoal, then with flour emery

⁷⁶ Holtzapffel (1846), p. 891.

⁷⁷ Holtzapffel (1850), p. xx.

⁷⁸ Holtzapffel (1846), p. 930.

dusted onto the plates from a muslin bag and rubbed with a small, baize-covered square of timber, and then with rottenstone applied with a woollen-cloth-covered rubber. The plate was washed and dried before being finished with a dry buff rubber and more rottenstone.⁷⁹ The pivot holes were then cleaned out with a feather, lightly coated in dry whiting, before a protective varnish was applied.⁸⁰

Square tuning-pin heads were cut using another Holtzapffel device that applied two thick saws to one end of the pin. The distance between these could be adjusted and fixed to set the size of the head for production in large batches, and to ensure they all fitted the same tuning key. The pin was presented to the two saws, the second of which cut at right angles to the first.⁸¹ The mechanisation of workshops was an important factor in developing the precision necessary to make the late Georgian harp.

8.2.3: Ornamentation, decoration, and finishing

The making of composition (compo) ornaments, three-dimensional decoration applied to the harp column, was a specialist skill. Compo makers are described in directories as frame makers, although some were employed in the manufacture of architectural decorations. In 1810, Érard chose one such craftsman, George Jackson, to decorate the first 50 of his new double-action instruments, paying -/24/- per harp. Jackson, whose father, Thomas is credited with the invention of compo, reputedly in conjunction with Robert Adam (1728-1792), made decoration for other harp makers such as Thomas Dodd and Alexander Barry.⁸² Martin (1813) gives a recipe for compo:

[...] to two pounds of whiting and one pound of glue, half a pound of oil is added. These are placed in a copper and heated, stirring it with a spatula till the whole becomes incorporated. It is then suffered to cool and settle; after which it is taken and laid upon a stone covered with powdered whitening and beaten till it becomes of a tough and of a firm consistence. It is then put for use, covered by wetted cloths to keep it as it is called fresh.⁸³

⁷⁹ 'Rottenstone, which is used in polishing different substances [...] seems owing to a decomposition or change in which the shale limestone undergoes in some places, or on near to the surface.' John Farey, *General View of the Agriculture and Minerals of Derbyshire*, vol. 1 (London: Sherwood, Neely, and Jones, 1815), p. 231.

⁸⁰ Holtzapffel (1850), p. 1039.

⁸¹ Holtzapffel (1846), p. 793.

⁸² V&A. Archive of Art and Design, AAD/2012/1/2/1, George Jackson's Accounts (1812-1818).

⁸³ Thomas Martin, *The Circle of the Mechanical Arts* (London: Richard Rees, 1813), p. 491.

Compo moulds, typically of boxwood, were commonly reverse-carved (carved in relief). The mould maker planed and smoothed the timber block before marking out the design. It was then oiled before cutting with fine, sharp gouges, some as narrow as one-twentieth of an inch. The maker could copy an existing mould or, judge how deep to carve the mould guided by eye.⁸⁴ To make one in brass, copper, pewter, lead, or sulphur, a plaster or composition model was made and the mould was cast from it. Brass ones, made in this way, could be further carved or scratched to add fine detail. The 1824 Erat inventory notes three brass moulds, valued at £3 (20/- each), and eight wooden ones at 10/- each. Used in combination, these represent a small range of those required to decorate Erat's harps (Figure 8.11).

Erat purchased composition ornaments, including long lengths of 'bottom moulding' (-/3 per foot), 'small strap' (-/1 per foot), and 'pine ovolo' (-/2 per foot), from W. H. Freeman.⁸⁵ Occasional purchases include a 'set [mirrored pair] of seahorses' (-/3/6) and a 'rams head' (-/6), which were common on English single-action harps. That caryatids, acanthus flowers and leaves, and cherubs with lyres, copied by Erat from their competitor Érard, are absent from the record suggests that they were made in their workshop.

The move from carved ornaments to those of composition was evidently motivated by cost: compo ornaments were quicker to make and easier to reproduce removing the need for a long and laborious stage of harp decoration. Whilst many of Érard's composition moulds survive (Appendices 8.2 – 8.5), only one or two can be attributed to the Erat Company (Figure 8.12 and Figure 8.13).

⁸⁴ 'Composition Ornament Making', *The Magazine of Science and School of Arts*, 2 (London: Brittain, 1816), p. 271.

⁸⁵ End of year accounts for December 1821 and 1822. EL. pp. 149-150 and pp. 312-313.



Figure 8.11. Composition ornaments on Erat single-action harp (no. 696) during restoration, private collection



Figure 8.12. Reverse-carved, lion-couchant mould (one of a pair), Erat (c1805), private collection.



Figure 8.13. Reverse-carved, acanthus-flower mould, Erat (c1815), private collection.

Harp finishing, like that of ornament making, was a specialist task, and the finisher needed patience, a good understanding of colour and pigments and, being the final process, excellent attention to detail. That the Erat brothers were responsible for this indicates that they oversaw quality control. A wide range of colours was achieved by japanning, the process of ‘covering bodies by grounds of opaque colours in varnish, which may be either afterwards decorated by painting or gilding, or left in a plain state.’⁸⁶ First the surface was brushed evenly with hot size, and then it was primed. Next it was sanded with the finest paper, and a water polish was applied and then a coloured ground.⁸⁷

Blue grounds could be achieved with Prussian blue, verditer glazed with the same, or smalt (as used by Erat) mixed with shellac, and then brought to a shine with five or six layers of seedlac. Reds could be made using different pigments which were glazed with Indian lake dissolved in spirit: vermilion glazed with carmine, fine lake or rose pink produced scarlet; and glazing with Indian lake dissolved in spirit produced a bright crimson. King’s yellow, sometimes mixed with Dutch pink (Erat employed both) produced a bright yellow; king’s yellow mixed with bright Prussian blue made a green ground, and a ‘fouler’ (less bright) green was made by mixing verdigris with Dutch pink. Crystals of verdigris (distilled verdigris) laid on gold leaf produced a very bright green. Mixing lake and Prussian blue made purple grounds; and omitting the lake while adding vermilion produced a darker version. Ivory black or lamp black mixed with shellac produced a black Japan ground which could be varnished with seedlac.⁸⁸

Holtzapffel described in detail how the Erats finished their harps. First the wood was painted with up to six layers of white, hard varnish to seal the pores. When dry, it was sanded with fine glass paper and decorated before eight to ten coats of varnish were applied, every third coat abraded with fine glass paper to remove the brush marks.⁸⁹ Once hard, the varnish was polished with ‘pumice-stone powder and water on woollen

⁸⁶ Nathaniel Whitlock, *The Decorative Painters' and Glaziers' Guide* (London: Isaac Taylor Hinton, 1827), p. 91.

⁸⁷ Whitlock (1827), pp. 92-93.

⁸⁸ Whitlock (1827), pp. 96-99.

⁸⁹ Surviving instruments suggest that by 1846, when Holtzapffel published this description, timber finishes were more popular than coloured ones had been in vogue during the first quarter of the century. The application of a coloured pigment, an extra stage, would have taken place before varnishing.

rags', left for a day or so, and then further polished with yellow tripoli and water. After the surface was washed clean, a further polishing stage took place, this time with tallow and wheat flour, and finally the harp was cleaned with an old silk handkerchief. Holtzapffel tells us that:

[...] the tripoli used by the Messrs. Erats, from whom these particulars were gathered, was obtained from the earth removed in digging the canal in the Regent's Park, London; the dry lumps when cleared from the clay by which they are surrounded, are of a light brown yellow, and as hard as a stone, so as to require to be crushed with a hammer previously to being ground.⁹⁰

Faux timber finishes were popular, as demonstrated by the painted imitation rosewood ones listed in Erat's ledger, these presumably being cheaper and easier to execute than veneered ones. Whitlock advised that the grainer should procure rosewood veneers for copying. He instructed that the chosen surface should first be painted a rose red (vermilion lake mixed with flake white). When dry, nearly opaque Vandyke brown should be spread over the red and then beaten against the grain with a dry tool. A leather-tipped stick could then be used 'with great freedom' to make veins and knots. A darker tint of Vandyke brown was then applied to pick out the grain before a badger-hair brush was used to soften the effect, 'and when varnished the imitation will be excellent' (Figure 8.14).⁹¹

⁹⁰ Holtzapffel (1846), p. 1101. Tripoli is an alternative name for rottenstone.

⁹¹ Whitlock (1827), p. 40.



Figure 8.14. Imitation rosewood, Whitlock (1827).

'Gilding on wood, both in oil and burnish, is at present at its highest perfection, and is executed in London, better than in any other part of the world.'⁹² Martin, writing of the gilding process in general, described the application of gesso to the wood before burnished gilding: fine powdered whiting should be added to a pint and a half of strong size and whisked with a brush until they formed the consistency of thick cream. This should then be mixed in small batches in equal parts with more strong size to make 'thin whiting'. Once the surface for gilding had been moistened with a sponge and hot water, thin whiting should be applied, and burnished when dry. Four coats of the thicker whiting should then be painted on and allowed to dry before the next is added. A sixth coat is then applied in a 'smooth, even, and flowing manner'; whilst still wet, the flat parts should be rubbed down with a chisel the concave parts with a gouge, and the convex with fingers. Superfluous whiting can then be removed with a chisel or gouge.

⁹² Martin (1813), p. 212.

A final seventh coat should then be applied; the hollows and rounds rasped with shaped pumice stone and the flats with a flat piece, the surface being kept damp with a sponge and excess water sponged off. Fine polishing could then be done with moistened linen wrapped around lime-wood or fir. In summer, the object could be placed in the sun to dry; in winter, it should be placed before a fire.⁹³

Before gilding could take place, the surface should be painted with an emulsion of one part strong size to four parts water, mixed with a piece of yellow stone ochre double the size of a large walnut. When dry, it should be sanded with 'half worn out' glass paper. Two coats of gold size should then be applied and later rubbed with a burnishing stone before the application of another. The parts to be burnished (the raised bands on the harp pillar, for instance) should be painted with a reduction of size (to concentrate it) mixed with two teaspoons of water, and the gilder could then lay on the gold using a cushion, knife, and tip. The work should be kept wet using a camels-hair pencil for small parts, and a swans quill one for larger, directly before the gold was laid on, starting with hollows and flats which must be dry before the other parts are addressed.⁹⁴

⁹³ Martin (1813), p. 213.

⁹⁴ Paraphrased from Martin (1813), p. 214.

8.3: Summary

Erat's workforce was arranged into distinct roles in three main departments, focusing on woodwork, metalwork, and finishing. Employees changed roles within departments, and might migrate between them, indicating that some were multi-skilled or acquired new skills while employed. While some employees remained for many years, others moved between makers or left to become self-employed. Erat employed fewer men than Érard; he used regulations to manage his workforce, and those who did not live up to expectations or who misbehaved were sacked, although certain behaviours – practical jokes and occasional drunkenness – were apparently tolerated.

Journeymen were a necessary part of the workforce, and fluctuations in the total wage bill indicate that employees were hired or laid off according to demand. That both Erat and Érard employed cabinetmakers as well as apprenticed harp makers shows that not all aspects of the trade were specialised. Fluctuations in the average weekly wage bill indicate flexible employment practices, and the national economic climate, influenced by the Napoleonic Wars, directly affected wages.

Harp makers commonly served apprenticeships; their terms, similar to those in other industries, changed little during the nineteenth century. Although the formation of a Harp Makers' Society in 1828 suggests the beginnings of unionisation, it is not known whether any of Erat's men were members. It is likely, by analogy with other trades, that whilst some were union members, others were not.

The making of the English harp, a complex and precision craft, was made possible by developments in machinery during the industrial revolution. Whereas the making of metal parts required bespoke processes, specialised tools, and machinery, the wooden parts shared many processes and tools with cabinetmaking. Surface finishing involved several processes: japanning, gilding, and varnishing were undertaken in house, while others, such as composition ornament making, were subcontracted to outside specialists.

Chapter 9: Robert Willis, Jacob Erat, and the harp

9.1: Introduction

This chapter concerns the innovative development of a harp, and the collaboration and competition between its makers. It traces, through his workshop diary,¹ the design and patenting of Robert Willis's harp with the support of Jacob Erat and his workforce. Covering a period of fifteen months, between 21 October 1819 and 21 January 1821 (finishing three weeks before Jacob Erat's death), and comprising 293 entries over 115 pages, the diary affords information about Erat's organisation and workforce, whilst detailing the collaboration between an inventor (Willis) and a manufacturer (Erat) (Figure 9.1 and Figure 9.2). The costs of development and manufacture noted allow Pierre Érard's hugely exaggerated claims regarding the cost of innovation to be debunked. Willis's account of others' innovations, and his visits to the Attorney General to defend his patent, show the fierceness of competition between harp makers.

The illegitimate son of Dr Robert Darling Willis (physician to George III),² Robert was only 19 years old when he patented a new means of doubling the harp's action.³ Nine years after Sébastien Érard had patented what was then considered the zenith of harp innovation (see Chapter four), with the help of Erat and his craftsmen, Willis set about perfecting what some already considered perfect.

¹ CUL. MS Add. 7574, Robert Willis's Diary (21 October 1819 - 21 January 1821).

² Francis, Willis's paternal grandfather, also treated George III during his 'madness'.

³ Robert Willis, *An improvement or improvements upon the pedal harp* (London: HMSO, 1819).

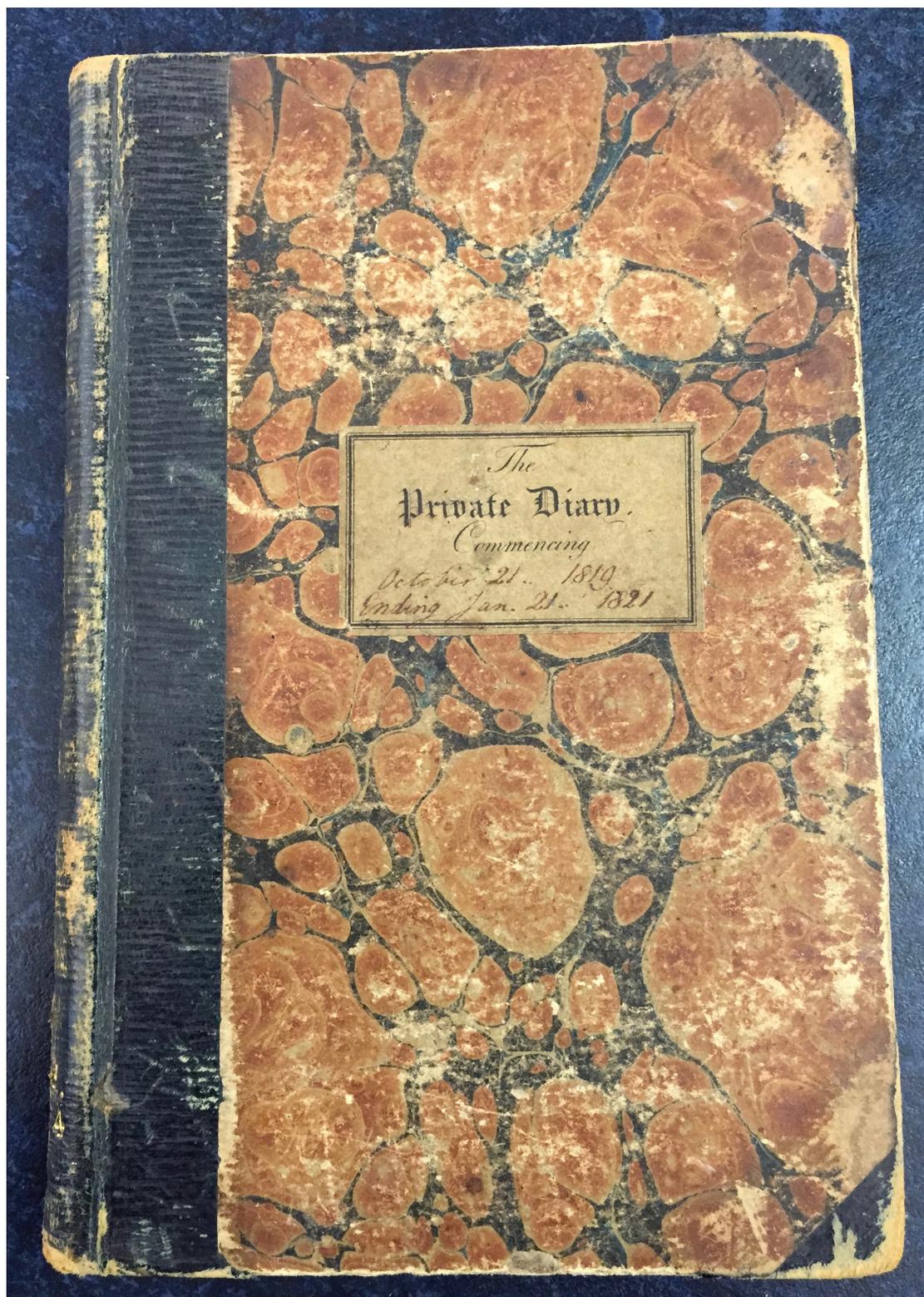


Figure 9.1. Robert Willis's Diary.

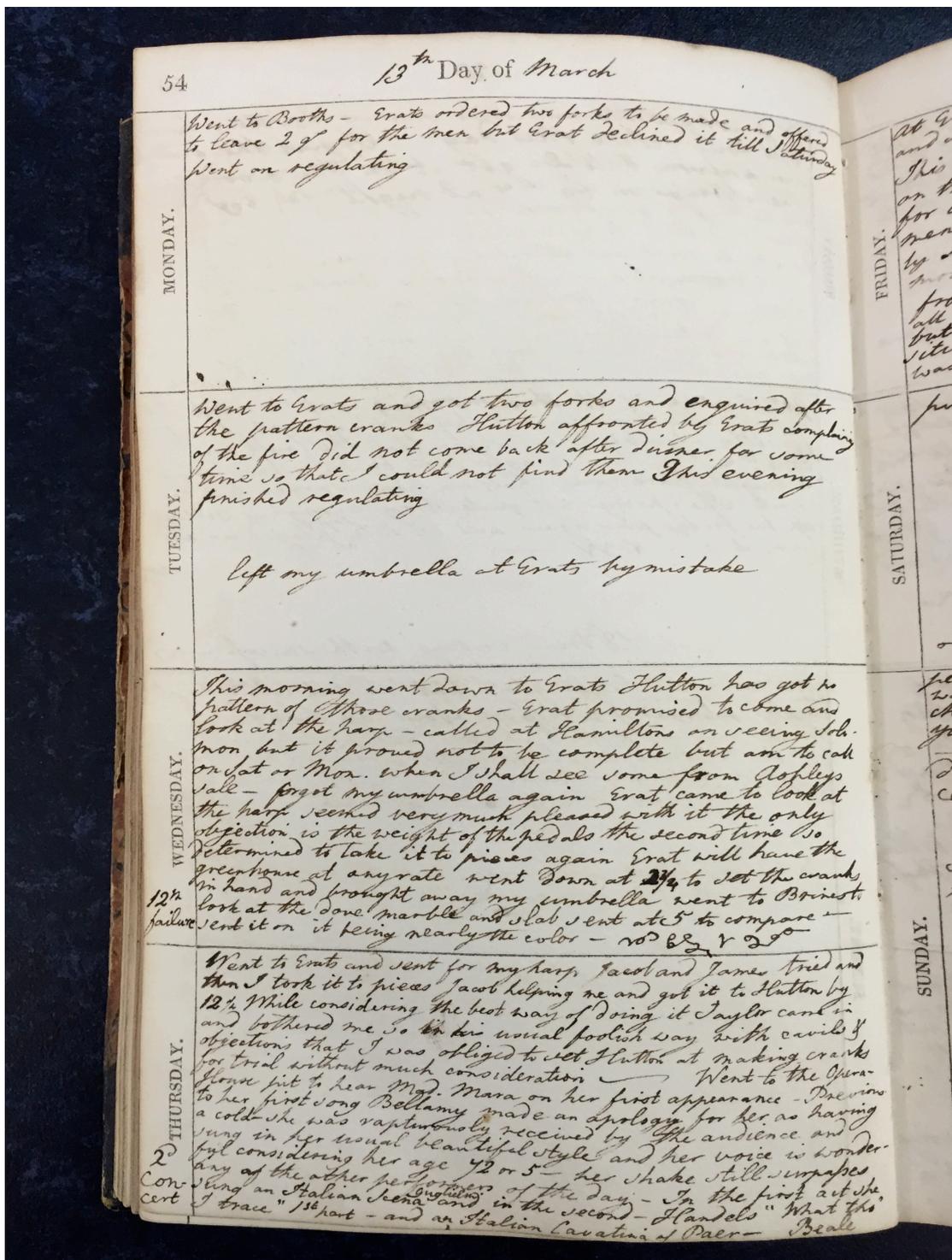


Figure 9.2. Sample page from Robert Willis's diary. WD, p. 34.

The diary, besides detailing work on the harp, illustrates intellectual curiosity; his interest in a range of mechanical developments, including Boynes's patent gig,⁴ and de Kempelen's automaton chess player is noted,⁵ as are his harp and violin lessons with a Mr Taylor,⁶ including one that lasted four and a quarter hours.⁷ Drawing lessons with a Mr Glover are recorded,⁷ as is interest, supported by Hullmandel,⁸ in lithography.⁹ Willis, a bibliophile, bought texts on archaeology, astronomy, Egyptology, geometry, geology, grammar, Greek, horology, mathematics, and travel.¹⁰ Despite – or perhaps because of – his paternal links to the monarchy, he displayed antiroyalist tendencies. On 7 May 1820 he penned a parody of Handel's Coronation Anthem, *Zadok the priest* (Figure 9.3).

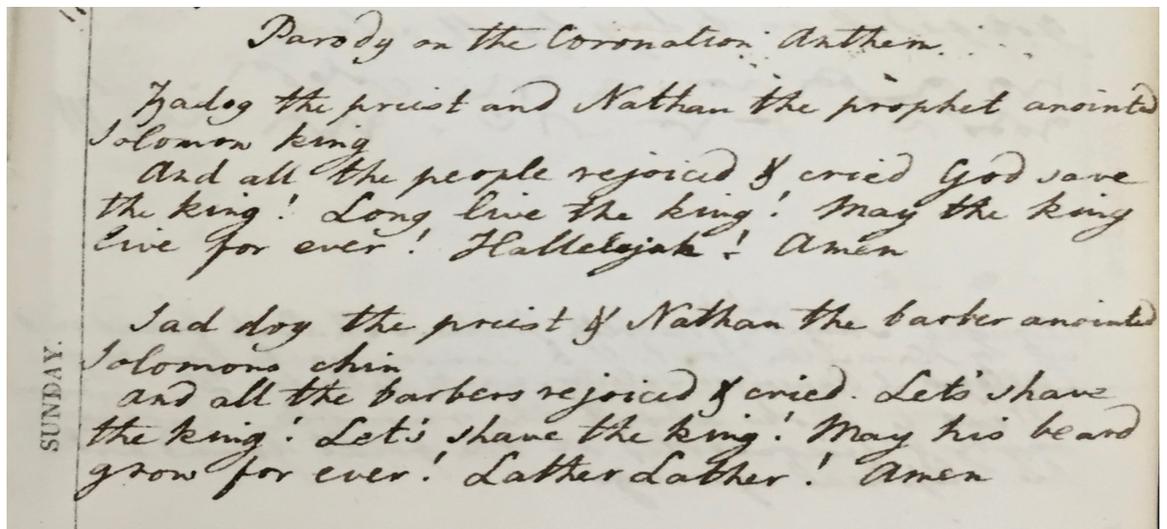


Figure 9.3. Willis's parody of Handel's coronation anthem. WD. p. 69.

⁴ WD. p. 84. 'On going through the city called to look at Boynes patent gig without horses it is impelled by a couple of wooden legs moved by treadles a very good plan.'

⁵ WD. pp. 86, 88 & 93.

⁶ WD. p. 87. 'Taylor having taken away our violin for the purpose of stringing it up took it by permission to a maker to have the finger board raised - they say it is not a Stadivarius but a Gugliaroni or Gugliani?' The violin was reset, as was typical of this age, to play louder and with higher tensions strings.

⁷ WD. p. 14.

⁸ In 1819, Charles Joseph Hullmandel (spelt Hulmandel in the Diary) (1789-1850) traded at 51 Great Marlborough Street. One of the leading lithographic printers of his day, he developed a method for printing gradations in tones, a system used by W. M. Turner in the reproduction of his paintings. Michael Twyman, *Hullmandel, Charles Joseph (1789-1850)*, in *Dictionary of National Biography* (Oxford University Press: Oxford, 2004), also "*Charles Joseph Hullmandel (Bibliographical details)*" http://www.britishmuseum.org/research/search_the_collection_database/term_details.aspx?bioId=120405 accessed 21 August 2015.

⁹ WD. p. 93.

¹⁰ WD. p. 78. Willis's expenditure on books was extravagant. On 8 and 9 June 1820 alone, Willis spent £59/12/6 on them. Among his collection were volumes by Tacitus (£10), Cicero (6 guineas) and Plini (£4/14/6).

Willis abandoned harp making in 1822 when he became an undergraduate at Gonville & Caius College, Cambridge.¹¹ A prodigious engineer, he was to go on to become the Jacksonian Professor of Natural and Experimental Philosophy there.¹²

Exactly when Willis started working on the harp is unclear. Pierre Érard's letter of 15 October 1818 to Sébastien provides the first evidence of it: 'Someone named Willis, who I had never heard of, is requesting a patent for certain improvements upon the harp. Of course I am opposed to this!'¹³ In a letter of 8 January 1819, Pierre links Willis and Erat for the first time, revealing a little about Erat's patent intentions: 'The patents of Willis and Erat against which I filed complaints are still on hold as the Attorney General has not yet made up his mind.'¹⁴ The pairing of Willis and Erat may indicate that their working relationship had already begun, but Pierre does not explicitly state that the well-established 62-year-old maker was helping the young polymath. On 28 April 1819, Pierre wrote: '[A] young man named Willis, who has no idea of instrument making, has just taken out a patent, he is supposedly going to make the neck half the thickness of yours, by placing the mechanisms one on top of the other, instead of putting them on the same plane!'¹⁵ Although Pierre knew of Willis, it is not clear that he knew what he was doing; there is no indication in the diary or patent that Willis intended to construct his machines in such a manner. On 9 July 1819, Pierre wrote to Sébastien: 'The patent from a young man named Willis has not yet been published. As soon as possible, you will

¹¹ Gonville & Caius College is normally shortened to Caius (pro. Keys) College. <https://www.cai.cam.ac.uk/study>

¹² Willis graduated from Gonville & Caius College, Cambridge in 1826 when he was elected a 'Frankland Fellow'. He later became an Anglican Priest. His interest in mechanical problems was not abandoned however; in 1830 he was made a fellow of the Royal Society in 1830, and in 1837 he succeeded the Rev. W. Farish as Jacksonian Professor of Natural and Experimental Philosophy at Cambridge, holding the position until his death in 1875.¹² Willis, a contemporary of Charles Babbage, made drawings of Babbage's difference engine in one of his sketchbooks. He was elected an honorary member of the Institution of Civil Engineers in 1838, and in 1849 was appointed to a Royal Commission examining the use of iron in railway structures, and in 1855 he was the vice-president of the Paris Exhibition. Willis published on a wide range of subjects, his papers including, *An Attempt to Analyse the Automaton Chess Player, of Mr. de Kempelen* (1821), *On the vowel sounds, and on reed organ pipes* and *On the mechanism of the larynx* (1829), *Remarks on the Architecture of the Middle Ages: Especially of Italy* (1835), and *On the Teeth of Wheels* (1838). In 1841 he published his *Principals of Mechanism* followed by *On Machines and Tools for Working in Metal, Wood, and Other Materials* in 1852; through-out his life, he wrote architectural histories of many cathedrals including, Canterbury, Chichester, Worcester and York, Glastonbury Abbey, and, the church of the holy sepulchre, Jerusalem.

¹³ Adelson et al. vol. 2 (2015), p. 693.

¹⁴ Adelson et al. vol. 2 (2015), p. 700.

¹⁵ Adelson et al. vol. 2 (2015), p. 714.

have the drawings'.¹⁶ Pierre, although he had not yet seen Willis's patent, was nonetheless concerned enough to oppose it.

Harp making, at least for Érard and Erat, both of whom were prolific, had been lucrative. Where other makers struggled, perhaps arriving too late to the industry to compete, these two had thrived. In associating himself with Erat, Willis had chosen an excellent mentor. Their relationship, though sometimes rocky, was financial: Willis paid Erat for his time, expertise, machinery, and materials; and Erat, as the diary shows, was not averse to borrowing Willis's ideas.

It appears that an investor had approached Willis. According to Pierre Érard, writing on 3 November 1818: 'The petitioner [Willis] is a young man of twenty, and his partner who is his financier, a bookseller!'¹⁷ Willis's financial backer was probably John Booth (1769-1840), bookseller of Duke Street.¹⁸ Booth is named in 47 of the diary entries, mostly in relation to Willis's interest in book collecting.¹⁹ Booth accompanied Willis to at least one meeting with the Attorney General regarding a competitor's patent attempts, a curious thing to have done if an uninterested party. By investing, Booth, 30 years Willis's senior, demonstrates that he believed in the technical ability of his younger partner.

In the diary, Willis uses technical terms to name harp components. Some are specific to harp making, others are explained in his patent, and a few are defined in his later seminal work, *Principals of Mechanism* (1841). His patent describes a bridge pin as forming 'the termination of the vibrating part of the string'; 'arbor' (sometimes spelt arbour in the diary), (a shaft) provides 'centres of motion to [...] levers or arms'; leaders (referred to as leading wires or bars in his book) connect the cranks, and a crank is defined 'a two-armed piece or bent lever'.²⁰ 'Mechanism'

¹⁶ Adelson et al. vol. 2 (2015), p. 724.

¹⁷ Adelson et al. vol. 2 (2015), p. 695.

¹⁸ According to Donald J. Reiman, a letter from Leigh Hunt to Booth, dated 17 September 1816, gives his address Duke Street, Portland Place. *Shelley and His Circle, 1773 - 1822*, ed. by Donald J. Reiman, vols. 7-8 (Cambridge, Massachusetts: Harvard, 1986), p. 70.

¹⁹ WD. pp. 13, 14, 17, 22, 26, 28, 29, 37, 40, 42, 44, 46, 47, 48, 50, 52, 54, 56, 58, 62, 64, 84, 88, 90, 91, 93, 107, 112, 114,

²⁰ Willis (1841), p. 193.

refers to ‘combinations of machinery [...] governing the relations of motion’,²¹ and Willis identifies that of the harp as both ‘link-work’, and ‘bell-crank work’, in common with that of the organ and the hanging of bells.²² Although the term ‘links’ is not defined, their name is self-explanatory to those versed in harp making – these, named levers or arms by Willis, linked the moveable bridge pins of a particular note in order to change the pitches of the corresponding strings. His explanation of ‘link-work’ adjustment, ‘[...] very simply made by drilling holes in the arms and shifting the joint-pins from one to another [...]’,²³ offers some insights in to how his mechanism was prototyped.

9.2: The Diary of Robert Willis

Selected extracts from Willis’s diary, with analyses, follow in order to tell the story of Willis’s harp developments, and his work in Erats workshop (a full transcription of the diary can be viewed in Appendix 9).

9.2.1: September 1819: ‘Mr E [...] positively declared the necessity of constructing a finished instrument’

On 26 September 1819, in his first diary entry, Willis indicates that his harp was already well advanced.²⁴ He does not describe his prototype, or the initial design process; whether working drawings were made is not stated, although his patent includes technical drawings of his mechanism. It is possible, that working in the Erat manufactory with the support of the Erats and their workforce, Willis could have adapted one of their harps; whilst the diary describes his attempts to develop a double-action mechanism, listing various components, and the problems he experienced, very little is written about the woodwork, suggesting that this altered little from those produced by Erat. Indeed, his patent drawings show that his machine joined the head of the harp in the same way used by others, and that the capital was turned with the same or similar profile.

²¹ Willis (1841), p. iiv.

²² Willis (1841), p. 192.

²³ Willis (1841), p. 437.

²⁴ WD. p. 11.

Of his prototype Willis wrote that three pedals were ‘acting beautifully’ and four ‘not acting so well’, and that he hoped it would satisfy ‘Mr E’ [Jacob Erat]. This indicates that a harp was structurally complete, mechanised, and strung, and that Willis believed his prototype was close to completion. Erat agreed; Willis wrote: ‘he looked at it as usual and positively declared the necessity of constructing a finished instrument’, stating that it would have been impossible to convert the prototype. Willis was impatient to finish, and perhaps tired by the prototyping: ‘I was compelled in an evil hour to begin once more a new harp.’ Over the following fifteen months, Willis recorded progress in his diary, from the mechanical experimentation, testing, and failures, to his success in perfecting a new double-action harp.

9.2.2: October 1819: ‘Crankes all drilled on arbors’

On 21 October 1819, Willis records a payment of £17/17/2 to a Mr Abbott ‘for spec’,²⁵ presumably a patent specification, indicating that, whilst he was still perfecting his harp, it was advanced enough to require protection. The next day, progress made on the machine for this new instrument is noted: ‘Plates planed & drilled reg [regulating] screws tapped in Corner piece finished iron crankes forged filed & drilled 5 leaders cut out, crankes cut out filed drilled & fitted on arbours.’²⁵ The woodwork was progressing also; a double soundboard was glued together, a cross soundboard was barred (i.e. the upper and lower string bars had been glued in place), and the pole, today commonly referred to as the pillar or forepillar, was ready for lining.²⁶

Willis was clearly experimenting with different soundboard arrangements. Whilst ‘double’ may refer to two sounding plates rather than the usual one (similar to those that Schwieso was seeking to patent) the diary entry for 30 October refers to both double and single boards, indicating that, in this context, it refers to the harp type.²⁷ ‘Cross soundboard’ is harder to define; it may suggest a laminated board with more

²⁵ WD. p. 13.

²⁶ The pole of the harp was made from laminated sycamore. That it was ‘ready for lining’ reveal that, in this instance, this process was not complete. A fabric lining would have been applied the channel during the laminating stage whilst the timber was still square, and the pole then turned. The wires (pedal rods) would have been inserted into the channel after finishing.

²⁷ WD. p. 15.

than one thin plate of timber (or veneer) glued together at right-angles to make a stiffer, stronger soundboard; it may also indicate a diagonally grained (rather than right-angled) board, and there is evidence that both Erat (Figure 9.4) and Dodd experimented with boards made in this way.²⁸ Two days later the pole was ready for turning.²⁹

By 26 October, the long pillars (turned metal rods that performed a dual role, holding the plates apart and supporting the cranks) were finished, the cranks were riveted and slit (ready to receive the linkages), and the 'small bars' (thin vertical bars used to dampen vibration but more importantly to reinforce the glue joints) were on the soundboard.²⁹ It is clear from the rapid progress that Willis was not working on his harp alone; at least one (though probably more) of Erat's workmen were assigned to the project.

Four days later the short leaders and cranks were finished, and the arbors cut and 'ground into their respective pivot-holes with fine oilstone powder'.³⁰ A double soundboard was made, and was awaiting cleaning before being finished and strung, and a single one was ready to glue-up. Willis noted that Erat's double harp was finished but that the 'pedal jumps badly', and he commented that four springs were housed in the pole, three in the machine, and seven wire ones (presumably corresponding to the seven pedals) at the bottom.²⁷

²⁸ Willis may have believed that the longer diagonal grain would have resulted in a more resonant board, the longer grain enabling more vibration. A systematic analysis of harps with such boards may help us to understand his motivations.

²⁹ WD, p. 14.

³⁰ Holtzapffel (1850), p. 1039.

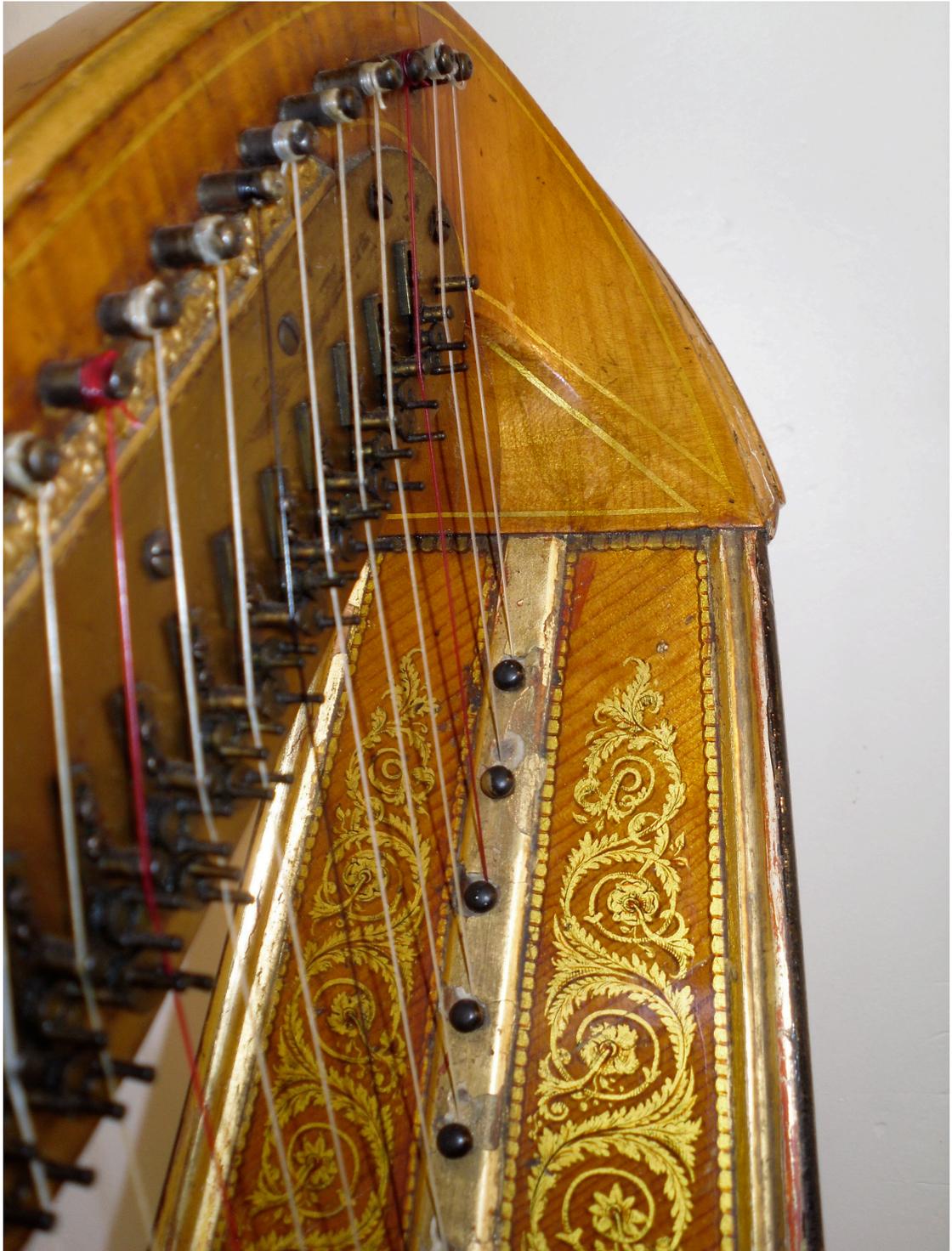


Figure 9.4. Diagonal grained soundboard on Erat double-action harp. Photo used with the kind permission of Sylvain Blassel

9.2.3: November 1819: 'Soundboard pole and plates ready'

By 1 November, the 'leaders [were] all cut out', the soundboard was ready, and the pole and head had come back from the turners, suggesting that unlike on earlier harps, Willis's pole was turned in two pieces and later joined. The following day, the leaders were going on, the arbors were being ground in, and the plates were ready,³¹ and on 3 November the wrest pin positions were marked.³¹ On 4 November, Willis wrote that 'grinding in' was 'retarded by the woodmen wanting the plates the day before', that the double soundboard was strung, its tone being good, but that it was 'drawing too fast';³¹ presumably the pedal action was moving quicker, when activated, than Willis would have liked.

On 5 November, Willis collected his patent specification from Abbot, and began to drill the leaders. In haste, he 'threw down the new soundboard and knocked off the shoulder [from a harp neck] & scratched another body [by] placing it on a bottom temporarily to try it.' That all three components were together may suggest that all of the woodwork was undertaken in one workshop, or that, as indicated by the later inventory of 23 Berners Street,³² Willis was working in a finishing shop where assembly took place. Again Willis praised the tone of the harp but reported it was rather thin in the treble.³³ By the following day the harp was 'hanging together'.

Willis commented on the publication of Bochsa's new instruction book for the harp: 'he gives an history of the harp intended to shew Érard to be the only perfect one and gives drawings of it_'. Willis's tone suggests that he disagreed with the renowned composer and harpist on this matter; indeed, that he was attempting to improve upon Érard's double-action confirms this.

Despite (and possibly because) he was working in his manufactory and employing his workmen, Willis kept a close eye on Erat's developments: 'E [Erat] has only made two of his new harps to open the flat the rest stand as in Érards'.³³

³¹ WD. p. 16.

³² TNA, C110/99, Inventory of Mr Erat's Estate, appraised 9 December 1824.

³³ WD. p. 17.

Work on the harp did not always run smoothly. On 8 November Shorland was prevented from finishing the soundboard ‘for want of swell arches and spring screws’, components of the swell shutters that needed to be fixed in place in the body before the soundboard could be permanently attached to it.³⁴ By 12 November the machine was together, Graham was making the cylinder, and Hutton was forging the springs. One gets a sense that the working relationships between Willis, Erat, and his employees were sometimes strained: ‘Erat accusing me of having offered Hutton 10 pounds to finish the machine quickly I denied it positively upon which he went into the factory and presently coming out of it proved to be all a piece of impudent wit of the men.’³⁵ This suggests that not only did Erat not trust Willis, he could easily be played by his men. The following day, the soundboard was applied to the harp (though Willis doesn’t state whether this was the final fitting) and, evaluating his design ideas, Willis noted that it was ‘no better than the common construction’.³⁴ Two days later Willis asked Hutton to ‘weigh’ his springs noting that ‘It takes about 25lbs to bring it to its place and 45lbs to carry it to the end of its action’. He compared this to clock springs that carry ‘from 8 to 16lbs’.³⁶

Over the following few days Willis wrote that the machine was ‘quite finished’, the springs were going on, that Graham was making the ‘outside work’ (presumably the string bridges discussed in the patent), and that he had given the swell arches to Shorland. On 18 November, Willis gave Shorland the pole and neck,³⁶ indicating that the harp was to be put together, perhaps to allow fine fitting of the joints or to test string alignment, and on the 19th, the outside work (external mechanism parts) was being added. Finding the springs difficult to fit, Willis ‘determined to sacrifice the upper arbor of the great E [Erat]’ showing that not only was he borrowing ideas from other makers, the design and production processes ran parallel, and that experimentation was an important part of these. After dinner, Willis returned to the workshop to ‘string up the soundboard’ showing that it had finally been fixed the body.³⁷

³⁴ WD. p. 18.

³⁵ WD. p. 19.

³⁶ WD. p. 20.

³⁷ WD. p. 21.

Between 20 November and the end of the month, work continued on the machine. The spring pieces were fitted and drilled for the adjusting screws, a tuning key was made, and the plates were filed and finished. A soundboard was ‘tuned up’ and Taylor, Willis’s harp teacher, ‘filed it’, Willis predicting that the tone would be as fine as the other. Tuning up, in this context, probably refers to the thickening of the soundboard; it is clear that it hadn’t been fitted to the harp. It is noteworthy that Taylor was conversant in at least one aspect of harp making. Presumably this was an uncommon skill for a harp teacher. Taylor informed Willis of a new harp being made by Stumpff, and Willis visited Stumpff hoping to see it, but was not allowed. In discussion, Stumpff told him that it had ‘no more work in it than the common single’. This may have been an exaggeration, perhaps in order to mislead and tease Willis; there is no evidence that Stumpff made such a harp.³⁷

On 24 November Willis wrote: ‘the men drinking yesterday afternoon delayed work’, further evidence of staffing problems. That alcohol was purchased by the Erat company, suggests that drinking at work was sanctioned. In 1821 alone, £3/3/8 was paid for gin and rum ‘for the men’,³⁸ but only 3d for beer (a safe alternative to water).³⁹

By the end of the month, when the finished plates were passed to the ‘woodman’, presumably in order to mark their positions and fit to the neck,⁴⁰ progress was once more being made.

9.2.4: December 1819: second, fifth, sixth, and seventh failures

In early December, the harp was nearing completion. On the second, Joyce (presumably an Erat employee) was making the tuning pins and Graham riveting, on the fourth the machine and woodwork were put together and,⁴⁰ by the sixth, the machine was ‘strung up’. The pedals and long wires were scheduled for finishing on

³⁸ ECB, pp. 2, 7, 12, 13, 21, 144.

³⁹ Sixteen payments of £-/2/2½ were made to ‘Charwoman & Beer’ between December 1825 and May 1826, (CB. pp. 150-153). Other payments of £-/2/- (CB. pp. 149-150) to just ‘Charwoman’ suggest that she either provided or delivered 2½d worth of beer on each of these occasions, and that beer was more regularly purchased than the cashbook indicates.

⁴⁰ WD. p. 24.

the seventh, when the neck split ‘for want of veneers and pillars’ and had to be taken apart for repairs – referred to by Willis as his 2nd failure.⁴¹ By 9 December, the harp was together again but was only strung with three strings, and Martin was fitting the long wires (pedal rods).⁴² The following day, most of the outside work had been fitted to the mechanism.⁴³ Erat’s business took priority; on the eleventh, Willis wrote that Erat was ‘so busy as to be unable to finish my harp’.

Whilst Willis was stringing up the harp at home on 15 December, the head pillar broke.⁴⁴ The following day he removed it and got a new one from Erats,⁴⁴ suggesting that some of the components were the same as those used in Erat’s instruments. A new pedal box was made on the seventeenth, the harp was reassembled and strung, but problems continued: ‘the friction was so great as to prevent the springs bringing up the strings when the pedals were all natural and all very heavy.’⁴⁵ Again Willis dismantled the harp, and working from 10am to 1:15pm on 18 December, he greased the pulls, altered the washers, and put the harp together once again.⁴⁵

The ‘5th failure’ occurred on 21 December when an unknown fault prevented the pedals from returning when all were in the sharp position.⁴⁶ The problem, referred to Willis at his ‘6th failure’, was identified as a loose crank cylinder and rectified the following day,⁴⁶ only for a rivet to break when the pulls were being tested on Christmas Eve.⁴⁷ The top plate was removed in order to repair this, but further difficulties occurred when the centre screw was overturned during its replacement, stripping its thread. Willis worked through Christmas Day to resolve this but the screw still ‘yielded’ and was entered in the diary as the ‘7th failure’.⁴⁷ In trying to force the corner piece in place on 26 December, the ‘force & strain began to drive

⁴¹ WD. p. 26. Willis does not tell us what his first, third, and fourth failures were.

⁴² The name ‘T. Martin’ was signed in pencil inside the body of a Stumpff double-action harp (no. 1008) previously owned by the author. It is possible that the ‘Martin’ named in Willis’s Diary, and the ‘T. Martin’ who signed this instrument were the same person, and that he later worked for Stumpff, further evidence of the movement of craftsmen between makers.

⁴³ WD. p. 27.

⁴⁴ WD. p. 28.

⁴⁵ WD. p. 29.

⁴⁶ WD. p. 30. In the space of one month, Willis’s diaries entries recorded his 2nd and 5th failure. That he didn’t record the 3rd or 4th ones in his diary either indicates that they were minor, or that, frustrated by the problems encountered, he chose to not record them.

⁴⁷ WD. p. 31.

the machine out of the wood'. Willis gave up on this solution determining to show it to 'the old man'.⁴⁷

Erat sent for the harp at 4 o'clock on 28 December,⁴⁸ and Willis went to see him the next day. On taking the harp apart, they discovered that the cylinder was soft and bent. 'Erat & Hutton both stated it to an occurrence which has happened to the common [single-action] harps & the old man stated to me that the men often softened the screws for the ease of turning';⁴⁸ the solution was found from the construction of older and simpler harps.

9.2.5: January 1820: 'E did not approve of the experimenting'

In January, the design and prototyping of Willis's harp continued apace. On the 3rd, despite the new cylinder being twice the size of the previous one, the earlier problem reoccurred; Willis labeled this his '8th failure'.⁴⁹ On the 4th he experimented by dispensing with the moveable bridge pins for the silver (wound) strings that answered his expectations but did not remedy the fault.⁴⁹ When Erat viewed the harp the next day, he did not approve of Willis's experimentation but, on realising that it meant 'getting more wood' in the neck (i.e. making it stronger) he 'stated that it removed every objection to the plan'.⁴⁹ Willis ordered new arbors from Dockree, another of Erat's suppliers.⁵⁰

On 13th January, the iron cranks were forged and another pole, the second noted in the diary, indicating it belonged to the second harp, was planed. Erat agreed to put another man on the smith's work, possibly to catch up after a busy period in the manufactory.⁵¹ Dockree delivered the new arbors on the 14th,⁵² a lead-time of eight days indicating that these were non-standard parts and were made to Willis's specification. On the 15th, the new cranks were cut out and Hutton drilled the new

⁴⁸ WD. p. 32.

⁴⁹ WD. p. 34.

⁵⁰ Willis gives Dockree's address as J. Dockree, Brass Turner, Galway St, Bath St, City Road. WD. p. 29.

⁵¹ WD. p. 36.

⁵² WD. p. 37.

arbor holes,⁵² and the pole was ready for turning, and the neck was cut out on the 17th.⁵³

Willis visited Abbot (his patent attorney) on 24 January to oppose Schwieso's patent application,⁵⁴ further evidence that he was taking an active interest of developments by other makers. The next day, back in the workshop, the neck, pole and pedals were finally finished.⁵⁴

The diary entry on 28 January gives further evidence of the relationship between his ideas and designs, and the actuality of making: 'Jacob met me in a great hurry and took me up into the shop where I found a difficulty about the motion of the springs not agreeing with my drawing but I caused Hutton to make some links of different lengths and soon found one to suit.'⁵⁵ Hutton's experimentation was, in effect, a reaction to, and modification of Willis's designs, based on the testing of the later. That is to say, whilst the overall invention was Willis's, Erat and his men, through experimentation such as this, played a significant role in the design of the harp.

Later that day, Erat paid his final settlement for the Berners Street house to which he was soon to move his workshop, and on 29 January he told Willis of his intention 'to write Berners St on the harp now in hand',⁵⁵ the new address, grander than the smaller, older house on Wardour Street showed Erat's customers that this was a company befitting of their patronage. The springs were finished on 31 January, although one broke whilst being tested by Hutton, possibly resulting in an argument; Willis reported that 'Hutton left at 12 and never returned until after breakfast the next morning'.⁵⁶

⁵³ WD. p. 38.

⁵⁴ WD. p. 40.

⁵⁵ WD. p. 41.

⁵⁶ WD. p. 42.

9.2.6: February 1820: 'Went this evening to the Attorney Generals'

As the harp progressed, parts from early prototypes were reused in later ones. On 1 February, Willis took Hutton a spring and five pillars from 'the old harp', and found him stopping up the holes in an old plate. Reusing parts saved time and money, and allowed development of the successful parts of the design whilst dispensing with those that didn't work. Again Willis and Jacob discussed innovations by other makers: 'Jacob having told me that he had seen Schwieso's new harp through the blinds of his house in Tottenham St I came home that way and got a peep at it - two rows of solid forks'. He also received notice of a meeting with Schwieso at the Attorney General's on Monday 7 February at 8 o'clock, about Schwieso's most recent patent attempt.⁵⁶

Willis appears to have had twenty-four hour access to Erat's workshops, suggesting that despite their differences, he was trusted. On 2 February, he worked there from 4 o'clock in the afternoon, to 12 o'clock the next day, grinding in half of the arbors, and returned at 3 o'clock that afternoon to complete the job.⁵⁶ This was the second set of arbors being ground in, an earlier set having been finished the previous November, indicating that a new (perhaps modified) machine was being manufactured, further evidence of design through manufacture. On 3 February, Hutton hung a pull on the machine, and in doing so was able to determine the length of the wires connecting the motion cranks to the springs in the pedal box.⁵⁶ He finished the leaders on the 5th by marking off the position of the pillars and the new screw holes, presumably on the plates he'd earlier stopped; by that evening, the leaders were finished and riveted to the spring crank, and were ready to be riveted to the motion cranks.⁵⁷

On 7 February Willis, accompanied by Booth, stopped his coach at Erat's on the way to his meeting with the Attorney General. They found him to be out. Erat, having heard that neither Schwieso nor Dizi intended to go to the meeting, felt no need to attend either. Erat's solicitor was at the Attorney General's chambers on their arrival. He requested an adjournment of two weeks, 'Erat being alleged to be at

⁵⁷ WD. p. 43.

Paris', and, despite Willis being unconvinced by the reason given, this was duly granted.⁵⁸

By 9 February, the machine was nearly complete. Willis tried the pull, and finding it in need of adjustment, took it to pieces again, labeling this his '9th failure'.⁵⁸ He reassembled it the following day but, finding it lacking, he found it necessary to alter the proportionate length of the cranks and leaders and this, he hoped, had solved the problem. In a rare comment of the Erat family, Willis noted that Mrs Erat was very ill.⁵⁸

On 11 February, the spring, having been filed to weaken it, was replaced with a stronger one but problems persisted. Again Willis dismantled the harp, this time to alter the length of the links. On fitting the machine to the harp neck, the linkages would not move due to one of the arbors being in the wrong hole; once rectified it 'answered to the best of my [Willis's] expectations'. He showed it to the 'old man' but 'he having been laying out his shops &c in Berners St was too tired to care about it'.⁵⁹ The Erats' business had yet to move to their new address, and its founder was undertaking significant building work to accommodate new workshops. For the third time Willis dismantled the harp and, on returning later that night, he found that Hutton was working on it, and had the links ready for brazing. The following day the links were brazed, the cranks and leaders were finished, and Hutton set about cutting the plates 'a little more', suggesting that their final shape was still undecided. Willis 'set the wood in hand' and made a new piece to go under the pole,⁶⁰ and 'a new rim to the bottom'. Later he discovered, 'two of my soundboard glued up which the old man said he was going to try but which I should probably have known nothing about if I had not seen them by chance',⁵⁹ further demonstrating that Willis's soundboards were made differently from those by Erat who was more than happy to 'borrow' his developments. By the end of the day, the

⁵⁸ WD. p. 44.

⁵⁹ WD. p. 45.

⁶⁰ The poles of Erat's harps sat on a small, square plinth that in turn sat upon the lid of the pedal box. Willis appears to have adopted a similar construction.

plates were finished and the machine (comprising the links, arbors, cranks and leaders) was coming together.⁶¹

On the morning of 15 February Hutton was working on the machine springs (used to return the action its open, or flat, position when the pedals were disengaged). By the afternoon the machine was finished and Erat promised to 'put [it] into Maunders hands'.⁶¹ Willis found Maunders fitting it to the neck on 17 February, noting in his diary that he 'had to take it off thrice to cut the cranks free'. Whilst some drawings were probably made before construction, the position of the cranks (when in action) had not been fully calculated, and the neck was stopping their movement. Willis 'put the regulating screws & outside work on while Maunders put the pedals' as the harp neared completion.⁶¹

After breakfast on 18 February Willis left Taylor stringing up the harp whilst he collected forgotten slides (adjustable bridge pins) from home, and Hutton was left adjusting the screws (possibly the back screws used to regulate). That 'Maunders [was] at work at Erats harp attempting to convert one of the first into one of the last regulating forks but it would not do' demonstrates that Erat was still working on his own innovations.⁶² Erat's patent of 1813 addressed the regulation of semi-tones.⁶³ According to Pierre Érard, writing to his uncle on 17 September 1818, Erat had abandoned this patent and had begun working with an untalented, harp-teaching student of Dizi's named Taylor (presumably the same Taylor who was working with Willis). Pierre added: 'He has come up with a new mechanism that is supposed to change both semitones with one single sliding fork, which is at the same time used to adjust the semitone.'⁶⁴ The regulating fork on which Maunders was working may have been the product of Erat's and Taylor's efforts. Furthermore, their relationship suggests that either Erat introduced Taylor to Willis, or Willis introduced Erat to Taylor; an example of inventor and musician collaborating.

⁶¹ WD. p. 46.

⁶² WD. p. 47.

⁶³ Jacob Erat, *An improvement in the construction of the pedal harp*, no. 3693 (London: HMSO, 1813).

⁶⁴ Adelson et al. vol. 2 (2015), p. 689.

On 19 Feb 1820, Willis adjusted some of the pedal notches, giving Maunder directions to cut the remainder. Willis was clearly as skilled in wood and metal work, as he was in mechanics and mathematics. Later, on returning to the workshop, he found that the harp had been sent home. Upon examination there, he discovered that one of the rivets had broken, and after dinner with Taylor, his guest dismantled the harp in order to repair ‘the rivet pull D motion crank rivet’ (the crank which transmitted movement from the pedals and rods to the action). It was reassembled by nightfall.⁶² That Taylor was able to do this, and had previously worked on a soundboard, suggests that rather than being just a student of Dizi’s and a ‘harpist of little talent’ as suggested by Pierre Érard,⁶² he was skilled in at least two aspects of harp making. It is plausible that he may have worked for Dizi on the development and manufacture of Dizi’s harps.

The following evening, whilst Willis was adjusting the harp, the tension pulled the machine off of the neck. He ‘seamed the plates to the head by putting a stout wire through them’, but on stringing up discovered the fault was as bad as ever.⁶²

The postponed meeting with the Attorney General regarding Schwieso’s patent took place on 22 February 1820. Pierre Érard attended with his solicitor and Poole (his clerk). Four harps were presented; a French single-action and an old white double-action (that Erat thought was Gröll’s innovation), a new double-action by Schwieso (and a harp machine by the same), and a harp by Dizi. Schwieso and Davis introduced their harp during the first hour; Érard spoke for the next hour; Dizi for 10 minutes, and Willis for only five: a hierarchy of makers was clearly established.⁶² Pierre Érard’s letter to Sébastien on 23 February 1820 adds further detail:

Schwieso, accompanied by another man of about fifty-five years old [Davis], and who I suppose is the mechanic inventor of talent, entered first in the office of the Attorney General; Schwieso had a harp with them. The shape greatly resembles that of your harps. As it was covered, I could not see if it was a double or single action, but I think that it was only a single action because in addition they had with them a mechanism of a harp, wrapped in a green sheet, that was undoubtedly the model for their brilliant invention!⁶⁵

⁶⁵ Adelson et al. vol. 2 (2015), pp. 729-731.

Pierre's opinions were based upon supposition and rumor. Schwieso was also believed to have had a financier, and may have been accompanied by him. In a letter to Sébastien on 7 July 1820, Pierre wrote that Schwieso had taken a large house in Soho Square and 'I think one of the Astors provides funds!'⁶⁶ In reality, he did not know who had attended with Schwieso.

Of Willis, Pierre commented: 'the young man whose drawings I gave you recently in Paris, also came to defend his rights but only brought papers with him, so he has not yet made anything which was easy to predict.' Again Pierre was incorrect and, as demonstrated by Willis's diary, the development of his harp was well advanced. In addition to Willis and Schwieso, Pierre noted that Dizi also attended the meeting, bringing the number of harp makers in the room to four, and that he had 'avoided speaking to Dizi or anyone else, having nothing to say to them, nor hear from them!';⁶⁷ whether he was influenced by competition or animosity is unclear.

Back in the workshop on 24 February 1820, the cranks were 'roughed out and drilled but not slit', indicating that one crank sat within the end of another before being pinned at the fulcrum. Hutton was filling up the arbor holes with steel bushes; this was new to the harp; the application of tougher bearing edges recognises that the movement of the arbor wore away at the brass plates. Another 'cross soundboard' was finished and ready to glue down demonstrating that more than one instrument was now being made.⁶⁸

On 28 February, after Hutton finished the cranks, Willis directed him to fit large iron washers extending from cylinder to cylinder, mostly likely to prevent wear. Of Erat's harp developments, Willis commented: 'Old mans swell [is] nearly finished - acts very well'.⁶⁹ A swell, operated by an eighth pedal, had been applied to earlier Erat harps. Whether this was an update or something new is unclear; surviving instruments show that Erat's swell shutters were initially larger than those by Érard though, by the mid-1820s when the Erat harps became closer in design to their

⁶⁶ Adelson et al. vol. 2 (2015), p. 747.

⁶⁷ Adelson et al. vol. 2 (2015), p. 730.

⁶⁸ WD. p. 48.

⁶⁹ WD. p. 50.

larger competitors, they were smaller. Pierre Érard had also been thinking about the harp swell; on 2 March 1819, in a letter to Sébastien, he wrote: 'The sound of the harp often seems dull to me. The old single actions are more brilliant. Some impartial persons find that the sound of some of D's [Dizi's] harps is clear and silvery [...] I notice that our harps that have no swell shutters are always louder.'⁷⁰ The tone of the double-action harp is less bright in comparison with the single-action due to heavier stringing and construction, and that Pierre was comparing it to new instruments by Dizi demonstrates his concern about how their harps were being perceived. On 13 July he asks Sébastien whether he has an echo pedal with which to replace the swell, and suggests, with reference Stumpff, who was attempting to register such an innovation 'to drag out the procedure as long as possible.'⁷¹ There is no suggestion of demand for an echo pedal; Pierre's motivation was to thwart Stumpff's patent registration; he would have been aware that novelty was a useful and important tool in maintaining Érard's industry dominance.

9.2.7: March 1820: 'Taylor played on it for about an hour'

By 6 March 1820 the cranks were fitted. Whilst Hutton was working on the links and solid leaders one bent although it did not break.⁷² Materials and designs were evidently continually tested through prototyping, and solutions were sought for problems through experimentation.

Having received the machine from Hutton at four o'clock (presumably in the morning) on 10 March, Willis fitted the outside work from one to two in the afternoon, and finally had it on the neck by seven o'clock in the evening.⁷³ Arriving home by eleven o'clock the next day, he set to work adjusting the machine and had corrected the earlier fault before dinner. Taylor arrived at half-past three in the afternoon and 'might have come half an hour sooner but was afraid', presumably of Willis encountering more difficulties with the machine. Finding the springs to be a little weak, Willis continued adjusting the harp and by half-past ten in the evening

⁷⁰ Adelson et al. vol. 2 (2015), p. 709.

⁷¹ Adelson et al. vol. 2 (2015), p. 725.

⁷² WD. p. 52.

⁷³ WD. p. 53.

Taylor was able to play an air upon it, and the following morning 'played on it for about an hour'. Willis noted that the '12th trial' ended with success and was clearly pleased.⁷³ On 13 March he offered to leave 2 guineas 'for the men' but the Erat 'declined it till Saturday', perhaps concerned that, given money, they'd choose to drink (as before) and would not turn up for work.⁷⁴

Erat visited the harp at Willis's home on 15 March 1820 and 'seemed very much pleased with it', but finding the pedals heavy suggested it be taken to pieces again. So soon after his apparent success, Willis referred to this as his '12th failure'.⁷⁴ The following day, with the harp removed to the Erat workshop, both Jacob and James (Erat's oldest sons) tried it, and Willis dismantled the harp with Jacob's help. By 1pm, he had instructed Hutton to begin making new cranks for trial though having been interrupted by Taylor, Willis complained that he had not been able to give this the due consideration. Instead he left for the Opera House to see Madame Mara on her first appearance noting that, despite a cold, she 'sung in her usual beautiful style and her voice is wonderful considering her at 72 or 5'.⁷⁴

A further example of testing through making is noted on 20 March. Having finished the pull (connecting the wires or pedal rods with the action) and the cutting of the plates, Willis found that it did not work well: '[I] took it to pieces gave it to him [presumably Hutton] after dinner had it altered to go more over the strait line and tried it again but still it is not quite the thing staid till 7 at night'.⁷⁵ Changing the motion of the pull whilst prototyping demonstrates that this was not fully calculated and drawn. The pull was further altered on 23 March by moving the spring to a higher position. Willis left Hutton working on the harp whilst he visited Stodart to remind him that he'd promised to teach him how to tune the pianoforte. Later, Willis finished the pull having added 'two or three holes drilled in the crank &c to adjust it to my mind link being too long'. Whilst trying to shorten the link it broke; Willis again left it for Hutton to fix after dinner. Returning to the workshops at half past six, the link had been replaced, the springs moved higher, and consequently the action worked well.⁷⁵

⁷⁴ WD, p. 54.

⁷⁵ WD, p. 56.

On 25 March, Hutton finished the patterns and gave them to the woodmen (the material to make these is not noted). He prepared to fit body 'No 1' to the neck and pole. That Hutton appears to have worked solely upon the metal parts of the harp but was now working on a wooden body indicates that this would have included fitting a metal ring for the pole to sit in. Willis noted that body 'No 3' was strung and that it had 'a very fine tone indeed.'⁷⁶ Hutton was unwell on 28 March and was replaced by Martin who fitted the cranks to the arbors for later riveting. Hutton arrived later with '11 leaches on & was ordered to keep his bed but "got tired of lying on his banck!"; in his choice of spelling, Willis may be indicating that Hutton had a regional accent. Being too weak to work, Hutton promised to return the following morning. Later, Willis had his first harp lesson with Taylor, and his diary entry suggests that he was already planning a concert, perhaps to demonstrate his harp.⁷⁷

The following morning, being 'never better in his life', Hutton returned to work to rivet the cranks onto the arbors. The brasses were not done (Willis had expected these to have been finished). Erat had 'thrown a piece of the woodshop into Beasmores for another vice';⁷⁸ more space was clearly required.⁷⁷ On 30 March the delay in finishing the brasses is revealed - they had been sent to Érards by mistake. If, as is likely, Willis used Beauchamp (Erat's supplier), this suggests that Beauchamp also supplied Érard. By the end of the day, the motion cranks were finished.⁷⁷

Good Friday fell on 31 March; the men (with the exception of Hutton) worked until eleven o'clock only. The brass for the spring piece was 'in a great state of forwardness' and both brasses (perhaps indicating the plates) were filed level.⁷⁹

⁷⁶ WD. p. 57.

⁷⁷ WD. p. 58.

⁷⁸ On leaving Erat's employment, Beasmore established his own harp manufactory although the dates of his venture are unclear. Beasmore's address is given as 18 Regent Street, Kensington Square, and his occupation as harp maker, in a court case dated 18 March 1832. He provided half of a £20 fine awarded against William Mertens, formerly an apprentice and employee of Erat, who had been bound over to keep the peace. LMA. MJ/R/P/012/048, William Mertens of 33 George Street, Lambeth, Harp Maker, bound over to keep the peace, 18 March 1832.

⁷⁹ WD. p. 59.

9.2.8: April 1820: 'It does admirably'

Willis fitted and tried a new crank and spring on 4 April 1820. He wrote: '[it] does admirably'. By the evening, Hutton was forging six new springs, probably for the pedals.

Erat was now moving his stock from Wardour to Berners street as he relocated his business, and Willis wrote: '[the] Old man had a stone fall on his toes in moving his wood and lamed him very badly'.⁸⁰

On 14 April 1820, having succeed in stopping Schwieso's patent, Willis paid Abbot's bill of £5/4/4.⁸¹ Schwieso, however, was not to be thwarted. On 7 June he wrote to the Society of Arts and Sciences seeking support for his new harp.

London June 7th 1820
No 11 Soho Square

Sir, with the utmost deference I beg to submit to you for the consideration of the Society of Arts &c, a model of my independent double movement machine for the pedal harp, as an invention entirely new, producing from the same string without additional power the single & double action which differs from all other machines in present use and not so liable to be out of order which can be attested by Professors of the first respectability, shall be happy to explain if the society think proper to honor me with an opportunity am Sir your most obedient humble serv.

J. C. Schwieso

To A. Aikin Esq.
Secretary to the Society of Arts &c.⁸²

A second letter, authored this time by Schwieso and Grosjean (indicating a new partnership), and sent on 18 January 1822 reveals that the Society had viewed their earlier innovation but had been unimpressed: 'Since we had last the honor of appearing before the Hon'ble Society of Arts & Sciences we have been engaged in various experiments to render more perfect the tones of that beautiful instrument the harp.'⁸³ An identical letter was sent only two weeks later on 30 January,

⁸⁰ WD. p. 60.

⁸¹ WD. p. 39.

⁸² RSA. PR/AR/103/10/256, Letter from J. C. Schwieso about his improvement to the pedal harp, 7 June 1820.

⁸³ RSA. PR/AR/103/10/245, Letter from Schwieso and Grosjean about their improved harp, 8 January 1822.

suggesting that the Society had not replied to the first one.⁸⁴ Again one can assume a reply was not received as on 12 February a further, longer letter, detailing their innovations was sent.⁸⁵ In it Schwieso and Grosjean acknowledged that the Society has previously felt ‘that the different specimens of double movements presented to them were all similar in their application,’ and that theirs did not merit particular attention. They claimed to have improved the harp further by applying a double soundboard, ‘by which they will neither give nor burst, on the contrary they guarantee that their harps can be raised to the forte piano pitch & even higher if required’. The interior board was convex and the exterior one flat so that on tuning the inner one was pulled into contact with the outer one to counteract the pull of the strings. Whether the Royal Society thought this innovation was of merit is unknown.

Willis diary shows that he occasionally worked on his harp at home. On 14 April he wrote: ‘went to Holtzapffels paid him [he] is to send a man to look at my lathe this evening 6 o’clock’. Willis, like Delveau, had a lathe at home, where he could presumably experiment and make small parts. In a comment on Erat’s workshop, Willis noted that, since Erat had moved his wood, he could see Hutton ‘drawing up’ through the back window, the back door at 100 Wardour Street now being visible. This indicates that an extension that covered some (or perhaps all) of the rear yard was used to store timber, and perhaps other materials.⁸⁶

The leaders were finished and ready to hang together on 15 April, the ‘old gentleman [Erat]’ was in the workshops for the first time since his accident, and one of Holtzapffel’s men fetched Willis’s lathe, perhaps for repairs or modification.⁸⁶ On the 16 April, the Erats spent the night a Berners Street, presumably for the first time, and the plate was taken off the door at 100 Wardour Street the following morning.⁸⁷

⁸⁴ RSA. PR/AR/103/10/246, Letter from Schwieso and Grosjean about their improved harp, 30 January 1822.

⁸⁵ RSA. PR/AR/103/10/247, Letter from Schwieso and Grosjean about their improved harp, 12 February 1822.

⁸⁶ WD. p. 63.

⁸⁷ WD. p. 64.

Willis's diary entry of 17 April confirms that Erat's relationships with the men did not always run smoothly: 'A door is put up at the bottom of the stairs & a set of rules framed A large dustmans bell is provided - 10-6 - with which to ring them to & from meals & the back door is nailed up - They are sulky about but have done nothing in opposition'. That a set of rules was displayed suggests that the men could read (implying a degree of formal education), and that they needed reminding of Erat's expectations. Willis doesn't tell us what they had done wrong but, from the steps taken, one might surmise that they were absenting themselves without notice; breaks were to be regulated by a bell, and slipping down the stairs unseen on to the street, or out of the back door, was no longer possible. Thankfully the men 'had done nothing in opposition' although this suggests they may have previously done so.

On 19 April, Willis records remedial building work at 100 Wardour Street,⁸⁷ further evidence that the Erats were preparing to leave. The condition of the house was clearly parlous, and the move to new premises essential. Perhaps the Erats had focused their investments on the business at the expense of the building. Érar's manufactory was similarly dilapidated. On 27 December 1815 Pierre reported to Sébastien that he had been advised that they should leave their Great Marlborough Street premises that was at risk of collapse, and that the freeholder's agent had promised to install a new roof, and to renovate the walls, floors, ceilings, doors and windows.⁸⁸ On 25 July 1817 Pierre informed Sébastien that he had rented apartments at 53 Wigmore Street for six months during the refurbishments. 'We have here just the shop and the books; all of our workers are in Portland Street.'⁸⁹

Problems with Willis's harp continued on 21 April which Hutton spent easing the four pulls. One of the wires (pedal rods) broke 'into the pipe' (the hollow centre of the pole) suggesting that they were sticking, and necessitating the making of another.⁹⁰ On 24 April, Maunder again had to remove the machine from the neck to cut away wood to prevent the linkages binding; the same problem that occurred in February, possibly suggesting that the template used to mark it had not been altered

⁸⁸ Adelson et al. vol. 2 (2015), p. 621.

⁸⁹ Adelson et al. vol. 2 (2015), p. 661.

⁹⁰ WD. p. 65.

to allow for later changes. Willis directed Joyce (a previously unmentioned Erat employee) to prepare patterns for the slide pins, and to make spare outside naturals. The next day Maunder cut the pedals, and Willis spent 26 April installing and adjusting these and the shutters.⁹¹

9.2.9: May 1820: 'E offers to manufacture the thing'

The pedals were 'done' on 1 May and in the evening Taylor took the 'bottom' (pedal box) in order to deliver it to Erat the following morning.⁹² Taylor's role in the development of Willis's harp exceeded that of harp teacher. He was also consulted throughout the process and was often present in the workshop. The Bottom was finished by 3 o'clock on 2 May and Willis completed half of the pedal notches by that night, finishing the remainder the next day;⁹² 5 May was spend regulating; he also noted that his caveat expired.⁹² On 6 May the harp was finished: 'John Taylor [came] to see the Harp liked it very well At night Miss N.J. Mr B.J & J [unknown] played to Beale this morning May 6th 18th trial harp finished'.⁹³

After visiting the 'old man' on 12 May, Erat reported that he had shown the harp to 'two professors',⁹⁴ and that they liked the idea but that the silver strings must be moved and, on 13 May, Willis met M Weippert on the stairs who had also been shown it by Erat, although his opinion is not noted.⁹⁵ Erat's increased interest confirms that the harp worked: 'E offers to manufacture the thing & give six or seven [pounds] for every harp sold'. He left Erat with his patent specification to examine with a promise that a decision would be made by the following Tuesday.⁹⁴ Commission payments could be lucrative. Those recorded in the Erat ledger reveal that teachers could expect to receive between £8, and £25 for each instrument sold

⁹¹ WD. p. 66.

⁹² WD. p. 68.

⁹³ WD. p. 69.

⁹⁴ WD. p. 71.

⁹⁵ This is probably John Michael Weippert, the M indicating that he was known as Michael to distinguish him from his older brother, John Erhardt Weippert. (My thanks to Mike Parker for his insight on the Weippert family). Both were harpists, composers, and teachers. A John Weippert appears regularly in the Erat Ledger, his address initial given as John Street, Tottenham Court Road, and later Dean Street, Soho.

to a student.⁹⁶ That Jacob offered only £6 or £7 for each of Willis's harps sold indicates naivety on Willis's part, and shrewd business practices by Erat.⁹⁷

On 13 May 1820, Willis lists the costs incurred in obtaining and opposing patents. We learn that two patent attorneys were employed, the aforementioned Abbott, and a John Farey. Farey received three payments; 5 guineas for work undertaken between 4 and 22 November, 2 guineas in December 1818, and a further £14/10/- on 2 August 1819 for a specification, altogether £21/17/-. Abbott received four payments; £142/6/2 'for patent' on 20 February 1819, £4/12/8 'for opposing' on 15 March 1819, £17/7/2 'for specification' on 2 August 1819 (indicating that Willis simultaneously instructed both Abbott and Farey to write specifications for the same invention), and £5/4/4, again 'for opposing', on 22 January 1820; a total of £169/10/4. Two guineas were also paid for 'caveats' on 22 January 1820, though the recipient is not noted. Taken together, Willis owed £193/9/4.

Despite the harp being finished, Willis continued to experiment. On 17 May he 'determined to try long fork motion by means of outside work', and liking the outcome ordered two more.⁹⁸ These were fitted the next day and Erat felt that this new addition could be made to return with a 'common spring and pedal', those used on the single-action harp, again mixing new and old development.⁹⁸

Willis listed his 'expenses to this day' on 27 May; Farey was owed £21/17/-, Abbott £176/6/8 (£6/16/4 more than his earlier calculation), and Erat £272/16/8, a total of £471/-/4. Erat's bill is then itemised; '2 machines with different actions materials & labour for D^o' were charged at £30, and the 'Brass. Iron. Steel &c for two last machines', £22; Dockree's bill for 'screws. arbour &c paid to Dockree for the two last machines' was £11; £15 was charged 'for 5 necks & poles & one body with different sounding boards'; 'files and other tools', £12; 'four sets of gut strings & two

⁹⁶ EL. p. 252, 'Commission acct paid Mr Burton commission on the sale of a harp to Miss Hay Apr 26, 1822', 26 August 1822. EL. p. 285, 'Commission paid Madame Boom commission the sale of a harp to Mrs Beames for which the cash was received on the 22nd inst. £25', 5 November 1822.

⁹⁷ Assuming Erat made 40 of Willis harps per year at £70 (the midrange price of an Erat double-action), Willis would have received between £240 and £280 (based on Erat's offer of £6 or £7 per harp, and Erat would have made between £2,560 and £2,520.

⁹⁸ WD. p. 72.

sets of silver do', £5/12/-; 'two sets of pedals', £6, and wages, by far the greatest single cost, £171/4/8. Calculated by expense type, the developmental costs of Willis's harp can be represented thus (Figure 9.5).⁹⁹

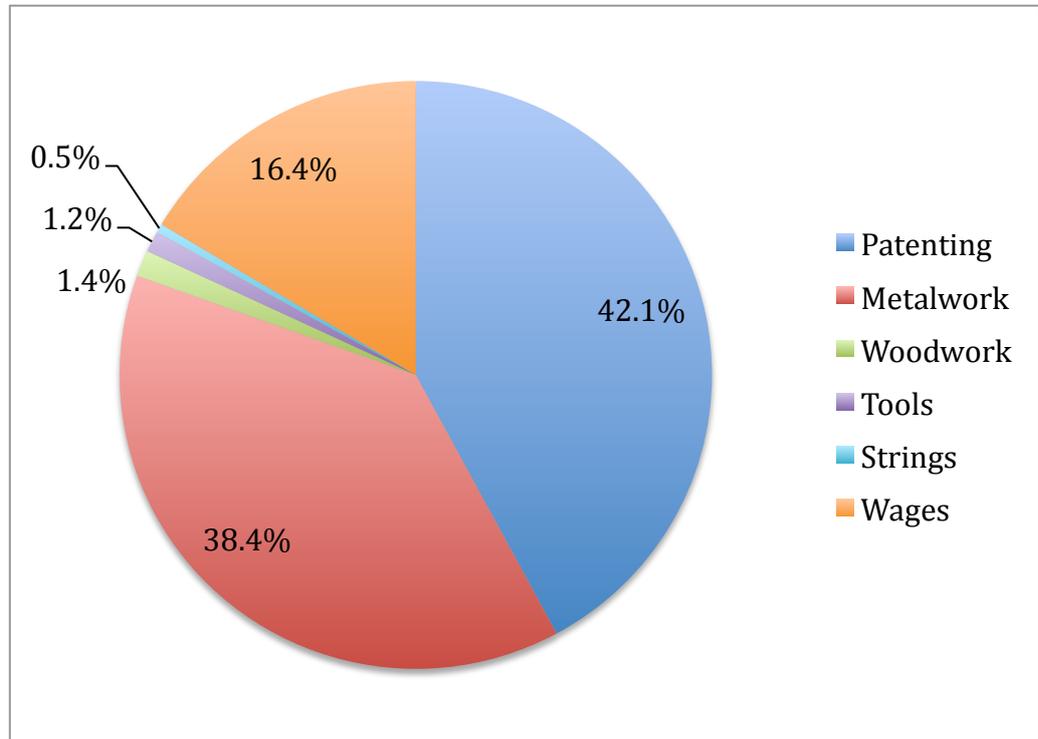


Figure 9.5. Developmental expenses of Robert Willis's patent harp.

Pierre Érard's claim that his uncle expended £20,000 whilst perfecting his double-action is difficult to substantiate;¹⁰⁰ Érard registered five patents for the harp before arriving at his double-action in 1810. If Willis's figures are indicative, approximately £500 would have been spent achieving each patent, a total of £2500 for five patents. Although Érard may have sustained additional unknown costs, it is unlikely these would have brought expenditure to £20,000 (an additional £17,500). It is noteworthy that the balance of the only surviving workshop accounts from Érard (2 February 1807-15 June 1809) contained in their otherwise expansive ledgers (1797-1917), total £21,843/18/1,¹⁰¹ close to the figure approximated by Pierre. If Pierre was citing this figure as Sébastien's development expenses, he was

⁹⁹ WD, p. 75.

¹⁰⁰ Érard (1821), p. 9.

¹⁰¹ RCM. 497, Érard Ledgers, Workshop Accounts, p. 62.

being deliberately misleading; the accounts, aside from wages, materials used in harp making, and other sundry items, include unrelated amounts such as payments for ‘the late Mr Fiesinger’s funeral’ (£92/3/6),¹⁰² and ‘Mr Érad’s Taylor’ (£27/16/6).¹⁰³

9.2.10: June 1820: ‘Resolved to begin another harp’

On 6 June 1820, Willis ‘resolved to begin another harp went down & got plate for drawing the pull’, drawing it the next morning; confirmation that drawing played a part in design.¹⁰⁴ Having paid Erat’s bill on 8 June, work stopped towards the end of the month (coinciding with the end of the season) and Willis left London.¹⁰⁴ On 22 June 1820 he set off to Kingston, and then onto Dorking, where he dined & slept; the next day he travelled from Dorking to Boxhill, then to Guildford, returning to London in the Evening. He left London again on 26 June 1820 visiting Bognor, Angmering, Chanctonbury Ring, Steyning, and Bramber, sketched at Arundel, and visited Highdown Hill and Worthing with a Miss Nicholson, before returning to London on 30 September 1820.¹⁰⁵ Further mentions of Miss Nicholson suggest that the two were romantically linked.

9.2.11: October 1820: ‘I trimmed Erats for the badness of the harp’

When Willis picked up his diary again, he first wrote of his social life, perhaps having lost some focus after being away from work for three months. On 2 Oct he notes ‘Miss N [Nicholson] to breakfast [...] Set off on my rounds met Taylor at Booths - wonderful surprise at seeing me!!! Ordered trousers at Meeskii & to have new pockets put to my coat. At Stodarts [the pianoforte maker] his cousin come back from America - Virginia - to return in a week’. He then turns to his harp: ‘At Erats my machine finished and very well made by Greigson & Jacob finished’, Greigson, presumably another Erat employee, being mentioned for the first time.¹⁰⁶

¹⁰² RCM. 497, Érad Ledgers, 13 February 1807.

¹⁰³ RCM. 497, Érad Ledgers, 19 January 1809.

¹⁰⁴ WD. p. 78.

¹⁰⁵ WD. p. 83.

¹⁰⁶ WD. p. 84.

On 5 October, Willis was surprised to find 'Hutton gone'. He again 'went to drink tea with Miss N', before returning to Erat's: 'This morning I trimmed Erats for the badness of the harp they lent us', yet more evidence of the sometimes strained relationship between Willis and the Erats. That Willis had borrowed a harp from Erat indicates that his was not yet in production.¹⁰⁶ The following day he was relieved to find things 'all remarkably civil!' at Erats where he discovered a black varnished and painted body (suggesting that it was decorated) to his design with its 'holes &c all drilled'. He marked off the outside work to be done by Joyce (who presumably had taken over from Hutton), and 'determined to string up another body'.¹⁰⁷ On 8 October, Willis sketched two devices designed to calculate string tension (Figure 9.6).¹⁰⁷ The first is a stand with a crossed and braced base; the string is stretched between a moveable hook attached to a cranked handle and the top, and a weighted attachment at the bottom. The tension of the string would have been increased or decreased by turning the handle. The second device consists of two wall-mounted brackets; the string is stretched from a suspended block containing what appears to be a standard harp tuning pin at the top, and a fastening at the bottom from which is hung a platform for weights; the tension could have been altered by turning the tuning pin.

On 15 October, Willis sketched one of Erat's innovations, and its revealed origins: 'Erats have got a plan for applying a spiral spring to their harps in imitation of Dizi's but not so good being inclosed [sic] in a tube intended to be pressed by the motion crank'.¹⁰⁷ This device, which can be seen on a double-action harp (serial no. 1352) at the National Trust's Lanhydrock House (Figure 9.7),¹⁰⁸ does not appear to have been widely used. Willis saw another use for this spring and sketched his idea in his diary. By replacing the traditional pedal springs with a bell spring, and by placing it closer to the end of the lever that was the pedal (rather than close to the fulcrum), he intended to reduce the spring's weight, and also the tension on the machine (Figure 9.8).

¹⁰⁷ WD. p. 85.

¹⁰⁸ A new Erat 'patent' double-action, described as 'rosewood with burnished gilding' was sold to a Mr Pilbrow of Fore Street, Exeter, for £70 on 9 November 1822. EL. p. 280.

Erat informed Willis on 17 October that he did not intend to use his soundboards until Willis's harps were finished. It would seem that despite this conversation, Erat changed his mind, or perhaps misled Willis who later added: 'This proved to be a lie!!!'.¹⁰⁹

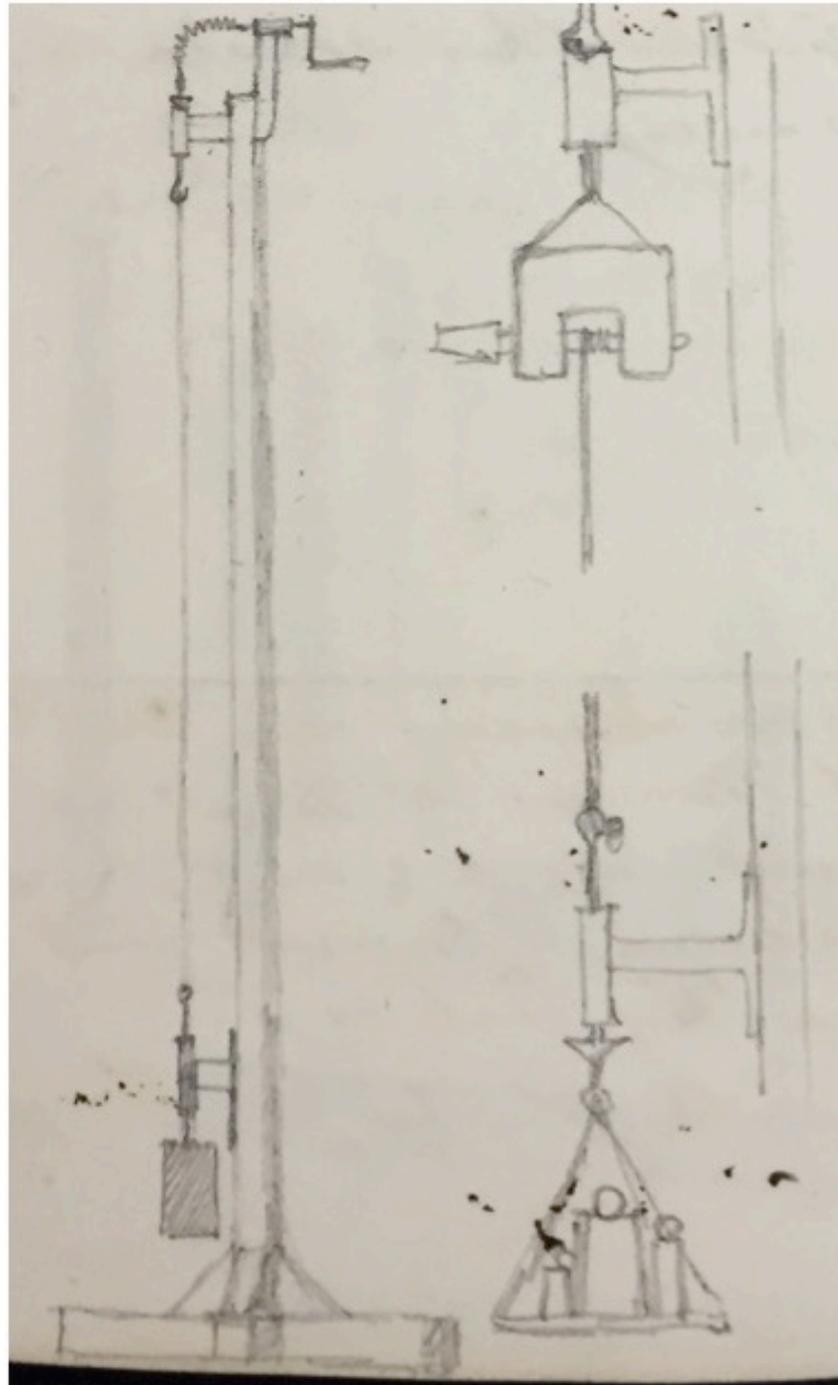


Figure 9.6. Willis's sketch for a string tension machine. WD. p. 85.

¹⁰⁹ WD. p. 88.

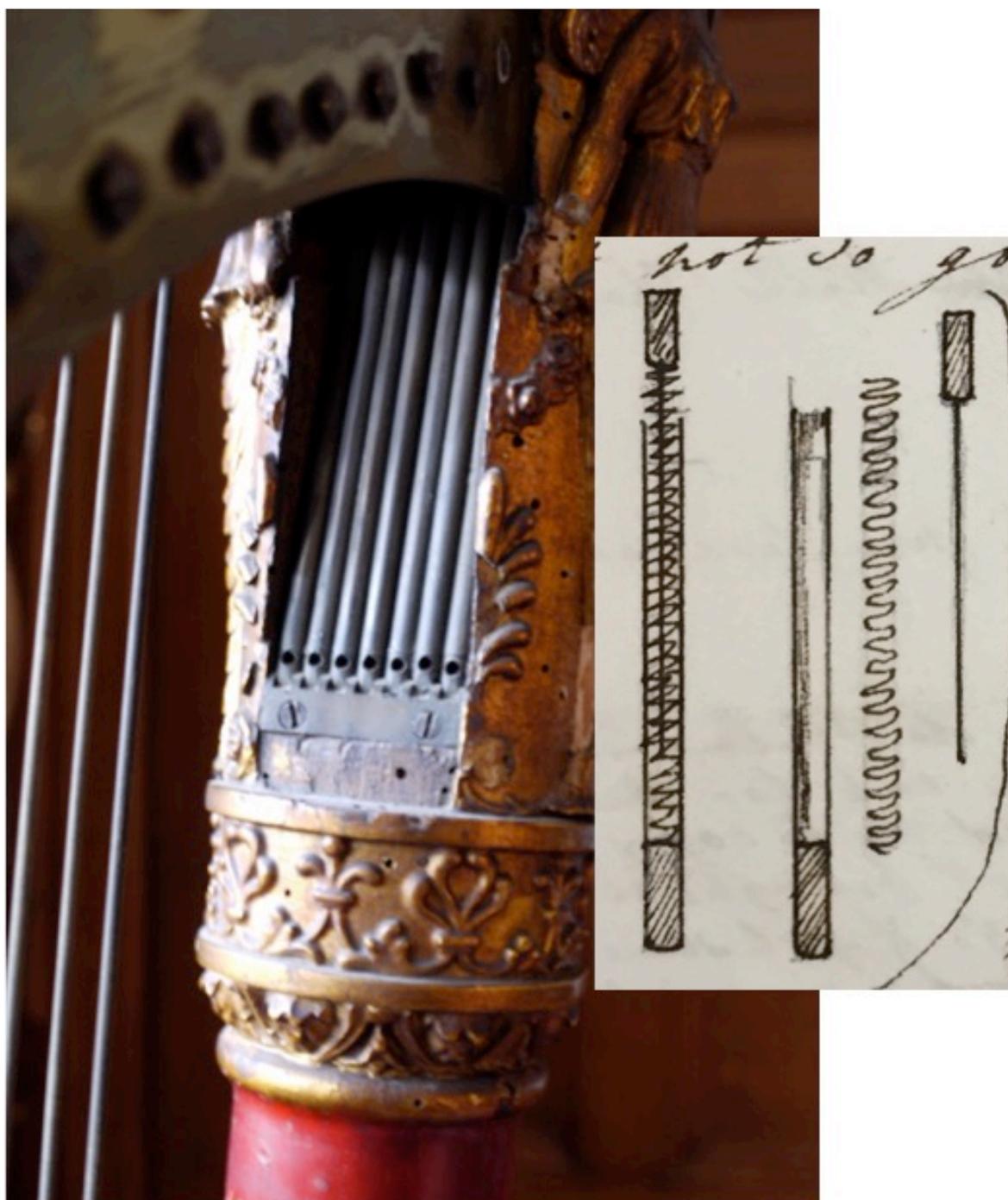


Figure 9.7. Erat's enclosed spiral spring and Willis's sketch of the same. WD. p. 87. Photo used with the kind permission of the National Trust at Lanhydrock House.

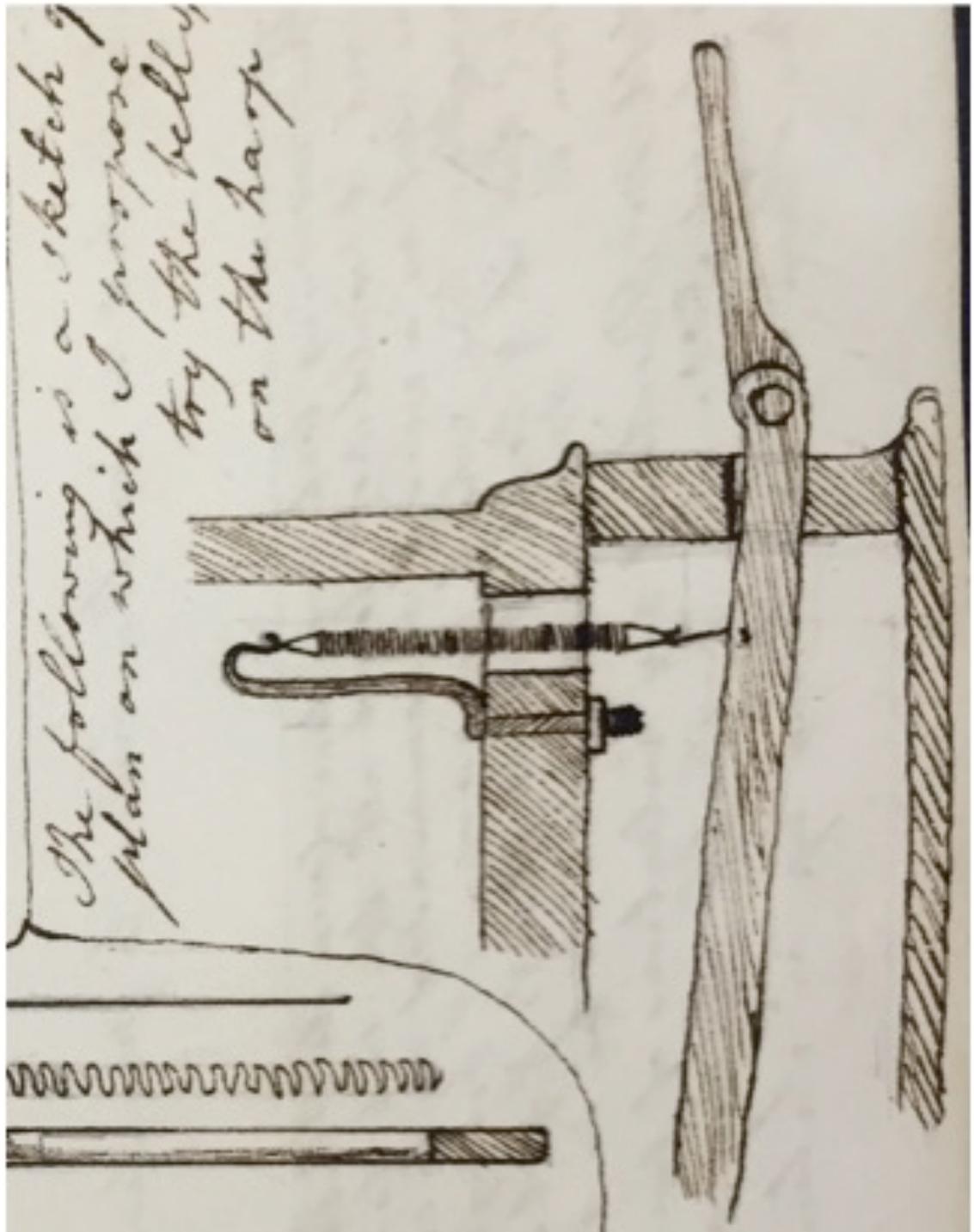


Figure 9.8. Willis's proposed use of a spiral for returning the harp pedals. WD. p. 87.

9.2.11: December 1820: 'I have lost a week somewhere'

On 1 December Willis found two of his cross-grained soundboards 'finished for sale' in the workshop, apparently mounted on Erat's own harps: '[the] old man says he never promised to lay them by - for which vide Oct.16.' Although these entries reflect only one side, and we do not have Erat's view, this again suggests that the relationship between the two was, at times, troubled; one might, at best, see this as a communication problem, though it is likely that Erat took advantage of his seniority.¹¹⁰

Regulation continued on 3 December 1820: 'All a week too soon?? - I have lost a week somewhere!' suggesting that the long hours involved in the final push to finish the harp were beginning to affect him.¹¹⁰ On 18 December the harp was ready to play,¹¹¹ and Taylor took it away on 20 December, presumably to try it, returning it six days later.¹¹² On 29 December, 'Mr and Mrs N [Nicholson]' (the parents of Miss Nicholson – perhaps Willis was trying to impress future parents-in-law) came to view the harp.¹¹³

9.2.12: January 1821: 'Welsh & his brother and Ries to see the harp'

On new year's day, Willis's lathe was taken away in order to add 'the drilling frame'. One Welsh and his brother, and [Ferdinand] Ries came to see the harp;¹¹⁴ Vulliamy returned the next day,¹¹⁵ and Henry Steil on the 5th.¹¹⁶ That Vulliamy, a renowned clockmaker, was interested in Willis's harp further confirms the link between his the

¹¹⁰ WD. p. 101.

¹¹¹ WD. p. 106.

¹¹² WD. p. 108.

¹¹³ WD. p. 109.

¹¹⁴ WD. p. 110.

¹¹⁵ WD. p. 110. Benjamin Lewis Vulliamy (1780-1854), a clockmaker of Pall Mall, succeeded to the business on the death of his father, also Benjamin. The company was appointed Clockmaker to the Crown in 1742. He was elected a fellow of the Royal Astronomical Society in 1831, and an associate of the Institution of Civil Engineers in 1838. *Benjamin Lewis Vulliamy*, http://www.gracesguide.co.uk/Benjamin_Lewis_Vulliamy [accessed 21 August 2015].

¹¹⁶ WD. p. 111.

clock and harp making professions, Jacob Erat's occupation having been given as clock manufacturer on his daughter's wedding certificate.¹¹⁷

On 7 January Willis noted the weight of his wire springs, and their pull (in inches), indicating that he continued to test his harp; the springs could be changed, if necessary, to give additional power to the machine (Figure 9.9).¹¹⁶

The weight of some of my wire springs

E spring	— 2 lb draws it	1 1/4 inch	— when in action
		it is drawn a	1/4 inch
F spring	— 2 lb draws it	3/4 inch	
	3	----- 1 1/2	-----
	4	----- 2	-----
		drawn an inch and 1/4	before action
Another strong	2 lb draws	1/4 inch	
spring	4	----- 1/2 inch	
about G	6	----- 3/4	
	8	----- 1	

Figure 9.9. Willis's calculation of spring weights. WD. p. 111.

Willis's lathe was returned on 10 January: 'The rest of the apparatus positively next week Ordered Nov 20', suggests that he was beginning to prepare the tools needed for harp making. On 15 January he 'went to the Society of Arts to enquire after a harp'.¹¹⁸ He does not tell us whether he had submitted an instrument for their assessment, or whether he wanted to view a harp by another maker.¹¹⁹ His diary entry of 16 January suggests that Erat was making his harps: 'saw my soundboard glued up yellow harps are stained with sp. [spirits of] Wine & saffron.'¹¹⁸ Five days later, Willis returned to the Society of Arts. This time his entry confirms that he had

¹¹⁷ On 11 November 1814, Pierre name an M. Kessel, a watchmaker who had finished working on the action for a wind instrument for Sébastien. It is likely that the Érards used Kessel, or another horologist whilst developing their harp innovations. Adelson et al. vol. 1 (2015), pp. 562-563.

¹¹⁸ WD. p. 111.

¹¹⁹ Schwieso submitted his own harp to the Society of Arts on 13 February 1822. Adelson et al. vol. 2 (2015), p. 789.

submitted an instrument but that the 'Harp [was] not to come before the committee before Th. Wk'; the opinion of the Society is not noted.¹²⁰

That Jacob Erat revised his will in early February suggests that he was aware that he was dying. That Willis's final diary entry, consisting only of 'Sunday 21 January 1821 R. Willis', was written just three weeks before Erat's death,¹¹⁸ suggests that it was his host's infirmity which brought Willis's time in the workshop to an end. Whether he had hoped to continue is unknown, but he now lacked a mentor experienced in making, and there is no evidence that he went on to produce his harp for sale.

Although Willis no longer had the use of the workshop, his continuing purchases from the Erats in 1821 and 1822 indicate that they remained on good terms.¹²¹ The first day of the ledger (21 February 1821), in the general list of monies owed upon Jacob's death (see Chapter 7), records Willis as owing £86/13/-. As the cost of developing his prototype harp had already been met, the correspondence of this amount to the price of a new double-action harp (as noted in the ledger),¹²² suggests that Willis had bought one of Erat's.

¹²⁰ WD. p. 120.

¹²¹ On 11 June 1821, the Erats' repaired Willis's mahogany desk, charging him -/2/-; on 31 October 1821, Willis bought 6 silver strings for a guinea, and strings of an unknown quantity and type for -/5/6/ (EL. p. 105); three sets of strings 'from E15 upwards' and 'sundry strings with three silvers ones, costing a guinea and -/18/- respectively, were bought on 18 April 1822 (EL. p. 189); and on 18 April 1822, £1/8/- was paid for eight silver strings (EL. p. 243). On 12 January 1822, Willis bought a packing case lined with green baize for 3 guineas (EL. p. 88). Its purchase, presumably to transport a harp, may have coincided with Willis moving to Cambridge to begin his studies there that year.

¹²² Between February 1821 and June 1824, the Erat Ledger shows that double-action harps sold between £44 and £105, depending upon the finish.

9.2.13: **Diary Appendix: The Early Stages**

In an appendix to the diary, Willis described the early stages of his project:

My model for the harp action No1 was put into Vulliamys hands in the later end of March 1818 and completed about the 24th of April after many alterations / X approved of it highly and it was shewn to Erat who undertook to complete a pull for trial in about a fortnight / he recommended to me to take out a caveat which I did _ This first pull was made with three arbors throughout and one leader but when finished not one of the actions had the right motion. The brass plates were ready for drawing about the 14th of May but the pull was not ready for trial till June 9th _ The old man and myself made the great part of it _ The failure having arisen from the difficulty of making the crank motions/ the next plan was to have but one and to carry the motion through by means of three pulls which I left E to execute while I went into the country.¹²³

The dates suggest that he must have begun work on his harp before March 1818, when his first action went to Vulliamy (the renowned clock maker), and perhaps, allowing time for it to be made, as early as 1817. Vulliamy and a person simply referred to as 'X', who approved highly of Vulliamy's work, are revealed as early collaborators. That Erat and Willis collaborated in the making of partial actions, starting with 'one pull' (i.e. linking all the representatives of one degree of the diatonic scale), then 'three pulls', reveals a further early state of prototyping.

Whereas Vulliamy worked on a prototype for a month, Erat and Willis made the first pull in two weeks, and the preparation of 'the brass plates' (presumably for a whole instrument) took around three. Whether Vulliamy and Erat were acquainted is not known; the benefits of such a relationship, particularly to the later, would have been immeasurable.

9.3: Summary

Despite the registration of 23 patents for the harp between 1794 and 1845, and survival of many harps of this period, little was hitherto known about how they were invented. Willis's diary records the processes employed in the conception, innovation, and patenting of a new harp, affording a unique opportunity to trace the

¹²³ WD. p. 118.

development of a novel instrument design in a particular working environment and place. Far from being a solitary endeavor, as alluded to by Pierre Érard (1821), innovation was collaborative. Willis chose collaborators for their technical skills, wealth, musical, and legal knowledge - whilst perhaps conceived by a sole inventor, such instruments were not the outcome of one mind. Harp development, the outcome of trial, error, and modification, and production were undertaken concurrently.

Word-of-mouth, industrial espionage, and workforce movement informed the inventor/maker, sometimes leading to misunderstandings. Although the protection afforded by patents was questionable (see Chapter 4), they advertised the registrant's ingenuity. That representatives of the Erat, Érard, Dizi and Schwieso companies met to assert their rights at the Attorney General's office, indicates that they were keenly protecting their interests.

Erat's Wardour Street manufactory, by the time of Willis's arrival there, was clearly dilapidated. The workshops were arranged in a vertical manner with the stairs forming a central spine through which products, materials, and people were moved. Consequently, occasional workforce problems arose. Willis indicates that the transition from Wardour to Berners Street began in January 1820, and that the latter was being adapted to house a new manufactory.

Why Willis chose to invent a new double-action harp is never made clear. Given his interest in mechanical objects, it is unsurprising that he was aware and interested in harp innovation. Whether he felt he could do better, or just viewed the instrument as an interesting mechanical challenge, we do not know. That he spent significant time and money in pursuit of the novel, and that in May 1820 Jacob Erat offered to pay commission in return for manufacturing rights, indicates that Willis had intended to make more of this venture. Erat's death brought these plans, and Willis's working relationship with the Erats, to an end.

Chapter 10: Conclusions

The nineteenth-century harp as an object is central to this thesis. Where other studies have concentrated on its musical use and representation in art, here the harp is considered primarily in relation to decorative and technical design, business practice, consumption, and manufacture. Whilst others have examined a range of makers or a specific instrument, I consider here predominantly one maker, Jacob Erat, whose manufactory spanned the transition between craft-based and increasingly mechanised practices. This approach, affording a detailed view of one company, illuminates the small manufacturing businesses that abounded in London. Organology (the study of musical instruments) has developed significantly since the publication of Praetorius's *Syntagma Musicum* (1619), in particular since it was so named and defined by Bessaraboff (1941). Parallel streams of study today offer multifarious methods and methodologies: where informed by and intersecting with the social sciences, new forms, such as cultural organology, have emerged. De Vale, in her classificatory, analytical, and applied organologies, aimed to encompass all aspects of instrument study, and Stiegler's general organology widens the field to encompass the study of relationships between objects, their users, and social organisations within which they are made and used. In examining the harp as an object (in terms of innovation and design), its makers, and users (consumption, business, and manufacturing), drawing on cultural, design, and business history, this thesis may be conceived of as situated within Stiegler's general organology. Each chapter presents significant new findings, deepening our understanding of innovation, business, manufacture, and consumption of the nineteenth-century harp. I have shown that, from 1760 onwards, use of the harp and the publication of music for it increased greatly in Britain. When the importation of single-action harps was impeded by the French revolution, the main centre of manufacture moved from Paris to London, where a distinctly new branch of its development resulted in a larger, more complex instrument. Although German and French makers pioneered the single action, it was the London-based, French-born Érard who introduced a larger, more robustly mechanised built one from his manufactory and showrooms. It was this instrument, and his later double-action model (both widely copied by London competitors), that became successful in Britain.

In opening a manufactory as early as 1797 (about five years after Érard), Jacob Erat became a founding member of this nascent sector of London's instrument making industry. Over the following twenty-five years, a further nine makers were established, some having previously worked for Érard or Erat, where they probably served apprenticeships. By clustering together in Soho, harp makers followed a pattern established by other London industries, located in close proximity to suppliers and customers. London remained the centre of production for some fifty years.

The harp evolved to become a fashionably symbolic instrument, synonymous with wealth, elevated class, and taste. As it was the most expensive of early nineteenth-century domestic instruments, its consumers had more to consider than musical application alone. Ownership became aspirational, and the availability of second-hand instruments and hire services placed the harp within reach of the middle class. Contemporary treatises on female education show that musical ability was highly desirable; playing the harp had the potential to enhance a young woman's marriageability, and the instrument was illustrated as an adjunct to the latest fashions in women's journals. Caricatures associated it with romance; novels further feminised it and, in contradistinction to demure representations, occasionally eroticised its use. Despite this, most professional players continued to be male.

As in architecture, furniture, and fashion, the decorative form of the harp was initially influenced by a resurgent interest in classical design, and later in the gothic, revealing it as an object of contemporary design. Makers' decorative choices represent careful marketisation of a product, and those of customers, particularly with regard to colour, were likely to have been influenced by trends in the domestic interior. Although surviving harps are in a relatively narrow range of colours, reflecting later taste, the Erat company made them in a wide, vibrant range which when combined with gilt type and painted ornamentation, resulted in 900 permutations, making the harp the most decoratively varied instrument of its age. Classical revival influences were emulated in the three-dimensional ornament applied, and whilst Erat and others largely copied Érard's, some makers, including Erat, tried at times to differentiate their instruments by applying different classically inspired ornament. When, later, the gothic model was

introduced, at least one maker (Blazdell) attempted to define a new decorative style (the Elizabethian) while others continued to copy Érard.

The English harp, a product of industrial revolution, developed simultaneously to other fledgling technologies. Its adoption coincided with the rapid expansion of London's population that provided a ready market for high value, luxury products.¹ Where the technical innovation of some instruments has been studied in depth, the London-made harp has hitherto largely been ignored. Authors have predominantly concentrated on the musical aspects of the instrument and have asserted Érard's dominance without acknowledging the scale of the industry, and the complex web of interrelationships between its key protagonists. Competition drove technical innovation, fuelled by the movement of workforce between makers. In patenting their technical designs, registrants played a small but significant part in the dramatic increase in the protection of intellectual property that occurred during the industrial revolution. The number of patents registered in Britain between 1790 and 1819 exceeded those enrolled in France, but by the 1820s, the situation had reversed; the British system was expensive and complicated (and hence prohibitive), but the French one, which did not require proof of novelty, was simpler and cheaper. Of those for musical instruments, patents for the harp numbered second only to the pianoforte, and taken together with letters from Pierre to Sébastien Érard and Robert Willis's diary, they paint a picture of heated rivalry between makers that, at times, bordered on animosity. Patents offered little protection in Britain, and other methods, such as bad-mouthing (attempts to proliferate bad publicity about competitors instruments), or buying others' designs, were arguably more rewarding. The Érards were the most prolific harp patentees, and Sébastien's 1794 patent remains the most important one registered for it, setting trends in both woodwork and mechanical design that are still in use today. Charles Groll's forgotten patent, however, was the first to double Érard's single action, and Groll deserves acknowledgement as a key innovator in the birth of the double-action instrument. The harp described in Erat's 1813 patent was made only in small numbers, and their reversion to Érard's relatively well-established design indicates lack of commercial success. Jacob's further patent attempt and the development of

¹ London's population grew rapidly from 900,000 in 1801 to 1,274,800 in 1821. London Statistical Society, *Statistical Illustrations of the Territorial Extent and Population [...] of the British Empire* (London: Effingham Wilson, 1827), p. 163.

Willis's patent harp show that innovation ran alongside routine manufacture. Other harp patents, particularly those never realised, may be viewed not as failures but as representative of a culture of rapid and vigorous evolution. They speak of the industrialisation of London, mechanisation of workshops, movement within the workforce, industrial espionage, and a dynamic and competitive industry. The dearth of patents and the financial collapse of several makers following Pape's registration of the last British harp patent (1845) indicate decline. Further study may show that this resulted from changing fashions and progressive globalisation (existing makers emigrated and new ones established overseas). As the economies of other countries – notably America – grew, a single centre of production, Soho, was succeeded by several. It is possible that the harp industry was, in part, a victim of its own success; Érard had made over 6,000 harps, and Erat over 4,000 (not to mention those by other makers, the output of which are unknown). A growing number of cheaper, second-hand instruments would have saturated the market and reduced exclusivity, and the appearance of the harp as a street-instrument during the second half of the nineteenth century would have damaged its position as a high-value, upper-class object.²

The Erat, Érard, and Dodd businesses were family based; further work is needed to establish familial lines of other makers. The Erats' accounts show that business and family were closely enmeshed; they enjoyed a comfortable upper-middle class lifestyle and could afford to run three properties. Clothing accounts, and those for Education, show that the family could afford high-quality goods and a boarding school education, and Jacob's funeral in 1821 was lavish.

Harp making, where successful, was lucrative. Jacob's last will and testament reveals a careful and meticulous man who planned for the continuation of his business and the security of his family. The business was profitable at the time of his death, and bequests show cash payments to family members and investments accrued over time. His choice of executors alludes to his social circle; Broadwood was a wealthy pianoforte maker, and George Sharp, a harp teacher, neighbour, and father of the prodigious harpist, Louisa Sharp. Affiliation to both would have been beneficial to the

² John E. Zucchi, *The Little Slaves of the Harp* (London: McGill-Queens University, 1992), p. 13.

company and shows that the family moved within middle-to-upper-class circles. Family continued to play an important role in the company following Jacob's death. By instructing that his wife should be allowed to continue the business until his eldest son was 25 years old, he moved the overseeing of the business from a patriarchal to matriarchal model, albeit for a limited time. This indicates that Martha had previously played a role and was acquainted with its day-to-day management. By leaving each daughter with an independent income as well as a dowry, Jacob can be viewed as somewhat enlightened. Jacob's sons, Jacob and James, would oversee the business until their deaths in 1836 and 1858.

Family and business life were also closely linked. Jacob junior, as honorary treasurer of the Society of British Musicians from 1834 until the closure of the business following James's death in 1858, socialised with the great and good of the musical world, and even petitioned Queen Victoria.³ Concerts at 23 Berners Street (including a one by Felix Mendelssohn) served to advertise the business.

The establishment and collocation of a harp making industry in Soho was fuelled by European immigration, workforce availability, manufacturing developments, and proximity of suppliers and customers in a focused metropolitan area. The flexibility of early Georgian townhouses, prevalent in this part of London, offered ideal spaces for makers, and those from different instrument specialisms sometimes occupied properties in succession.⁴ The vertical nature of these buildings, often with two rooms per floor, enabled (or perhaps forced) the subdivision of manufacture into distinct departments, and extensions were built on rear yards to house various offices. By 1819, the Erat's premises on Wardour Street had become chaotic and hazardous, and a

³ That William Erat, a professor of music, assumed the role following James's death indicates that the society was also important to him. It is likely that it advertised his occupation, but that he had also formed friendships with its members during his brother's tenures.

⁴ Jacob Erat took possession of 100 Wardour Street from William Milhouse, the woodwind maker. David Lasocki, 'New Light on Eighteenth-Century English Woodwind Makers from Newspaper Advertisements', *GJ*, 63 (2010), 73-142 (p. 80). Erat's subsequent manufactory at 23 Berners Street was later occupied by Rudall, Rose, and Carte, also woodwind makers. John Charles Schwieso occupied 95 Wardour Street (LMA. Sun Fire Insurance Policy, MS11936/493/995045, insured: John Charles Schwieso & Co., 11 Soho Square) previously occupied by Bates & Co., the pianoforte maker. Margaret Debenham, 'London Directory Entries for Musical Instrument Makers in the years 1763, 1793 and 1794'. <http://www.debenham.org.uk/personal/MD%20Extracted%20directory%20entries.pdf> [accessed 31 December 2016].

larger location was sought. Their move to Berners Street took place over an extended period whilst the new premises were altered and expanded; inventories and accounts, which name the offices of business, describe a period of transition, the stock in workshops changing over a four-year period. That few tools are documented indicates that the workmen provided and probably maintained their own.

Income from the sale of harps, predominantly to English customers, exceeded that of all other products combined, while London and its environs dominated hire. The Erats were located in close proximity to their suppliers, and it is likely that business relationships established whilst at Wardour Street were maintained following the move to Berners Street. Although most components were made in the workshops, some were bought from specialist craftsmen. Whilst the opening accounts indicate the business was profitable, analysis of later accounts reveal that it was loss making. Family expenditure, a result of family aspiration, would have further compounded losses. Despite apparently healthy sales and low supplier costs income was insufficient to balance the books, and it was probably this that occasioned legal action between George Sharp (an executor) and the family.

Erat's workforce was divided into specialisms focused on the wooden or metal parts of the harp, and movement between jobs indicates that promotion depended on experience. Apprenticeship, the terms of which changed little over the nineteenth-century, was the usual method of training. The men were paid well, and although payments for food and drink suggest that they were treated well too, incidents of indiscipline occasionally disrupted work. The formation of a trade society for harp makers in 1828 occurred comparatively late when compared to other industries, but we do not know whether the Erat's men were members.

Harp manufacture combined traditional craft skills with new ones made possible by advances in machinery. Erat's 1824 inventory lists four lathes, probably used for turning metal, and Holtzapffel later describes a bespoke harp maker's drilling machine.⁵ Contemporary treatises on woodworking and crafts describe some of the skills and methods that would have been used by harp makers; Holtzapffel's harp-

⁵ Holtzapffel (1843). p. 62.

specific descriptions, particularly with regard to drilling, cutting tuning pin heads, making harp plates, and finishing the woodwork, are particularly illuminating, and demonstrate how skilful the makers were. Craftsmen drawn from other fields were sometimes employed: both Erat and Érard hired cabinetmakers, indicating transferability of skills, and clockmakers occasionally aided development of the mechanism.

Harp development was collaborative, and trial, error, and problem solving were important aspects of design and development. Monies spent during the prototyping stage of Willis's harp illuminates the cost of innovation, casting doubt on Pierre Érard's exaggerated claim that his uncle spent over £20,000 developing his double-action harp. Where Érard had earlier bought Charles Groll's patent, Erat chose to licence Willis's in a deal that could have given the young man a healthy annual income, though he would have received less per harp than a teacher received in commission. Erat's death nullified the deal.

Occasional references to Willis's private life offer insights into the social life of young gentlemen of the period. He expressed great interest in new London architecture and buildings (anticipating his later academic career), attended the opera, learnt to play instruments, and commented on his immediate social group and their activities.

This thesis is ambitious in three respects. Firstly, the sources studied are unusual in their breadth. Both known and newly discovered primary sources are considered; findings are based on contemporaneous instruments, drawings, decorative moulds, financial accounts, patents, letters, a diary, property leases, indentures, inventories, insurance policies, newspapers, directories, and other literature; later source materials include plans and photographs of buildings. While individually interesting, together they afford a vivid picture of an important nineteenth-century London industry.

Secondly, this work encompasses a wide range of methodologies from different but interrelated fields: organology, musicology, material culture, and design and cultural history; and applies large-scale financial analysis to a musical instrument for the first time. The drawing together and interpretation of disparate documents presents a

problem to the researcher. In her study of musical instrument making businesses in early industrial London, Nex (2013) observes that the financial aspects of musical instrument making are the least examined and that more work is needed to identify and analyse new sources.⁶ By using statistical analysis, I show that voluminous business accounts can be mined for quantitative and qualitative information.

Finally, significant new information has been revealed about consumption in relation to family and class; products, their uses and users; business success and failure; and practicalities of manufacturing, including spatial arrangement of a workshop, workforce and training, materials, processes, and skills. Hitherto, analyses of makers' records have typically been selective or modest in scale. The database transcription of narrative documents, exemplified by letters from Pierre to Sébastien Érard, patent summaries, and Willis's diary, demonstrate that this method can be applied in non-financial sources, enabling the researcher to manage, compare, and contrast large and various bodies of information. Advances in digital photography and changes in archival policy permitting its use permit virtual removal from an archive, offering unprecedented analytical possibilities to the researcher who, freed from the constraints of institutional opening hours, can transcribe and collate data in databases and in other ways. Further developments in optical character recognition (OCR) may enable such documents to be scanned and digitised.

Of harp makers, the Érard ledgers (1797-1917) have been studied to some degree;⁷ but the Morley ledgers (1891-1943),⁸ and those created by J. F. Browne & Co (1849-1919), remain unstudied.⁹ Their full examination would illuminate our understanding of harp manufacture and consumption from late eighteenth-century London-based beginnings to the middle of the twentieth, encompassing the industry's expansion to North America. Accounts, originally intended as records of income and expenditure, thus offer the researcher significant scope better to understand the companies for which they survive. The limited extent of the Erat accounts belies their depth; their analysis

⁶ Nex (2013), p. 291.

⁷ The Érard ledgers, RCM. GB 1249 Érard.

⁸ The Morley ledgers, private collection.

⁹ J. F. Browne & Co. harp maker, Winterthur Museum, Wilmington, Delaware, doc. 268.

here demonstrates methods that are transferable to the study of the products, services, achievements of other instrument makers.

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Appendices

Appendix 1: The Erat ledger and cashbook: codicology

The 548-page Erat ledger,¹ bound in brushed leather with embossed foliate edges on the front and backboards, measures 420mm by 300mm by 65mm, with pages sized 410mm by 270mm. The spine is embossed with 5 black horizontal lines, spaced 60mm apart, and carries a red parchment label with the word 'Journal' in 9mm high gilt letters. The front cover carries a black 10mm letter C in gothic script. The end sheets are marbled in red and dark blue. A General Stationary Warehouse supplier label is pasted on the inner cover naming the supplier as J. Kirton and recording an address at 1 Portland Street, Cavendish Square. It is collated of 23 quires of 10 bifolia; the final three quires are compiled of 12 bifolia. Six stitches, 2 of 3.2mm (top and bottom) and 4 of 4.5mm are visible over binding tape inside the front and back hinges. Alternate green and brown thread is visible at the back of the textblock. Pages are ruled with 45 faint horizontal lines spaced at 8.4mm intervals. Headers are 12.7mm high. 9 columns, spaced left to right measure 127mm (entry number), 194mm (description), 15mm (£), 9mm (s) and 10 (d). A further 4 columns ruled in red measure 8mm, 13.5mm, 8mm and 13mm. Pages are numbered consecutively, 1 to 542 in copperplate script, top right on recto and top left on verso leaves. The final four pages are unused and unnumbered. Monthly entries are arranged by income (sundries drawn to strings, repair of harps, music desks &c., hire of music desks, wrest pins, harp covers, harps, harp hire, portorage and carriage, petty cash, and bills receivable (monies owed to the company falling due at a later date)) and expenditure (drawn to sundries, including harps, discounts, and cash payments (housekeeping, wages, monies spent on the family)); bills received or due are sometimes listed at the end of the month.

The calf-skin covered, 156-page cashbook measures 430mm by 170mm by 19mm, with a capital E printed in black on the front cover.² Pages measure 380mm by 162mm. The end sheets are of white paper and the front one carries the same retailers' label as the journal. As both commence on 21 February 1821, it is likely

¹ TNA. C110/99, EL.

² TNA. C110/99, ECB.

that the ledger and cashbook were purchased together. Bound with 5 stitches measuring top to bottom: 36mm, 57mm, 58mm, 60mm, and 36mm, the cashbook is compiled in 5 quires, of 9, 7, 8, 7, and 8 bifolia totalling 156 pages. Pages are ruled with 5 columns measuring, left to right: 23.5mm (date), 20.2mm (description), 12mm (£), 7.5mm (s), and 15mm (d). The first page is surmounted with a header row measuring 26.5mm, and is ruled in red ink. Pages are numbered consecutively: 1 to 153. There are two pagination errors: pages 80 and 103 are repeated consecutively. There are typically 42 entries per page. Encompassing 63 months and comprising 5654 entries (each recording date, item or items purchased and amount spent), the cashbook documents the daily purchases necessary for the administration of the business. Initially in regular use, with 1044, 1433 and 1487 entries in 1821, 1822, and 1823 respectively, by 1824 the number of entries falls to 1353, followed by 245 and 93 entries in 1825 and 1826.

Appendix 2: The harp in context

Appendix 2.1: Sources for trades plotted on Horwood's map (fig. 2.3)

Musical Instrument Makers	Source
a. John Broadwood, pianoforte maker, Great Pulteney Street.	<i>Kent's Original London Directory</i> (London: Causton, 1794).
b. Christopher Ganer, pianoforte maker, Broad Street	Pierre Dubois, <i>Music in the Georgian Novel</i> (Cambridge: Cambridge University Press, 2015), p. 335
c. Rice Jones, pianoforte maker, Golden Square	TNA, PROB 11/1523/41, Will of Rice Jones, Coal Merchant and Piano Forte Maker of Golden Square, Middlesex, 6 June 1811.
d. John Browne, pianoforte maker, 27 Soho Square	John Tallis, <i>Tallis's London Street Views</i> (London: Nattali and Maurice, 1969), p. 207.
Theatres and Music Rooms	Source
1. Hanover Square Rooms	Simon McVeigh, <i>Concert Life in London from Mozart to Haydn</i> (Cambridge: Cambridge University Press, 1993), xx.
2. The (New) Argyll Rooms	
3. The Pantheon	
4. Tottenham Street Rooms	
5. Theatre Royal	
6. King's Theatre	
7. Hickford's Rooms	
8. Carlisle House	
Associated trades and notable residents	Source
i. Samuel Taylor Coleridge, 71 Berners Street, poet (1812-13).	http://www.english-heritage.org.uk/visit/blue-plaques/coleridge-samuel-taylor-1772-1834
ii. Thomas Hardwick Junior, 55 Berners Street, architect.	Karen Mulhallen, <i>Blake in our Time</i> (London: University of Toronto Press, 2010), p. 144.
iii. Sir William Chambers, 53 Berners Street, architect.	Henry Benjamin Wheatley, <i>London Past and Present</i> (Cambridge: Cambridge University Press, 2011), p. 169.
iv. William Shield, 31 Berners Street, composer.	LMA. Sun Fire Office, Insurance Policy, MS 11936/498/1006316, 30 July 1823.
v. David Taylor, 26 Berners Street, cabinetmaker.	LMA. Sun Fire Office, Insurance Policy, MS 11936/509/1037729, 11 November 1825.
vi. Henry Bone R.A., 19 Berners Street, Enamel painter to His Majesty and HRH The Prince Regent	<i>Annals of the Fine Arts</i> (London: Sherwood, Neely, and Jones, 1817), p. 422.
vii. Thomas Sheraton, 106 Wardour Street, cabinetmaker.	http://www.english-heritage.org.uk/visit/blue-plaques/sheraton-thomas-1751-1806
viii. Robert Williams, 102 Wardour Street, saw maker.	LMA. Sun Fire Office, Insurance Policy, MS 11936/410/675411, 13 February 1798.
ix. James Newton, 63 Wardour Street, cabinetmaker.	LMA. Sun Fire Office, Insurance Policy, MS 11936/407/660924, 7 January 1797.
x. John Banyon, 76 Wardour Street, dealer in coals and timber.	LMA. Sun Fire Office, Insurance Policy, MS 11936/410/673321, 15 December 1797.
xi. John Wellsman, 33 Wardour Street, cabinetmaker and upholsterer.	LMA. Sun Fire Office, Insurance Policy, MS 11936/457/879734, 25 February 1813.
xii. John Meals, 28 Wardour Street, carver and gilder.	LMA. Sun Fire Office, Insurance Policy, MS 11936/410/668669, 1 August 1797.
xiii. William Cairncross, 17 Wardour Street, timber merchant.	LMA. Sun Fire Office, Insurance Policy, MS 11936/453/844466, 14 April 1810.

Appendix 2.2: Sun Fire Insurance policies for Wardour Street occupants (1797-1812)

House No.	Sun Fire Insurance LMA. Ref./ other source	Date	Name	Occupation/Position
1	MS 11936/410/675686	31 March 1798	Sarah Weston	Spinster
2	MS 11936/407/658446	29 September 1796	William Garness and William Wicks	Draper tailors and salesmen
2	MS 11936/410/675487	12 March 1798	Thomas Wood	Gent
2	MS 11936/410/675686	31 March 1798	Sarah Weston	Spinster
3	MS 11936/407/665278	18 April 1797	Peter Vincent	Gent
3	MS 11936/419/718878	1 July 1801	John Watkinson	Gent
3	MS 11936/431/764795	15 September 1804	John Baptist Vincent and Peter Vincent	Goldsmiths
3	MS 11936/431/767060	29 September 1804	John Watkinson	Gent
5	MS 11936/437/798725	11 January 1811	Benjamin Dring	Tallow chandlers
6	MS 11936/419/715874	6 April 1801	John Griffith	Broker
6	MS 11936/431/769097	9 November 1804	John Griffith	Coach and trunk maker
6	MS 11936/431/769142	3 December 1804	John Griffith	Broker, administrator in trust to Joseph Griffith deceased
8	MS 11936/419/721130	6 July 1801	Rebecca Vicent	Spinster
11	MS 11936/419/721146	7 July 1801	James Gosling	Baker
12	MS 11936/440/802907	14 May 1811	Joseph Dales	Cabinetmaker
14	MS 11936/413/692583	17 August 1799	Charles Bird	Gent
15	MS 11936/413/692593	17 August 1799	George Cussons	Gent
15	MS 11936/445/814993	10 April 1812	James Price	Gold worker
19	MS 11936/407/658446	29 September 1796	William Garness and William Wicks	Draper tailors and salesmen
24	MS 11936/407/655671	7 July 1796	Alexander Redford	Carpenter
25	MS 11936/427/747737	25 May 1803	Sarah Taylor	Widow
28	MS 11936/407/658093	16 August 1796	Ann Bullen	Widow
28	MS 11936/410/668669	7 August 1797	John Meals	Carver and gilder
28	MS 11936/437/790589	26 June 1810	George Cobden	Tailor

29	MS 11936/407/662952	22 March 1797	Mary Grandy	Bricklayer
30	MS 11936/410/670806	16 October 1797	Adam Sturges	Butcher
31	MS 11936/413/689672	25 June 1799	Richard Kimpton	Shoemaker
34	MS 11936/400/642265	5 May 1795	Edward Pugh	Gent
34	MS 11936/419/715511	11 March 1801	Henry Ward	Dealer in tobacco
34	MS 11936/437/798271	30 December 1810	Henry Ward	Tobacconist
37	MS 11936/419/709813	29 November 1800	Mary Smith	Chandler
53	MS 11936/407/665693	24 May 1797	Richard and James Green	Smiths and bell hangers
53	MS 11936/437/792303	16 July 1810	John Barrett	Cabinetmaker
60	MS 11936/413/684964	21 January 1799	Thomas Watson	Upholder
61	MS 11936/407/658461	30 September 1796	James Fraser	Gent
61	MS 11936/413/689963	5 July 1799	John Schweitzer	Tailor
63	MS 11936/407/660924	7 January 1797	James Newton	cabinetmaker
66	MS 11936/410/670563	12 October 1797	William Jones	Chemist and druggist
70	MS 11936/419/712152	31 December 1800	John Imray	Gent
71	MS 11936/440/802404	14 April 1811	Joseph Steavenson	Distiller
74	MS 11936/430/760298	5 March 1804	Joseph Simpson	Bricklayer
76	MS 11936/410/673321	15 December 1797	John Banyon	Dealer in coals and wood
79	MS 11936/431/769177	26 December 1804	William Haslam	Carpenter
79	MS 11936/440/812763	13 January 1812	William Haslam	Builder
82	MS 11936/413/682996	28 December 1798	John Lockhart	Carpenter
86	MS 11936/434/785088	7 January 1810	Joseph Simpson	Bricklayer
87	MS 11936/431/762534	6 June 1804	John Berry	Chandler
89	MS 11936/410/670537	10 October 1797	Robert Linch	Gent
89	MS 11936/419/718603	27 May 1801	Ann Ross	Widow
90	MS 11936/445/819322	7 July 1812	William Pott senr. & junr.	Cabinetmakers
91	MS 11936/413/692356	16 July 1799	John Barfield	Printer
93	MS 11936/407/665277	15 April 1797	John Fillingham	Coach maker
96	MS 11936/410/673808	1 January 1798	James Styring	Tallow chandler
96	MS 11936/423/725286	24 November 1801	Anthony Fisher	Wax and tallow chandler
99	MS 11936/431/762835	28 June 1804	Mark Pounder	Smith

101	MS 11936/431/767253	5 October 1804	Edward Myers	Gent
102	MS 11936/410/675411	13 February 1798	Robert Williams	Saw maker
103	MS 11936/407/655635	4 July 1796	Catherine Parkins	Laundress
104	MS 11936/410/675083	15 January 1798	Thomas Flint	Cabinetmaker
105	MS 11936/413/687400	18 March 1799	Martha Arthur	Widow
112	MS 11936/407/665192	4 April 1797	Mary Wallace	Spinster
113	MS 11936/407/658979	28 October 1796	Cussons	Cabinetmaker
114	MS 11936/413/687151	7 February 1799	John Bray	Tailor
115	MS 11936/407/658979	28 October 1796	John Bray	Tailor
118	MS 11936/423/732370	19 June 1802	James White	Cheesemonger
122	MS 11936/445/825564	15 January 1813	Jekel Catesby and Alexander Spencer	Chair painters
124	MS 11936/410/677794	29 June 1798	Philip Blenne	Goldsmith
127	MS 11936/407/660997	16 January 1797	Barnard King	Cook
150	MS 11936/413/684905	15 January 1799	Isaac Rook	Carpenter
The Fox	MS 11936/413/689208	13 April 1799	Job Carteridge	Victualler
The Jolly Brewer	MS 11936/413/689412	13 May 1799	Richard Butter	Victualler
The Queens Arms	MS 11936/440/812982	23 January 1812	James Woodroffe	Victualler

Appendix 2.3 Sun Fire Insurance policies for Berners Street occupants (1820-1825)

House No.	Sun Fire Insurance LMA. Ref./ other source	Date	Name	Occupation/Position
1	MS 11936/488/978798	26 April 1821	William Strong	Private
1	MS 11936/498/1005766	26 June 1823	William Honeywell	Coach maker
1	MS 11936/504/1033388	3 August 1825	William Honeywell	Coach maker
2	MS 11936/483/966642	May 1820	Clement Sharp & Rev John Quarrington	Cabinetmakers and upholsterers
2	MS 11936/488/976435	7 February 1821	Clement Sharp and William Dudds	Cabinetmakers and upholsterers
2	MS 11936/504/1026932	16 February 1825	Clement Sharp	Cabinetmaker
3	Kent's Original London Directory (London: Cawston, 1823).	1823	Dodd & Sons	Manufacturers of Dizis Patent Harp
4	MS 11936/498/1005375	4 June 1823	James Clavering Esq	Private
11	MS 11936/493/989752	4 April 1822	John Cox	Bookseller
11	MS 11936/498/1003788	7 May 1823	John Cox	Bookseller
13	MS 11936/498/1010014	30 October 1823	Jane Lynd	Private
14	MS 11936/498/1010335	17 November 1823	Richard Evans and Benjamin Salkill	Wheelwright
16	MS 11936/509/1039298	15 December 1825	Charles William Charlton	Gent and his wife (maternal aunt of Charles Dickens) a spinner of piano forte strings
18	MS 11936/488/981110	5 July 1821	Frances Morgan	Private
20	MS 11936/493/995784	10 October 1822	Gian Battista Rolandi	Bookseller
23	MS 11936/488/976442	14 February 1821	Jacob Erat	Harp Maker
23	MS 11936/488/976443	14 February 1821	Jacob Erat	Harp Maker
23	MS 11936/504/1028246	2 March 1825	The Executors of Jacob Erat	Harp Maker
26	MS 11936/488/983859	8 October 1821	David Taylor	Cabinet maker
26	MS 11936/493/997359	6 November 1822	David Taylor	Cabinetmaker & upholsterer
26	MS 11936/498/1008799	30 October 1823	David Taylor	Cabinetmaker & upholsterer
26	MS 11936/499/1021655	November 1824	David Taylor	Cabinetmaker & upholsterer
26	MS 11936/509/1037729	11 November 1825	David Taylor	Cabinetmaker & upholsterer
27	MS 11936/509/1037729	11 November 1825	David Taylor	Cabinetmaker & upholsterer
28	MS 11936/497/1016713	21 April 1824	Elizabeth Trail	Widow
31	MS 11936/498/1006316	30 July 1823	William Shield esq.	Composer and musician

35	MS 11936/483/974342	14 December 1820	William Elliott	Baker
35	MS 11936/503/1035171	25 August 1825	Rachel and Elizabeth Collin	Dress makers and dealers in toys
43	MS 11936/483/970962	9 October 1820	John Watson	Gent
45	MS 11936/488/983053	10 September 1821	Jane Bartleman	Private
45	MS 11936/487/985860	3 December 1821	John Crosdill	Musician, violoncellist, and violinist
46	MS 11936/483/970354	10 August 1820	Sir Robert baker	Private
62	MS 11936/483/966638	May 1820	John King	Baker
62	MS 11936/499/1016630	29 April 1824	John King	Baker
62	MS 11936/499/1023379	9 December 1824	John King	Baker
63	MS 11936/483/970568	7 September 1820	Luc Etienne Bertin	surgeon
65	MS 11936/504/1031069	26 May 1825	Richard Rawe Esq	Private
65	MS 11936/509/1037161	26 October 1825	John Shaw Esq & Rice Ives Esq	Private
67	MS 11936/483/970340	2 August 1820	Henry Delamain Esq	Wine merchant

2.3.1. Other notable residents on Berners Street

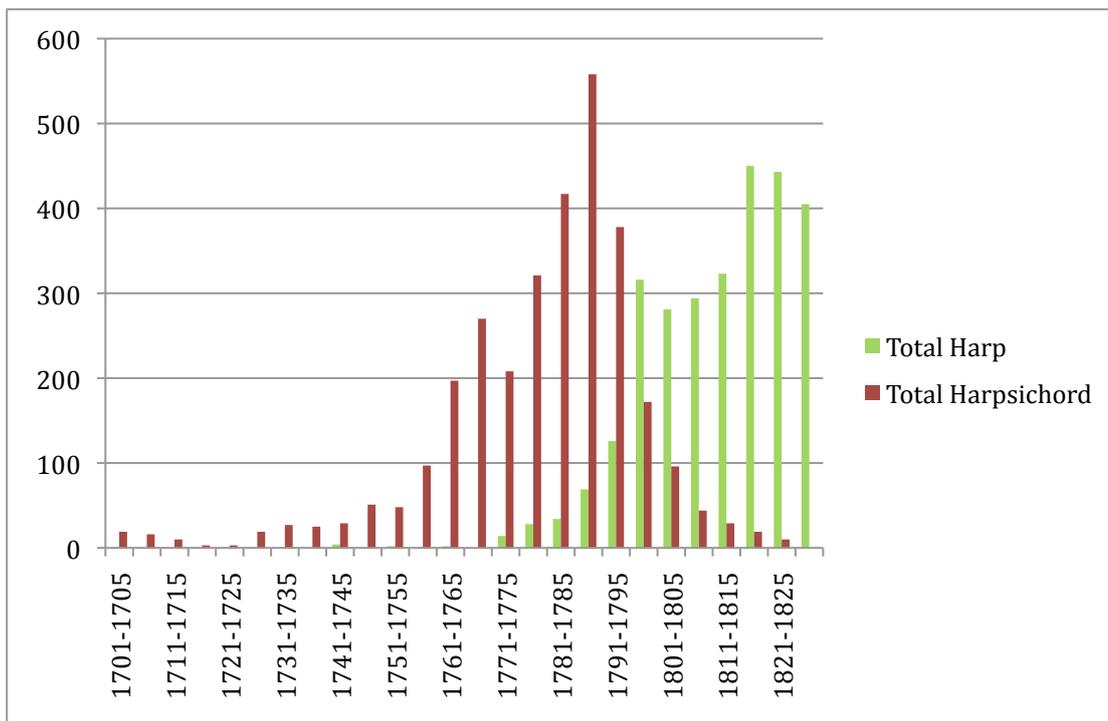
8	http://en.wikipedia.org/wiki/John_Opie	1791-1807	John Opie R.A. (16 May 1761 – 9 April 1807)	Historical & portrait painter
12	http://www.britishmuseum.org/research/search_the_collection_database/term_details.aspx?bioId=124383	from c1803	Henry Fuseli	Painter/ draughtsman, author & poet
19	Annals of the fine arts, vol. 1 (London: Sherwood, 1817) p. 422	1817	H. Bone R.A.	Enamel painter to His Majesty and HRH The Prince Regent
53	http://www.racollection.org.uk/ixbin/indexplus?_IXACTION_=file&_IXFILE_=templates/full/person.html&person=5569	Died 1796	Sir William Chambers (23 Feb 1723-8 March 1796)	Architect
55	http://www.victorianweb.org/art/architecture/hardwick/biothjr.html	died 1829	Thomas Hardwick Junior d.1829	Architect
71	http://openplaques.org/plaques/272	1812-13	Samuel Taylor Coleridge 1772-1834	Poet & philosopher

Appendix 2.4: Social classes, their descriptions, and yearly incomes

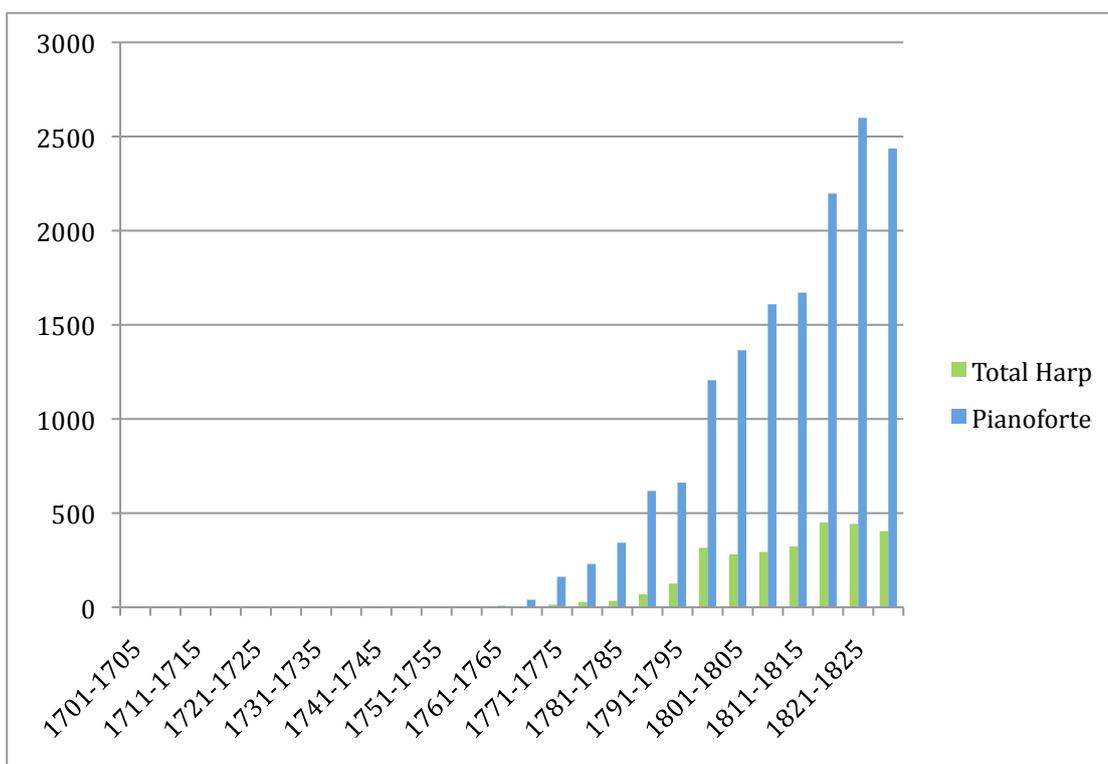
From Patrick Colquhoun, *A Treatise on the Wealth, Power, and Resources of the British Empire Explained* (London: Mawman, 1814), pp. 106-107.

The population of the United Kingdom of Great Britain and Ireland, including the army and navy, admits of the following division into classes, viz. Colquhoun pp.106-107.	Heads of Families.	Total persons comprising their Families.	Average yearly income of the family of each class. (£)
HIGHEST ORDERS 1 st . The Royal Family, the Lords Spiritual and Temporal, the Great Officers of State, and all above the degree of a Baronet, with their families	576	2880	5,010 - 172,000
SECOND CLASS 2 ^d . Baronets, Knights, Country Gentlemen, and others having large incomes, with their families	46,861	234,305	800 - 3,510
THIRD CLASS 3 ^d . Dignified Clergy, Persons holding considerable employments in the State, elevated situations in the Law, eminent Practitioners in Physic, considerable Merchants, Manufacturers upon a large scale, and Bankers of the first order with their families	12,000	61,000	300 - 2,600
FOURTH CLASS 4 th . Persons holding inferior situations in Church and State, respectable Clergymen of different persuasions, Practitioners in Law and Physic, Teacher of Youth of the superior order, respectable Freeholders, Ship Owners, Merchants and Manufacturers of the second class, Warehousemen and respectable Shopkeepers, Artists, respectable Builders, Mechanics, and Persons living on moderate incomes, with their families	233,650	1,168,250	200 - 805
FIFTH CLASS 5 th . Lesser Freeholders, Shopkeepers of the second order, Inn-keepers, Publicans, and Persons engaged in miscellaneous occupations or living on moderate incomes, with their families	564,799	2,798,475	100 - 200
SIXTH CLASS 6 th . Working Mechanics, Artisans, Handicrafts, Agricultural Labourers, and others subsists by labour in various employments, with their families	2,126,095	8,792,800	45 - 50
SEVENTH, OR LOWEST CLASS 7 th . Paupers and their families, Vagrants, Gipsies, Rogues, Vagabonds, and idle and disorderly persons, supported by criminal delinquency	387,100	1,828,170	10 - 12
THE ARMY AND NAVY Officers of the Army, Navy, and Marines, including all Officers on half-pay and superannuated, with their families	10,500	69,000	35 - 300
Non-commissioned Officers in the Army, Navy, and Marines, Soldiers, Seamen, and Marines, including Pensioners of the Army, Navy, &c. and their families	120,000	862,000	

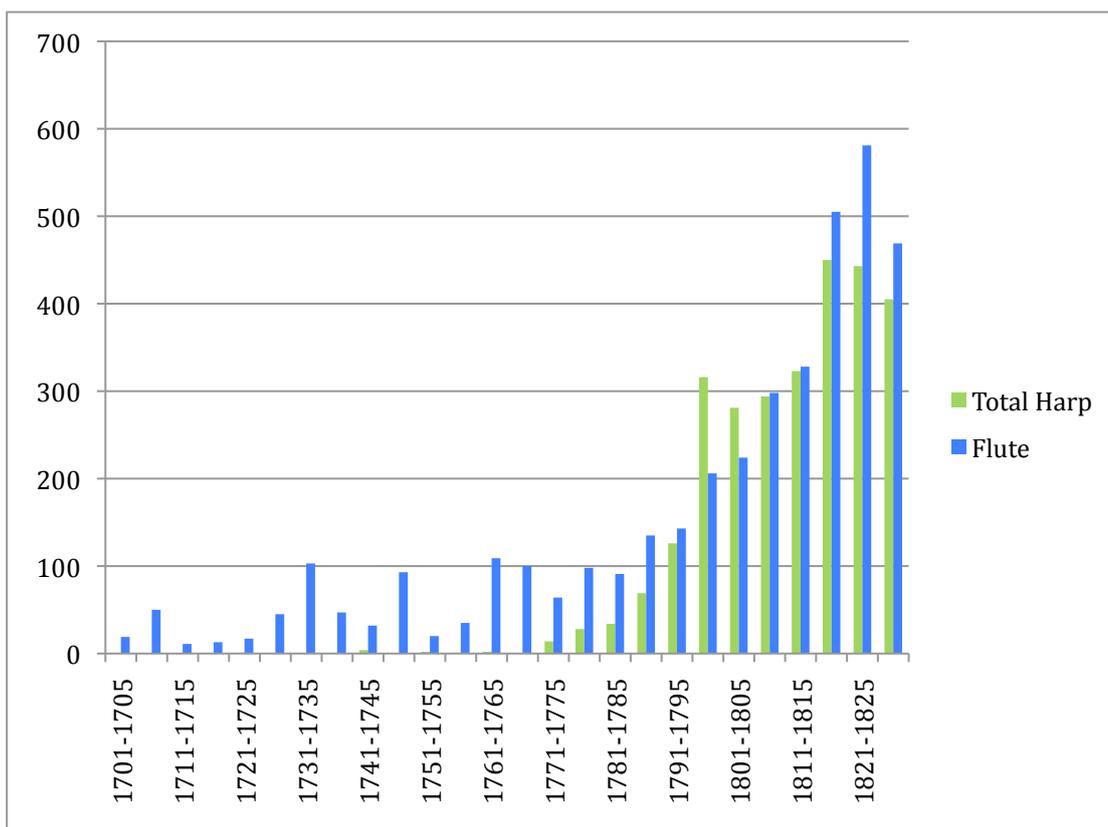
Appendix 2.5: Numbers of works published for the harp compared with other instruments



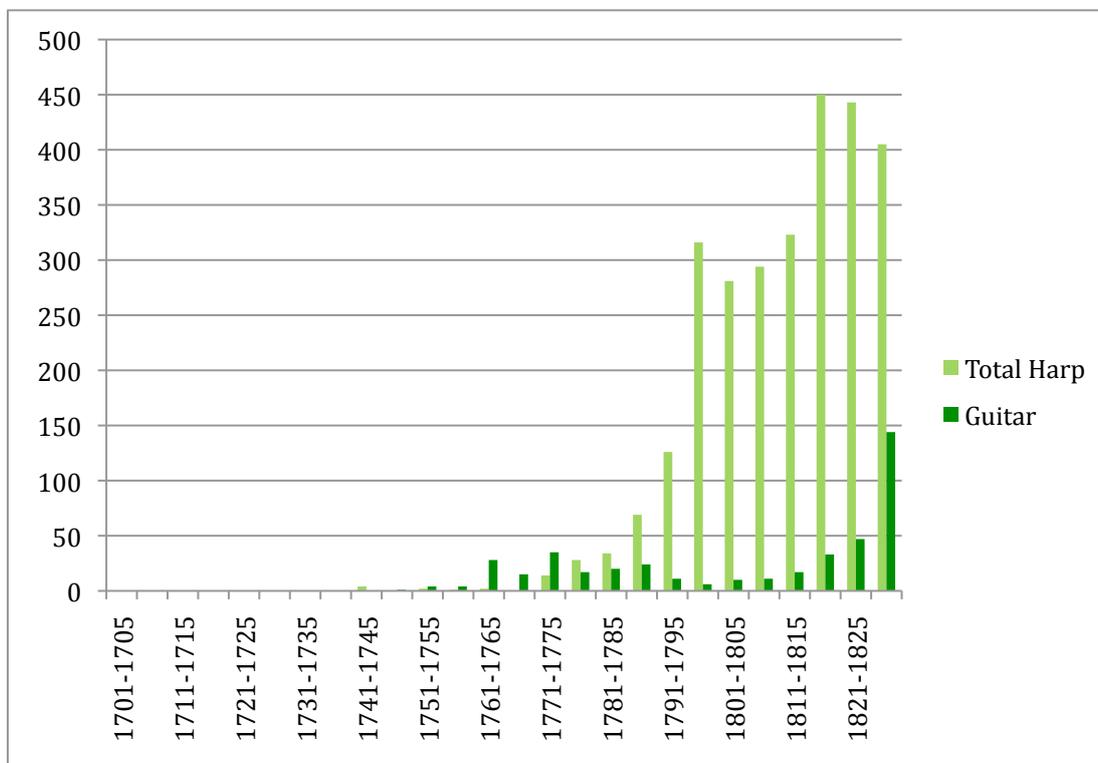
Comparison of number of works in the British Library for the harp with those for the harpsichord



Comparison of number of works in the British Library for the harp with those for pianoforte



Comparison of number of works in the British Library for the harp with those for flute



Comparison of number of works in the British Library for the harp with those for guitar

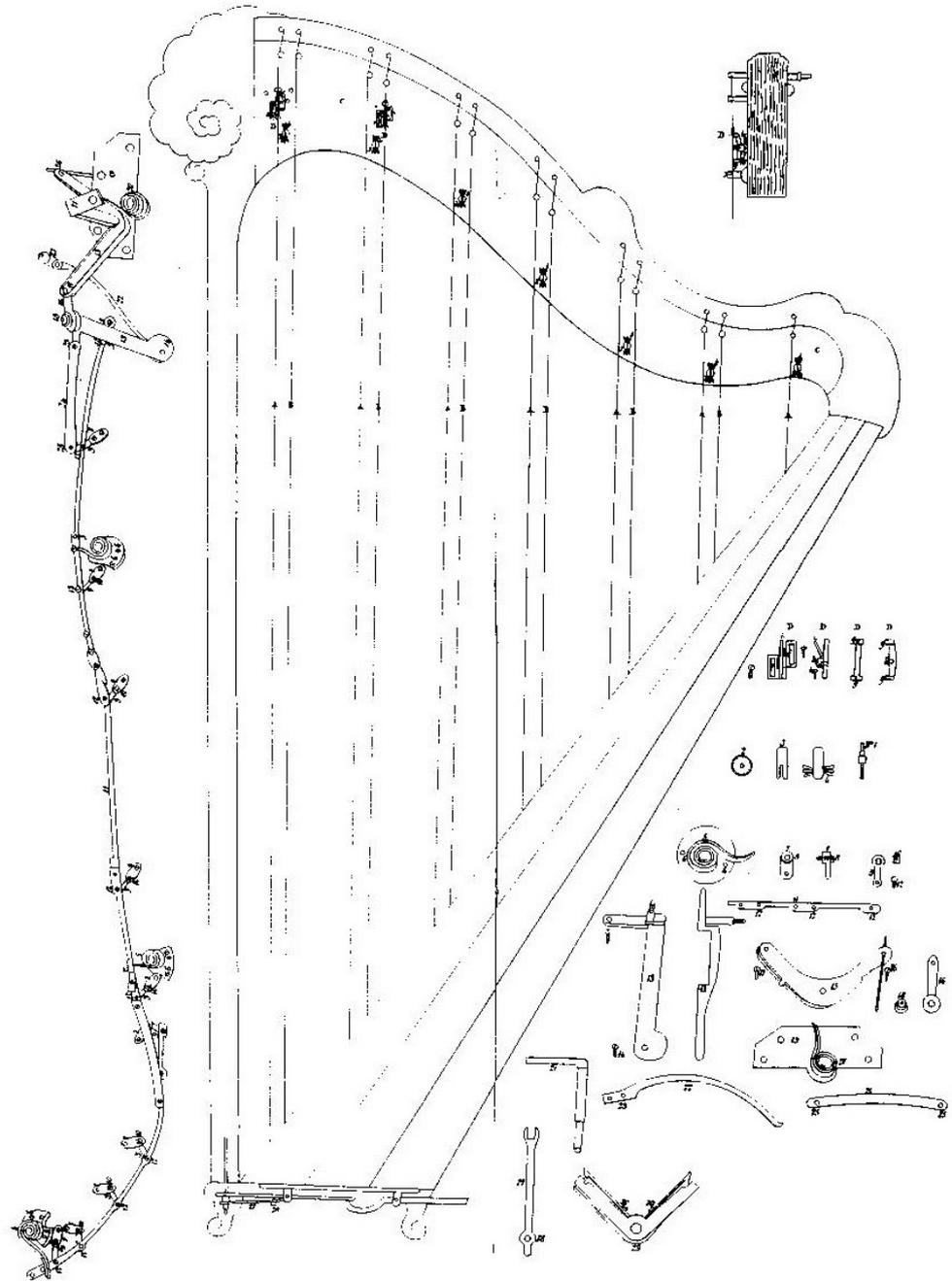
Appendix 4: Harp Patents**Appendix 4.1: Harp patents registered in London**

Year	Patentee	Number	Specification Title
1794	Sébastien Érard	2,016	Certain Improvements in the harp and pianoforte both large and small.
1800	George Fröschle	2,387	Two several improvements in the pedal harp.
1801	Sébastien Érard	2,502	Certain new improvements in the construction of harps and pianofortes both large and small.
1801	John Becker	2,551	Improvements in musical instruments, chiefly applicable to harps and pianofortes.
1802	Sébastien Érard	2,595	Improvements in the construction of the musical instrument called a harp.
1803	George Woods	2,718	Certain new methods of constructing harps, harpsichords, pianofortes, violins, and guitars, and other stringed musical instruments.
1805	Richard Jubb	2,838	Making and tuning the musical instrument called the pedal harp.
1807	Charles Gröll	3,059	Certain improvements upon harps.
1808	Sébastien Érard	3,170	Certain improvements upon pianofortes, large & small, and upon harps.
1810	Sébastien Érard	3,332	Certain further improvements upon pianofortes and harps.
1813	Charles Gröll and Frederick Dizi	3,642	Certain Improvements on harps.
1813	Jacob Erat	3,693	An improvement in the construction of the pedal harp.
1817	Frederick Dizi	4171	New-Invented Improvements on harps
1819	Robert Willis	4,343	An improvement or improvements upon the pedal harp.
1822	Pierre Érard	4,670	Certain Improvements on harps.
1822	Edward Dodd	4,671	Improvements on pedal harps.
1822	James Delveau	4,672	An improvement on harps.
1826	John Charles Schwieso	5,404	Improvements on certain stringed musical instruments.
1835	Pierre Érard	6,962	Certain Improvements on harps.
1836	James Corbett	7,241	Certain improvements in producing harmonic sounds on the harp.
1837	Frederick Grosjean	7,450	Certain improvements on harps, which improvement are applicable to other musical instruments.
1840	John Hawley	8,526	Improvements in pianos and harps.
1845	John Henry Pape	10,668	Improvements in musical instruments.

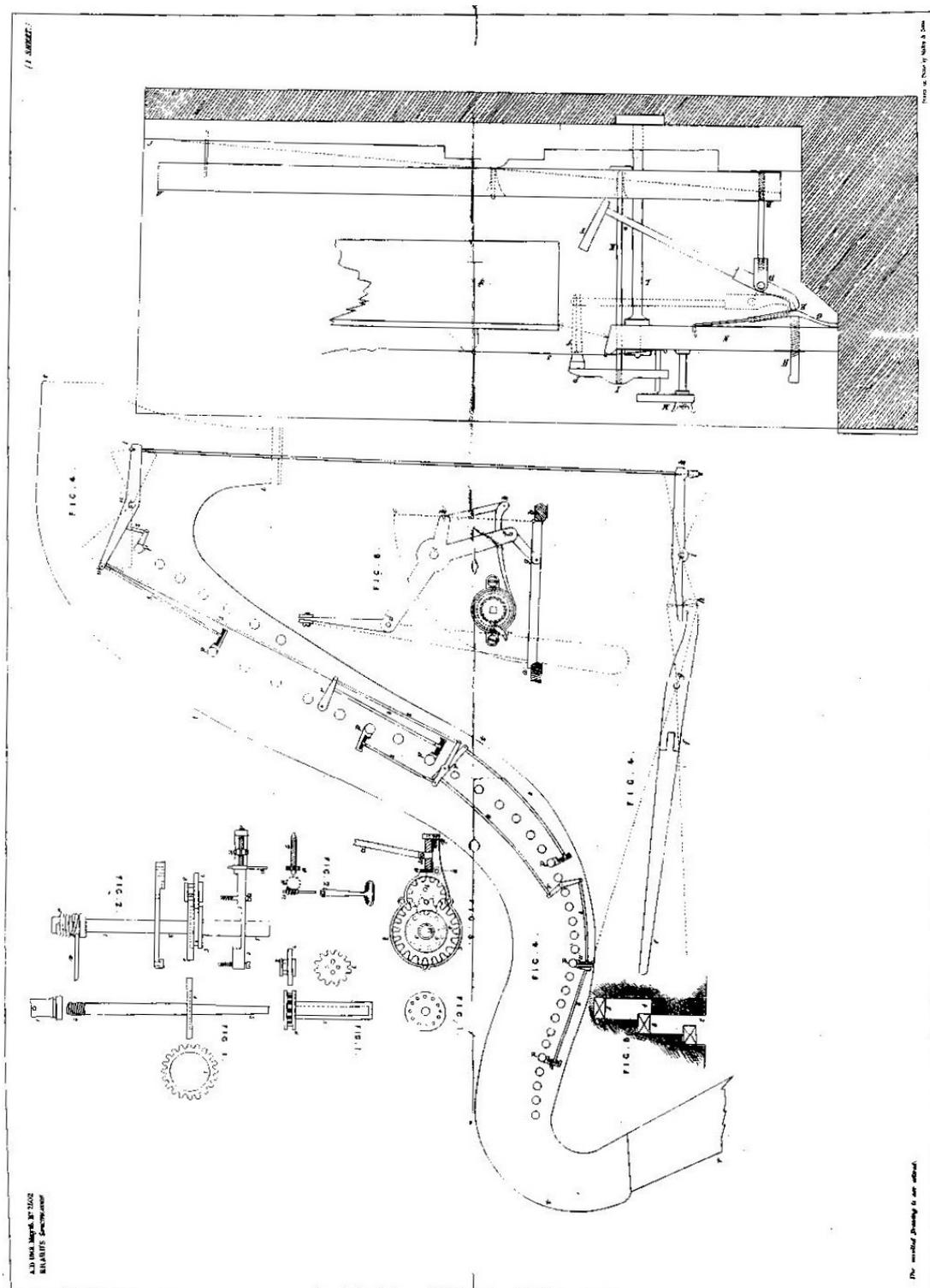
Appendix 4.2: George Fröschle's patent, no. 2387, 3 May 1800

A.D. 1800, May 3, No 2387.
FRÖSCHLE'S SPECIFICATION.

11-56871



Appendix 4.3. Sébastien Érard's patent, no. 2502, 16 May 1801



Appendix 4.5: Wood’s patent, no. 2718, 28 June 1803: string dimensions

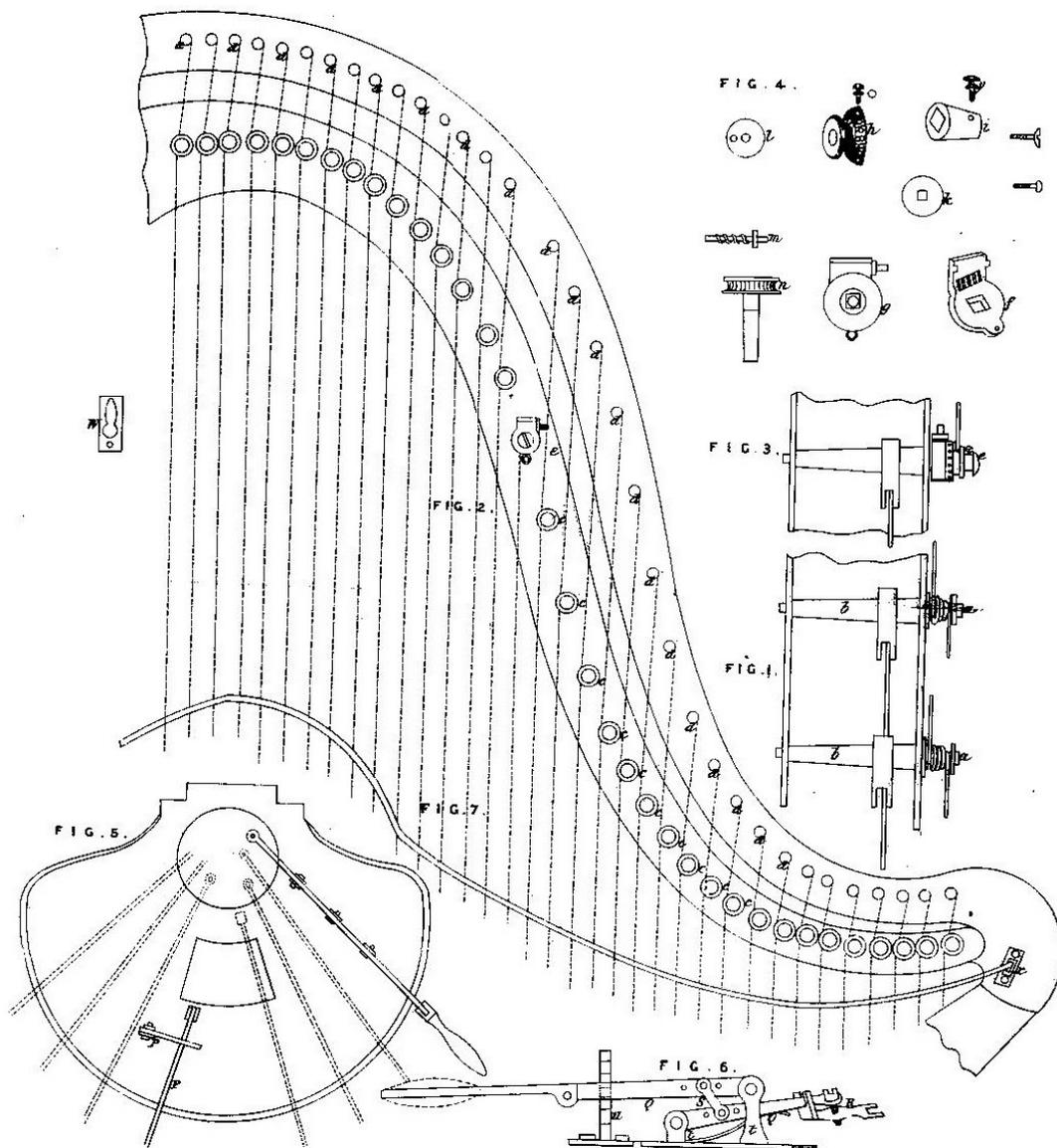
Supposing the lowest note on the harp to be D, and the uppermost C, and supposing the length of the longest string to be forty-seven inches and two-tenths, and of the shortest five inches, the diameter (on equal tension being given to all strings) will be in the following proportions.³

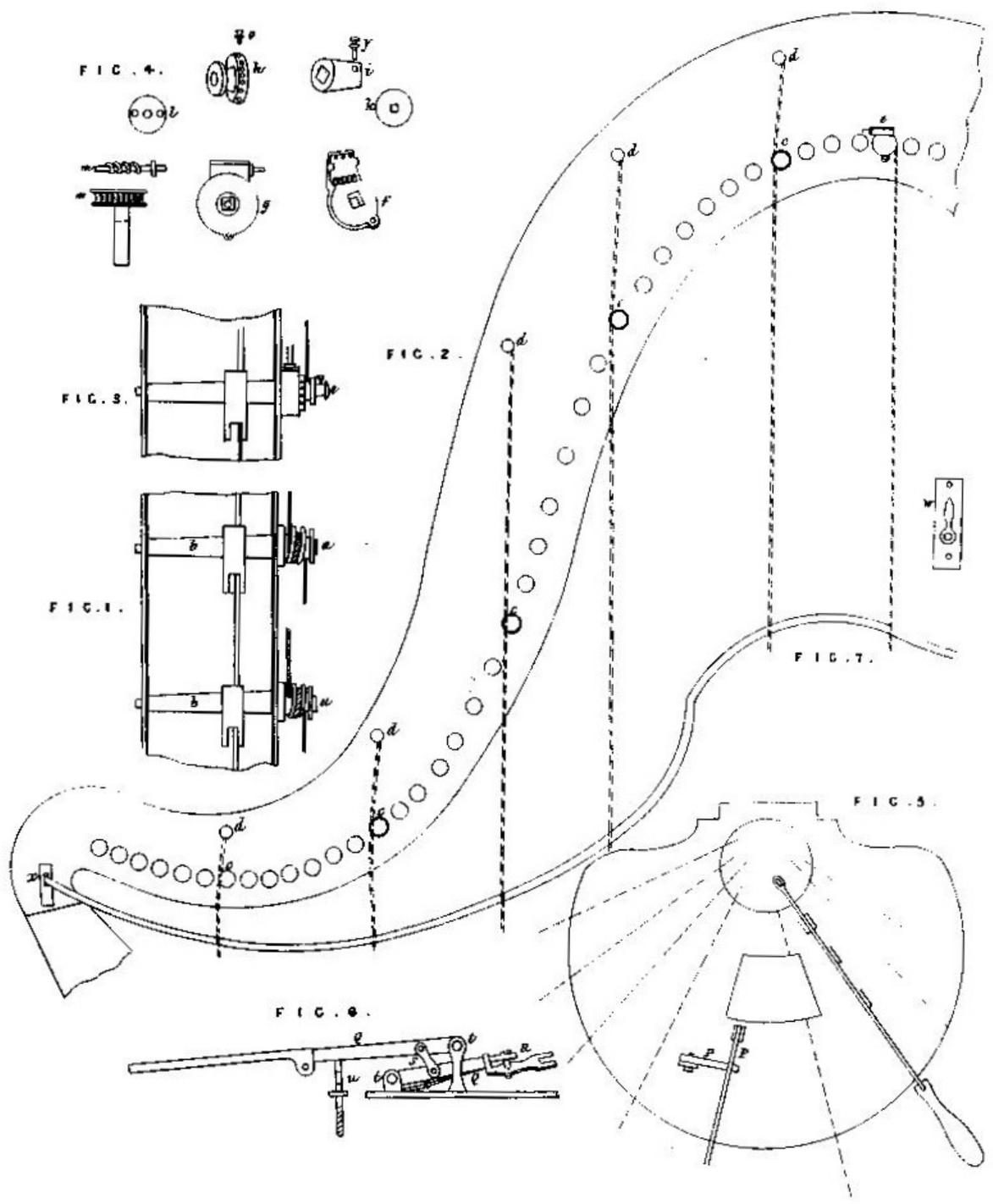
Notes		Lengths ⁴ [inches]	Diameters [inches]	Notes		Lengths [inches]	Diameters [inches]
D	[DD]	47.2	0.12104	E		24.333	0.026095
E		46.4	0.10724	F		23	0.026057
F		45.6	0.10513	G		21.666	0.024557
G		44.8	0.09535	A		20.33	0.023386
A		44	0.086465	B		19	0.02234
B		43	0.079153	C	c''	17.666	0.022655
C	C	42	0.076194	D		16.333	0.021870
D		41	0.069528	E		15	0.021166
E		40	0.06350	F		14	0.021404
F		39	0.061460	G		13	0.020536
G		38	0.056206	A		12	0.019820
A		37	0.051412	B		11.333	0.018703
B		36	0.047161	C	c'''	10.666	0.018753
C	c	35	0.045714	D		10	0.017860
D		34	0.041927	E		9.33	0.017018
E		33	0.038485	F		8.66	0.017301
F		32	0.037456	G		8	0.016686
G		31	0.034449	A		7	0.016983
A		29.666	0.032064	B		6	0.017658
B		28.333	0.029916	C	c'''']	5	0.02000
C	c'	27	0.029639				
[middle]							
D		25.666	0.027769				

³ The Repertory of Patent Inventions, pp. 253-255.

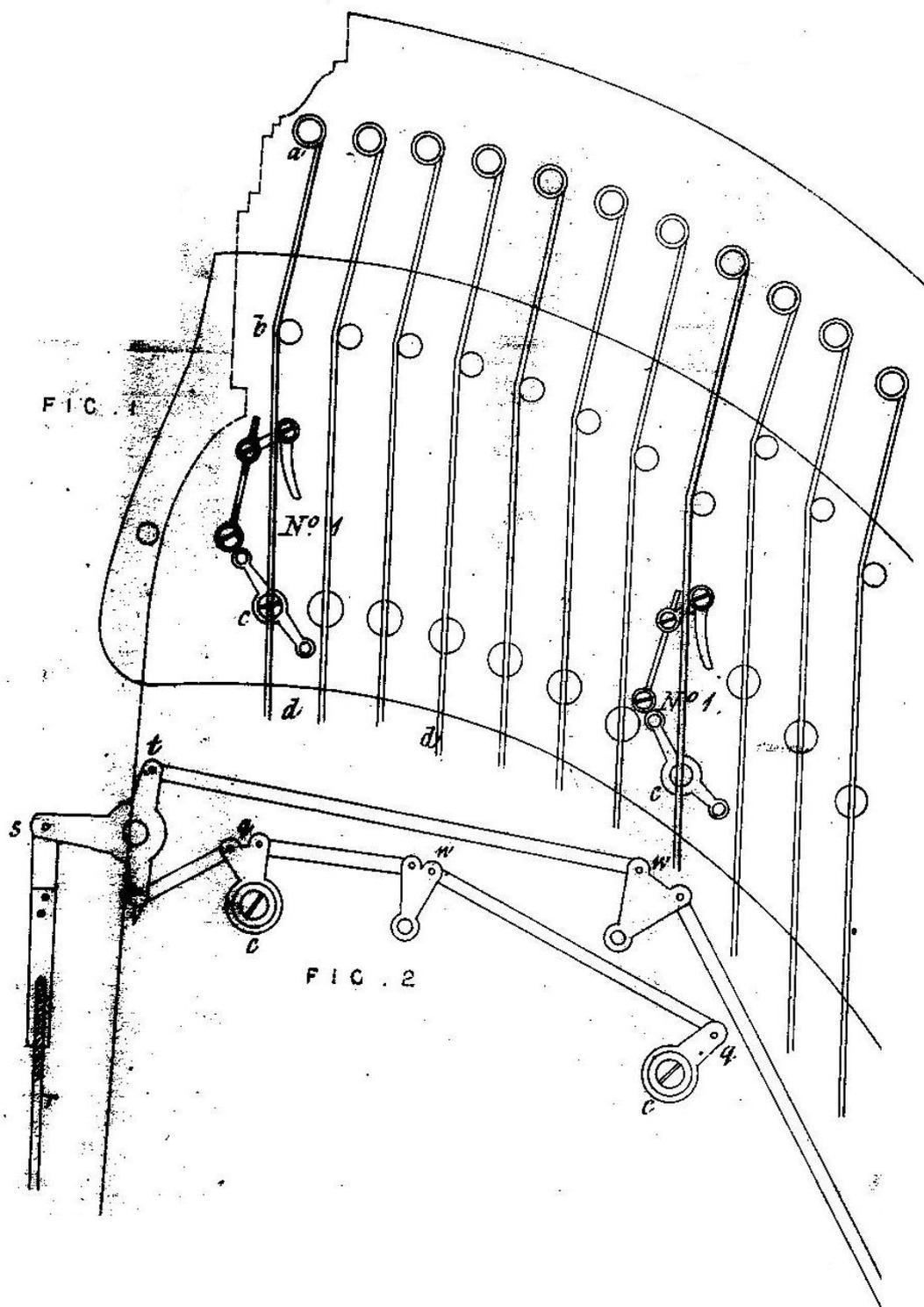
⁴ Notation modernised: e.g. length, 472 represented as 47.2 [inches]; diameter, 12104 represented as 0.12104 [inches].

Appendix 4.6: Richard Jubb's patent, no. 2838, 5 April 1805

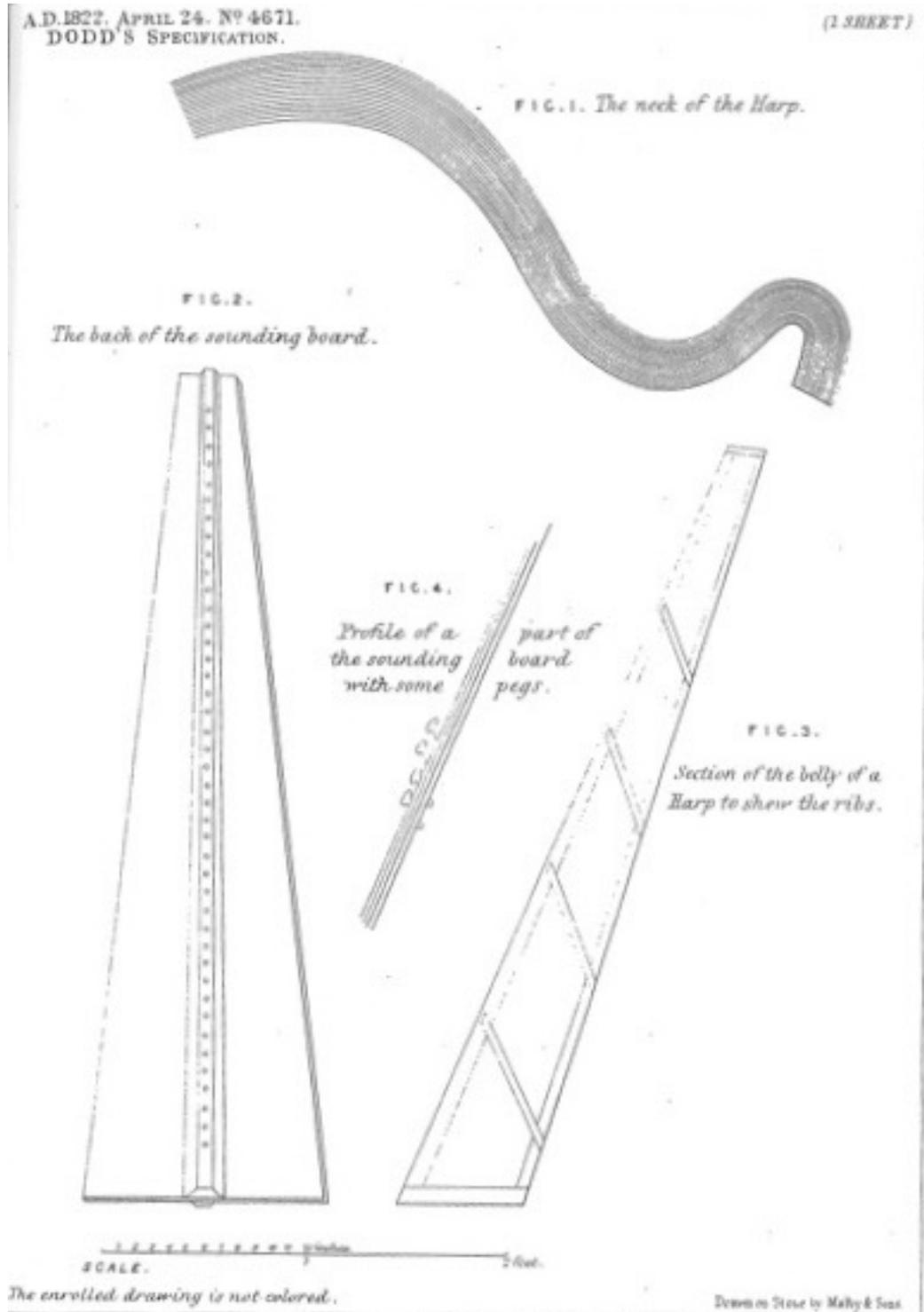




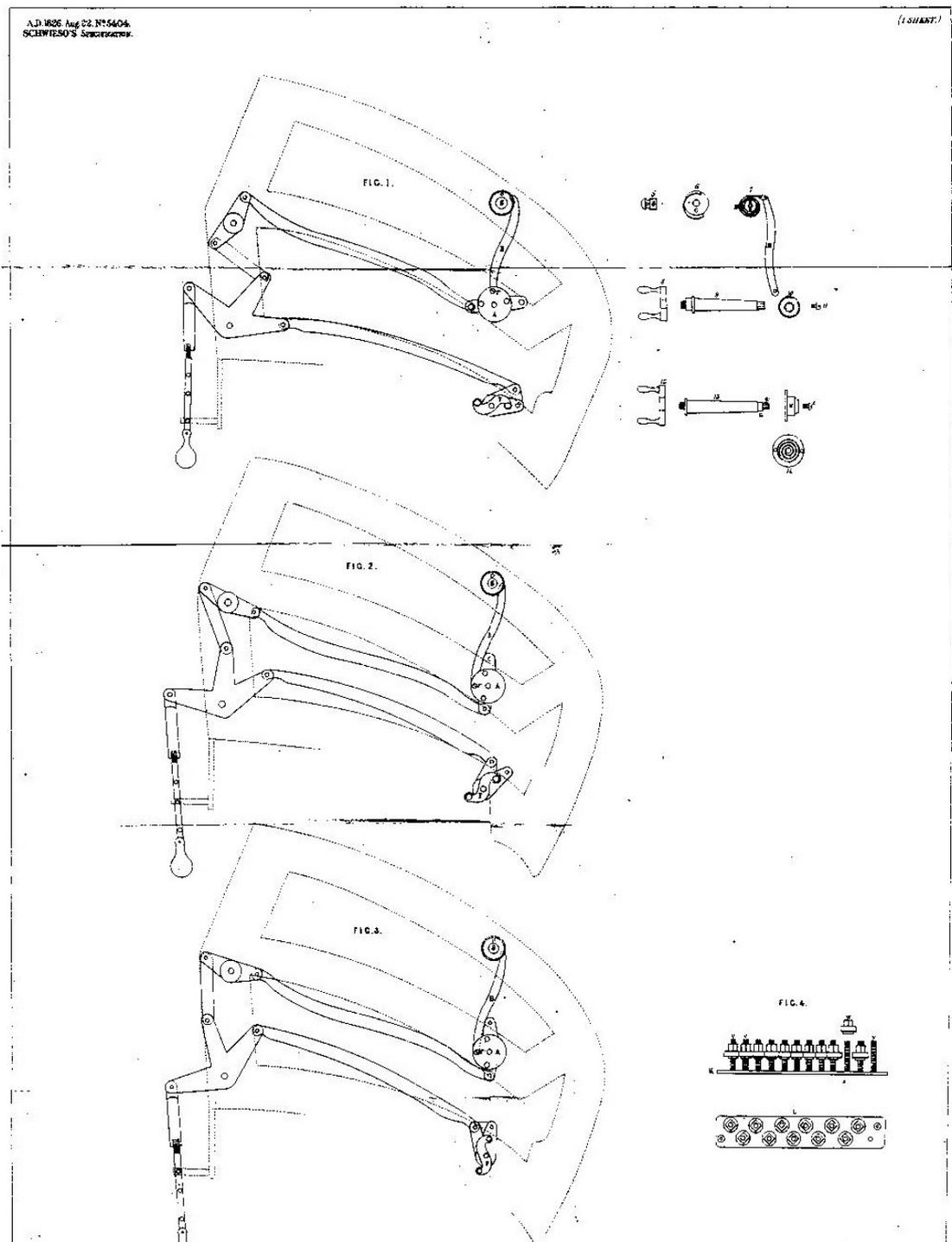
Appendix 4.7: Sébastien Érard's patent, no. 3170, 24 September 1808



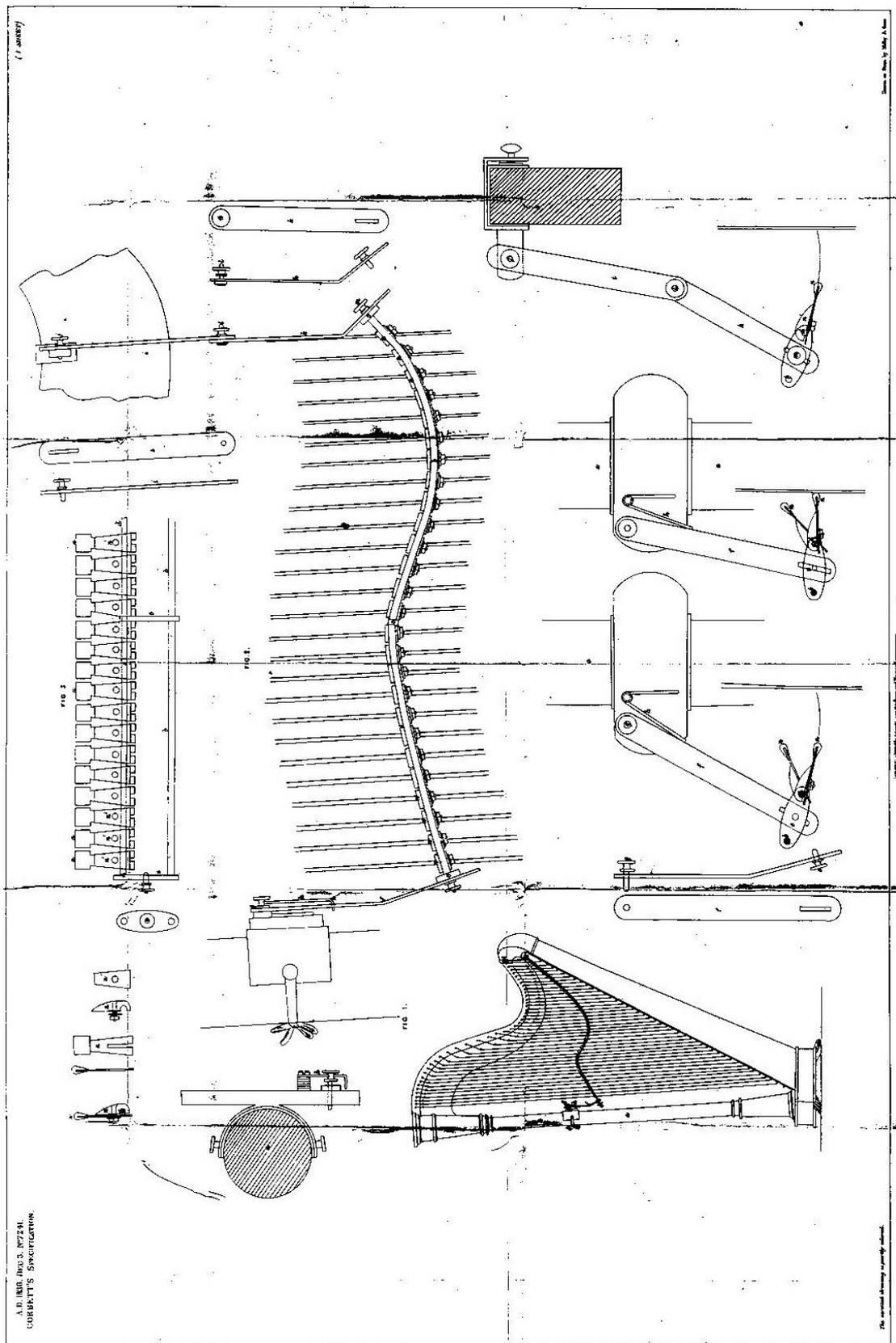
Appendix 4.8: Edward Dodd's patent, no. 4671, 24 April 1822



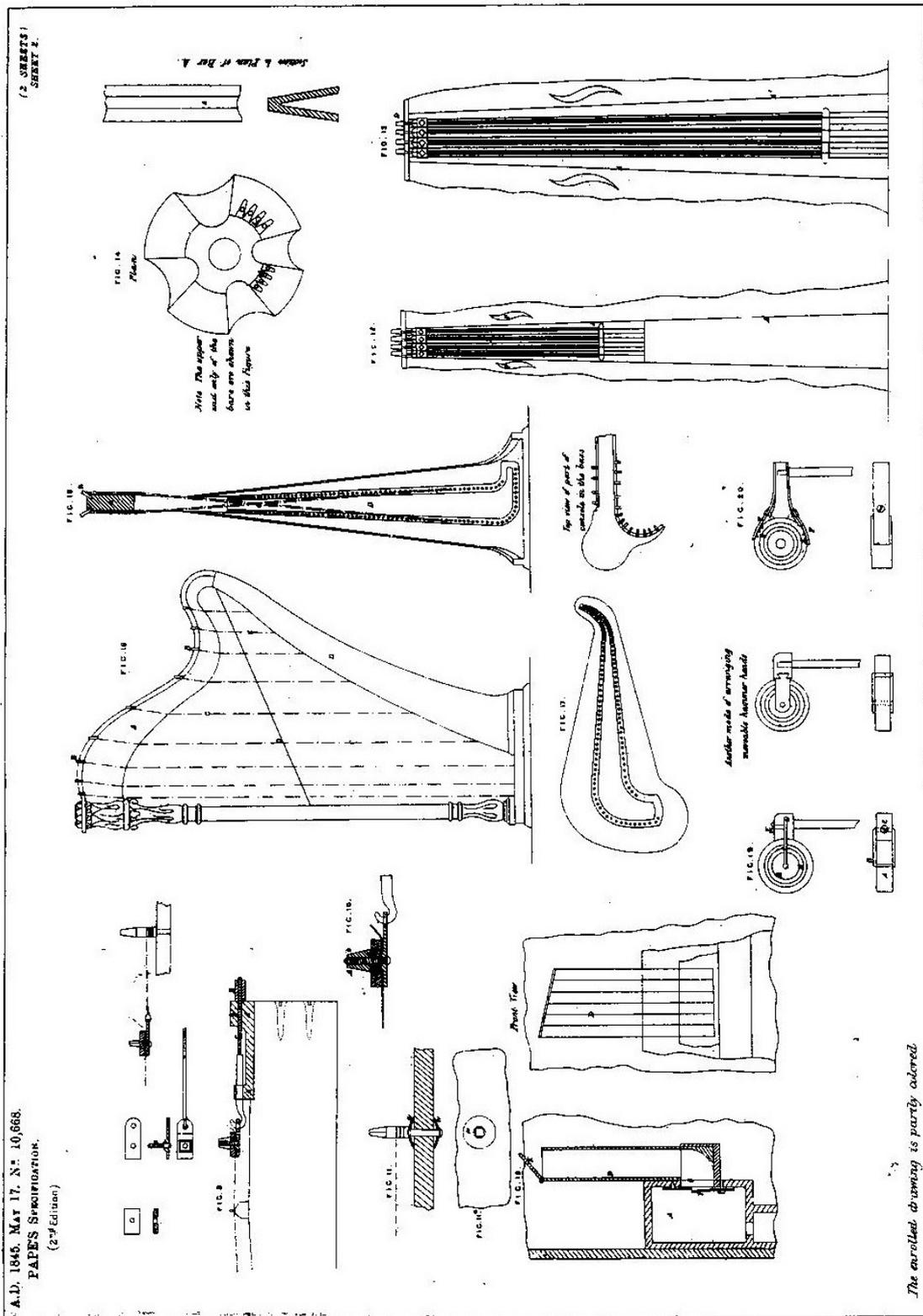
Appendix 4.9: John Charles Schwieso's patent, no. 5404, 22 August 1826



Appendix 4.10: James Corbett's patent, no. 7241, 2 June 1836



Appendix 4.11: John Henry Pape's patent, no. 10,668, 17 November 1845



Appendix 5: The Erat family

Appendix 5.1: Erat family expenditure by type, 1821-1824

	£/s/d
Rent paid – Wardour Street	202/14/-
Rent received – Wardour Street	-137/-/-
Rent paid – Berners Street	52/10/-
Housekeeping	1516/6/11
Servants' wages	20/17/6
Education	281/6/4
Social life and entertainment	12/16/-
Clothing	113/17/6
Religious observation	14/12/6
Total	2178/-/9

Appendix 5.2: Transcription of Jacob Erat's will, March 1821

NOTE: original spellings are preserved. Page numbers are noted, followed by r (recto) or v (verso), and illegible text is marked [?].

[294v] This is the last will and testament of me Jacob Erat late of Wardour Street in the Parish of Saint James Westminster but now of Berners Street in the Parish of Saint Mary le Bone in the County of Middlesex harp maker Whereby in the first place I give and bequeath to my dear wife the sum of fifty pounds for mourning and also all of the plate linen china glass household goods and furniture and all other property and effects to which were in or about my messuage or dwelling house in Park Street Camden Town in the said County of Middlesex to and for her own absolute use benefit and disposal I also give and bequeath to my said wife dividends and annual proceeds of or arising from the sum of two thousand pounds navy five per cent Bank annuities (which I direct my executors to appropriate and set apart for that purpose) and also the use and enjoyment of my leasehold messuage or dwelling house in Park Street Camden Town aforesaid in which I lately resided or the rent thereof and also the rents issues and profits of my leasehold house and premises in Perry Street Camden town aforesaid for and during the term of her natural life provided she so long continues my widow and remains unmarried and from and after the decease or marrying again of my said wife which shall first happen I shall direct that the said Bank annuities and leasehold premises shall form and be considered as part of my residuary personal estate and I give to my trustees and executors herein after named the sum of fifty pounds a piece for their trouble and to each of my children the sum of twenty five pounds for mourning And I also give to my said trustees and executors the sum of two hundred pounds sterling upon trust to invest the same in their joint names as soon as conveniently may be after my decease upon some of the public stocks or funds and from time to time until my son William Erat shall attain his age of twenty one years to lay out and accumulate all the dividends and annual proceeds arising thereforin in the nature or purpose of compound interest in addition to the principal or capital producing the same but nevertheless they my said trustees and executors shall have full power and authority if they shall think fit at any time during the minority of my said son to sell all or any part of such stocks funds or accumulations and to apply the produce thereof for his advancement in the world either as an apprentice or otherwise

And when and so soon as my said son William shall have attained his age of twenty one years then upon trust to transfer and make over all such stock funds and accumulations as aforesaid or so much thereof as shall not have been previously sold and applied for his advancement as aforesaid unto him my said son for his own use and benefit over and above his share of my residuary estate and effects hereinafter mentioned But if he shall happen to die before he shall have attained his age of twenty one years then I will and direct that the said stocks and funds and the accumulations thereof or so much thereof respectively as shall not then have been sold and applied for his advancement as aforesaid shall be considered as and for part of my residuary personal estate and be applied and disposed of accordingly and subject to the trusts and directions aforesaid and also subject to the payment of my just debts and funeral and testamentary expenses and the several legacies given and bequeathed by this my will or any codicil hereto I do hereby give and bequeath my leasehold messuage and premises in Berners Street aforesaid and all my monies stocks funds and securities for money goods chattels stock in trade books debts and all and singular other the estate property and effects whatsoever and whensoever and of what nature or kind soever which I shall be possessed of or in any wise entitled to at the time of my decease [295r] such parts thereof only as by this my will and otherwise disposed of unto my friends John Broadwood of Great Pultney Street in the parish of Saint James Westminster piano forte maker George Sharp of Berners street in the parish of Saint Mary le bone in the said county of Middlesex musician and my said wife Martha Erat their executors administrators and assigns upon the several trusts and to for the end intents and purposes and with under and subject to the powers provisoes and declarations hereinafter expressed declared and contained of and concerning the same (that is to say) upon trust that they my said Trustees or trustee do and shall permit and suffer my said wife by with and under their direction and superintendance to conduct and carry on my said trade or business of a harp maker from and after my decease until my son Jacob Erat shall attain his age of twenty five years or in case he my said son Jacob shall happen to die before he shall attain that age until and for such period or time as may be necessary and requisite for performing the trust hereby in them reposed and I will and direct that the clear gains and profits which shall be made and arise from my said trade or business and all the rents interest dividends and annual proceeds of or arising from my residuary estate and effects from the time of my decease until my said son Jacob

Erat shall attain his said age of twenty five years (after setting a part a sufficient sum of money not exceeding the sum of eight hundred pounds a year (part thereof) to be applied by my said wife for the maintenance and education of all my children and for the household and other family necessities and expenses of them my said wife and children) shall be laid out and invested by my said trustees or trustee for the time being in some or one of the parliamentary stocks or public funds of Great Britain or at interest on government or real securities in England with full power for my said trustees or trustee for the time being from time to time to alter vary and transpose all or any of the said stocks funds and securities at their or his discretion so that the same and the resulting dividends interest and produce thereof may be accumulated in the way of compound interest and when and so soon as my said son Jacob Erat shall have attained his said age of twenty five years it is my will and desire that he together with my son James Erat (provided my said trustees and trustee for the time being shall be satisfied with their demeanour and good conduct) shall be permitted and suffered to take to and carry on my said trade or business of a harp maker as joint and equal partners therein and in the gains and profits thereof to and for their mutual benefit and advantage And I direct that upon my said son Jacob Erat attaining the said age of twenty five years a valuation of all and singular stock in trade utensils and instruments necessary and used by me in conducting and carrying on my said trade or business shall be made by two indifferent persons one of them to be chosen by my said trustees or trustee and the other by them my said sons and in case such two persons so to be chosen as aforesaid should not arise then an umpire to be chosen by them in the usual way and the amount if such valuation when so made shall be deducted from and taken as part of or in full for the respective shares and proportions of them my said sons of and in my residuary personal estate hereinafter by me give to them as the case may be But if the amount of such valuation shall exceed the amount of the shares and proportions of them my said sons of and in my said residuary estate then I direct that they my said sons shall give security by their bond or otherwise to my said trustees or trustee for the payment of the excess or surplus thereof with interest at five per cent by payments not exceeding two hundred pounds a year and it is my will and I do hereby fully authorise [295v] and empower my said trustees and trustee for the time being if they or he shall think it necessary at any time to advance and lend to my said two son Jacob & James from and out of the monies coming to their hands by virtue of the trust

of this my will and sum or sums of money not exceeding in the whole the sum of five hundred pounds they my said sons giving to my said trustees and trustee for the time being their joint and several bond or bonds in a sufficient penalty for securing the repayment to them my said trustees or trustee of the amount of the money so to be lent to them my said sons as last aforesaid together with interest for the same at the rate of five pounds per cent per annum so as that the same may be wholly repaid to my said trustees or trustee within the space of three years from the time or times of such advance or advances And immediately upon my said son Jacob Erat attaining his said age of twenty five years I direct and declare that my said trustees and trustee for the time being shall and do stand and be possessed of and interested in as well the before mentioned monies accumulations stocks funds and securities as also all the rest residue and remainder of my estate and effects not hereinbefore by me specifically given and bequeathed upon the several trusts and to and for the several funds intents and purposes hereinafter dictated expressed declared of and contained and containing (the same) (that is to say) I direct that my said residuary estate or the produce thereof and such stocks funds securities and accumulations as aforesaid shall be divided into eight equal parts or shares of which eighth parts or shares I direct my said trustees or trustee for the time being (subject as aforesaid) to pay transfer assign or deliver unto my said son Jacob and to and for his own use and benefit another of the said eighth parts or shares of my said residuary estate property and effects (subject as aforesaid) I direct shall be paid transferred assigned or delivered to my said son James to and for his absolute use and benefit our other of the said eighth parts or shares I direct shall be transferred assigned or delivered to my said son William when and so soon as he shall attain his age of twenty one years to and for his absolute use and benefit and the interest and proceeds thereof or a sufficient part thereof in the mean time shall be applied for or towards his maintenance and advancement and I direct my said trustees and trustee for the time being shall and do stand and be possessed of and interested in the remaining five eighth parts or shares of my said residuary estate and effects or the produce thereof or the stocks funds and securities wherein or upon which the same shall be placed out invested or contained upon trust to pay apply and dispose of the interest dividends and annual proceeds of one of such five eighth parts or shares unto and for the benefits of each of my five daughters Catherine Mary Ann Martha Georgiana and Julia Erat from time to time during the term of her natural life for her maintenance

and aduration during her minority and afterwards for her own solo and separate use and benefit so as that the same or any part thereof shall not be subject or in any manner liable to the debts control or engagements of any husband whom such daughter shall happen to marry and I expressly direct and declare that the receipt and receipts of every such daughter under her hand shall notwithstanding her minority or coverture be the only good and sufficient discharge to my said trustees or trustee for the time being for so much dividend interest or annual produce as in such receipt or receipts shall be expressed to be applied or received provided and I do hereby declare my will to be that is shall not be lawful for either or any of my said daughters respectively to charge sell assign or otherwise dispose by way of anticipation of the interest dividends and annual produce [296r] so to them respectively payable as aforesaid or any part thereof and from and after the decease of each such daughter then as to the capital or principal of the part or share whereof the interest dividends or annual proceeds is and are hereby made payable to her during her life as aforesaid upon trust that they my said trustees or trustee do and shall stand and be possessed thereof in trust for and for the benefit of all and every the child or children of the body of such daughter who being a son or sons shall attain the age or ages of twenty one years and who being a daughter or daughters shall attain the like age or ages or be married equally to be divided between and amongst them (if more than one) and share and share alike But if there shall be only one such child then the whole thereof to be held in trust and for the benefit of such only child provided that in the mean time and until such share or shares shall become vested in such child or children a sufficient part of the said interest and dividends shall be paid and applied for and towards their his or her maintenance education and support and the residue thereof shall accumulate and be added to their his or her respective shares or share and to be payable and paid with the original share and shares accordingly provided always that is any of my said sons shall happen to die under the age of twenty one years or if any of my said daughters shall happen to die without having any child or children of her or their body or bodies lawfully begotten who being a son or sons shall live to attain the age or ages of twenty one years or being a daughter or daughters shall live to attain the like age or ages or be married then and in every such case I will and direct that the share or shares of each of them my said sons so dying under the age of twenty one years and of each and every of my said daughters so dying without leaving any such child or children as aforesaid

shall go belong and accrue to the survivors or survivor or others or other of them my said sons and daughters and such the respective child or children of my said daughters as aforesaid and be equally divided between and amongst them accordingly in like manner and at the like ages days or times and subject to the like contingency and arrears in all respects as his her and their original share or shares is or are hereinbefore made payable or as near and conformable thereto as may be And I direct my said trustees or trustee to stand and be possessed of every such surviving or accruing share or shares accordingly and I do hereby fully authorize and empower my said trustees or trustee for the time being at the request of each of my said daughters to sell out and raise from her respective share of my said residuary estate any sum not exceeding the sum of five hundred pounds sterling on her marriage with any husband such marriage taking place with the approbation and consent of my said wife and my said trustees or trustee for the time being but not otherwise and I do hereby further authorize and empower my said trustees in case any or either or my said daughters shall marry with such consent as aforesaid and shall be desirous after my said son Jacob Erat shall have attained the age of twenty five years of having a further advance made to her out of or on account of her share of the said residuum to transfer or pay to such daughter so much as she may require in case they my said trustees shall think proper so to do provided that after such transfer or payment there be still left a sufficient sum of such daughters share of the said residuum to purchase so much stock in the three per cent consolidated bank annuities as will secure to such daughter a net annual income of fifty pounds a year at the least And I do hereby also further authorize and empower my said trustees and trustee for the time being to discontinue my said trade or business and to [296v] prevent my said wife from carrying on the same if found unprofitable and absolutely to sell and dispose of all or any of my leasehold and other property and personal estate whatsoever and wheresoever not before not before by me specifically bequeathed at their or his discretion and to invest the money arising from any such sale or sales in some of the parliamentary stocks or public funds of Great Britain or on Government or real securities with full power from time to time to alter vary and transpose the same stocks funds and securities as to them my said trustees and trustee for the time being may appear necessary or advisable for the purposes of this my will provided always And I do hereby further declare and direct that in case the said John Broadwood George Sharp and Martha Erat or any or other of them or any

future trustee or trustees to be nominated and appointed as hereinafter is mentioned shall happen to die or be desirous to be discharged from or neglect or refuse to act in the trusts and purposes of this my will at any time or times before the same trust's and purposes shall be fully performed or otherwise determined then and in every such case it shall case it shall and may be lawful to and for the surviving or continuing trustees or trustee for the time being of this my will or if there shall be no such surviving or continuing trustee then to and for the executors or administrators of the last surviving or continuing trustee to nominate and appoint any other person or persons to be a trustee or trustees for the purposes aforesaid or any of them in the places and steads or place and stead of the said John Broadwood George and Martha Erat or such of then or such future trustee or trustees as shall so happen to die or be desirous to be discharged from or neglect or refuse to act in the trusts aforesaid And upon every such nomination or appointment the trustee or trustees for the time being or if all the trustees shall be then dead the executors or administrators of the surviving trustee shall assign transfer and make over the said trust property and estate and all trust monies stocks funds and securities which shall be then vested [[written in left margin] in them or him under or by virtue of this my Will so & in such way & manner that the same may be effectively vested] in or in the joint names of the surviving or continuing trustee or trustees and such new trustee and trustees or in the names of such new trustees only as the case may happen But nevertheless upon the same trusts and to and for the same ends intents and purposes as are hereinbefore expressed and declared of and concerning the same or to for or upon such of those trusts intents and purposes as shall be then subsisting or capable of taking effect which person or persons so to be appointed a trustee or trustees as aforesaid shall and may from thenceforth act in the management and execution of the trust and purposes of this my will or such of them as shall be then subsisting or capable of taking effect as fully and effectually in all respects and with the like indemnifications powers and authorities as he or they might have done in case he or they had been originally in and by this my will nominated and appointed a trustee or trustees for the purposes aforesaid And I do hereby further direct and declare that the said John Broadwood George Sharp and Martha Erat and such other trustee and trustees as shall be nominated or appointed by virtue of this my will and each of them their and each of their said executors and administrators respectively shall be charged and chargeable only for such monies as they and every of

them shall actually receive by virtue of the trusts hereby in them reposed and that the one of them shall not be answerable or accountable [[inserted in the margin [for the other or others of them then shall they my said Trustees or any of them be answerable or accountable] for any banker broker or other person with whom or in whose hands any part of the said trust monies shall or may be lodged or deposited for safe custody or for the insufficiency or deficiency of any security or securities on which [297r] any monies shall or may in pursuance of this my will be placed out or invested nor for any other unfortunate loss or damage which may happen in the execution of the aforesaid trusts or in relation thereto except the same shall happen by or through their own wilful defaults respectively And also that they my said trustees and each of them then and each of their respective executors administrators and assigns shall and may by and out of the monies which shall come to their respective hands by virtue of the trusts aforesaid retain to and reimburse himself and themselves and allow to each other all such costs charges damages and expenses whatsoever which they or any of them shall or may respectively sustain expend disburse be at or put into or about the execution of the trusts hereby in them reposed or any matter or thing relating thereto And I appoint the said John Broadwood George Sharp and Martha Erat joint executors and executrix of this my will And I also appoint my said dear wife guardian of all my said children during their respective minorities And I revoke all former and other wills by me at any time heretofore made and declare this to be my last will and testament In witness whereof I the said Jacob Erat have to this my last will and testament contained in seven sheets of paper set my hand and seal (that is to say) my hand to the first six sheets thereof and my hand a seal to this seventh and last sheet thereof this fourteenth day of February in the year of our Lord one thousand eight hundred and twenty one Jacob Erat signed sealed published and declared by the said Jacob Erat the testator as and for his last will and testament in the presence of us who at his request in his presence and in the presence of each other have hereunto subscribed our names as witness J. Hamilton Berwick St Soho - Geo. Twining Berwick Street Soho

Proved at London 3rd March 1821 before the worshipful Charles Coote Dr of laws & surr[ogate] by the oaths of George Sharp and Martha Erat widow the Relict two of the executors to whom adm[inistrati]on was or granted being first sworn duly to administer power reserved to John Broadwood the other ex[ecut]or

Appendix 5.3: Transcription of Jacob Erats junior's will, 24 July 1835

[364r] This is the last will and testament of me Jacob Erat of No. 23 Berners Street Oxford Street in the county of Middlesex harp manufacturer I desire in the first place that all my just debts funeral and testamentary expenses be duly paid and satisfied and subject thereto I give and bequeath to my mother Martha Erat widow the sum of nineteen guineas I also give and bequeath the life sum of nineteen guineas a piece to each of my sisters hereinafter named videlicet to Catherine the wife of Mr Thomas Bird surveyor to Mary Ann the wife of Mr James Rufus Tutton professor of music to Mrs Martha Hoskins widow to Georgiana Erat spinster and to Julia Erat spinster I likewise give and bequeath to my two brothers James and William Erat the sum of ten guineas each and I give to Mr Robert Wilberfoss of Somerset Place Cannon Street Road Whitechapel accountant the sum of twenty five guineas free of legacy duty as a small token of my friendship for him and I direct that all the foregoing legacies be paid within six calendar months next after my decease provided always that if all or any of the above names legatees shall happen to depart this life before me then the legacy or legacies of her him or them so dying shall fall into and form part of the residue of my estate hereinafter bequeathed and as to all the rest and residue of my estate and efforts whatsoever and wheresoever and whether in possession reversion or expectancy I give and bequeath the same and every part thereof to my dear wife Caroline Erat her executors adm[ministrant]ors and assigns absolutely to and for her and their absolute use and benefit and I appoint my said dear wife and the said Robert Wilberfoss Executor and Executrix of this my will In witness whereof I have hereunto set and subscribed my name this 24th day of July in the year of our Lord 1835 – Jacob Erat – signed and published in the presence of - Thos Gilbank 46 Coleman St – Hy Rawlins Johnson Verchild clerk to Mr Gilbank

Nov 17th 1836

My dear Caroline I wish you to present Martha Hoskins my sister after my decease with 50 which sum I wish to be invested for the benefit of her daughter – Jacob Erat
 Appeared Personally Charles Holtzapffel of Charing Cross in the County of Middlesex lathe and tool maker and Julia Louisa Holtzapffel of No. 23 Berners Street Oxford Street in the same county spinster and jointly and severally made oath that they respectively knew and were well acquainted with Jacob Erat late of No. 23 Berners Street Oxford

Street in the county of Middlesex harp manufacturer deceased for many years before and down to the time of his death and that having during such their acquaintance with the said deceased frequently seen him write and subscribe his name to writings they have thereby become respectively well acquainted with the manner and character of his handwriting & subscription and the deponents having now respectively carefully viewed and perused the paper writing hereto annexed which purports to be and contain a codicil to the last will and testament of the said deceased which said codicil begins this “Nov 17 1836 My dear Caroline I wish you to present Martha Hoskins” and ends thus “which sum I wish to be invested for the benefit of her daughter” and is thus subscribed “Jacob Erat” and having respectively particularly noticed and observed the said recited signature or subscription to the said codicil they further jointly and severally made oath that they verily and in the conscious believe the whole body series and contents of the said codicil beginning and ending as before recited and also the said verified signature or subscription to the same to be all of the even proper handwriting and subscription of the said deceased and the deponents having also respectively noticed and observed that the said words “my Godchild” appearing at the end of the said codicil have been struck through with a pen they lastly jointly and severally made oath that they well know that the said Martha Hoskins in the said codicil mentioned has not and had not at the time of the date of the said codicil more than one child namely Martha Sarah [365v] Hoskins Spinster – *Charles Holtzapffel – J. L. Holtzapffel* – on the 1st day of June 1837 the said Charles Holtzapffel and Julia Holtzapffel were duly sworn to the truth of the foregoing affidavit – before me – *W. C. Curtens Snr – Present N. B. Engleheart Notary Public*

Proved at London (with a codicil) 7th June 1837 before the Worshipful William Calverley Curteis Dr of Laws & sworn by the oaths of Ann Caroline (in the will written Caroline Erat widow the Relict & Robert Wilberfoss the executors to whom adm[inistrati]on was granted having been first sworn duly to adm[iniste]r ...

Appendix 5.4: Ann Caroline Erat's Will, 6 March 1838

[64v] This is the last will and testament of me Ann Caroline Erat of Berners Street Oxford Street in the county of Middlesex widow I appoint William Boycott of Clements Lane in the city of London Banker and my sister Charlotte Boycott his wife my brother Charles Holtzapffel of Long Acre and of Charing Cross in the county of Middlesex and my sister Julia Louisa Holtzapffel spinster Executors Executrixes and Trustees of this my will and I appoint them and the survivors and survivor of them guardians and guardians of my daughter Ann Caroline Erat during her minority whereas under and by virtue of the last will and testament of my [65r] late father John Jacob Holtzapffel deceased I am empowered by my last will and testament in writing or any writing in the nature thereof to bequeath & dispose of our equal third part or share of the sum of twelve thousand pounds sterling by the said will directed to be raised or the stocks funds or securities in or upon which the same may be invested to any person or persons [now] I the said Ann Caroline Erat in pursuance and by virtue of and in exercise of the said power or authority so given to me as aforesaid by the said will of my said later father deceased and of every other power or authority in any wise enabling me in the this behalf do by this my last will and testament in writing bequeath and dispose and also appoint all that the said one equal third part or share of and in the said sum of twelve thousand pounds sterling and the stocks funds and securities in or upon which the same may be invested so by the said [writed] will bequeathed as aforesaid unto the said William Boycott and Charlotte his wife Charles Holtzapffel and Julia Louisa Holtzapffel and the survivors and survivor of them and the executors and administrators of such survivor upon the trusts and for the intents and purposes hereinafter expressed and declared of and containing the same that is to say upon trust to set apart or invest in the three pounds per cent Bank consolidated annuities so much of the one third share of the said sum of twelve thousand pounds as will produce the annual sum of twenty four pounds and upon further trust to pay twelve pounds one moiety in thereof to Miss Jane Erfsein my maternal aunt during her natural life and to pay twelve pounds the other moiety of the said annual sum of twenty four to Mrs Caroline Matilda Hall also my maternal aunt during her natural life the said payments to be made free of legacy duty and as and when the dividends from the said three pounds per cent consolidated Bank annuities become due and payable the first half yearly payment of the said annuities to be made on the first day the dividends on the

said Bank annuities shall become due next after my decease and upon further trust to stand possessed of the said three pounds per cent consolidated Bank annuities so to be invested or set apart as aforesaid subject to the said annuities of twelve pounds and twelve pounds and also the residue of the said one equal third share of the said twelve thousand pounds or the stocks funds and securities aforesaid and from time to time during the minority and discoveriture of my said daughter Ann Caroline Erat to pay and apply all or any part of the interest dividends and annual produce thereof as they my said trustees or the survivors or survivor of them shall think fit in and towards the maintenance and education or other wise for the benefit of my said daughter and to accumulate in any of the government stocks funds or securities so much of the said interest dividends and annual produce if any as shall not be applied as aforesaid upon the like trusts as by this my will are declared of and containing the principal funds from which such accumulations shall have been produced and I direct that in case my said daughter shall die before she attains the age of twenty one and without having been married then that my said trustees or the survivors or survivor of them shall stand possessed of the said trust premises upon trust as to one fourth part thereof for the said Charles Holtzapffel and as to one fourth part thereof for the said Charlotte Boycott and also the remaining two fourth parts thereof upon trust for the said Julia Louisa Holtzapffel but if any or either of my said brother and sisters shall die before me then I direct that the share and shares of such one or more of them so dying shall be in trust for the survivors or survivor of them in equal shares and if they shall all die before me then I direct that the whole of the said interests by this my will bequeathed to them my said brother and sisters shall go and be equally divided amongst all and every the child or children of my said brother and sisters who shall be living at my death and be payable or transferable to them respectively when and as they shall severally attain the age of twenty one years with full powers for the trustees of this my will to apply the annuities interest or dividends of their respective shares as they shall think fit towards their respective [65v] maintenance and aduration in the meantime and in default of any such child or children as aforesaid then to and equally amongst my next of kin according to the statute for distribution of intestates estates and I do hereby further direct and declare that if my said daughter shall attain the age of twenty one years without having been married then that my said trustees or the survivors or survivor of them shall subject to the annuities aforesaid in pay to or permit and suffer my said

daughter to receive the interest dividends and annual produce of all the said trust premises for her own absolute use and benefit when and as the same respectively shall become due for and during her natural life or until she shall marry and that in case she shall die unmarried then that my said trustees or trustee for the time being of this my will do and shall pay transfer and make over the said trust premises to such person or persons as my said daughter by her last will and testament in writing or any codicil or codicils thereto or by any writing or writings in the nature of or purporting to be her last will and testament or a codicil thereto shall direct or appoint and in default of and subject to any such appointment I direct that the said trust premises shall go and be disposed of as hereinbefore directed in case my said daughter should die under age and unmarried and it is my will that my said daughter shall not have power to sell mortgage or otherwise dispose of or anticipate her interest in the said trust premises or if by any act of hers the same shall in any way be affected or become liable to be affected by her engagements or liabilities her interest therein shall cease and the same trust premises shall go and be in trust for the same persons as would be entitled thereto if my said daughter were then dead underage and unmarried as aforesaid And I do hereby further direct that from and immediately after the marriage of my said daughter either before or after she shall attain the age of twenty one years all her interest in the said trust premises shall absolutely cease and determine and that they my said trustees or the survivors or survivor of them shall forthwith serve and settle by proper deeds and securities and the said trust premises upon and for my said daughter for her separate use for her life free from the control of her husband and so as to prevent any anticipation of the annual interest dividends and proceeds by her or any other person and after her decease for such person or persons and to be paid at such times and in such manner as she my said daughter shall be her last will and testament or any codicil thereto or by any writing or writings in the nature of and purporting to be her last will and testament or a codicil thereto direct or appoint and in default of any such appointment and so far any shall not extend then for all and every the children or child of my said daughter in equal shares if more than one as tenants in common but no child taking under any appointment shall be entitled to any share of the unappointed part of the said trust premises without bringing his or her share into [hotchpotch] and accounting for the same accordingly provided always that if my said daughter shall die in her husband's lifetime without having any child or children then that subject to any

such bequest as aforesaid the said trust premises shall go and be divided among the person or persons who according to the stature in that behalf made and provided would have been entitled thereto as the next of kin of my said daughter on her mother's side at the time of her decease in case she had died without having a husband And I do hereby expressly declare and direct that if my said daughter and the husband with whom she may intermarry do not [concur] with my said trustees in making the settlement aforesaid then that they my said trustees shall stand possessed of all the said trust premises upon trust for the same persons who would be entitled thereto if my said daughter were then dead under age and unmarried as hereinbefore mentioned I give to my said sister Charlotte Boycott my mahogany cabinet and my diamond ring which formerly belonged to my mother I give the said William Boycott any printed books he may select from among those in my possession at my decease I give my said brother Charles Holtzapffel my portrait of my dear father I give to my sister in law Amelia Vaux Holtzapffel my gold and turquoise brooch and my gold vinaigrette and I give to my [66r] brother in law James Erat my double burner lamp and I give and bequeath all the rest and residue of my personal estate and effects whatsoever & wheresoever unto the said William Boycott and Charlotte his wife Charles Holtzapffel and Julia Louisa Holtzapffel their executors administrator and assigns upon trust to levy and raise thereof sufficient money pay and satisfy all my just debts and funeral & testamentary expenses and the several pecuniary legacies following that is to say to my said sister Julia Louisa Holtzapffel the sum of six hundred pounds sterling if unmarried at my decease but not otherwise And to my Godson John Jacob Holtzapffel to Mrs Bird wife of Thomas Bird to Mrs Tutton wife of James Rufus Tutton to Julia Erat Spinster to Georgiana Brown the wife of Daniel Brown and to Mrs Martha Hoskins widow and Mr Robert Wilberfoss the sum of nineteen pounds nineteen shillings each also to my said brother in law James Erat my brother in law William Erat Miss Diana Boycott and Miss Julia Ann Weippert the sum of ten Guineas each and as to all the rest residue and remainder of my said residuary estate if any after payment of my said debts funeral and testamentary expenses and legacies I direct that my said trustees or trustee shall stand possessed thereof upon and for such and the same trusts intents and purposes and with under and subject to such and the same powers provisoes declarations as are hereinbefore expressed declared and contained of and concerning the residue of the said one third part or share of the said twelve thousand pounds or

the stocks funds and securities aforesaid except only that if my said daughter should die under twenty one years and without having been married then it is my will that out of the said last mentioned monies the sum of three hundred pounds sterling should be paid to each of them the said Mrs Bird Mrs Tutton Julia Erat and Georgiana Brown and the sum of one thousand pounds Sterling to the said Mrs Martha Hoskins if they shall be living at my decease and if any of them shall die before me then I give the legacy or legacies of the person or persons so dying to the survivors or survivor of such last mentioned legatees in equal shares and if all them shall die before me then I direct that the sum of one thousand pounds as part of the said last mentioned monies shall be paid to my said sister Julia Louisa Holtzapffel and that all the remainder thereof shall sink into and become part of my said residuary estate and shall go and be disposed of hereinbefore is directed concerning my said third part or share of the sum of twelve thousand pounds and I direct that if my said residuary estate should not prove sufficient money to pay the said several legacies of three hundred pounds and one thousand pounds in full that the same should abate proportionally provided always and I do hereby direct that if my said daughter shall marry with the consent of the major part of my said trustees or the survivor of them or with the consent of the survivor of them the sum of five hundred pounds sterling shall be raised by the sale or disposition of a sufficient portion of my residuary estate and not out of my said third part of the said sum of twelve thousand pounds and the same shall be paid to her or to such person or persons as she shall direct and that it shall be lawful for my said trustees or the survivors or survivor of them if they or he should think fit after or in contemplation of such marriage as aforesaid to cause in the like manner and out of the same funds and pay to my said daughter or as she shall direct any further or sum or sums of money not exceeding in the whole the sum of five hundred pounds sterling And I direct that the receipt or receipts in writing of my said daughter notwithstanding her coverture shall be a sufficient discharge to my said trustees for any sum of money to be paid to her under the trusts of this my will and I do hereby direct that the trustees or trustee for the time being of this my will shall from time to time invest alter vary and transpose all or any of the hereinbefore mentioned trust premises for or unto other stocks funds and securities as often as they he or she think fit And I direct that such investment at alteration variation or transposition shall during the minority of my said daughter be made at the discretion and of the proper authority of the trustees or

trustee for the time being of this my will and after she shall have attained twenty one years with her consent in writing or if shall die after having attained that age [66v] then with the consent in writing of the person or persons entitled to the interest of the said trust premises if they or he shall have attained twenty one years and if not then at the discretion and of the proper authority of the said trustees or trustee for the time being of this will and I hereby further declare that all and every person & persons who shall or may pay any sum or sums of money to the trustees or trustee for the time being of this my will shall be exonerated from all responsibility in respect of the application thereof provided always and I do hereby declare that in case the said William Boycott and Charlotte his wife Charles Holtzapffel and Julia Holtzapffel or any or either of them shall die in my lifetime or shall at my decease renounce the trusts of this my will or in case the said Charlotte Boycott shall marry again or the said Julia Louisa Holtzapffel shall marry or in case the said William Boycott and Charlotte his wife Charles Holtzapffel and Julia Louisa Holtzapffel or any or either of them or any trustee or trustees to be appointed under this present provision shall afterwards die or become unable to unwilling to act in the trusts of this my will before the same shall be fully executed and performed or in case the said Charlotte Boycott shall marry again or in the said Julia Louisa Holtzapffel shall marry then and in every such case and so often as the same shall happen and so as there shall not at any time be less than three trustees acting in the execution of the said trusts it shall be lawful for the continuing or surviving trustees or trustee for the time being of this my will (with the consent of my said daughter after she shall have attained her age of twenty one years and so long as she shall remain unmarried) and after her decease or marriage then in their his or her own discretion or if there be no surviving or continuing trustee then for the retiring trustees or trustee or if there be no such last mentioned trustee then for the executors or administrators of the last deceased trustee (with such consent or in such discretion as aforesaid) to appoint any fit person or persons to supply the place or places of the trustee or trustees respectively so dying or becoming unwilling or unable to act as aforesaid And that immediately after every such appointment the said trust premises stocks funds or securities shall be conveyed or transferred in such manner that the same may vest in such new trustee or trustees jointly with the surviving or continuing trustee or trustees or in such new trustee or trustees solely as the case may require and such new trustee or trustees shall have and may exercise as well before as after

such conveyance and transfer as aforesaid all the powers and authorities whatsoever hereinbefore contained in the same manner to all intents and purposes as if he or they had been appointed a trustee or trustees by this my will provided also that the trustees for the time being of this my will shall be changed and changeable with such sums only as they respectively shall actually receive by virtue of the trusts hereby reposed in them notwithstanding their joining in any receipt or receipts or doing any other act for the sake of conformity and that they or any of them shall not be answerable or accountable for any involuntary loss or damage which may happen in the execution of the aforesaid trusts or in relation thereto provided also And I hereby lastly declare that it shall be lawful to the said trustees or trustee for the time being by and out of the money which shall come to their his or her hands by virtue of the trusts aforesaid to deduct and retain for themselves respectively and also to allow to each other all costs charges and damages and expences [sic] and fees to counsel for advice which they or any of them may sustain disburse or incur in or about the execution of the aforesaid trusts in relation thereto In witness whereof I have to this my last will and testament contained in eight sheets of paper set my hand & seal as follows (that is to say) to the first seven sheets thereof I have subscribed my name and to this eighth and last sheet I have set my hand & seal this twenty sixth day of March in the year one thousand eight hundred and thirty eight *Ann Caroline Erat* signed sealed published and declared by the said Ann Caroline Erat as her last will and testament in the presence of us who in her presence and in the presence of each [67r] other have subscribed our names as witness thereto *Thos Gilbank 46 Coleman Street Daniel Connor his clerk*

Proved at London 22nd June 1841 before the worshipful William Calverley Curteis doctor or laws and surrogate by the oaths of William Boycott Esquire Charlotte Boycott wife of the said William Boycott the sister Charles Holtzapffel Esquire the brother & Julia Louisa Holtzapffel spinster the sister also the executors to whom adm[inistrati]on was granted having been first sworn duly to administer

Appendix 6: The Erat business**Appendix 6.1: Stock account, 21 February 1821**

EL. pp. 10-14.

Page	Location		Stock	£	s	d		
10		Shop fixtures and utensils used in trade	Eleven vices	6	12	0		
			Four lathes	20	0	0		
			Six stakes	1	10	0		
			Two planes	1	0	0		
			One spinning wheel	1	1	0		
			One stove and pipe	2	0	0		
			Smiths	Three benches	3	0	0	
				Wood screws	2	10	0	
			Wood	One stove and pipe	3	0	0	
				One stove and pipe	1	10	0	
			Draycotts		One bellows	1	5	0
					One anvil	0	10	0
					Grindstone & stand	1	5	0
					One vice	0	8	0
	Two hammers	0		3	0			
	Files in store room	6		10	0			
11	Forge	Articles for the manufacture of harps		Six iron screws for stools	3	0	0	
				Steel plate	0	5	0	
				Brass plate	1	2	0	
				Iron & steel wire	0	17	0	
			Brass wire	0	15	0		
			Seven sets of solid arbours, pillars & cylinders	10	10	0		
			Two sets of hollow arbours, pillars, cylinders	3	0	0		
			Three sets of fork pins	1	19	0		
			Five sets of slide screws	1	6	0		
			Four sets of adjusting screws	1	17	0		
			Six sets of regulating forks	9	9	0		
			Ten doz. Staple screws	0	5	0		
			Ninety seven pedal screws	0	7	0		
			Four pole staples	0	4	0		
			Four sets of arches	0	6	0		
			Six machines for double motion finished	42	0	0		
			Work in an unfinished state	10	0	0		
			Smiths	Eight bodies unfinished	8	0	0	
				Four poles unfinished	4	0	0	
			Wood	One double harp unfinished	40	0	0	
				Twenty one necks, poles & bodies in the white	84	0	0	
			Maunder's		Ten unfinished harps Draycott's shop	40	0	0
					Cast brass	3	0	0
					242 sheet brass 17oz	18	7	0
					Square steel wire	2	10	0
			Store room		Stock of wood comprehending in all about the manufactory	60	0	0
					Seventeen unfinished harps in white in back attic	68	0	0

Page	Location	Stock	£	s	d	
11		Harps on hire	Mr Lentz Dec 12 1812 no number	20	0	0
		Mr Chas. Horn Jan 28 1817 No. 527	20	0	0	
		Miss Oxley Aug 11 1817 No. 1128	20	0	0	
		Miss Parsons Aug 29 1818 No. 991	30	0	0	
		Sir Jas. Macintosh Oct 2 1818 No. 1047	30	0	0	
		Mr John Taylor Dec 4 1818 No. 731	20	0	0	
		Mr Calcot Feb 2 1819 no number	8	0	0	
		Mr Dietrichsen Jan 22 1820 no number	6	0	0	
		Count Newbrough June 9 1819 No. 548	20	0	0	
		Mr Wright June 21 1819 No. 1234	20	0	0	
		Mrs Brown July 31 1819 No. 1197	20	0	0	
12		Mr Hollings Oct 7 1819 No. 11	20	0	0	
		Mrs Thornhill Dec 31 1819 No. 1264	30	0	0	
		Mr Carr Sep 27 1819 No. 602	20	0	0	
		Mrs Bellamy Jan 7 1820 No. 1245	20	0	0	
		Miss Stevenson Apr 11 1820 No. 490	20	0	0	
		Col. Campbell Apr 29 1820 No. 1235	20	0	0	
		Mrs Lott May 12 1820 No. 1204	30	0	0	
		Mr Paton June 26 1820 No. 1120	20	0	0	
		Mr Saml. Sacket July 7 1820 No. 838	20	0	0	
		Mr Mislser Aug 2 1820 No. 1095	20	0	0	
		Mr Phillips Aug 9 1820 No. 1090	20	0	0	
		Mr Dingle Aug 14 1820 No. 439	20	0	0	
		Mr Wallace Aug 17 No. 1247	20	0	0	
		Col. Frazer Sep 9 1820 No. 1285	30	0	0	
		Mr Taylor Kensington Oct 9 1820 No. 1162	20	0	0	
		Mrs Rennells Oct 19 1820 No. 1275	30	0	0	
		Mr Walton Nov 13 1820 No. 1292	20	0	0	
		Mr Rose Apr 21 1820 No. 913	20	0	0	
		Miss Attwood Dec 5 1820 No.1243	20	0	0	
		Mrs Courtney Dec 6 1820 No. 1008	20	0	0	
		Miss Hummell Dec 11 1820 No. 1296	30	0	0	
		Mr W. Hammond Dec 20 1820 No.1257	30	0	0	
		Mr Norton Jan 1 1821 No. 1209	20	0	0	
		Miss Dibdin Jan 16 1821 No. 1089	20	0	0	
		Mr Owen Jan 17 1821 No. 1154	20	0	0	
		Mrs Knott Jan 19 1821 No. 779	20	0	0	
		Mr Jas. Taylor Jan 27 1821 No. 1308	30	0	0	
		Miss Somers Jan 29 1821 No. 1003	20	0	0	
		Mr Lion Jan 27 1821 No. 419	20	0	0	
		Miss Booth Jan 29 1821 No. 1008	30	0	0	
		Mrs Rowley Feb 5 1821 No. 1143	20	0	0	
		Mr Brett Feb 2 1821 No. 120	10	0	0	
		Mr Hince Feb 6 1821 No. 1079	20	0	0	
		Mrs Barrett Feb 6 1821 No. 1064	20	0	0	
		Mrs Simpson Feb 9 1821 No. 1302	30	0	0	
		Mrs Robley Feb 14 1821 No. 1254	20	0	0	
		Mr Abbott Feb 15 1821 No. 1283	30	0	0	
		Mr Davies Feb 19 1821 No. 1311	30	0	0	
Miss Mitchell Feb 2 1821 No. 1306	30	0	0			
Mr Hooper Sep 12 1819 No. 1199	20	0	0			
Miss Lemon July 29 1819 No. 1108	20	0	0			
Mr Broadhurst Aug 7 1817 No. 611	20	0	0			
Miss Merrick Oct 20 1820 No. 1218	20	0	0			

Page	Location		Stock	£	s	d
13		Harps on hire ctd.	Mrs Clark Jan 25 1821 No. 1303	40	0	0
			Miss Power Jan 12 1821 No. 1300	40	0	0
			Mrs Kearsley Dec 26 1820 No. 626	20	0	0
			Mr Ball Feb 8 1821 No. 698	20	0	0
			John Prince July 18 1821 No. 355	20	0	0
			Mr Glendenning Nov 3 1820 No. 1273	30	0	0
			Mr Tutton Dec 18 1820 No. 1031	20	0	0
			Miss Matthews Sep 20 1820 No. 56	15	15	0
			Miss Parken Jan 26 1821 No. 1092	20	0	0
			Mr Dale Jan 6 1821 No. 1223	20	0	0
			Mr Lawrie Jan 29 1821 No. 542	20	0	0
			Double action harp supposed to be No. 1302 & afterwards altered to No. 1392	40	0	0
			Double action harp supposed to be No. 1319	40	0	0
			Single action sold to J. Prince	30	0	0
			Second hand unfinished double harp	15	0	0
			Single small harp No. 928	20	0	0
			Double harp yellow No. 1320	40	0	0
			Second hand harp No. 12 on hire at Mr Dells	5	0	0
			Single action harp No. 1309	30	0	0
			Second hand harp No. 514	20	0	0
Second hand harp No. 1295	20	0	0			
14		String account	20 bundles of the best first at 5s	5	0	0
			44 bundles of firsts at 3s/6	7	14	0
			12 bundles of thin firsts at 3s	1	16	0
			30 bundles of seconds at 5s	7	10	0
			7 bundles of seconds at 6s	2	2	0
			12 bundles of seconds at 4s	2	8	0
			4 bundles of thick bass at 15s	3	0	0
			20 bundles of no. 5 at 12s	12	0	0
			16 bundles of no. 4 at 11s	8	16	0
			2 bundles of small bass at 10s	1	0	0
			11 bundles of thirds at 7s	3	17	0
			12 bundles of thirds at 8s	4	16	0
			1 bundles of No. 5 blue at 15s	0	15	0
			6 bundles of No. 4 blue at 10s	3	0	0
			8.5 bundles of No. 3 blue at 7s	2	19	0
			8 bundles of No. 2 blue at 5s	2	0	0
			5.5 bundles of No. 1 blue at 3s/6	0	19	0
			0.5 bundles of No. 4 blue at 10s	0	5	0
			2 bundles of No. 5 red at 13s	1	6	0
			4 bundles of No. 4 red at 7s/6	1	10	0
			4 bundles of No. 3 red at 5s/6	1	2	0
			6 bundles of No. 2 red at 4s/6	1	7	0
			5 bundles of No. 1 red at 3s/6	0	17	0
			1 bundle of thick bass at 15s	0	15	0
			4 bundles of thick bass at 13s	2	12	0
			1 bundle of small bass at 10s	0	10	0
			1 bundles of small bass at 9s	0	9	0
			1 bundle of small bass at 8s	0	8	0
			2 bundles of small bass at 7s/4	0	14	0
			2 bundles of small bass at 5s	0	10	0
1 bundle of small bass at 6s/6	0	6	0			
31 bundles of foreign strings at 3s/6	5	8	0			

Page	Location		Stock	£	s	d
14		[Household]	Household furniture from Wardour Street at p valuation	66	9	0
			Household furniture taken with the house in Berners Street as p valuation	190	0	0
			Stock of wine [x] doz madeira at [x] p doz	0	0	0
			Plate linen and china as p valuation	25	0	0
			Cash in the house supposed to be	28	12	0

Appendix 6.2: End of year stock account, 31 December 1822

EL, pp. 326-329.

Page	Location	Account	Stock	£	s	d	
326	Draycotts		13 bodies & poles at £4 each	52	0	0	
	Maunder		19 bodies & 7 poles at £2 each	52	0	0	
	Wood Shop		12 bodies unfinished at £1 each	12	0	0	
	Attic		8 bodies at £2 each	16	0	0	
	First Floor		3 bodies and poles at £4 each	12	0	0	
	Smiths Shop		2 double machines unfinished at £5 each	10	0	0	
			3 pedals at £1/5 each	3	15	0	
	Store Rooms		60lbs of steel wire at 2s per lb	6	0	0	
			4 lbs of steel wire at 6s per lb	1	4	0	
			Cast brass estimated at	10	0	0	
			Plate brass estimated at	40	0	0	
			Crank brass estimated at	5	0	0	
			Arches, screws, staples etc estimated at	7	0	0	
			Files estimated at	5	0	0	
327	String Boxes		14 square boxes with locks at 12/-	8	8	0	
			5 long boxes 8/6	2	2	6	
			7 second hand long boxes at 2/-	0	14	0	
			2 tin boxes	1	11	6	
	String Account		114 bundles of Foreign 1sts at 4s/9 should be £27/1/6	26	11	6	
			54 bundles of Foreign 2nds at 5s should be £13/12/6	13	2	6	
			1 bundle of Foreign 3rds at 12s	0	12	0	
			33 silver strings at 1/8 should be £2.15	1	18	4	
			33 bundles English 1sts at 3/6	5	15	6	
			5 bundles English between 1sts and 2nds 4s	1	0	0	
			13 bundles 2nds 5s	3	5	0	
			15 bundles L. 3rds at 7s	5	5	0	
			11 bundles L. 3rds at 8s	4	8	0	
			8 bundles S. bass at 10s	4	0	0	
			4 bundles second bass at 12s	2	8	0	
			5.5 bundles thick bass	4	2	6	
			6 bundles No. 1 at 3/6	1	1	0	
			3 bundles No. 2 at 4/6	0	13	6	
			Half bundle No. 3 at 5/6	0	2	9	
			6 bundles No. 4 at 8/-	2	8	0	
			1.5 bundles No. 5 at 12/-	0	18	0	
			1 bundle No. 1 at 3/6	0	3	6	
			5 bundles No. 2 at 4/6	1	2	6	
			Half bundle No. 3 at 5/6	0	2	9	
			4.5 bundles No. 4 at 10/-	2	5	0	
			1.5 bundles No. 5 at 15/-	1	2	6	
			12 bundles sundries at 6/-	3	12	0	
			4 bundles 1sts, 2nds, 3rds at 6/-	1	4	0	
			12 bundles of 1sts at 4/-	2	8	0	
			8 bundles of 2nds at 4/-	1	16	0	
		Store Rooms		Wood in sundry shops estimated at	30	0	0

Page	Location	Account	Stock	£	s	d
328	Harp Covers		1 Crimson	2	10	0
			1 Brown	2	0	0
			1 Moreen	1	0	0
	Harp Cases		1 New Case	2	8	0
			5 Second Hand cases at 25s each	6	5	0
			1 lined with tin second size	2	0	0
			1 Mahogany Case	3	0	0
	Music desks, stools etc		5 desks on hire	5	0	0
			3 desks in white	3	0	0
			5 second hand desks	3	10	0
			1 new stool	2	10	0
			1 canterbury	1	10	0
			4 Japanned stools & 3 second hand stools 15/-	5	5	0
			3 white stools 25/-	3	15	0
	Stock of harps on hire		5 second hand stools 10/-	2	10	0
			No. 1238 at Mr Patons	20	0	0
			No. Verones at Mrs Broadhurst	5	0	0
	329	Stock of harps at home	No. At Mr Lentz	20	0	0
			No. 991	30	0	0
			No.	15	0	0
			No. 11	20	0	0
			No. 439	20	0	0
			No. 1257	30	0	0
			No. 120	10	0	0
			No. 12	5	0	0
			No. 557	30	0	0
			No. 201	10	0	0
			No. 153	22	0	0
			No. 359	25	0	0
			No. 1151	42	0	0
			No. 1368	40	0	0
			No. 1381	30	0	0
No. 1395			40	0	0	
No. 1403			30	0	0	
No. 1128 at Mr Wilkinson			20	0	0	
No. At Mr Calcot			8	0	0	
No. At Mr Dietrichsen			6	0	0	
No. 548 at Mr Bradley			20	0	0	
Lent No. 1235 to Mr Carr			20	0	0	
No. 838 at Mr Garcia			20	0	0	
No. 1095 Miss Hampshire			20	0	0	
No. 1090 at Mr Phillips			20	0	0	
No. 1285 at Mr Wright			30	0	0	
No. 1243 at Mr Killick			20	0	0	
No. 1308 at Mr Cousins	30	0	0			
Lent No. 419 to Miss Hadgdon	20	0	0			
No. 1088 at Miss Binckes	30	0	0			
No. 1302 at Mrs Brown	30	0	0			
No. 1283 at Mr Abbott	30	0	0			
No. 1306 at Mrs Corri	30	0	0			
No. 611 at Mr Binfield	20	0	0			
No. 698 at Miss Hopwood	20	0	0			
No. 1031 at Mr Lewis	20	0	0			

Page	Location	Account	Stock	£	s	d
329		Stock of harps at home ctd.	No. 1223 at Mr Gifford	20	0	0
			No. 1096 at Mr Bird	50	0	0
			No. 13 at Mr Barry	15	15	0
			No. At Mr Jas. Taylor	50	0	0
			No. 1263 now 1359 Luckcock & Co	55	0	0
			No. 1314 at Mr Derkheim	40	0	0
			No. 1315 at Lady Bankes	40	0	0
			No. 1322 at Miss Stodhart	30	0	0
			No. 1327 at Miss Harrison	40	0	0
			No. 1143 at Mr Eagers	37	0	0
			No. 1101 to Rolfe & Co	31	10	0
			No. 1326 at Mr Roobards	45	0	0
			No. 1244 at Mr Davies	40	0	0
			No. 1362 at Mr Broadwood	40	0	0
			No. 1364 at Miss Jones	30	0	0
			No. 1365 at Miss Atwood	30	0	0
			No. 1384 at Mr Denning	30	0	0
			No. 1394 at Mr Parish	30	0	0
			No. 1396 at Mr Child	30	0	0
			No. 1401 at Miss Walton	30	0	0
Lent 1409 to Dr Temple	30	0	0			

Appendix 6.3: 1824 Inventory

TNA. C110/99, Mr J. Erat's Estate, Inventory of stock etc (9 December 1824)

Pg	Room	Bench	Stock	cwt	qr	lb	£	s	d					
1	Store		Twelve double machines for harps complete Nos. 1505, 1518, 1513, 1510, 1512, 1498, 1519, 1511, 1502, 1499, 1497, 1503				148	4						
			Four single machines for harps complete Nos. 1515, 1517, 1516, 1509				19							
			Rolled brass	1	2	13½	12	11						
			Cast brass	0	3	13	6	17	5					
			Pedal steel	1	1	25	5	16	10					
			Square steel	1	1	7	5	2	4					
2					40 tuning forks (damaged)				1					
					240 sets of springs				27	10				
					11 pair of branches				1	19				
					Flat steel	0	2	16	10	16				
					65 gross of screws				2	8	9			
					52 bundles of foreign 1sts				12	7				
					8 bundles of foreign 2nds				2					
					1 bundle of English No. 5 blue					17				
					7.5 bundles of English No. 3				2	12	6			
					3 bundles of English No. 2					15				
					3 bundles of English No. 1					10	6			
					0.5 bundles of English No. 4					5				
					1 bundle of English No. 4 red					7	6			
					2.5 bundles of English No. 3 red					13	9			
					4 bundles of English No. 2 red					18				
					9 bundles of English best 1sts				2	5				
					13 vessels & 3 pans					13				
					26 brass feet					13				
					10 gross of pegs					5				
					3			8 bundles of common 1sts				1	4	
								8 bundles of large 2nds				2		
								6 bundles of thin 3rds				1	13	
20 bundles of large 3rds									7					
10 bundles of 2nd size bass									6					
9 bundles of small bass				4				10						
0.5 bundles of thick bass								7	9					
2 bundles of sundry strings								7						
4 bundles of 2nd size bass				2										
2 bundles of 2nds								7						
2 bundles of 3rds								11						
71 silver strings				5				6	6					
Sand and emery paper								8						
Back room 1st floor			1 French harp No, 10,000							2				
			1 French harp (no number)				2							
			24 harps in white				153	12						
			6 harps in white mounted				42							

Pg	Room	Bench	Stock	cwt	qr	lb	£	s	d
4	Front room 1st floor		Second size double action harp No. 1484 stained rosewood				40		
			Double action harp No. 1492 in oil gold				40		
			Double action harp, smalt blue No. 1496 in burnished gold				40		
			Second hand double action black harp No. 1400 in oil gold				30		
			Double action grey harp No. 1479 in burnished gold				40		
			Double action green harp No. 1504 in burnished gold				40		
5	Manufactory Smith's Shop	No. 1 Bench	Metal for work in hand 13lbs at 155s p cwt					18	
			1 vice			1	1		
			Wages paid on acct. of work in hand			8	3	4	
			Harp with the common machinery No. 1825			4			
			Harp with the common machinery No. 1824			8			
			Harp with the common machinery No. 8000			4			
		No. 2 Bench	70 files, screw drivers etc at 7.5s each			2	3	9	
			Sundry drills, taps etc in drawer				5		
			Hand vice, pliers, dividers & stakes				5		
			Two double machines finished No. 1520, 1521			24	14		
			1 vice			1	1		
			56 files, screw drivers etc at 7.5 each			1	15		
			sundry drills, taps etc in drawer			5			
			Hand vice, pliers, dividers & stake			5			
			No. 3 Bench	Two single machines finished No. 1522, 1523			9	10	
				50 files at 7.5s each			1	11	3
				1 vice			1	1	
				Sundry drills, taps etc in drawer				5	
Hand vice, pliers, dividers & stake					5				
No. 4 Bench	Metal for work in hand 3lbs at 1s				3				
	2lbs of brass				2	9			
	60 files, screw driver etc at 7.5s each			1	17	6			
	1 vice			1	1				
	Drills, taps etc in drawer				5				
	hand vice, pliers, dividers & tap				5				
No. 5 Bench	Wages paid on acct. of work in hand			9	13	4			
	Metal for work in hand				7				
	40 files, screw drivers etc at 7.5s each			1	5				
	1 vice			1	1				
6									

Pg	Room	Bench	Stock	cwt	qr	lb	£	s	d		
6		No. 5 Bench	Sundry drills, taps etc in drawer					5			
			hand vice, pliers, dividers & tap				5				
			Wages paid on acct. of work in hand				4	3	4		
		No. 6 Bench	1 vice				1	1			
			20 files, screw drivers etc at 7.5s each					12	6		
		No. 7 Bench	Metal for work in hand 16lbs of pedal steet at 8.5d p lb						11	4	
			11lbs of cast brass at 1/5 p lb						15	7	
			1 vice				1	1			
			Wages paid on acct. of work in hand				3	13	4		
			50 files, screw drivers etc at 7.5d each				1	11	3		
			Sundry drills, taps etc in drawer						5		
		7	Manufactory Smith's Shop continued	No. 8 Bench	Hand vice, pliers, dividers & stake					5	
1 vice							1	1			
30 files, screw drivers etc at 7.5 each								18	9		
Bench in middle of room	Sundry drills, taps etc in drawer								5		
	Hand vice, pliers, dividers & stake								5		
	Wages due on work done								3		
	Plate brass at 155s per cwt			2	1	10	18	2	6		
	Cast brass at 1s.5 p lb				2		3	19	4		
8				Bench in middle of room	32 files, screw drivers etc at 7.5 each				1		
					2 planes at 10s/6 each				1	1	
					1 screw wrench					4	
					2 vices				2	2	
		1 broken vice						10			
		Planing bench and block						5			
		Bench in smiths shop	Benches in smiths shop					5			
			Stove, pipe & pans					1	16		
			Flat steel at 3s per lb				15	2	5		
			Brass wire at 1/8 per lb				18	1	10		
			Square steel at 78s per cwt		1	3	1	1			
			Iron wire at 3d per lb		3	6	1	2			
			Steel wire at 2s per lb				12	1	4		
			950 feet of inch sycamore					16	12		
			35 feet of inch of cube sycamore at £10.10 per load					7	6		
			1167 feet of sawing planks at 9s per hundred					5	5	2	
			550 feet of veneers at 9s per hundred					2	9	6	
			Trucking wood home						5		
1 Bar lathe					9	9					
1 Bar lathe					4	10					
1 Bar lathe					10						
1 Bar lathe					16						

Pg	Room	Bench	Stock	cwt	qr	lb	£	s	d			
8	Smith's Shop		1 Bed lathe				8					
			1 spinning machine for silver wire				1					
			Sundry saws tools etc in smiths' shop				3					
		ctd.		3 benches				3	3			
9	Wood shop		Stove, pipe & pans				2	10				
			57 wooden screws at 1s/6				4	5	6			
			5 moulds at 10s				2	10				
			Sundry pieces of beech, sycamore and deal				3					
			103 feet of 1.5 inch sycamore at 6d per foot				2	11	6			
			88 feet of 1 inch sycamore at 4d per foot				1	9	4			
			2 presses at 5s					10				
			2 glue pots & sundries				2					
			12 harps in white unfinished at £5.13 each				67	16				
			4 iron screws at 3s					12				
10	Maunder's shop		3 sets of pedals				4					
			2 double sets of screws				1	7	4			
			5 single sets of screws				2	5				
			6 swell cranks at 3s each					18				
			2 sets of arches at 2s each					4				
			4 sets of uprights at 1s					4				
			1 spoiled machine No 1257					16				
			22 sets of long wires				2	16	6			
			120 feet of veneer at 2.5s per foot				1	5				
			53 sounding boards at 4s each				10	12				
			220 feet of 0.5 inch sycamore at 2d per foot				1	15	8			
			1 bench					8				
			1 cupboard					10				
			2 harps in white at £6.8 each				12	16				
			2 gross of pegs at 10s per gross				1					
			Sundry old belly wood				5					
			11	Varnisher's Room		Sundry wood for gluing up				1	10	
						1 damaged harp used for experimentation No. 1257				1		
1 damaged harp used for experimentation							1					
Sundry tin box, 2 old string boxes & drawers & Dutch clock							1	7				
57 string gauges at 2s/2 each							6	3	6			
7 doz. C forks at 11s							3	17				
1.5 doz C forks at 11s								11	6			
10 single desks in white at 16s each							8					
2 second hand double desks							2					
Sundry engraved borders							1					
13 copper plates for borders for harps				20								
Harp taken in exchange from Cothay				5								

Pg	Room	Bench	Stock	cwt	qr	lb	£	s	d	
11	Varnisher's Room continued		9 sets steel pins & 6 tuning keys				9			
			Sundry brushes					7	6	
			8 quires of paper 1/6					12		
			8 harps under varnish at £8.3 each				67	4		
			2 harps mounted, in white				14			
			1 harp varnished & gilded without machine				12	12		
			Repairs on two harps estimates at				4			
12	Varnisher's Room continued		11 second hand, and stools in white at 13s each				7	3		
			1 gallon of varnish				1	12		
			1 second hand single action harp No. 1481				22			
			2 benches					10		
			Stove & pipe				1	10		
			Cupboard & stone bottles					5		
			1 set of feet in wood					10		
			Back yard		Trough lined with lead & veneers				1	6
	Forge			1 vice					10	
				1 Anvil					10	
1 Grindstone							1	5		
1 bellows pipe & back							3			
2 hammers & benches								5		
Gilder's room			2 benches					10		
			Harp varnished and in oil gold without machine				10	3		
13	Back room		Large tin box for strings				1	10		
			97 belly boards at 1s/10				8	17	10	
			16 leaves of air-wood veneer at 4s				3	4		
	2nd floor	Counting house		9 packing cases second hand at home and lent				4	10	
				4 square string boxes				2	8	
				1 square string box second hand					7	
				2 second hand harp covers					16	
				1 moreen harp cover					14	
				Harp with the single action No. 737 second hand				20		
				3 brass moulds 20s				3		
				3 wooden moulds 10s				1	10	
				Desk & shelf for books				1	10	
				14	Harps on hire		Small harp with the common machinery No. 12			
Small harp No, 13 with the common machinery							4			
Second harp No. 838 with the single action							20			
Second hand harp No. 1088 with the double action							30			
Second hand harp No. 1090 with the single action							20			
Second hand harp No. 1401 with the single action							20			

Pg	Room	Bench	Stock	cwt	qr	lb	£	s	d
14			Second hand harp No. 1417 with the double action				30		
			Second hand harp No. 1409 with the single action				20		
			Second hand harp No. 1463 with the double action				30		
			Second hand harp No. 1447 with the single action				20		
			Second hand harp No. 1465 with the double action				30		
			Second hand harp No. 1045 with the single action				20		
			Second hand harp No. 842 with the single action				20		
			Second hand harp No. 1427 with the single action				20		
			Second hand harp No. 1449 with the double action				30		
			Second hand harp No. 1506 with the single action				20		
			Second hand harp No. 1495 with the single action				20		
			Second hand harp No. 439 with the single action				20		
			Second hand harp No. 1031 with the single action				20		
			15			Engraving 14 patent harps 14/6 each			
Engraving 6 common harps 2s each								12	
Second hand harp No. 1238 with the single action							20		
Second hand harp No. 1468 with the double action							30		
Second hand harp No. 1406 with the single action							20		
Second hand harp No. 1508 with the single action							20		
Second hand harp No. 120 with the common machinery							10		
Second hand harp No. 1327 with double action							30		

Appendix 7: Erat sales and suppliers

Appendix 7.1: Monies owed by the company (21 February 1821)

Page	Customer	£/s/d
1	Siems & Tracey as p Bill deliv'd	109/9/-
	Hansler & Mc Kensie as p Bill deliv'd	88/5/-
	Holtzapffel & Co. as p Bill deliv'd	6/1/6
	W. Hoole as p Bill deliv'd	18/-/9
	W. H. Freeman as p Bill deliv'd	4/15/9
	In ^o . Bamford as p Bill deliv'd	11/10/6
	J. W. Newby as p Bill deliv'd	23/14/3
	W. Beauchamp as p Bill deliv'd	132/16/2
	B. Busby as p Bill deliv'd	5/2/-
	Hancock & Co. as p Bill deliv'd	2
	W ^m . Bennett as p Bill deliv'd	18/8/4
	W. George as p Bill deliv'd	42/13/-
	Dan ^l . Steward as p Bill deliv'd	8/14/-
	Mrs Crystal as p Bill deliv'd	-/10/10
	John Wood as p Bill deliv'd	1/4/6
	G. Wakeling as p Bill deliv'd	11/5/-
	G, Cooper as p Bill deliv'd	18/1/10
	Botten & Co. as p Bill deliv'd	23/12/8
	R. & W. Pusey as p Bill deliv'd	10/2/-
	J. Young as p Bill deliv'd	9/-/6
	B. Longmate as p Bill deliv'd	30/16/-
	Joseph Reynolds as p Bill deliv'd	1/7/1
	F. P. Farques as p Bill deliv'd	1/17/-
	W. Forster as p Bill deliv'd	1/3/-
	Mr Hill as p Bill deliv'd	3/2/6
	Jos ^h . Sharpe as p Bill deliv'd	-/8/-
	J. Bryant as p Bill deliv'd	1/19/4
	R. Roberts as p Bill deliv'd	6/1/11
	Tho ^s Bird as p Bill deliv'd	138/-/-
	Cairncross as p Bill deliv'd	8/16/3
	Davies as p Bill deliv'd	38/4/-
	Turner as p Bill deliv'd	5/7/2
	Buckthorn as p Bill deliv'd	88/13/-
	Miss Massion as p Bill deliv'd	2/4/6
	Sawyer & Son as p Bill deliv'd	2/7/-
	Challoner & co. as p Bill deliv'd	100/5/9
L. Dell as p Bill deliv'd	16/13/9	
J. Kempson as p Bill deliv'd	7/17/7	
James Child as p Bill deliv'd	50/6/6	
John Taylor as p Bill deliv'd Commission	5/-/-	
Madame Boom as p Bill deliv'd Commission	23/16/-	
Pointer as p Bill deliv'd	2/5/6	
2	Preston as p Bill deliv'd	7/17/-
	Goulding & Co as p Bill deliv'd	4/7/4
	Hamilton as p Bill deliv'd	9/14/2
	Kirkman as p Bill deliv'd	3/-/-

Appendix 7.2: Legacy payments (21 February 1821)

EL. p.2.

Payment	£/s/d
M. Erat Legacy	50/-/-
George Sharp Legacy	50/-/-
Catherine Erat Legacy	25/-/-
Jacob Erat Legacy	25/-/-
James Erat Legacy	25/-/-
Mary Ann Erat Legacy	25/-/-
Martha Erat Legacy	25/-/-
William Erat Legacy	225/-/-
Julia Erat Legacy	25/-/-
Georgiana Erat Legacy	25/-/-

Appendix 7.3: Customers: monies outstanding (21 February 1821)

EL. pp. 2-9.

Customer	£/s/d
Mrs Bensly Balce Acct. to this day from old ledger folio 19	1/3/-
Mr Hooper [ditto] folio 31	52/10/-
Goulding Balce [ditto] folio 35	9/4/-
Mr. Chadwick [ditto] folio 40	20/9/-
Anna Gouldsmith [ditto] folio 51	13/13/3
Geo' Cary Balce [ditto] folio 53	4/11/3
Bertie Ambrose Balce [ditto] folio 65	3/11/6
Mrs Sterling Balce [ditto] folio 66	11/11/-
Mrs Brown Balce [ditto] folio 77	1/6/6
Mr Adey Balce [ditto] folio 79	21/6/2
Mr Taylor Kensington [ditto] folio 79	16/11/8
Miss Forster Balce [ditto] folio 81	3/5/10
Mr John Letts Balce [ditto] folio 85	5/4/-
Sir W. Roberts Balce [ditto] folio 88	1/18/-
Mr Millhouse Balce [ditto] folio 119	-/5/-
Countess of Portsmouth [ditto] folio 121	16/14/6
Mr Allen Balce [ditto] folio 125	4/19/-
Mr Horn Balce [ditto] folio 125	60/-/-
Manuel de la Torre [ditto] folio 129	4/11/-
Mr Mackie Balce [ditto] folio 136	2/2/-
Mrs Dod Balce [ditto] folio 137	1/6/6
Mrs Belisario [ditto] folio 138	1/19/-
Mr Calcot [ditto] folio 139	12/4/-
Mr Hammans [ditto] [ditto] folio 139	1/11/6
Mr Craven [ditto] folio 143	3/14/1
Miss Kendrick [ditto] folio 150	4/7/1
Mrs Williams [ditto] folio 153	-/10/6

Customer	£/s/d
Mrs Maurice [ditto] folio 156	3/19/-
Mrs Picard [ditto] [ditto] folio 161	1/15/-
Miss Bennison [ditto] folio 164	5/2/3
Mr Campbell [ditto] folio 165	7/13/6
Miss Lydiard [ditto] folio 168	2/-/8
Edward Wellings [ditto] folio 170	3/-/-
Captn. Mills [ditto] folio 172	5/8/-
Miss Linwood [ditto] folio 175	7/12/4
Mr Hoffman [ditto] folio 177	4/4/-
Mr Mitchell [ditto] folio 178	-/5/-
Mr Aünestrup [ditto] folio 184	63/-/-
Miss Anderson now Mrs Ford [ditto] folio 185	21/1/6
Mr. Edmonds [ditto] folio 189	2/-/-
Mr Pill Balce [ditto] folio 190	-/4/6
Mr Chatterton [ditto] folio 191	8/19/4
Mr Watson [ditto] folio 195	-/12/-
Mrs J Watson [ditto] folio 200	-/8/-
Mr Patton [ditto] folio 202	1/-/-
Mrs Buckley [ditto] folio 204	45/18/-
Earl of Harrington [ditto] folio 209	7/5/10
Mrs Bird [ditto] folio 210	2/13/-
Miss Nash now Mrs Sharp [ditto] folio 211	-/16/-
Miss Miles [ditto] folio 213	2/1/6
Mrs Nicks [ditto] folio 217	-/18/6
Mr Griesbach [ditto] folio 222	11/11/-
Col. Hay [ditto] folio 223	8/17/7
Miss Rowcroft [ditto] folio 225	9/12/-
Mrs Durham [ditto] folio 227	-/6/-
Miss Dixon [ditto] folio 233	23/9/3
Mr B Cunnah [ditto] folio 238	18/18/8
Mr John Reid [ditto] folio 242	4/4/-
Mr Williams [ditto] folio 250	12/4/10
Mrs Salmon [ditto] folio 254	3/17/-
Mrs Bainbridge [ditto] folio 258	1/4/6
Miss Morton [ditto] folio 261	1/10/-
Mrs Martin [ditto] folio 267	-/16/6
Mr Thompson [ditto] folio 268	1/12/-
Cutler Esq. [ditto] folio 272	10/3/-
Mr Pilbrow [ditto] folio 276	59/2/-
Mr White [ditto] folio 280	15/2/2
Dr Richardson [ditto] folio 165	7/2/6
Dettmer Esq [ditto] folio 283	2/1/-
G. Cowie [ditto] folio 286	1/19/6
H N Bel [ditto]l [ditto] folio 287	2/19/-
Mr Hewitt [ditto] folio 288	18/-/-

Customer	£/s/d
M. H. Nepean [ditto] folio 289	6/15/-
Mr Law [ditto] folio 294	-/3/6
Miss Phipps [ditto] folio 295	12/16/6
Mr Challoner [ditto] folio 299	170/-/8
Mr Binches [ditto] folio 300	-/3/-
Miss Oxley [ditto] folio 301	-/-/-
Mrs Kymer [ditto] folio 306	1/14/-
Mr Chilly [ditto] folio 307	104/13/11
Mr Furber [ditto] folio 318	21/9/9
Miss Massion [ditto] folio 319	1/1/10
Hanmer Esq. [ditto] folio 320	1/13/6
Mr Constable [ditto] folio 320	-/10/-
Miss Lazenby [ditto] folio 322	7/11/3
J. Cause [ditto] folio 324	17/9/6
Mrs Lusack [ditto] folio 331	3/3/-
Mrs Flowerdew [ditto] folio 333	2/2/-
Miss Dias [ditto] folio 337	5/3/2
Herbert Jenner [ditto] folio 339	1/2/6
Miss Knight [ditto] folio 344	1/2/-
Mr Weaver [ditto] folio 346	6/1/6
Parsons & Brodbelt [ditto] folio 347	59/5/-
E.J. Waters [ditto] folio 348	2/17/-
Mr Beis [ditto] folio 350	14/16/6
P. Meyer [ditto] folio 352	7/19/6
John Taylor [ditto] folio 353	-/19/-
Miss Hummell [ditto] folio 356	25/4/3
Miss Mitchell [ditto] folio 358	2/3/-
Miss Stephenson [ditto] folio 359	3/10/-
Miss Morratt [ditto] folio 360	-/1/6
Major Clayton [ditto] folio 361	2/7/6
Mr Holditch [ditto] folio 366	1/19/-
Miss Gill [ditto] folio 371	119/18/-
Captn. Murray [ditto] folio 373	2/2/6
Mrs Cook [ditto] folio 377	4/1/-
Mrs Bellamy [ditto] folio 378	15/12/-
Miss Gordon Kings Street [ditto] folio 379	19/2/4
J. Bacon Esq. [ditto] folio 382	3/16/-
Mr Nicholson [ditto] folio 384	7/12/-
Mr Dietrichsen [ditto] folio 385	6/17/-
Lady G. Bathurst [ditto] folio 387	40/11/-
Mr Wright [ditto] folio 388	40/19/6
Miss Matthews [ditto] folio 391	3/8/-
Mr Smith [ditto] folio 391	-/15/-
Miss Jane Wood [ditto] folio 399	9/2/3
Mr J. Parish [ditto] folio 400	141/4/8
Mrs Hervey [ditto] folio 402	3/14/6

Customer	£/s/d
Miss Hodgson [ditto] folio 403	3/7/6
Mr Holst [ditto] folio 403	51/4/10
General Needham [ditto] folio 404	-/9/3
Mrs North [ditto] folio 407	7/12/-
Mr Field [ditto] folio 410	-/17/-
J. Poole [ditto] folio 410	1/9/-
W. Nicholson [ditto] folio 412	-/5/
Mr Morland [ditto] folio 413	-/10/6
Mr P Taylor [ditto] folio 413	1/16/-
Mrs Herman [ditto] folio 415	-/15/-
Mr Menage [ditto] folio 417	4/9/11
Mr Purkis [ditto] folio 418	4/17/7
Mr More [ditto] folio 419	1/1/-
Mr Dover [ditto] folio 419	2/9/6
Mr Josh. Dale [ditto] folio 422	4/2/6
Miss Dixon [ditto] folio 427	-/17/-
Mr Hanson [ditto] folio 427	-/10/10
Mrs Johnson [ditto] folio 428	-/1/-
Miss Frieswell [ditto] folio 429	1/13/6
Lady F. Osbourne [ditto] folio 430	2/-/-
Miss Mc. Dougall [ditto] folio 430	8/-/-
Lady Muncaster [ditto] folio 431	33/5/4
Mr Brugier [ditto] folio 437	5/-/-
Mr Avis [ditto] folio 438	1/6/-
Miss Power [ditto] folio 441	2/9/6
Mr Strange Jnr. [ditto] folio 442	11/19/6
Lady Tankerville [ditto] folio 444	1/9/-
Mr Phillips [ditto] folio 446	181/1/-
Mrs Lock [ditto] folio 447	54/10/-
Mr John. Weippert [ditto] folio 449	65/12/9
Revd. Mr Harrison [ditto] folio 451	3/-/-
Mrs Dupuy [ditto] folio 452	24/8/-
Mr Delawney [ditto] folio 453	2/10/-
Mr F Hollings [ditto] folio 454	19/18/9
Miss A Hoffman [ditto] folio 455	19/-/2
Mrs Collier [ditto] folio 456	4/7/-
Mr Owen [ditto] folio 457	60/-/-
Mr Lamort [ditto] folio 459	54/15/-
Mr Sutton [ditto] folio 461	10/15/4
Lady Carr [ditto] folio 463	11/6/-
Mr Munro [ditto] folio 464	8/3/6
Mrs Lott [ditto] folio 465	5/8/-
Mrs Brown [ditto] folio 467	6/6/-
Mr Cam [ditto] folio 467	-/5/-
Mr Tomkinson [ditto] folio 469	5/2/6
Mrs Appleton [ditto] folio 470	7/12/-

Customer	£/s/d
Mr Briscowe [ditto] folio 470	11/2/6
Mrs Boyle [ditto] folio 474	4/4/3
Mr Walton [ditto] folio 476	3/15/-
Mrs Thornhill [ditto] folio 477	21/15/6
Mr Denning [ditto] folio 477	15/19/-
Lady Sutton [ditto] folio 478	2/8/-
Mr Parish [ditto] folio 481	-/17/3
Mr Mislér [ditto] folio 481	1/5/-
Miss Parker [ditto] folio 482	-/3/6
Madame Dupesney [ditto] folio 487	61/4/11
Mr Poole [ditto] folio 487	1/15/-
Mr Grosses [ditto] folio 488	10/-/-
Mr Vatte [ditto] folio 489	3/16/-
Mr Binfield [ditto] folio 490	64/11/7
Miss Dibdin [ditto] folio 491	1/-/-
Sir Jas. Macintosh [ditto] folio 493	60/10/-
Col. Bayard [ditto] folio 494	79/12/-
Captn. Rescott [ditto] folio 495	-/11/8
Mrs Herman [ditto] folio 496	3/10/-
Madame Despourine [ditto] folio 496	1/15/-
Mrs Brown [ditto] folio 497	-/7/6
W. Etherington [ditto] folio 498	7/4/4
Mrs Bissett [ditto] folio 501	2/9/9
Mr Carr [ditto] folio 502	5/-/-
Mr Seamark [ditto] folio 503	2/2/-
Miss Bryant [ditto] folio 504	33/-/-
Mr Dell [ditto] folio 505	9/8/-
Mrs E. Horne [ditto] folio 508	1/-/-
Jn. Scholfield [ditto] folio 509	3/19/6
Mr Hall [ditto] folio 510	3/-/-
Mr Davison [ditto] folio 511	2/-/-
R. Willis Esq. [ditto] folio 512	86/13/-
Mr Cooper [ditto] folio 513	7/6/6
Mr Viner [ditto] folio 514	2/2/-
Col. Campbell [ditto] folio 514	15/15/-
Mr Owen Edinbro' [ditto] folio 515	1/9/10
Mr Miles [ditto] folio 515	-/7/6
Mr Garcia [ditto] folio 515	34/17/1
Miss Lemon [ditto] folio 516	6/6/-
Mr Hellet [ditto] folio 519	2/19/6
Mrs Thorolf [ditto] folio 520	2/-/-
Mr Howell [ditto] folio 521	90/11/2
Miss Stamps [ditto] folio 522	18/17/6
Mrs Rowley [ditto] folio 522	1/4/-
Mr Newton [ditto] folio 524	17/4/6
Madame Boom [ditto] folio 526	-/13/8

Customer	£/s/d
R. Hartwell [ditto] folio 529	-/17/-
Mr Humphuys [ditto] folio 529	6/6/-
Mr Roffet [ditto] folio 530	22/7/6
Countess of Darlington [ditto] folio 531	1/4/6
Chas. Packer [ditto] folio 533	174/12/11
Mr Eagers [ditto] folio 536	-/19/-
Mr Arkinstall [ditto] folio 536	11/3/3
Mr Eccleston [ditto] folio 533	1/17/-
Mr Innalls [ditto] folio 539	56/7/6
Miss Oxley [ditto] folio 539	19/11/6
Mr Child [ditto] folio 540	63/6/8
Mr Ollive [ditto] folio 541	4/18/-
John Prince Esq. [ditto] folio 545	7/10/-
Mr Wallace [ditto] folio 546	9/18/-
Lady Shaw [ditto] folio 548	9/12/-
Mr S. Sacket [ditto] folio 549	14/2/-
Mrs George [ditto] folio 550	-/9/6
Mrs Clark [ditto] folio 551	-/17/-
Mrs Young [ditto] folio 553	77/16/-
Miss Johnson Portland Place [ditto] folio 554	-/2/-
Mr Senior [ditto] folio 556	1/17/6
Mr Chipp [ditto] folio 557	83/16/8
Mr Wrightson [ditto] folio 558	86/10/-
Mr Parslowe [ditto] folio 559	67/5/6
Mr Phillips Junr. [ditto] folio 560	32/14/5
Mrs Wilcox [ditto] folio 561	6/-/-
Mr Harding [ditto] folio 561	1/11/-
Morgan Esq [ditto] folio 563	2/15/5
Mr Rennells Surgeon [ditto] folio 565	9/12/-
Wildman Esq [ditto] folio 566	163/17/4
Mr Brooks [ditto] folio 568	11/13/6
Mr Fitzer [ditto] folio 568	-/11/3
Mrs Lee [ditto] folio 568	3/17/-
Mrs Corri [ditto] folio 569	1/2/6
Miss Kennedy [ditto] folio 570	1/10/-
Captn. Grindley [ditto] folio 571	1/-/-
Mr Grant [ditto] folio 571	-/12/-
Mrs Nichollay [ditto] folio 574	116/11/-
Col. Frazer [ditto] folio 575	14/17/6
Mrs Neville [ditto] folio 577	3/13/6
Mrs Love [ditto] folio 578	13/15/6
Mr M. Weippert [ditto] folio 579	1/13/8
Mrs Beer [ditto] folio 579	100/4/2
Mr Fortescue [ditto] folio 580	6/1/9
Mr Glendenning [ditto] folio 580	6/-/-
Miss Greene [ditto] folio 582	18/4/6

Customer	£/s/d
Mr Hingstone [ditto] folio 582	1/15/9
Mr Norton [ditto] folio 582	1/2/-
Mr W. Dale [ditto] folio 583	18/13/6
Mr Ball [ditto] folio 584	1/1/-
Miss Husband [ditto] folio 584	38/15/6
Mrs Barrett [ditto] folio 585	4/18/8
Lady Caroline Drummond [ditto] folio 585	3/-/-
Francis Calvert Esq [ditto] folio 585	49/5/-
Baliol Best Esq. [ditto] folio 586	151/9/-
Miss Gordon Vauxhall [ditto] folio 586	2/14/-
Thomas Howell [ditto] folio 587	10/14/-
Miss Challens [ditto] folio 587	2/19/-
Joad Esq [ditto] folio 587	10/1/-
Mrs Byerley [ditto] folio 587	-/15/4
Mr Gear [ditto] folio 588	-/14/-
Miss Booth [ditto] folio 588	17/3/2
Mr Maude [ditto] folio 588	-/11/-
Mr Tullock [ditto] folio 589	9/-/-
Miss Lukin [ditto] folio 589	-/7/-
Mrs Knott [ditto] folio 589	-/1/-
Mr Chas. Saunders [ditto] folio 590	-/5/-
Mr Webbe [ditto] folio 591	10/8/-
Mr Anderson [ditto] folio 591	3/11/-
Mr Hart [ditto] folio 591	-/10/6
Mr Thompson [ditto] folio 591	-/10/-
Bowman Esq [ditto] folio 592	5/2/-
Miss Hammond [ditto] folio 592	8/12/2
Mr Rennell Somers town [ditto] folio 592	-/5/-
Mr Adams [ditto] folio 592	-/9/6
Mr Nichols [ditto] folio 592	-/17/6
Mrs Polhill [ditto] folio 593	-/10/6
Mr Davies Jermyn St. [ditto] folio 593	-/10/6
Miss Merrick [ditto] folio 593	46/4/-
Miss Kitty Atwood [ditto] folio 594	3/17/6
Mrs Courtney [ditto] folio 594	2/19/-
Mrs Kearsley [ditto] folio 594	1/1/-
Miss Nichol [ditto] folio 595	-/10/-
Miss Richards [ditto] folio 595	2/-/-
Mr Ellis [ditto] folio 595	32
Mr Taylor Hammersmith [ditto] folio 600	1/16/6
Mrs Lang [ditto] folio 152	4/19/-
Miss Stoddart [ditto] folio 589	-/14/6
Miss Matthews [ditto] folio 172	4/10/-
Mr James Taylor [ditto] folio 534	121/6/11
Mr James Platts [ditto] folio 445	8/9/3

Appendix 7.4: Harp Sales (1821-1824)

1821

Ledger page	Date	Serial no.	Action Type	New/Second Hand	Colour	Gilding	Customer	Address	£/s/d
17	28-Feb-21	1309	S	SDH	Black	Swell & patent stops	Miss Byerley		35/-/-
21	31-Mar-21	514	S	SDH		Swell & patent stops	Hallet Esq	London, 66 Frith Street	30/-/-
21	31-Mar-21	1079	S	SDH	Purple	Swell and patent stops, oil gold	Mr Critchley	Derby, Iron Gate	35/-/-
21	31-Mar-21	1092	S	SDH		Swell and patent stops, burnished gilding	Mr Watlen	London, Leicester Place	35/-/-
21	31-Mar-21	1312	D	NWH	Black	Patent harp, oil gold with single gold vignettes	Mr Watlen	London, Leicester Place	65/-
21	31-Mar-21	1313	D	NWH	Rosewood	Patent harp, burnished gilding with gold lines in front	Mrs Polhill		63/-
21	31-Mar-21	1326	S	NWH	Black		Mrs Broadhurst		45/-/-
21	31-Mar-21	NN	S	NWH	Green	Swell and patent stops, double gilt, elegantly ornamented	John Prince Esq	Kent, Tonbridge Wells	73/10/-
31	10-Apr-21	38	S	SDH			Mr Jonson		20/-/-
31	10-Apr-21	464	S	SDH	Black	Single gilt	Mrs Hoffman		20/-/-
31	10-Apr-21	913	S	NWH		Burnished gilding with Raphael's arabesks	Mr W Dale	London, Poultry	36/15/-
31	10-Apr-21	1096	D	SDH			Mr Binfield	Reading	50/-/-
31	10-Apr-21	1295	D	NWH	Purple	Swell and patent stops, double gilt, elegantly ornamented	Mr Jopson		55/-/-
31	10-Apr-21	1300	D	NWH	Crimson	Patent harp, burnished gilding with Raphael's arabesks	Miss Somers	London, Lombard Street	60/-
31	10-Apr-21	1320	D	NWH	Yellow	Patent harp, burnished gilding with lines in front	Mrs Hoffman	London, 426 Strand	66/-
31	10-Apr-21	1324	D	NWH	Red	Patent harp, burnished gilding with Raphael's arabesks	Mr Binfield	Reading	70/-

Ledger page	Date	Serial no.	Action Type	New/Second Hand	Colour	Gilding	Customer	Address	£/s/d
31	10-Apr-21	1329	D	NWH	Red	Patent harp, burnished gilding with Raphael's arabesks	Mr Harris	London, Holborn	55/-
43	8-May-21	527	D	SDH		Burnished gilding with gold borders	Mr Horn		60/-/-
43	8-May-21	1008	S	SDH	Black	Swell and patent stops, double gilt, elegantly ornamented	Mr P Mayer	London, Great Portland Street	36/15/-
43	8-May-21	1330	S	NWH	Rosewood	Burnished gilding with Raphael's arabesks	Mr Rost	London, 13 Church St, Soho	47/-/-
43	8-May-21	1332	D	NWH	Black	Patent harp, burnished gilding with Raphael's arabesks	Mr Love	London, Bond Street	75/-
43	8-May-21	1332	D	NWH	Black	Patent harp, double gilt with white front and gold lines	Mr Love		75/-
42	12-May-21	1120	S	SDH	Black	Swell and patent stops, burnished gilding with Raphael's arabesks	Mr Etherington	Petersham	36/15/-
50	19-May-21	13	S	SDH			Mr Phillips		31/10/-
58	16-Jun-21	626	S	SDH	Black	Swell and patent stops, white painting	Mr Leathwaite	London, Lombard Street	36/15/-
58	16-Jun-21	669	S	SDH	Black	Swell & patent stops	Mr Eavestaff		36/-/-
58	16-Jun-21	1089	D	SDH	Black	Swell and patent stops, oil gold	Mr Pilotti	at Col. Marsacks nr. Reading	35/-/-
58	16-Jun-21	1296	D	SDH	Black		Mr Bland	London, 21 Somerset Street, Portman Square	55/-/-
58	16-Jun-21	1316	D	NWH	Black	Patent harp, burnished gilding with gold borders front and sides	Mr John Walton		65/-
58	16-Jun-21	1321	D	NWH	Yellow	Gold & black lines	Mr James Taylor	London, Warren Street	70/-
58	16-Jun-21	1323	D	NWH	Blue variegated	Patent harp, burnished gilding with Raphael's arabesks	Mr Viner	Bath, Wood St., Queens Square	70/-

Ledger page	Date	Serial no.	Action Type	New/Second Hand	Colour	Gilding	Customer	Address	£/s/d
58	16-Jun-21	1341	S	NWH	Green Variagated	Double gilt, elegantly ornamented	Mr Lyon	London, Nassau Street	47/5/-
58	16-Jun-21	NN	S	SDH		Swell & patent stops	Miss Hart	London, 31 Weymouth Terrace, Hackney Road	40/-/-
71	4-Jul-21	1162	S	SDH		Double gilt, superbly ornamented	Mr Taylor	London, Kensington, High Street	40/-/-
71	4-Jul-21	1246	S	SDH	Black	Burnished gilding with gold borders	J.C. Lawrence		42/-/-
71	4-Jul-21	1311	D	NWH	Rosewood	Patent harp, burnished gilding with gold lines in front	John Walmsley Esq	Rochdale	115/10/-
71	4-Jul-21	1325	D	NWH	Smalt	Patent harp, double gilt, elegantly ornamented	Miss Mitchell	London, Bedford Place	105/-/-
71	4-Jul-21	1348	S	NWH	Crimson	Swell and patent stops, burnished gilding	John Weippert	London, John St. Tottenham Court Road	50/-/-
72	26-Jul-21	668	S	SDH	Black	Swell and patent stops, oil golds	Mr Phillips	London, New Milman Street	35/-/-
72	26-Jul-21	1234	S	SDH	Purple	Swell & patent stops	Mr Munden	Birmingham, New Hall St.	35/-/-
72	26-Jul-21	1342	S	SDH	Black	Swell & patent stops	Mr Peachey	London, Bishopsgate Street	45/-/-
72	26-Jul-21	1343	S	NWH	Crimson	Patent stops, burnished gilding with Raphael's arabesks	Mr Carr	London, 404 Oxford Street	44/2/-
90	01-Aug-21	1338	S	NWH	Green Variagated	Swell & patent stops	Ludwig Lenhold		49/7/-
90	01-Aug-21	1347	S	NWH	Green Variagated	Swell & patent stops	Ludwig Lenhold		49/7/-
86	15-Aug-21	56	S	SDH			Miss Matthews	London, Union Place, New Road	18/18/-
86	15-Aug-21	557	S	SDH			Mr Viner	Bath	30/-/-
86	15-Aug-21	1263	D	SDH		Oil golds	Mr Packer	Bath	55/-/-
86	15-Aug-21	1280	S	SDH			Mr Phillips	London, Greenwich	47/5/-
86	15-Aug-21	1333	D	NWH	Rosewood	Patent harp, burnished gilding with gold vignettes	Mr Packer	Bath	65/-/-
96	14-Sep-21	579	S	SDH		Swell & patent stops	Miss Shepherds	Teddington	36/15/-
96	14-Sep-21	1280	S	SDH	Purple	Swell and patent stops, double gilt	Mr Gasgoigne	London, Leadenhall Street	45/-/-

Ledger page	Date	Serial no.	Action Type	New/Second Hand	Colour	Gilding	Customer	Address	£/s/d
96	14-Sep-21	1292	S	SDH		Swell & patent stops	Mr Wandell	London, Howland Street	37/-/-
96	14-Sep-21	1317	S	SDH		Swell & patent stops, small size	Mr John Watlen	London, Leicester Place	35/-/-
96	14-Sep-21	1344	S	NWH	Blue variagated	Oil golds with double gold vignettes	Mr Beavan	London, Cullum Street	42/-/-
97	22-Sep-21	1331	D	NWH	Black	Patent harp, burnished gilding	John Watlen	London, Leicester Place	68/-/-
109	5-Oct-21	464	S	SDH	Black	Single gilt	Right Honorable Earl Poulett	Somerset, Crewkerne	52/-/-
109	5-Oct-21	602	S	SDH		Swell & patent stops, 2nd Size	Mr Hatley	Birmingham, West Bromwich	35/-/-
109	5-Oct-21	1143	S	SDH		Burnished gilding, elegantly decorated with painting	Messrs Rolfe & Co.	London, Cheapside	37/-/-
109	5-Oct-21	1154	S	SDH		Burnished gilding with Raphael's arabesks	Mr Owen	Leamington, Albion Cottage	38/-/-
109	5-Oct-21	1197	S	SDH	Green	Swell and patent stops, burnished gilding with Raphael's arabesks	Mr Challoner	London, Regent Circus	34/-/-
109	5-Oct-21	1209	S	SDH		Swell and patent stops, single gold vignettes	The Right Honorable Major Gardiner	Ramsgate	40/-/-
109	5-Oct-21	1247	S	SDH	Rosewood		Dr Temple	London, Bedford Row	52/10/-
109	5-Oct-21	1264	D	SDH		Swell and patent stops, raphael's arabesks	Messrs Rolfe & Co.	London, Cheapside	35/-/-
109	5-Oct-21	1335	D	NWH	Blue variagated	Patent harp, burnished gilding with gold lines	Mrs Dowden	Wandsworth, Southville	100/-/-
108	9-Oct-21	1302	S	SDH	Black	Freshly ornamented	Mrs Love	London, Bond Street	72/-/-
120	14-Nov-21	1022	S	SDH		Swell and patent stops, burnished gilding with Raphael's arabesks	Mr Loder	Bath, Orange Grove	37/-/-
120	14-Nov-21	1332	D	NWH	Salmon	Patent harp, double gilt, elegantly ornamented	Mr Love	London, Bond Street	80/8/-
120	14-Nov-21	1358	S	NWH	Black	Swell and patent stops, single gilt	Mr Patton	Bath, Music Warehouse	45/-/-

Ledger page	Date	Serial no.	Action Type	New/Second Hand	Colour	Gilding	Customer	Address	£/s/d
120	14-Nov-21	1363	S	NWH	Red	Swell and patent stops, burnished gilding & oil gold with white front	Kitchiner		45/-/-
120	14-Nov-21	1366	S	NWH		Oil gold with Egyptian borders	Mr Clark	London, Clerkenwell Close	42/-/-
134	13-Dec-21	542	S	SDH	Black		John Watlen	London, Leicester Place	36/15/-
134	13-Dec-21	1351	D	NWH	Yellow	Patent harp, burnished gilding with gold lines in front	Mrs Auldjo	London, 41 Finsbury Square	80/-/-
134	13-Dec-21	1355	S	NWH		2nd size, oil gold with gold vignettes	Mr Owen	Leamington, Albion Cottage	44/-/-
134	13-Dec-21	1360	S	NWH	Black	Burnished gilding with double gold vignettes	Miss Eldiston	London, Clapham	78/15/-
133	31-Dec-21	1328	S	NWH	Black		Mrs Broadhurst		40/-/-
133	31-Dec-21	1334	D	NWH	Black	Patent harp, oil gold with white front and gold lines	John Watlen	London, Leicester Place	68/5/-

1822

Ledger page	Date	Serial no.	Action Type	New/Second Hand	Colour	Gilding	Customer	Address	£/s/d
155	12-Jan-22	1345	D	NWH	Rosewood	Patent harp, burnished gilding, painting in front	Mr Binfield	Reading, Berks	78/15/-
155	12-Jan-22	1350	D	NWH	Black	Patent harp, burnished gilding with Raphael's arabesks	Mr Gillespie	London, America Square	105/-/-
155	12-Jan-22	1354	D	NWH	Blue Variagated	2nd size, oil gold, with Egyptian borders	Mr Weaver	London, 26 Edgware Road	44/-/-
168	20-Feb-22	355	S	SDH		Swell and patent stops, burnished gilding, with white front and gold lines	Mr Killick	Gravesend	30/-/-
168	20-Feb-22	1328	D	NWH	Rosewood	Patent harp, burnished gilding with Raphael's arabesks	Lord Burghersh	Florence (Minister at the Court of Florence)	105/-/-
168	20-Feb-22	1356	D	NWH	Yellow	Patent harp, burnished gilding with gold lines	Mr Burton	London, 61 Greek Street	78/15/-
168	20-Feb-22	1370	D	NWH	Black	Swell and patent stops, double gilt, elegantly ornamented	Mr Dax	London, Bedford Row	78/15/-
182	20-Mar-22	38	S	SDH		Gilt and elegantly ornamented	Mr Gibbs	London, 166 High Holborn	20/-/-
182	20-Mar-22	490	S	SDH		Swell and patent stops, burnished gilding, with white front and gold lines	Mrs Jones	Clapham	42/-/-
182	20-Mar-22	1204	D	SDH			Mrs Lott	London, 5 Upper North Place, G.T. Road	52/10/-
182	20-Mar-22	1245	S	SDH	Black	Swell & patent stops	Mr Etherinton	Petersham	36/15/-
182	20-Mar-22	1273	D	SDH		Patent harp, gilding and handsomely ornamented	Mr Hallett	Dulwich	42/-/-
182	20-Mar-22	1336	D	NWH	Blue Variagated	Patent harp, double gilt, front & side borders elegantly ornamented	Miss Dewhurst		105/-/-

Ledger page	Date	Serial no.	Action Type	New/Second Hand	Colour	Gilding	Customer	Address	£/s/d
182	20-Mar-22	1357	D	NWH	Black	Swell & patent stops	H.P. Keane	London, 23 New Street, Spring Gardens	63/-/-
194	3-Apr-22	1066	D	SDH	Smalt	Raphael's arabesks	Mr Welch	London, Denmark Row, Camberwell	65/-/-
194	3-Apr-22	1371	D	NWH	Yellow	Patent harp, double gilt, elegantly ornamented	Mr Cartwright	Lambeth (south), Warely Cottage (for Miss Stromborn)	65/-/-
195	05-Apr-22	834	S	SDH		Swell & patent stops	Mr Lillycrop	Exeter, Devon	36/15/-
195	05-Apr-22	1275	D	SDH	Green	Patent harp	Mr Lovekin	London, Kensington Gravel Pits	52/10/-
195	05-Apr-22	1302	D	SDH	Black		Miss Hay	London, Marlborough Street	60/-/-
195	05-Apr-22	1373	D	NWH	Smalt	Patent harp, burnished gilding with Raphael's arabesks	Mrs Pothill	London, York Place	73/10/-
195	05-Apr-22	1377	D	NWH	Rosewood	Swell and patent stops, double gilt, white front ornamented with painting	Page Esq	London, Henrietta Street, Brunswick Square	78/15/-
195	05-Apr-22	1378	D	NWH	Black	Patent harp with single gold vignettes	Miss Sharp	Bath, New Bond Street	68/5/-
206	17-May-22	770	S	SDH	Black	Double gilt, elegantly ornamented	Miss Grant	London, 121 Sloane Square	36/-/-
206	17-May-22	1064	S	SDH	Purple	Double gilt, elegantly ornamented	Miss Preston	Wymondham, Stanfield Hall, Norfolk	47/5/-
206	17-May-22	1353	D	NWH	Rosewood	Burnished gilding with white front and gold lines	Sir W. Roberts	Exeter (nr), Lympstone (nr), Courtlands	84/-/-
206	17-May-22	1372	D	NWH	Rosewood	Patent harp, burnished gilding with gold borders	Mr Flowerdew	Blackheath	70/-/-
206	17-May-22	1374	D	NWH	Rosewood	Swell and patent stops, double gilt, elegantly ornamented	Ludwig Lenhold	Moscow	47/5/-
206	17-May-22	1375	D	NWH	Rosewood	Swell and patent stops, double gilt, elegantly ornamented	Ludwig Lenhold	Moscow	47/5/-
207	27-May-22	503	S	SDH	Black	Oil golds with Egyptian borders	Mr Watlen	London, Leicester Place	35/-/-

Ledger page	Date	Serial no.	Action Type	New/Second Hand	Colour	Gilding	Customer	Address	£/s/d
207	27-May-22	1361	S	SDH		Swell & patent stops	Mr Hoffman	London, Charlotte Street	30/-/-
221	10-Jun-22	1337	S	SDH	Black	Swell & patent stops	Mr Loch	London, London Street, Fitzroy Square	37/-/-
221	10-Jun-22	1379	D	NWH	Blue Variagated	Patent harp, burnished gilding, gold borders front and sides	Captain Day	London, Millwall, Poplar	105/-/-
221	10-Jun-22	1385	D	NWH	Purple	Burnished gilding with gold borders	Mr Marsack	Reading, Caversham Grove	110/5/-
221	10-Jun-22	1389	S	NWH	Green Variagated	Swell and patent stops, oil gold, with white front	Ludwig Lenhold	Moscow	47/5/-
235	3-Jul-22	1003	S	SDH			Miss Seller	Loughborough	42/-/-
235	3-Jul-22	1383	S	NWH		Swell and patent stops with oil gold	Mr W Nicholson	No. 5 Brewsler St, Islington	44/-/-
235	3-Jul-22	1387	D	NWH	Black	Patent harp, burnished gilding with Raphael's arabesks	Miss Beech	Hackney, Mare Street (at Mrs Martin's)	105/-/-
235	3-Jul-22	1391	D	NWH	Blue variagated	Patent harp, burnished gilding with Raphael's arabesks	Mr. Lillycrop	Exeter	68/5/-
235	3-Jul-22	1392	D	NWH	Black	Burnished gilding	Mr Loder	Milsom Street, Bath	68/5/-
248	15-Aug-22	1388	D	NWH	Yellow	Patent harp	Mrs Broadhurst	London, Old Cavendish Street	70/-/-
247	24-Aug-22	1367	D	NWH	Blue Variagated	2nd size, gilt ornamented	Mr Wilson	London, Great Wilde Street, Lincolns Inn	44/-/-
247	24-Aug-22	1386	D	NWH	Red	Patent harp	Mr Watlen	London, Leicester Place	70/-/-
258	21-Sep-22	469	S	SDH	Black	Burnished gilding	John Heyer & Co.	Liverpool	40/-/-
258	21-Sep-22	1108	S	SDH		Double gilt, elegantly ornamented	Mr Watlen	London, Leicester Place	35/-/-
258	21-Sep-22	1254	S	SDH			Mr Lillycrop	Exeter	35/-/-
258	21-Sep-22	1369	S	NWH	Black		Mr Patton	Bath	45/-/-
267	22-Oct-22	495	S	SDH			Mr Thomas Kendall	Margate, 23 Kings Street	31/10/-
267	22-Oct-22	1045	S	SDH	Blue Variagated	White front ornamented with painting at the bottom	Mr Martin	London, 80 Coleman Street	42/-/-
267	22-Oct-22	1247	S	SDH	Rosewood		Miss Gale	Greenwich (at Miss Gregorys, Crooms Hill)	40/-/-
267	22-Oct-22	1273	D	SDH		Patent harp	Mr Chatterton	Portsmouth, Green Row	45/-/-

Ledger page	Date	Serial no.	Action Type	New/Second Hand	Colour	Gilding	Customer	Address	£/s/d
267	22-Oct-22	1346	D	NWH	Red	Double gilt, white front with plain lines	Mr Binfield	Reading, Berks	78/15/-
267	22-Oct-22	1398	D	NWH	Red	Patent harp, double gilt, elegantly ornamented	Mr Brooks	London, Hatton Garden	70/-/-
280	9-Nov-22	934	S	SDH	Green	Double gilt, elegantly ornamented	Honorable Mrs Knight	Leatherhead, Fetcham Cottage	47/5/-
280	9-Nov-22	1319	D	SDH	Black		Mr Lillycrop	Exeter	50/-/-
280	9-Nov-22	1340	S	SDH			Mr Owen	Leamington	37/-/-
280	9-Nov-22	1349	D	SDH		Swell & patent stops	Mr Brooks	London, Hatton Garden	44/-/-
280	9-Nov-22	1352	D	NWH	Rosewood (imitation)	Patent harp with burnished gilding	Mr Pilbrow	Exeter, Fore Street	70/-/-
280	9-Nov-22	1390	S	NWH	Green Variagated	Swell and patent stops, double gilt, and elegantly ornamented	Ludwig Lenhold	Moscow	47/5/-
280	9-Nov-22	1400	D	NWH	Black	Patent harp, oil gold with Egyptian borders	Mr Patton	Bath, Milson Street	65/-/-
280	9-Nov-22	1404	D	NWH	Yellow	Patent harp, gilt, elegantly ornamented	Messrs Banks & Co.	Liverpool	65/-/-
279	26-Nov-22	1303	D	SDH		Patent harp	Mr Green	Teignmouth, Wellington Place	65/-/-
294	04-Dec-22	662	S	SDH	Blue	Gilt	Mr Gulbruith	Hull, Whitefriars	73/10/-
294	04-Dec-22	731	S	SDH		Double gilt, elegantly ornamented	Mr Watlen	London, Leicester Place	35/-/-
294	04-Dec-22	1264	D	SDH		Swell & patent stops	J.W. Braddock	Portsmouth	50/-/-
294	04-Dec-22	1318	D	SDH		Patent harp	Mr Owen	Leamington, Albion Cottage	55/-/-
294	04-Dec-22	1339	D	SDH	Rosewood	Patent harp	Mr J.W. Braddock	Portsmouth	50/-/-
294	04-Dec-22	1380	S	NWH	Black	Oil gold	Mr Thomas Chipp	London, Plumbtree Street	47/5/-
294	04-Dec-22	1382	S	NWH	Black	Oil gold	Mrs Morgan	Bruckley, Northamptonshire	70/-/-
294	04-Dec-22	1393	D	SDH		Patent harp, 2nd size	Mr Windus	London, Stoke Newington	89/5/-
294	04-Dec-22	1405	D	NWH	Grey	Patent harp, burnished gilding with gold lines	Miss Elwin	Ealing Green	110/5/-
294	4-Dec-22	1407	D	NWH	Purple	Patent harp with burnished gilding	Mr Packer	Bath, Orange Grove	73/10/-

Ledger page	Date	Serial no.	Action Type	New/Second Hand	Colour	Gilding	Customer	Address	£/s/d
294	04-Dec-22	1408	D	NWH	Grey	Patent harp, burnished gilding, white front and gold lines	Mr Samuel Mather	Sheffield	73/10/-
293	31-Dec-22	657	S	SDH	Black		Mr Patton	Bath, Milson Street	31/10/-
300	31-Dec-22	1397	D	NWH	Black	Double gilt, elegantly ornamented	Mr Wiliams	Hatfield St	68/-/-
301	31-Dec-22	1399	D	NWH	Blue Variagated	Patent harp	Mr Eagers	Wigmore St	73/10/-

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Ledger page	Date	Serial no.	Action Type	New/Second Hand	Colour	Description	Customer	Address	£/s/d
334	15-Jan-23	1410	D	NWH	Rosewood		Mr Binfield	Reading, Berks	78/15/-
334	15-Jan-23	1411	D	NWH	Black	Patent harp, double gilt, with white front and gold lines	Mr J.C. Green	Teignmouth, Devon	68/5/-
334	15-Jan-23	1346	D	NWH	Red	Patent harp with a white front	Dr Temple	London, Bedford Row	84/-/-
345	18-Feb-23	1415	D	NWH	Black	Patent harp, burnished gilding, white front, decorated with painting	Mrs Beames	London, Harpers Street, Brunswick Square	99/15/-
357	11-Mar-23	1418	D	NWH	Blue Variagated	Patent harp, oil gold, with a white front and gilt lines	Mr Pilbrow	Exeter	70/-/-
357	11-Mar-23	1421	D	NWH	Green Variagated	Burnished gilding with a white front with grape borders	Mr key	London, Denmark Hill	105/-/-
357	11-Mar-23	1422	D	NWH	Black	Patent harp, burnished gilding, with a white front, decorated with painting	Mr John Watlen	London, Leicester Place	65/-/-
379	12-May-23	1423	D	NWH	Purple	Patent harp, burnished gilding, elegantly ornamented	Courtney Stacey Esq	Maidstone, Kent	105/-/-
401	22-Jul-23	1414	D	NWH	Rosewood	Patent harp with burnished gilding	Mr Lott	London, 10 Skinner Street	78/15/-
401	22-Jul-23	1437	D	NWH	Grey	Patent harp, burnished gilding, with gold borders	Mr Hale	Cheltenham	70/-/-
401	22-Jul-23	1430	D	NWH	Black	Patent harp, burnished gilding, with grape borders	Mr Phillips	Greenwich, Stockwell Street	63/-/-

Ledger page	Date	Serial no.	Action Type	New/Second Hand	Colour	Gilding	Customer	Address	£/s/d
401	22-Jul-23	1433	D	NWH	Rosewood	Patent harp, burnished gilding, with a white front and gold borders	Mr Watlen	London, Leicester Place	68/5/-
401	22-Jul-23	1434	D	NWH	Black	Patent harp, burnished gilding, with a white front	Mr Nicks	Exmouth, Devon	63/-/-
414	14-Aug-23	1436	D	NWH	Rosewood	Patent harp, burnished gilding, white front with gold lines	Mr Hale	Cheltenham	70/-/-
414	14-Aug-23	1444	D	NWH	Blue Variagated	Double gilt	Mr Watlen	London, Leicester Place	68/5/-
427	1-Sep-23	1441	D	NWH	Blue Variagated	White front with gold borders	Mr Lillycrop	Exeter	68/5/-
427	1-Sep-23	1450	D	NWH	Grey	Patent harp, burnished gilding, ornamented with painting	Mr C. Hale	Cheltenham	7310/-
440	13-Oct-23	1321	D	NWH		Double gilt with blacked lines	Mrs Brown	Bath, Sion Hill, Winifrid House	70/-/-
441	12-Nov-23	1446	D	NWH	Rosewood	Patent harp, white front with gold lines	Mr John Loder	Bath, Milson Street	70/-/-
451	12-Nov-23	1449	D	NWH	Black	Patent harp, elegantly ornamented	Mr Patton	Bath	65/-/-
451	12-Nov-23	1452	D	NWH	Black	Patent harp, oil gold	Mr A. Loder	Bath, Orange Grove	65/-/-
451	12-Nov-23	1314	D	NWH	Rosewood		Mr R. Houlden	London, Kensington, High Row	68/5/-
463	29-Dec-23	1451	D	NWH	Yellow	Patent harp, white front and ornamented with painting	Mr J.D. Loder	bath	70/-/-
463	29-Dec-23	1455	D	NWH	Purple Variagated	Patent harp, burnished gilding, elegantly ornamented	Mr Welch		78/15/-

Ledger page	Date	Serial no.	Action Type	New/Second Hand	Colour	Gilding	Customer	Address	£/s/d
463	29-Dec-23	1462	D	NWH	Purple	Patent harp, oil gold	Mr John Watlen	London, Leicester Place	68/5/-
345	18-Feb-23	1322	D	SDH	Smalt	Patent harp, oil gold	Mr Lovekin	London, Kensington Gravel Pits	49/-/-
357	11-Mar-23	1306	D	SDH		Patent harp, double gilt, elegantly ornamented	Mrs Lawton	Brighton, Pavillion Colonnade	65/-/-
368	25-Apr-23	1088	D	SDH	Green	Patent harp	Mrs Lieltzhe	London, 15 Tavistock Square	55/-/-
379	12-May-23	1362	D	SDH			Mrs Williams	London, Kentish Town	60/-/-
390	28-Jun-23	991	D	SDH			Mr Chatterton	Portsmouth, Green Row	47/5/-
390	28-Jun-23	1395	D	SDH	Crimson		Mr Lovekin	London, Kensington Gravel Pits	60/-/-
401	22-Jul-23	1315	D	SDH		Double gilt, elegantly ornamented	Mr Monro	Newcastle-on-Tyne	52/10/-
427	1-Sep-23	1352	D	SDH			Mr Geo. Spencer	London, Holloway, White Cottage	58/-/-
440	13-Oct-23	1428	D	SDH	Green	2nd size	Mr Mitchell	London, Duke Street, Lincolns Inn	44/2/-
439	15-Oct-23	1308	D	SDH		Burnished gilding, white front, decorated with painting	Mrs Cousins	Greenwich, Maize Hill	55/-/-
451	12-Nov-23	1302	D	SDH	Purple		Mr Pilbrow	Exeter, Fore Street	50/-/-
450	20-Nov-23	1169	D	SDH			Miss Lieltzke	London, 15 Tavistock Square	55/-/-
464	23-Dec-23	1368	D	SDH		Patent harp	Mrs Luden	London, Hanover House	57/15/-
463	29-Dec-23	1206	D	SDH	Blue Variagated	2nd size	Miss Jones	Reading, Purley Park	40/-/-
368	25-Apr-23	1424	S	NWH	Blue Variagated	2nd size, double gilt, elegantly ornamented	Mr Repuke	London, New Belton Street, Long Acre	44/-/-

Ledger page	Date	Serial no.	Action Type	New/Second Hand	Colour	Gilding	Customer	Address	£/s/d
356	12-Mar-23	1403	S	NWH	Rosewood	Burnished gilding, elegantly ornamented with painting	Messrs Higgins, Whiteley & Co.	London, London Street	81/18/-
378	1-May-23	1365	S	NWH		Double gilt, elegantly ornamented	Miss Creasy	London, 226 Upper Thames Street	47/5/-
379	12-May-23	1394	S	NWH		Double gilt, elegantly ornamented	Mrs Gould	Hadley, Northan Place (nr. Hadley)	60/-/-
390	28-Jun-23	1439	S	NWH	Smalt		Mrs Ruxton	Witney, Oxfordshire. Ensham Hall nr. Witney	78/15/-
390	28-Jun-23	1413	S	NWH	Black		Mr Venton	Blackheath, Grove House, Dartmouth Row	52/10/-
427	1-Sep-23	1442	S	NWH	Green	Swell and patent stops, double gilt, elegantly ornamented	Ludwig Lenhold	Moscow	47/5/-
427	1-Sep-23	1443	S	NWH	Blue	Swell and patent stops, double gilt, elegantly ornamented	Ludwig Lenhold	Moscow	47/5/-
427	1-Sep-23	1412	S	NWH	Black		Mr Mitchell	London, Southampton Row	43/-/-
427	1-Sep-23	1440	S	NWH	Blue Variagated		Miss Gawle	London, Kennington Common, Harleyford Place	55/-/-
439	15-Oct-23	1458	S	NWH	Black	Swell & patent stops	W. Bury Esq	Ripon, Yorkshire	84/-/-
451	12-Nov-23	1425	S	NWH		Burnished gilding, gold borders front and side	Mr James Taylor		40/-/-
368	25-Apr-23	NN	S	SDH		Elegantly ornamented (Verones)	Mr Gibbs	London, Holborn	9/-/-
334	15-Jan-23	557	S	SDH			Mr Dale	London, Poultry	35/-/-
334	15-Jan-23	1223	S	SDH			Mr Gifford	Cambridge	42/-/-

Ledger page	Date	Serial no.	Action Type	New/Second Hand	Colour	Gilding	Customer	Address	£/s/d
346	11-Feb-23	509	S	SDH			Mr Elgood	London, Wimpole Street	30/-/-
346	11-Feb-23	1143	S	SDH		Burnished gilding, elegantly ornamented	Mrs Gould	Hadley, Northan Place (nr. Hadley)	42/-/-
345	18-Feb-23	580	S	SDH		White front with gold lines	Mr W. Lewis	London, Salt Hill	27/-/-
345	18-Feb-23	1128	S	SDH		Oil gold	Mr Watlen	London, Leicester Place	35/-/-
356	12-Mar-23	800	S	SDH			Mr Ward	London, 116 Crawford Street	35/-/-
368	25-Apr-23	428	S	SDH	Black		Mr Ollive	London, Gloucester Place, Kings Road, Chelsea	25/-/-
368	25-Apr-23	1031	S	SDH		White front with gold borders	Messrs Gow & Son	London, Regent Street	35/-/-
368	25-Apr-23	1364	S	SDH			Mr Wansell	London, Howlands Street	36/15/-
378	1-May-23	559	S	SDH			Mr Chatterton	Portsmouth	31/10/-
379	12-May-23	657	S	SDH		White front with gold borderings	Mr Shepherd	Cambridge, Barclay House	36/15/-
379	12-May-23	714	S	SDH			Mr Harrison		32/-/-
379	12-May-23	1096	S	SDH			Mr Harrison	Hull, George Street	68/-/-
379	12-May-23	1416	S	SDH			Mr Hoffman	Hampstead, Frognell	47/5/-
379	12-May-23	10000	S	SDH			Mr Hoffman	London, Hampstead, Frognell	5/-/-
390	28-Jun-23	1158	S	SDH	Black		W.H. Turner Esq	London, Little Britain	44/2/-
414	14-Aug-23	698	S	SDH		Double gilt	Miss Hopwood	London, 5 Clifton Square	35/-/-
414	14-Aug-23	1151	S	SDH	Black	2nd size	Mr Chatterton	Portsmouth	30/-/-
414	14-Aug-23	1326	S	SDH			Mr Ollive	London, Chelsea, Kings Road	36/15/-

Ledger page	Date	Serial no.	Action Type	New/Second Hand	Colour	Gilding	Customer	Address	£/s/d
427	1-Sep-23	419	S	SDH			Mr Ollive	London, Chelsea, Gloucester Place, Kings Road	21/-/-
427	1-Sep-23	1396	S	SDH	Black	Double gilt	Mr Bathi	London, Old Brompton	52/10/-
440	13-Oct-23	714	S	SDH	Black	White front with gold lines	Miss Marmont	Birmingham, Shorland Hall (nr Birmingham)	35/-/-
440	13-Oct-23	1101	S	SDH	Purple	white front with painting	Mr Lewis	London, Salt Hill	35/-/-
440	13-Oct-23	1143	S	SDH	Rosewood	Oil gold	Mrs Harrison	London, Mansion House Street	42/-/-
451	12-Nov-23	580	S	SDH		Double gilt	Miss Chillman	London, Upper Thames Street	35/-/-
450	20-Nov-23	1359	S	SDH	Black		Messrs Valentine & Lubbock	Birmingham	35/-/-

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Ledger page	Date	Serial no.	Action Type	New/Second Hand	Colour	Description	Customer	Address	£/s/d
487	7-Jan-24	555	S	SDH	Black		Messrs Monro & May	London, Holborn	29/-/-
487	7-Jan-24	1448	S	NWH	Rosewood	Burnished gilding with white front & decorated with painting	Mr Challoner	London, Lansdown Place	78/15/-
488	15-Jan-24	1244	S	SDH	Black		Miss Edlestone	Aberystwith	35/-/-
488	15-Jan-24	1265	D	SDH		Patent harp	Mr Pilbrow		50/-/-
488	15-Jan-24	1402	S	SDH			Mrs George Piggot	London, 13 George Street, Portman Square	40/-/-
498	7-Feb-24	555	S	SDH	Black		Messrs Monro & May	London, Holborn	30/-/-
498	7-Feb-24	1095	S	SDH	Black		Mr Barry	Hastings	35/-/-
498	7-Feb-24	1431	D	NWH	Lilac	Patent harp, double gilt, ornamented with gold lines	Mrs James	Hampstead, Albion Cottage	80/-/-
499	13-Feb-24	1243	S	SDH	Rosewood		Miss Gifford	Cambridge	35/-/-
499	13-Feb-24	1426	D	SDH		Patent harp	Mr Pilbrow	Exeter, Fore Street	57/15/-
499	13-Feb-24	1429	S	NWH	Rosewood	Double gilt and elegantly ornamented	Mr H. Mew	Newport, Isle of Wight	50/-/-
499	13-Feb-24	1453	D	NWH	Black	Patent harp	Mr A. Loder	Bath, Orange Grove	52/10/-
499	13-Feb-24	1464	D	NWH	Grey	Patent harp, burnished gilding with white front ornamented with painting	Mrs Sophia Saunders	London, Hampstead	105/-/-
499	13-Feb-24	1467	D	NWH	Green Variagated	Patent harp, burnished gilding, elegantly ornamented	Mr Lillycrop	Exeter	68/-/-
499	13-Feb-24	1470	S	NWH	Yellow	Double gilt and ornamented with black lines	Mr Gulbraith	Hull	49/7/-

Ledger page	Date	Serial no.	Action Type	New/Second Hand	Colour	Description	Customer	Address	£/s/d
511	3-Mar-24	36	NP	SDH		Small size no pedals	Mr Sutton	Dover	5/-/-
511	3-Mar-24	201	S	SDH	Black		Mr Beaumont	London, 60 St. James Street	15/-/-
511	3-Mar-24	611	S	SDH		Small size	Mr Binfield	Reading	28/-/-
511	3-Mar-24	1413	D	SDH	Rosewood		Mr John Weippert	London, Dean Street	38/-/-
511	3-Mar-24	1456	D	NWH	Green Variagated	Patent harp, burnished gilding	Mr Watlen	London, Leicester Place	68/5/-
511	3-Mar-24	1457	D	NWH	Grey	Patent harp, burnished gilding, ornamented with painting	Mr Wansell	London, Howland Street	68/5/-
511	3-Mar-24	1469	S	NWH	Black	Double gilt and elegantly ornamented	Mr Bowden	London, Union Street	45/-/-
511	3-Mar-24	1488	S	NWH	Crimson	2nd size, burnished gilding, caryatids, arabesques and vignettes	Mr Robinson	London, 61 Sun Street	44/-/-
520	1-Apr-24	36	NP	SDH		Without pedals	Mr Sutton		5/-/-
520	1-Apr-24	1133	S	SDH			Mr John Watlen	London, Leicester Place	35/-/-
520	1-Apr-24	1283	D	SDH	Black	Patent harp	Mr Martin	London, Coleman Street	65/-/-
520	1-Apr-24	1381	S	SDH			Mr W. Humphuys	Dover	40/-/-
520	1-Apr-24	1453	S	SDH	Black		Mr Ventorn	London, Grove Road, Mile End	30/-/-
520	1-Apr-24	1459	D	NWH	Purple	White front with grape borders	Mr Binfield	Reading	73/10/=
520	1-Apr-24	1460	D	NWH	Grey	Patent harp	Mrs Keartley	London, Rathbone Place	68/-/-
520	1-Apr-24	1461	D	NWH	Rosewood	Patent harp, burnished gilding, white front ornamented with grape borders	Mr Wansell	London, Howland Street	68/5/-

Ledger page	Date	Serial no.	Action Type	New/Second Hand	Colour	Description	Customer	Address	£/s/d
520	1-Apr-24	1471	D	NWH	Blue Variagated	Burnished gilding with gold borders front and sides	Mr Coshay	Barnstable	105/-/-
520	1-Apr-24	1482	NP	SHD	Purple	Small size no pedals, elegantly ornamented	Miss Hamlet	London, Cavendish Square	70/-/-
531	18-May-24	819	S	SDH	Black	Swell & patent stops	Mr Warne	Norwich, Cockney Lane	34/13/-
531	18-May-24	1254	S	SDH	Green		Mr Binfield	Reading	36/15/-
531	18-May-24	1384	S	SDH	Black	Swell & patent stops	Miss Yeoman	London, Hackney	60/-/-
531	18-May-24	1474	D	NWH	Rosewood	Patent harp, burnished gilding, white front ornamented with gold borders	Mr Birchell	London, Percy Street	115/10/-
531	18-May-24	1476	D	NWH	Purple	Patent harp with burnished gilding	Mr Watlen	London, Leicester Place	68/5/-
532	22-May-24	1475	D	NWH	Rosewood	Burnished gilding with white front	Mr John Taylor		70/-/-
532	22-May-24	1478	D	NWH	Grey	Patent harp, burnished gilding, with grape borders	Mr Wansell	London, Howland Street	68/5/-
542	28-Jun-24	1235	S	SDH			Mr Owens	London, Hackney Road	30/-/-
542	28-Jun-24	1420	S	SDH			Mr Owens	Hackney Road	35/-/-
542	28-Jun-24	1473	D	NWH	Black	Patent harp	Mr Phillips Senior	London, Greenwich	65/-/-
542	28-Jun-24	1477	D	NWH	Blue Variagated	Patent harp, burnished gilding, with gold borders	P. Wright Esq	Essex, Priory	87/-/-
542	28-Jun-24	1494	S	SDH	Black	White front	Mr Gow	London, Regent Street	47/5/-

Appendix 7.5.1: Sales figures: 'Sundries drawn to harps'

Month	1821	1822	1823	1824	Total
January		227/15/-	308/-/-	232/15/-	
February	346/10/-	292/10/-	282/15/-	562/17/-	
March	361/5/-	361/5/-	421/18/-	306/10/-	
April	255/10	499/15/-	254/15/-	530/-/-	
May	531/-/-	404/15/-	456/-/-	453/8/-	
June	570/12/-	346/15/-	282/12/-	264/5/-	
July	216/3/-	327/10/-	395/10/-		
August	218/3/-	55/-/-	240/-/-		
September	282/-/-	155/-/-	465/15/-		
October	543/10/-	307/5/5	365/2/-		
November	249/8/-	443/5/-	483/5/-		
December	329/18/-	722/-/-	314/15/-		
Total	3685/16/-	4142/15/-	4270/7/-	2349/15/-	14448/13/-

Appendix 7.5.2: Sales figures: 'Sundries drawn to harp hire'

Month	1821	1822	1823	1824	Total
January		7/12/3	7/6/1	14/7/9	
February	8/16/-	46/13/1	20/15/2	10/12/3	
March	16/16/3	24/16/6	12/15/6	32/9/3	
April	25/12/6	40/2/-	8/2/6	20/6/9	
May	49/2/-	30/11/-	16/11/6	53/12/1	
June	55/19/9	122/3/6	70/3/1	39/12/6	
July	64/16/6	51/18/-	61/19/11		
August	50/18/3	27/11/9	22/11/9		
September	34/1/3	16/4/-	39/1/-		
October	40/13/9	14/3/6	10/19/-		
November	30/10/9	12/5/-	44/18/6		
December	199/14/-	201/5	110/17/11		
Total	577/1/-	595/5/7	462/1/11	171/-/7	1805/9/1

Appendix 7.5.3: Sales figures: 'Sundries drawn to harp repairs'

Month	1821	1822	1823	1824	Total
January		25/-/-	61/13/-	24/13/-	
February		54/6/-	20/10/6		
March	-/5/-	10/4/6	33/7/-	23/3/-	
April	24/8/6	38/15/6	29/16/-	27/8/6	
May	18/5/6	26/16/6	23/19/-	10/19/-	
June	44/13/-	42/13/6	15/5/-	19/3/-	
July	10/5/-	30/7/-	20/8/8		
August	12/4/-	33/10/-	18/13/-		
September	14/2/6	14/7/11	34/-/-		
October	40/19/-	21/13/11	35/-/-		
November	20/1/-	15/8/-	24/19/-		
December	31/17/-	13/3/-	22/12/6		
Total	217/-/6	326/5/10	340/3/8	105/6/6	988/16/6

Appendix 7.5.4: Sales figures: 'Sundries drawn to string sales'

Month	1821	1822	1823	1824	Total
January		25/2/2	13/4/6	18/1/3	
February	7/16/3	21/16/6	11/5/2	13/17/9	
March	9/3/9	19/19/1	19/9/9	15/-/4	
April	16/19/2	22/10/10	28/4/1	9/7/6	
May	25/18/7	10/18/-	23/17/-	7/15/4	
June	21/7/-	22/11/-	5/4/5	18/1/7	
July	18/18/11	19/18/8	30/1/-		
August	31/13/-	35/14/10	37/13/-		
September	34/14/6	15/9/7	20/17/10		
October	39/4/-	25/9/3	39/8/8		
November	20/8/11	32/11/-	16/10/-		
December	20/3/-	15/12/2	28/15/10		
Total	256/7/1	267/13/1	274/11/3	82/3/9	880/15/2

Appendix 7.5.5: Sales figures: 'Sundries drawn to covers'

Month	1821	1822	1823	1824	Total
January		6/6/-			
February		7/6/-	6/11/-	2/5/-	
March			10/6/-	3/3/-	
April	3/16/-	7/15/-		2/15/-	
May		6/6/-	2/15/-	7/17/6	
June	4/11/-	8/2/-	-/1/-		
July	4/16/-		2/12/-		
August	4/1/6				
September	5/5/-	3/-/-			
October	3/-/-	3/15/-			
November	6/6/-	-/8/-	3/3/-		
December	3/13/-	3/3/-			
Total	35/8/6	25/18/-	25/8/-	19/-/6	106/5/-

Appendix 7.5.6: Sales figures: 'Sundries drawn to music desks'

Month	1821	1822	1823	1824	Total
January		8/8/-			
February		5/19/-	4/-/-	6/9/-	
March			10/12/6	4/-/-	
April		3/13/6	18/10/-		
May	-/17/6	4/4/-	11/16/6	30/17/-	
June	4/13/6	4/4/-	5/19/-	2/10/-	
July			-/3/-		
August	4/4/-	4/4/-			
September	10/4/-	6/16/6	2/5/-		
October	4/-/-		7/17/6		
November		7/15/-	-/18/-		
December	4/4/-	8/18/6			
Total (£)	28/3/-	54/2/6	62/1/6	43/16/-	188/3/-

Appendix 7.5.7: Sales figures: 'Sundries drawn to string boxes'

Month	1821	1822	1823	1824	Total
January		1/11/6	3/12/-		
February		7/4/6	1/17/-	-/2/-	
March		4/4/-	6/15/-		
April		1/16/-	5/13/-	1/8/-	
May	2/1/-		2/12/6	3/17/-	
June	9/4/-	1/17/-	1/1/-	2/11/-	
July	4/13/6		-/2/-		
August	1/14/-	2/12/-			
September	5/19/6	1/3/-	5/12/6		
October	2/13/-	2/17/-	4/19/-		
November	1/1/-	3/-/-	3/14/-		
December	1/10/-	4/18/-			
Total	28/15/6	31/3/11	35/18/1	7/18/-	103/15/-

Appendix 7.5.8: Sales figures: 'Sundries drawn to music stools'

Month	1821	1822	1823	1824	Total
January					
February				2/12/6	
March					
April		11/11/-	4/4/-		
May	4/9/-			4/14/6	
June		5/5/-			
July					
August	3/13/6	2/10/-			
September					
October	4/-/-		7/17/6		
November					
December					
Total	12/2/6	19/6/-	12/1/6	7/7/-	50/17/-

Appendix 7.5.9: Sales figures: 'Sundries drawn to string gauges'

Month	1821	1822	1823	1824	Total
January			-/16/-		
February		-/11/-			
March				-/5/-	
April		-/6/-			
May	-/5/-				
June	-/11/-			-/11/-	
July	-/5/-		-/6/-		
August	1/15/-		-/5/-		
September	-/10/-				
October	-/10/-	-/17/-	-/6/-		
November	-/15/-	-/5/-	1/-/-		
December	-/6/-				
Total	4/17/-	1/19/-	2/13/-	-/16/-	10/5/-

Appendix 7.5.10: Sales figures: 'Sundries drawn to tuning keys'

Month	1821	1822	1823	1824	Total
January					
February		-/2/6		-/2/6	
March				-/19/-	
April		-/6/-			
May	-/6/-	-/4/-		-/2/6	
June			-/3/-	-/2/6	
July	-/2/6	-/5/-	-/9/3		
August			-/5/-		
September	-/8/-				
October		-/6/-			
November		-/5/-	-/6/6		
December	-/3/-				
Total	-/19/6	1/8/6	1/3/9	1/6/6	4/18/3

Appendix 7.5.11: Sales figures: 'Sundries drawn to tuning forks'

Month	1821	1822	1823	1824	Total
January					
February					
March					
April		-/3/-			
May					
June	-/7/-		-/2/6	-/10/6	
July					
August					
September	2/12/6		2/14/6		
October					
November	1/5/-		-/5/-		
December					
Total	4/4/6	-/3/-	3/2/-	-/10/6	8/-/-

Appendix 7.5.12: Sales figures: 'Sundries drawn to printed music'

Month	1821	1822	1823	1824	Total
January					
February					
March					
April		1/12/4			
May					
June					
July					
August					
September					
October			5/1/8		
November					
December					
Total		1/12/4	5/1/8		7/-/-

Appendix 7.5.13: Music sales

Music bought by Miss Goddard on 25 April 1822 (EL, p. 197)

239	By Sharp N ^o 1313 taken in exchange	
	Mr Goddards N ^o 10 Printed Music	
	Rousseau's Dreams	2
	Overture to Le Nozze de Figaro	1. 4
	La Clemenza di Tito	1
353	Le Petit Tambour	3
	Lacoy Air	1
	Deh prendi	1
	Overture Giovanni	1
	Auld Lang Syne	2
368	Air Dixie	2
	3 ^{ra} bande Anacrisis parlée	2
	Le Gentil Husband	1
	Duncan Gray	1
	Air Mozart	2
	La Piccinina in Gondella	1
	Air Dixie 2 & 3	4
	Canfada	2
	Les Indes	2
	Mr. G. Goddard	

Music bought by Mr Timme on 15 October 1823 (EL, p. 437)

To a Studio for		30	
	Mr Timme	Northumberland Street	
-11	1. Mary of Castle Cary		1. 1.
-2	1. sea boat call		1. 1. 4.
	1. Beckwith's Russians - March		1. 1. 3.
	Rossini's Operas 6. 7. & 10.		1. 2.
-2	1. In A. in		1. 2. 6.
	Beauties of Rossini 1. 4. 5.		1. 10.
	1. Libe. at 1/6		1. 1.
	2. ditto 2/6		1. 2. 8.
-3	2. ditto 2/6		1. 3. 4.
-3	1. ditto 3/6		1. 2.
-2	1. Bochea's La Carnival		1. 2.
-4	1. A. V. drai Carina		1. 3.
-2	1. La. bi daren		1. 2.
-2	1. Il p. lyt Berges		1. 3.
-3	1. 8 light bounds		1. 1. 4.
-3	4. Songs Bishop		1. 5. 4.
	1. Yes thou art gone		1. 1.
	1. Song Bishop		1. 4.
-2	1. Caro Titelli		1. 1. 3.
-4	1. O quanta L'Anima		1. 1.
	1. Di piau		1. 1.
	1. La donna che		1. 1. 3.
	1. Chough & Crow		1. 1. 6.
	1. Witches		1. 1. 3.
	1. Why are you		1. 1.
	The winter Rose		1. 1.
	My childhoods was in the willow		1. 1.
	And we shall walk in silks attire		1. 1.
	1. Fall of Paris		1. 1.
	Aurora che sergurai		1. 1. 6.
-368			1. 1. 6.
			5. 1. 2.
			5. 1. 6.

Appendix 7.5.14: Sales figures: 'Sundries drawn to cash'

Month	1821	1822	1823	1824	Total
January		500/-/-	492/12/11	352/15/11	
February		929/12/11	325/8/8	370/10/7	
March		518/18/7	444/8/7	293/15/11	
April	398/5/6	417/15/4	280/1/6	452/12/2	
May	672/-/-	488/-/10	489/9/-	633/15/8	
June	401/14/8	259/15/10	138/3/10		
July	331/7/-	303/8/-	369/3/10		
August	535/8/-	544/2/6	409/8/3		
September	461/-/8	311/6/5	166/14/8		
October	395/19/11½	525/16/5	354/16/2		
November	237/10/3	318/15/1	446/15/6		
December	250/-/-	198/8/11	£287/8/-		
Total	3683/6/½	5316/-/10	4204/10/11	2103/10/3	15307/8/-

Appendix 7.6: Payments made to suppliers by year (1821-1823)

Supplier	Category	1821	1822	1823	Total
J. Newbury	Accessories - leather covers	16/-/-		5/-/3	21/-/3
J. Young	Accessories - upholstery	5/13/-		10/1/-	15/14/-
J. Mitchel	Accessories - harp cases		62/3/-	33/14/-	95/17/-
W. George	Accessories - harp covers	8/12/-		20/15/6	29/7/6
J. Bryan	Accessories - string boxes and harp cases	10/2/9	£36/15/-	20/6/2	67/3/11
Sawyer & Son	Advertising-Printing	2/12/6	2/3/10	3/8/9	8/5/1
F.P. Farques	Advertising-Printing	6/7/8			6/7/8
W.H. Freeman	Decoration-composition ornaments	3/4/4	2/10/8		5/15/-
Dixon & Son	Decoration-printed borders		2/18/-		2/18/-
Longmate	Harp making - engraving	8/6/-	19/16/6	32/9/6	60/12/-
Henry J. Pratt	Harp making - feet		5/8/-		5/8/-
Beauchamp	Harp making - metalwork	61/11/6½	123/3/2½	44/1/10	228/16/7
W. Hoole	Harp making - metalwork	13/18/4	£16/18/1	32/12/9	63/9/2
Botten & Co.	Harp making - metalwork	17/12/9	£9/3/6		26/16/3
Wakeling	Harp making - poles	7/1/6	8/-/10	7/19/6	23/1/10
Joshua Reynolds	Harp making - screws			2/6/6	2/6/6
Daniel Stewart	Harp making - soundboard pins		24/6/-	5/7/4	29/13/4
Hansler & McKenzie	Harp making - timber		23/9/3	11/16/3	35/5/6
John Bamford	Harp making - timber		7/15/6		7/15/6
William Cairncross	Harp making - timber		21/14/7	4/7/8½	26/2/3½
W. Viney	Harp making - timber			6/12/5	6/12/5
Siems & Tracey	Strings - gut	57/4	37/17/3		95/1/3
J.H. Bockthorn	Strings - coloured	55/12/6	56/12/6		112/5/-
Total		266/17/4½	460/15/8½	240/19/5½	968/12/6½

Appendix 7.6.1: Payments made to suppliers by type (1821-1823)

	1821	1822	1823
Harp making – timber		52/19/4	22/16/4½
Harp making – metalwork	93/2/7½	149/5/9½	76/14/7
Harp making – other	15/7/6	57/10/4	48/2/10
Strings		112/16/6	94/9/9
Decoration	3/4/4	5/8/8	
Accessories	40/7/9	98/18/-	89/16/11
Advertising	9/-/2	2/3/10	3/8/9

Appendix 7.7: Transcript: harp theft by swindling

A newspaper report of William Godfrey's trial for use of unsecured credit to defraud Erat, Delveau, and Dodd of harps, and others. 'Swindling,' *The Courier*, no. 10,325, 17 December 1824.

Swindling

MARYLEBONE-OFFICE. – Yesterday being the day fixed for the re-examination of William Godfrey, alias Cooke, on numerous charges of swindling, host of indignant creditors were in attendance to state their cases against him, the most of whom has obtained their knowledge of his apprehension from that powerful scourge of swindlers – the public press. We have already mentioned, as a proof of the kind of fellowship that subsists among persons of this stamp, that on the former occasion he was accompanied to the office by an elegantly-dressed lady, who immediately on the Magistrate pronouncing his decision, abandoned him to his fate, and that he was taken down to prison, linked to the midemeanants [sic] and others passed from this office. At the prison he either could not or would not obtain by a trifling gratuity the accommodation of a bed for the night; and yesterday he was brought up linked to the common string; yet, notwithstanding the extreme poverty that from these circumstances might justly be inferred, means were found to obtain the attendance of Mr. Harmer on his behalf.

Mr. Green's case was gone into. An objection started by the Attourney [sic] was soon over-ruled by the Magistrate, and the prisoner ordered to find bail.

Two individuals came forward, who proved the prisoner to have obtained a harp, valued at 40 guineas and umbrellas.

Mr. Green, house-agent, of Bond-street, said, that after a long negotiation, in which the prisoner took a prominent part, he had been induced to let Mrs. Saunders the house in Beaumont-street at a rent of 180 guineas per annum. On the 23rd of July, an agreement was signed, in which the prisoner, as subscribing witness, had written his name William Godfrey.

Mr. Rawlinson thought that this fact would strengthen Mr. Green's case by proving a false pretence as to name. He was quite satisfied he ought to commit the prisoner, unless he found bail: himself he should require in 100l., and two sureties in 50l, each.

Mr. Paile, musician, of 32, High Street, then stated, that three months ago, the prisoner called on him and fixed on a violin, &c. for which he agreed to give eight guineas, and then expressed a wish to have lessons at his apartments in Beaumont-street. He then intimated that it would not be convenient to pay till Christmas, when he should receive his dividends, and referred him to Mrs. Saunders for a character as to solvency. Witness was willing to credit him, as he thought him a gentlemanly man, of fascinating manners, and therefore called on Mrs. Saunders, who, on his stating his business, said, "You need not be under any apprehensions; indeed I am surprised you should have had any doubts. It is not a very large sum I suppose."

The goods were accordingly furnished, and three lessons given, but on calling to give the fourth, he was told that Mr. Godfrey was not at home, and this answer was repeated at all his subsequent visits, with the addition that Mrs. Saunders was also not at home. On Tuesday afternoon a person called on him and said Mr. Godfrey was round the corner, and wanted to speak to him. He inquired why Mr. Godfrey could not come to him, and was told he was in confinement at the police-office. On his visiting him at the office, the prisoner extended his hand, and said, "Ah, Mr. Paile, how do you do, I am glad to see you. I have got into a little trouble about a greengrocer, who I recommended to supply a lady, and I want you to become bail along with another friend." – (Loud laughing).

Mr. Charles Steer, boot-maker, of Tottenham Court-road, said, that he had supplied boots and shoes to the prisoner while he was residing at Spring Cottage, Downshire Hill, Hampstead. He declined supplying more goods, as he could not get his money. Some time after, while he was absent from home, the prisoner drove up to his door in a chaise, accompanied by a man servant, and both alighting, walked into his shop, in which was only a boy about 12 years old, his sister, whom he had left in charge of it, having just stepped up stairs. The prisoner took down a pair of boots, which the man-servant hastily tried on, and the prisoner then said, "These will do; tell your master they are for Mr. Godfrey," and both getting into the chaise, they were soon out of sight.

Mr. Rawlinson said this was the most serious offence of all, and as at present stated, had the aspect of felony. He should remand the prisoner on it till next Wednesday.

Mr. Erat, of 23, Berners-street, stated, that he had supplied Mrs. Saunders with goods to the amount of 110l. 15s., and that he had reason to believe his property was now at a sale-shop in Holborn, the owner of which refused to give any account of where he bought it. Mr. Rawlinson advised him to learn further particulars, and then call there again. A merchant from the city stated that he had let to the prisoner a counting-house in Swithin's Lane, the rent of which was unpaid. Others stated that he had swindled them by pretending to be a coal merchant. He had also represented himself to be a flour factor. Mr. Delveau, of Conduit-street had been defrauded of a harp, value 100 guineas, Mr. Dodd, of Berners-street, had similarly been tricked out of a harp, value 110 guineas. Numerous other persons were in attendance, whose cases were not stated. The prisoner appears to have been concerned in a systematic fraud of the most alarming extent, and of most systematic organisation.

Appendix 8: Making the harp

Appendix 8.1: Wages paid by the Erats

All figures are recorded in £/s/d

	1821	1822	1823	1824	Total
January		139/1/10	179/6/8	241/12/11	560/1/5
February	51/15/5	140/6/9	171/15/5	200/3/9	564/1/4
March	226/8/5	180/9/5½	204/15/1	206/2/-	817/14/11½
April	192/13/7	154/6/9	219/8/7½	190/11/2	757/-/1½
May	196/15/6½	118/15/1½	175/8/2	269/2/5	760/1/3
June	206/5/4	195/14/1½	170/11/7		572/11/½
July	107/6/6½	153/12/-	170/16/3		431/14/9½
August	133/10/2	191/6/3	196/12/10		521/9/3
September	157/13/2½	136/12/½	121/17/10½		412/3/1½
October	137/2/4	164/5/1	176/12/11		478/-/4
November	139/16/9	209/1/11½	234/17/3		583/15/11½
December	177/16/7	150/5/4	176/7/6		504/9/5
Total	1727/3/2½	1933/16/8½	2198/10/2	1107/12/3	6967/2/4

Appendix 8.2.1: Érard Grecian composition moulds (c1810)



Name wreath held between caryatids on Grecian capital inscribed 'S. Érard Published April 10 1811 (brass and boxwood).



Stylised anthemion motif from top of Grecian harp capital (brass and boxwood).



A mirrored pair of angels with lyres from the Grecian harp pillar base plate (brass and unidentified timber).



Caryatid tail (brass and unidentified timber).



Caryatid arms (brass and unidentified timber).



Two pairs of caryatid wings (brass and unidentified timber).



Reverse carved neck moulding (boxwood and unidentified timber).



Sound box moulding from junction with pedal box (brass and unidentified timber).



Beaded chaplet from capital (steel).

Appendix 8.2.2: Érard Gothic composition moulds (c1835)



Gothic name mould, inscribed 'Pierre Érard Published December 10 1835' (Brass).



Trefoil niches from top of capital (brass).



Foliate architrave from top of capital, beneath trefoil niches (brass).



Angel playing a harp from capital frieze (brass).



Angel playing a trumpet from capital frieze (brass).



Foliate design below frieze (brass).



Foliate design from junction between pillar and capital (brass).



Mullion from pillar shaft (brass).

Appendix 8.2.3: J. Geo. Morley, Grecian composition moulds (c1900)



Reverse carved stylised anthemion leaves from top of the Grecian harp capital (boxwood).



Reverse carved mirrored putti holding a lyre and trumpets, signed 'Hall' (boxwood).



Reverse carved caryatid signed 'Hall' and stamped J. Geo. Morley, with modern repair (boxwood).



Reverse carved stylised acanthus flower, signed 'Hall' (boxwood).



Two-part, reverse carved griffin (Gothic feet), signed 'Hall', the J. Geo. Morley stamp mostly cut off.

Appendix 8.2.4: J. Geo. Morley composition moulds (early 20th century)



Reverse carved vignette motif (boxwood).



Reverse carved, stylised foliate motif (boxwood).



Reverse carved, stylised foliate motif (boxwood).



Reverse carved floral swag, signed 'Hall' and stamped J. Geo. Morley (boxwood).



Reverse carved foliate panel (boxwood).

Appendix 8.2.5: J. Geo. Morley composition moulds (c1930).



Religious figure on pedestal holding a scroll, the Érard gothic harp (composition, timber frame and back).



Angel holding a lyre, for the Érard gothic harp (composition, timber frame and back).



Angel playing a trumpet, for the Érard gothic harp (composition, timber frame and back).



Lozenge and mullion design, cast from the top of the gothic pillar (composition, timber mount).



Panel from the base of the gothic pillar (composition, timber frame and back).

Appendix 9: Transcription of Robert Willis's Diary

26 September 1819 – 21 January 1821. CUL. Ms Add 7475.

Key:

/ section break

// blank line

- long or short dash

_ long, low dash at end of section

Double space for longer-than-normal spaces

< text > additional text written above line or in margin

[code] shorthand code (not decoded here)

Diary Date	Entry
26-Sep-19	Sunday September 26, 1819 / Left Little Hampton at 6 in the morning & arrived in London about 4 o'clock / Our luggage arrived in the course of the week and with it the Harp which I had finished in the Rough. Three Pedals acting beautifully because the springs were properly placed the other four not acting so well for the contrary reason but still I vainly & foolishly hoped it would satisfy Mr E _ / When he saw it on the following Saturday he looked at it as usual and positively declared the necessity of constructing a finished instrument and it being obviously impossible to convert mine into a finished instrument. I was compelled in an evil hour to begin once more a new harp - This was put in hand in the course of the following week; and its progress I have carefully noted in the following journal which I began on 21st of October
21-Oct-19	Erat began to whitewash _ 1 set of silver strings. Paid Abbott 17.17.2 for spec. Left Congreve at Downes / At Holtzapfel [sic]s 2/- Plyers 7 handles 9s 4d -
22-Oct-19	Received from Abbott the following - Mr Jas Thorn of Wells St Marylebone & Mr Allen of Castle St Marylebone - Piano forte makers are soliciting a Patent for an improvement in Piano fortes - P Abbott _ / Plates planed & drilled reg screws tapped in Corner piece finished iron cranks forged filed & drilled 5 leaders cut out, cranks cut out filed drilled & fitted on arbours. / At Newmans Ind Red & Ind Ink - 2s pd - At Booths ordered Morells Greece & Copybook - left Pamphlets to board _
23-Oct-19	At Holtzapfel [sic]s two brad awls & knob for drawer 1s. Perrys men to come on Monday morning. Received Morell & Copybook / Corner piece & cranks finished. Cranks all drilled on arbors Double soundboard glued together, Cross soundboard barred Pole ready for lining - Gave instructions for springs
25-Oct-19	Perrys men came in _ with bookcases / Frame put together - short leaders about - broaching crank rivet holes - Poles ready for turning - Soundboards half barred _ Took a lesson of Taylor _ / In Bond St couldn't find Congreves lock _ Meeskis ordered a great coat _ Wall in Argyle St down and up again since Sat. week. Booths. ordered notepaper _ / John Taylor to see the Harp liked it very much _ better than he expected _ Taylor came back and to Perry's men 1s _ (stayed late & took the metronome / Turned for the first time since coming to town
26-Oct-19	Took a lesson of Glover from 9 to 1¼ _ Recd note paper / Evening long pillars finished & in their places, cranks rivetted and slit, small bars on soundboard, N.B. Shorland not at work today _ Miss Nicholson to tea _
27-Oct-19	Finished two drawings and took them _ to go tomorrow _ Great roof of the Argyle room occupies 5½ houses in length and half the street or more in breadth - Met Booth going to Pall Mall to look over the County Fire Office _ Wet & dreary / Perrys men 1s Painter began

28-Oct-19	Booth says the convenience of the County Fire Office is sacrificed to the beauty as the offices on the ground floor are all darkened by the portico / Saw the Parentalia & looked at Nicholsons Archit. Dict. At Holtzapfel [sic]s finishing cranks _ Pole not gone to the turners yet. Taylors bird died Monday last _ Carpenters finished their job 1s _ Taylor brought his two little boys I shewed my lathe tools microscope and minerals
29-Oct-19	Rainy morning which prevented our going to Venice & the Market as proposed _ Wrote to the Maltster / Keen Paradise or Palace Row Lambeth [CODE]
30-Oct-19	Roof of Argyle room finished and taken to pieces / Left three gravers at Holtzapfel [sic]s to grind / Short leaders all finished cranks finished arbors cut preparing to grind in. Double soundboard finished all to cleaning off and staple _ Single s- ready to lay down to string up double s- on Monday_ Es double h. finished pedal jumps badly - 7 springs at top ie. 4 in pole & 3 in machine & 7 wire springs at bottom
1-Nov-19	Took a lesson of Taylor on Darins &c. / Leaders all cut out Graham gone to Finsbury / Soundboard ready / Pole and head come from Turners / Borrowed Rees Encyclopaedia [CODE] Part F. just came out
2-Nov-19	Leaders going on arbors grinding in / Soundboard pole and plates ready / In Vine St where the New Street crosses it a wooden bridge is erected to afford a passage over the foundations for foot passengers. Went to Bramahs to order locks / got small on Ploughs and Wheel Carriages
3-Nov-19	Leaders going on, arbors grinding in, pole planing marked places of wrest pins Bramahs man came to measure for locks of bookcases - went out to meeskis &c.
4-Nov-19	At Holtzapfel [sic]s two boxwood chucks 3¼ & 4 inches. Promised to lend him Congreves steam engine [CODE] Leaders ready to drill arbors grinding in retarded by the woodmen wanting the plates the day before / strung up the double soundboard, tone will be good but it draws too fast. [CODE] / Wilkins 1:6 Painter began to grain bookcases this afternoon.
5-Nov-19	Got my pamphlets Oct 22 _ Beginning to lay the wall plates at Argyll rooms _ Arbors all ground in _ Beginning to drill leaders / Threw down the new soundboard and knocked off the shoulder & scratched another body standing near this arose from placing it on a bottom temporarily to try it. Tone very good but rather thin in the treble / Went to Abbots and got my specification _ Booth tells me that the inhabitants of Vine St pulled down the house that was building across to obstruct the way & have succeeded in obtaining a passage to be left into the new street - Nov 2. / Painter finished his job this morning.
6-Nov-19	Left Bramah at Booths to get the plate replaced / Hanging together _ leaders almost finished gave direction about the springs _ Examined Cousineaus harp _ Bochsas has published a new instruction book in which he gives an history of the harp intended to shew Erard to be the only perfect one and gives drawings of it _ E has only made two of his new harps to open the flat the rest stand as in Erards / Went out with Mary & got Bochsas instruction book on hire at Birchalls
8-Nov-19	Took a lesson of Taylor / Machine hanging together leaders and springs going / Shorland cannot finish soundboards for want of swell arches and spring screws / Went to Stodarts to see the instruments Miss Smith wishes to have one of / Taylor called in a great hurry this evening to se Bochsas new instruction book
9-Nov-19	Took a lesson of Glover from 9 to 1½ / Went with Mary to Bramahs, locks to come home tomorrow
10-Nov-19	Machine hung together all to small upper leaders / Bramahs man came to put on locks has to take them back again to alter them to fit.
11-Nov-19	Machine nearly finished hanging together / Roof of concert room slated and the other roof begun to be framed in the street. Bramahs man put on all the locks but one which was not finished _ put in the books

12-Nov-19	Machine all hung together Graham making the cylinder Hutton forging the springs Soundboard strung up again / Erat accusing me of having offered Hutton 10 pounds to finish the machine quickly I denied it positively upon which he went into the factory and presently coming out of it proved to be all a piece of impudent wit of the men / Went to Coades, work going quite well / Bells Promfret Cakes 1s
13-Nov-19	Graham going with the cylinder & washers Hutton at the springs / Erat not very well and not come to town met Taylor there / soundboard turns out to be no better than the common construction _
15-Nov-19	Graham working the machine Took out one of my springs and took it to Hutton to weigh. It takes about 25lb to bring it to its place and 45lb to carry it to the end of its action _ The common clock springs from 8 to 16lb. The wire springs about
16-Nov-19	Machine quite finished springs going on
17-Nov-19	Graham making the outside work. Springs going on Gave swell arches to Shorland 8th. Erat got his new house. Taylor called in the morning to apologise for not coming last night _ The chairs came home - shelf bought home and door eased.
18-Nov-19	Graham going on with outside work. Hatton dandling [dawdling?] the springs in his old style. Gave Shorland the pole and neck for the new soundboard. Met my neighbour [CODE]
19-Nov-19	Outside work going on / Determined to sacrifice the upper arbor of the great E to facilitate the putting in & out of the springs / Hutton going on with the spring pieces / Went back after dinner to string up the soundboard [CODE] Taylor gave us a long lesson this evening.
20-Nov-19	Outside work going on. Spring pieces fitted to their places and drilled for the adjusting screws _ key made / Tuned up soundboard and Taylor filed it / Tone will be as fine as the other_ Taylor came before dinner to persuade me to go to Stumpfs which I did but could not get a sight of his new harp he said it had no more work in it than the common single [CODE]
22-Nov-19	Outside work going on _ making screws & screw holes tapped / X went to Fullers, Cuthells, Jones, Coades Downes Downes promised to return Congreve tomorrow / At Booths ordered De Geer Insectes. 7 tom 4to, Haworths Lepidoptera, Pritchard Anal.Egypt Myth, Huber on Ants. Maccullochs Westn Isles. Rupels Lat & Gr Grammar. Leachs Hool Mise.
23-Nov-19	1 spring in & all right. Outside work going on Glover from 10 to 2½ Taylor and we played a little concert this evening Rec. Pritchard, McCulloch & Rupel - 22 -
24-Nov-19	Hook filed / outside work going on beg. Forks - men drinking yesterday afternoon delayed work Order Falsaff & Bakewells Geology & went to Perrys men to come at 12 - Too Rupel to be lettered Spring piece to be altered for springs to come in from below. Outside work going on * Downes, Coades.
25-Nov-19	Spring pieces nearly done Outside work going on _ Downes came _ Grocer - Jenning. Holtzapfel [sic]s files & screw box _
26-Nov-19	Outside work going on Made 1 winch for the fancy _
27-Nov-19	Ordered Horce Entomologica Got Rupel De Geer, Huber, Leach Ordered Pohlmans Chefs / Outside work going on _ marked the plate for cutting _ got latten [lantern?] plate & wire in Compton St 9d. [CODE] / Called at Churtons Rec. Pohlman. Horce Frend & Alm.
28-Nov-19	Titles of Books to be got Hugenii. Op.mechan.geom.astron. & mis.ex editio Guil. Jas Sgraveande. Lugd. Bat. 1751. 4 vols 4to Amst.1724-28 4.t. in 2.t. in 4to - man.lib A description of several astron. And geogr. Clocks by Henry Jenkins. London 1778

29-Nov-19	Saw Haworth leg Britt. Plates filed & finished / gave them to the woodman. Unstrung my soundboard / Called at Williams
30-Nov-19	Williams brought Edystone & Enc. Meth. & W.B.T. Looked at Rees books _ List of Books to be bought Glover made up his lesson. [FOR LIST OF BOOKS SEE DIARY]
1-Dec-19	Graham finished outside work / Ordered Horsleys Newton. Fergusons Table for Tracts. Cummins Watch work & Mant's Prayer book. Went to De Villes in the Strand to see the new Holyhead Lantern & saw his oil gas apparatus and manufactory. [CODE]
2-Dec-19	Joyce began my pins / Hutton making pipes and Graham rivetting / [CODE] Looked out for binding [LIST OF BOOKS - SEE DIARY] Got 6 pairs of gloves / At Fadens Horwoods map to be out in a few weeks / Recd Mants Prayer book. Recd Mant / At Holtzapfel [sic]s pd. 3..11..3 as pr act from June 4th First day of Rees sale
3-Dec-19	Early to Coades / ordered vice at Holtzapfel [sic]s Machine and wood work all ready to put together / Recd Cummings & Ferguson and Mant No. 6 / [CODE] / Taylor took away W.B.Js. book alias / [CODE]
4-Dec-19	All put together but spring piece wanting some alteration we took it asunder again Ordered Huygens & Jenkins 28 Sent off books to bind dele munch 32 add Cummings 2 Jacob & Cummings Took first lesson of Beale.
6-Dec-19	Machine strung up _ Pedals and long wires to be finished tomorrow morning // Saw two copies of Hugins but Craig having been taken ill in the night could learn no particulars of them _ Settled the bindings / Paid first subscription to Militia Society. Wilson (Two split rings 2.6.) Oxford St. 1..10..0.
7-Dec-19	Glover began his oil picture _ three hours work from 9 ³ / ₄ . Stodart tuned piano. Harp split at the neck for want of veneer and pillars. Taken to pieces & put in hand // Ordered easel at Newmans // Craig still to ill to come 2d failure
8-Dec-19	Craig still to ill to come _ Went with Booth to Bullock to look at a collection of nat. hist. to be sold _ nothing remarkable // Harp going on
9-Dec-19	Took _ Lewis. Taylor. Jams. Richardson. Proper. Lawson. Mavor. Hodson. Oxley. Farr. Clive. Nicholson. Roe. Lackington. Rees & Prosser to be bound. Rarities Williamson. Gurney. Thickness to be lettered / Harp done, put together with three strings. Pedals to be set Martin doing long wire. // At Bullocks Lion sold for 10 ^l and Leopard for 8 ^l (Booth)
10-Dec-19	Took Emersons Mech. & Misc. to bind & talked about Marys copybook / At Erats from 11 to 3 ¹ / ₂ took Taylor home to dinner & returned to Erats & staid til 7 Got nearly all the outside work on // My mother found three dutch clocks for me // Holtzapfel going to move into Crescent Oxf. St. (J. Erat)
11-Dec-19	Left parcel - bought dutch clock 7s - Erat so busy as to be unable to finish my harp
13-Dec-19	Erat still busy / Craig recovered got Hugenii Op 2g Op reliqi 25s Lent Booth Stowers Pointers Grammar // From binding Alberti Huber & Blumenbach
14-Dec-19	Horsleys Newton 5 vols 4 ^{to} boards 10g. Got Musical Gazette boarded & Robertsons Notes on Africa / Gun punch at Holtzapfel [sic]s 2.6 // Went on with my harp. // Taylor brought Laura
15-Dec-19	Got the harp home Head pillar broke in stringing up
16-Dec-19	Took out the head pillar and got a new one from Erats
17-Dec-19	Cleaned the clock in the kitchen // Got the harp together _ made brass legs to support it at the head and a new pedal box but the mortification on stringing up to find that the friction was so great as to prevent the springs bringing up the strings when the pedals were all natural and all very heavy

18-Dec-19	Took the harp wholly to pieces, wiped and greased the pulls, altered the washers uncovered the wires, worked the pulls well and put it together again // Stood well all night but seemed to have derived its great support from the legs. Worked hard from ten til 1¼
19-Dec-19	Mr Booth brought his little nephew to tea _ said that the Newton was imperfect (13th) Put the outside work on & the strings but did not tune it up // J. Dockree, Brass Turner, Galway St, Bath St, City Road
20-Dec-19	Put two more brass stops to the pedals & got the harp tuned up _ springs return very well / Went to Erats & got 2 Right hand taps Outside work cast brass block for closing up the top and drill & put note in the post for Dockree (19th) Got ironwire 9d Lost the key of the tool chest but at night discovered it to be on the bunch but broken
21-Dec-19	Glover from 10 to 3 / Oil drawing 2d. Miss Sidebottom & sister came in to see it. Pedals affected by some unknown cause so as to prevent them from returning when all down. 5th failure
22-Dec-19	Discovered the unknown cause namely the looseness of the crank cylinder. // Determined to have tech longwire
23-Dec-19	Gave orders for steel wire & new pipes and took machine to pieces // Got the new pipes & rivetted them in // Found that Erat had done the same thing to his pedals as I had.
24-Dec-19	Got the long wire 8 boxes // Rivet broke in working the pulls which rendered it necessary to take the top plate off again and in putting it together overturned the centre screw / 6th failure
25-Dec-19	Got it all together but the centerscrew still yielded in consequence of its being overturned // 7th failure
26-Dec-19	Tried to wedge the corner piece fast but the force & strain began to drive the machine out of the wood so was obliged to give up on that plan // Determined to show it to the old man.
27-Dec-19	Tried again to fasten the corner piece by a hook to the front but it will not do Got Newton
28-Dec-19	Went down to the old man & told him & he sent for the harp at 4 o'clock // Taylor gave each a long lesson [CODE]
29-Dec-19	Went down to Erats and upon taking the harp to pieces discovered that the cylinder was soft and bent Erat & Hutton both stated it to an occurrence which has happened to the common harps & the old man state to me that the men often softened the screws for the ease of turning. // Model made and sent to the foundry for the new corner piece.
30-Dec-19	Model not come home yet
31-Dec-19	Brass come from casting this morning at four o'clock corner piece slit and fitted Pedals going on _ Graham at work on their machine
1-Jan-20	New Years Day // 1st Day of January 1820 // Harp going on but slowly from binding trend shorthand Emerson // [CODE]
3-Jan-20	Taylor came early this morning to say that James Erat had told him that the harp was strung up and tried on Saturday but on going down found he meant their own harp and that mine was in the same state as on Saturday _ Put it together Got the harp home by 3 o'clock strung and began to adjust it but found the same fault although the cylinder was twice as large as before. T stated that seeing the harp strung in the white he took it for granted that it was mine / [CODE] // 8th failure
4-Jan-20	Tried an experiment of dispensing with the moveable bridge pins for the silver strings / Glover from 10½ to 4 / Went on with the experiment which answered expectations but did not remedy fault / [CODE]

5-Jan-20	[CODE] / sent home for the harp E did not approve of the experimenting but when I shewed him the means of getting more wood he seemed pleased and stated that it removed every objection to the plan Desired a note to be written to Dockree for the new arbors & Taylor and me took the harp to pieces desired a piece to be added to the pattern plate to make the new drawing / [CODE]
6-Jan-20	The cold which seized me yesterday increased so as to confine me at home all day _ made the new drawing.
7-Jan-20	Went down to Erats took the outside work off my machine and set the work on to begin at 2 / from binding Clavis Coleman Senefelder Carey, Rich Lit four. Samielle Crabb Edgeworth Ackermann Cummins Jacob & Cummings
8-Jan-20	This morning at 12 New plates and dovetailes roughed out and one fitted gave Hutton directions - [CODE]
11-Jan-20	Sent model to cast for corner piece
12-Jan-20	Plates finished Hutton going to begin iron cranks A lever broke in our harp which I thought was a spring
13-Jan-20	Iron cranks forged Pole planed out Erat promised to put another man to the smiths work // Erat send up a second hand harp as a substitute for our own but being frosty & late would not let ours go
14-Jan-20	Pole going on corner piece cut out & nearly finished but not being strong enough thought it better to get a new one cast New arbors came home cranks drilled // Erat sent early this morning for our harp Booth sent me Rodds catalogue of pamphlets / [CODE] [crossed through]
15-Jan-20	Cranks cut out, got Hutton drill new arbor holes & cut a piece off back plate // Went down again to see the plate & gave further directions about it Pole ready for turner // [CODE]
16-Jan-20	From Rodds catalogue I got
17-Jan-20	Plate cut & finished. Set Hutton about reducing the leaders at the end Neck cut out. Corner piece came home sent a model for another. Our harp came home & sent the other back / Ordered Cobbett & Miners friend
18-Jan-20	End leaders finished / Told E of me determination to have another front piece thicker / Glover from ten to 3½ / Recd Cobbett & ordered Accum Adulteration of food & letters from Palestine
19-Jan-20	Ordered Ackins England described & Woods companion / Cranks fitted on arbors // Recd Accum New corner piece came from casting
20-Jan-20	Hutton doing corner piece marked of plate for cutting to set off the wood man again / Recd Aikens
21-Jan-20	Hutton going on with cranks & corner piece marked off wrest pins on wood. // [CODE]
22-Jan-20	[CODE] both corner pieces & cranks done Hutton going on with dead cranks / Called at Perrys for the dimensions of the tablets 8¼ long 2.10½ in the clear 2¾ moulding. Young Perry going out of town for a fortnight. Told them to get on with painting This evening dead cranks done Hutton going on with arbors Called at Fullers after Marys ornaments positively to come home tonight / Received notice from Abbott this morning.
24-Jan-20	Went to Abbots to give him notice of opposition to Schwiesos application / left drawing at Perrys, At Erats Hutton going on with cranks and arbors determined to make footpiece of two pieces glued cross grain. // Hair cut.
25-Jan-20	Called at Booths / paid Holtzapfel [sic] 1.15.10 / ordered black at Muskis / at Erats leaders nearly ready footpiece done neck and pole done put pedals in hand. / Brought home 6 oranges from Levy 9d. / Taylor brought home my models / Sent to bind Accum & Pechston on Gaslight my Richman Smith Mechanic & Panorama Tourist Cobbets Grammar Wheel Carriage Tracts & Anstice Rowe & Milton on Wheel Carriages Williamson & Small on Agricultural Mechanics

26-Jan-20	Called at Booths to settle bindings. / At Erats Hutton Preparing to fix corner pieced &c / made a model for a new scheme of constructing the harp
27-Jan-20	Called at Fullers again but found that the ornaments were sent home. / At Erats corner pieced fixed and determined the position of the screw spring piece my pedals not begun yet.
28-Jan-20	Hutton going on with cylinder cranks / Jacob met me in a great hurry and took me up into the shop where I found a difficulty about the motion of the springs not agreeing with my drawing but I caused Hutton to make same links of different lengths and soon found one to suit / Erat going to make his final settlement for Berners St House -
29-Jan-20	Hutton finished spring machinery but not quite adjusted Went again at night <with Taylor> and staid till the men left work _ Erat going to write Berners St on the harp now in hand.
30-Jan-20	[DRAWING DATED WEDNESDAY MAR 20] - Dimensions of slab & commode
31-Jan-20	[CODE] / At Erats springs all finished and move very well but one broke in Huttons trying of it // Hutton left at 12 and never returned until after breakfast the next morning
1-Feb-20	Glover said that he had heard on my harp / At Erats took Hutton a spring and 5 pillars screws from the old harp found him stopping up the holes in the plate did not leave him till he had finished the four / Jacob having told me that he had seen Schwiesos new harp through the blinds of his house in Tottenham St I came home that way and got a peep at it - two rows of solid forks / Glover finished his oil picture _ / Recd notice of a meeting with Schwieso at the At. Genls. next Monday 8 o clock evening *
2-Feb-20	At Booths he promised to go with me on Monday / at Erats half the Arbors ground in since 4 o clock yesterday and to 12 o clock today _ / Took our clock to pieces and altered the places of the pallets which move it to right - / At Erats again at 3 o clock the other 14 arbours ground in.
3-Feb-20	At Erats pulls hung together separately but not connected to the machine. Made Hutton hang one pull to the machine & determined by it the length of the wires connecting the motion cranks to the springs and the places of the brasses. / [CODE] / Went to Haleys to tell them to send for our clock to clean & promised it for Monday next. / At Erats again all the dead cranks jointed to the motion cranks. / Recd a number of Mants
4-Feb-20	At Erats machine all finished Hutton doing spring 2d time Hutton preparing brass, leader steel got out // Recd Ritson
5-Feb-20	Brasses finished Hutton doing leaders. Marked off the place of the pillars and new screw holes [CODE] / _ At 5 o clock evening leaders finished and rivetted to the spring crank and about to be rivetted to motion cranks _ / Erat tried the forging tool this morning which answers well / Beale promised to accompany me to the Institution next Wednesday / [CODE]
6-Feb-20	[LIST OF MAPS AND PRINTS - SEE DIARY]
7-Feb-20	Went this evening to the Attorney Generals with Booth in the coach called at Erats but he was out & having heard that Schwiesos was like Dizis did not mean to go When we arrived at the chambers & was called on but Erards solicitor came forward and requested to put off the hearing till this day fortnight which after all the solicitors had consulted the At Gen. together was agreed to Erard being alleged to be at Paris _

8-Feb-20	The machine being nearly finished determined to try one pull to see if the springs were properly adjusted. Upon trying it on the wood found that it had never been fitted consequently lost all the morning in fitting it. Went with Perry to the painters to look at the tablets / Booth lent me his plan of Marybone and sent me a parcel of old maps and prints from [?] sale looked over them at night [CODE] and chose the list (Jan 6) and also Smiths Topography of London & Westminster
9-Feb-20	Finished the trial of the pull and found it to answer expectation but required some alteration left directions to have it taken to pieces & came home to meet Beale but not finding him here went back again & found nothing done Took it to pieces myself and put it in hand / Came back again I went down with Beale to the Institution from thence to Fullers for tracing paper white & black 1s _ Began to copy Booths plan of Marybone // 9th failure
10-Feb-20	Tried the pull again but not having motion enough found it necessary to alter the proportionate length of the crank & leader. Tried it again & liked it well but the spring having been filed weaker in the morning would not do & had no more time this evening / At Erats 3 times today Mrs E very ill. At Booths got Branca, Mandey & Sign went to the painters again & took receipts to Perry / Recd from binding Accum Rechstom of Accom on Gas Williamson Small of Rare. Cobbet of Richman
11-Feb-20	Tried a stronger spring which still was not quite the thing took it to pieces once more and altered the length of the link got it on the wood but it would not move took it off and found one of the arbors in the wrong hole put it together again when it answered to the best of my expectations shewed it to the old man but he having been laying out his shops &c in Berners St was too tired to care about it. took it to pieces again & on returning at night with Taylor found it in Huttons hands and the links read for brazing but he waiting to ask some questions about the leaders &c _ / In the day went to St Martins St Andrews Cathell Downes & determined the moulding at Perrys after having been shewn that in Compton / St [CODE] / got a new penknife
12-Feb-20	This morning links brazed cranks finished and leaders about in the afternoon after dinner leaders finished and links nearly. Set him about cutting the plates a little more _ In the morning set the wood in hand sc. a piece under the pole & a new rim to bottom. In the evening pole fitted and bottom done. / Discovered two of my soundboard glued up which the old man said he was going to try but which I should probably have known nothing about if I had not seen them by chance. / Tore a hole in my coat against a packing case in going into Erats / Recd Ackermann on machinery.
13-Feb-20	The institution consists of a music shop Instrument warehouse. Private room & Grand Entrance & Royal entrance. Music shop looks into the New Street where is the grand entrance & bow window of the Instrument room which also look into Little Argyll St in which is the Royal entrance On the same floor is a private room for the members. Another entrance to the great concert room is made through the neighbouring house into the New Street from the grand entrance you go to the right to the instrument room to the left to the music shop or straight forward to the staircase which leads to an Antichamber from when you go to the Refreshment Room over the Instrument room to the Supper Room & Ball Room over the shop or to the great concert room which has four tiers of Boxes looking to Lit Argyle St and an Orchestra at the other end which is capable of being converted into a theatre and is provided with Dressing Room Scene room &c &c. & a back entrance to the New Street. The establishment is also provided with Printing offices under the music

14-Feb-20	Plates finished and all being hung together / Came home and made a sketch of our greenhouse for the old man / Went down again and in coming out of the factory slipped and fell from the top of the ladder to the bottom & down the next flight of steps onto the landing so to come seated against the press with my legs up against the woodshop door a most dangerous and awkward fall but I most providentially escaped with a slight bruise on my elbow Joyce, Timewell Martin and Beasmore came out immediately and Timewell picked me up. Mariam mended my coat _ Beasmore once fell down the same steps & over them then onto the landing but came on his feet unhurt so got down before Hutton who was descending before him. The potgirl fell down some time since with two pots of beer in her hand & was very much hurt _ Rose fell down them & came head foremost & hurt himself a little and James Erat fell from the top against the wood shop door three weeks ago all which might be prevented by a rope. / Strong [Strang] left Erats today.
15-Feb-20	This morning Hutton working the machine springs not in. Glover from 10½ to 3 began his water colour drawing. His last sketch book is No. 88 / At Erats again machine all finished saw the old man and he promised to put into Maunders hands / No work to be done tomorrow / (P.S. Monday Clock came home paid 10.0 to Haley for cleaning & repairing the third wheel pivots & holes & sent Irish Melodies to bind into two volumes) Rcd from binding Smiths Panorama and mechanic / Taylor came this evening but was too ill to give his lesson.
16-Feb-20	[CODE] / Went to Fitzroy Chapel. Ash Wed. Found Beale here when we came home & went down with him & Miss Sidebottom to the Institution again according to appointment.
17-Feb-20	Found Maunder at work fitting the machine to the neck had to take it off thrice to cut the cranks free - put the regulating screws & outside work on while Maunder put the pedals on &c Came home & finished the copy of Booths plan [CODE]
18-Feb-20	Taylor called in after breakfast & went down with me to Erats & strung up the harp while I came back to fetch some slides &c which I forgot - / called at Booths and left his plan / went to Erats & got Hutton to adjust the screws &c / Maunder at work at Erats harp attempting to convert one of the first into one of the last regulating forks but it would not do. Left Maunder to put in the long wires while we went home to dinner upon returning got one of the notches cut but not time to finish _ / Broadwood has lent the Institution 15000£ _ the concert is postponed Sine die J Erat [CODE]
19-Feb-20	Finished adjusting the notches & got all the outside work from Joyce. Left at twelve with directions to Maunder to cut all the other notches which he promised to do before dinner. / Came home and went down with to Perrys to see the frames determined upon the mitred reed & set one in hand of oak / called at Erats to see if the harp was set off & found that it was got home by three & upon looking at the harp discovered that one of the rivets was broke Taylor came to dinner after which he took it wholly to pieces & repaired the rivet pull D motion crank rivet got it together again as before by night
20-Feb-20	Shop. A Dwelling House for the Housekeeper over there Refreshment Room & Oil gas works under the street in a large cellar _ Second visit _ Gas works by Taylor and Martineau. Organ to be by Elliott probably not ready this season first rehearsal next Monday _ a passage from the supper room to the kitchen _ Room appears too high and the windows insignificant _ the orchestra has been constructed three times because they had too much sound and echo _ Thinks Elliott & Flight & Robson the best chamber organ builders but agrees with me in thinking that there is a great deal of quackery about Flight & Robson & their prices are enormous _ Elliott & good church organ builders _ Grey nothing extraordinary - / This evening began adjusting & tuning up but soon discovered the old fault let down the strings & seamed the plates to the head by putting a stout wire through them but on stringing up discovered the fault as bad as ever / 11th failure

21-Feb-20	Sent the harp down to Erats and resolved to put a corner piece to the cylinder and afterwards thought of a method of putting more cylinders _ made the drawing & set the model for casting in hand and also iron cranks to the cylinder / Drove to Abbots this evening with Booth but he had just received notice that the meeting was postponed to tomorrow at two o'clock / took Booth down to Astleys and left him there to fetch his nephew. / Came home and in my way called at Booths to took Scottus Peacock and took Scottus Technica Curiosa Mechan Hydraulica and Physica Curiosa
22-Feb-20	Went to Booths at 1 / took a 1s worth from Oxford St to Covent Garden / went to Sothebys to a sale bought Tooke's Harris Hermes for 1.11.6. Booth bought Archaologica went on to Abbots & from thence to the At. Gen. / Erard, his solic. & clerk Poole with four harps a French single, old white double Erat thinks Grolls, & new double Schwieso 1 harp & a machine. Dizi a harp and model. Schwieso & Davis first ½ hour. Erard next 1 hour myself 5 min. Dizi 10 min about / Erat says Groll offered his harp to him through Tomkinson - Erard gave 400 pound for it _ / This morning gave brass pattern to wood men to make casting model and left direction to have it sent off, Iron cranks partly forged ([CODE])
23-Feb-20	Hutton drilling iron cranks. / Timewell told me that the clerk had taken the model from him this morning - Erat said he had sent it off last night!!! - / gave Booth Harris to letter and desired him to send in the Archeologia - gave 21 prince 25g went to Vulliamy De Villes and Cuthells - took wood down to Banting but he not at home De Ville says that Apothecaries hall have been without the light for five days / Taylor have put their condenser between two stoves consequently liable to be heated & useless
24-Feb-20	Cranks all roughed out and drilled but not slit. Hutton filling up the arbor holes with steel bushes. Porter went for the brass - not to be done till tomorrow _ Erat promised to send for it & send it elsewhere _ gave new block in hand for pedals. cross soundboard finished and ready to glue down. / Lift Rymer to letter and guard book for marys mss music - & ordered a quire of music paper / - Booth out - / At evening brass come from casting all the holes filled up / called at Booths and desired him to get the mirror of magistrate [INFO RE BOOKS]
25-Feb-20	At Erats brass roughed out & sides smoothed ready for fixing -
26-Feb-20	Told Booth to send the Archaologia. got Harris from lettering got the information of the mir. of magistrates the binder has spoilt all my wheel carriage tracts must get 'em all again _ / brass corner piece drilled & filed ready for slitting - at night corner piece slit.
28-Feb-20	Cranks slit Hutton finishing them directed him to put large iron washers extending from cylinder to cylinder _ / Old mans swell nearly finished - acts very well. Opening of the new Argyll Rooms / 1st concert [written in margin]
29-Feb-20	Glover came at 8½ this morning // at Erats Hutton finishing cranks to cylinder all the cylinders turned.
1-Mar-20	Cranks all fitted in their places // This evening got the Transaction of the Society of Arts / Extraordinary high wind all this night and next day
2-Mar-20	Cranks and cylinders all fitted together into the brass Hutton broke a cylinder yesterday in screwing it into the plates and so lost all that afternoon in making another making a brass pattern for the iron washers, in the afternoon iron washers forged filed and hammered smooth / Booth send me the new London Journal
3-Mar-20	Hutton drilling iron washer // [CODE] went to V to look a clock for the kitchen // Taylor dined and went down with me to Erats iron washer finished Hutton going to make links

4-Mar-20	Hutton finished links / [CODE] / got home Rymer / Corner piece all completed and I brought it home at night
5-Mar-20	[LIST OF BOOKS]
6-Mar-20	Hutton going on with links and solid leaders / [CODE] / Leader bent without breaking / Went to Vulliamys. / Downes left my themometer at Dolland - Gouldings - Cuthells- Perrys- & called at Erats from thence to the painters - discovered the difference of On and at / [CODE] _ Called at De Villes he observed that he could read by a light house light two miles off _/ Dolland had got a new man / Kitchen clock came home _
7-Mar-20	Hutton not at work this morning at 9¼ nor after one consequently little or nothing done. Gave Booth the list of classics Went to grocers [CODE]
8-Mar-20	Ordered Sheridans works. Not to be out till spring. // This evening the springs and crankpiece in and all the pulls rivetted together _/ Went with Taylor to the Institution to get some music / [CODE] / Lent Taylor Pegge // [CODE]
9-Mar-20	All this day lost in working the pulls &c &c made a list of the on & at this evening _ Jacob and his surveyor called to look at the greenhouse
10-Mar-20	Did not get the machine out of Huttons hand till four o clock this day _ I put the outside work on from 1 to 2 - got it on the wood and the strings on by 7 at night / [CODE]
11-Mar-20	Got it home by 11 this morning set to work by myself rather timidly but before dinner got it sufficiently adjusted to ascertain that the fault was gone! _/ Taylor came by 3½ acknowledged he might have come half an hour sooner but was afraid. / The springs not quite strong enough so screwed up the bridge pins again and by 10½ Taylor played an air upon it _ [CODE] _// 12th trial ending with success -
12-Mar-20	This morning Taylor came but we did little to it Taylor played on it for about an hour.
13-Mar-20	Went to Booths _ Erats ordered two forks to be made and offered to leave 2gs for the men but Erat declined it till Saturday / Went on regulating
14-Mar-20	Went to Erats and got two forks and enquired after the pattern cranks / Hutton affronted by Erat complaining of the fire did not come back after dinner for some time so that I could not find them / This evening finished regulating // left my umbrella at Erats by mistake
15-Mar-20	This morning went down to Erats Hutton has got no pattern of those cranks - Erat promised to come and look at the harp -/ called at Hamiltons on seeing Sohmon [?] but if proved not to be complete but am to call on Sat or Mon. when I shall see some from Aspleys sale _ forgot my umbrella again / Erat came to look at the harp seemed very much pleased with it only objection is the weight of the pedals the second time so determined to take it to pieces again / Erat will have the greenhouse at any rate / went down at 2¾ to set the cranks in hand and brought away my umbrella / went to Brines to look at the dove marble and slab sent at 5 to compare -/ sent it on it being nearly the colour - [CODE] -/ 12th failure [written in margin]

16-Mar-20	Went to Erats and sent for my harp Jacob and James tried and then I took it to pieces Jacob helping me and got it to Hutton by 12¼ While considering the best way of doing it Taylor came in and bothered me so in his usual foolish way with cavils and objections that I was obliged to set Hutton at making cranks for trial without much consideration _/ Went to the opera House pit to hear Mad. Mara on her first appearance. Previous to her first song Bellamy made an apology for her as having a cold - she was rapturously received by the audience and sung in her usual beautiful style and her voice is wonderful considering her at 72 or 5 _ her shake still surpasses any of the other performers of the day - In the first act she sung in Italian Tena Guglieln? in the second - Handels "What tho' I trace" 1st part and an Italian Cavatina of Paer - Beale 2d concert [written in margin]
17-Mar-20	At Erats the plan will not do so made another drawing and set Hutton to work again to begin after dinner This afternoon the three cranks cut out one fastened on the arbor and all ready to slit _ marked the plate for cutting to give room for the hand _ I having mentioned that to Erat yesterday morning he instantly set to work and altered his own drawing to give more room also _ Yesterday archaeologia came from binding / Madam Mara was advertised to sing at all the vocal concerts except the first which was last Friday but she declined this night on account of severe indisposition and Mrs Salmon took her place _ Her benefit was advertised at first for last Thursday / 13th failure
18-Mar-20	Pull going on a Erats // [CODE]
19-Mar-20	Performed a brilliant concert of Mozart, the only female singer was Miss Travis _ The House not very full The audience chiefly composed of old people who had heard her in their younger days and of the children and professional men _ Mrs Salmon Miss Stephens Mrs Glover and her two daughters &c &c were there / [CODE] // Tiel-Celin? finds it necessary to take the corkscrew to pieces to put a new worm!!!
20-Mar-20	Got the pull finished this morning and the plate cut It will not do yet - took it to pieces gave it to him after dinner had it altered to go more over the strait line and tried it again but still it is not quite the thing staid till 7 at night / Got Scoresbys Artic Regions / Left Index of Archgie as pattern for catalogue / 14th & 15th failure
21-Mar-20	This morning got up 8½ / tied up Archeologia got down by 9½ look up Duplicates and and went to Sowards / painting finished went to Erats took off the pull and gave direction to raise the spring came / home by 12 took Mary to the British Gall. / Pall Mall by 1 staid till 3 -/ [CODE] -/ after dinner Springs fixed and crank drilled // [CODE]
22-Mar-20	This morning tried pull would not do took it to pieces by 2 gave it him with directions to alter the position of the spring / came home and dined / 2¾ Perrys men brought home my commode and fixed it / [CODE] / at Erats pull promises better than any yet _ went to Booths and got Welleys? history of inventions / saw Ruthervens Printing Press / 16th failure
23-Mar-20	Altered the pull this morning (without having tried it) by putting the spring higher / left Hutton at work and went onto Stodarts to remind him of learning to tune the piano he promises faithfully to come tomorrow by 12½ / got pull finished with two or three holes drilled in the crank &c to adjust it to my mind link being too long I broke it in attempting to shorten it left it for him to do after dinner -/ [CODE] -/ got to Erats again by 6½ got the link in the spring answers the purpose quite well. / Recd notice this morning that Schweisos Patent is stopped Scientific Tourist from binding

24-Mar-20	Showed the pull to the old man took it to pieces & made a drawing for the alterations 1 cylinder to the upper motion cranks 2 to the spring cranks went again after dinner and drew the corner pieces left directions to have the pattern made for cutting wood pattern to _/ [CODE]!!!
25-Mar-20	Hutton finished patterns gave them to woodmen & put my body in hand No 1 to have it fitted to the neck & pole / [CODE] / Found my body strung up today No 3 very fine tone indeed
27-Mar-20	Hutton not at work all day today / Lost our cat _/ Booth sent me Rodds catalogue Part 3 Has already sent for some articles which he thought I should want to secure them A complete set of the Delphine comin on for sale at Evan's in about a fortnight which was bound from the sheets for Col. Stanley _// Captn & Mrs Greatly called up today unexpectedly _/ Evans has been attending the Westminster election otherwise should have heard of these books before _
28-Mar-20	Hutton too ill to come set Martin on to his work / Glover from 9½ to 3 / Cranks fitted to arbors not rivetted I marked off the other cranks / Hutton came in has had 11 leaches on & was ordered to keep his bed but "got tired of lying on his bank!" so came to see how the work went on too weak to do any thing but promised to come tomorrow morning _// Began to settle our concert & took a first lesson of Taylor to that end.
29-Mar-20	Hutton at work rivetting cranks on arbors Martin had cut out & drilled the cranks I marked / [CODE] / brasses not sent for yet / saw a Persian harp there / went again after dinner brasses not done yet / Hutton "never better in his life" / Erat has thrown a piece of the woodshop into Beasmores for another vice / made another measured sketch of the Persian / harp brasses sent for again.
30-Mar-20	[CODE] // Brasses sent by mistake to Erards did not get them till after one o'clock / cranks all rivetted on arbors & motion cranks finished
31-Mar-20	Good Friday men worked till eleven o'clock / brass for spring piece in a great state of forwardness both brasses filed level only Hutton at work
1-Apr-20	Determined to have the old footpiece & bottom used & put it in hand Corner pieces both cut & in forwardness // [CODE]
3-Apr-20	[CODE] // Through Easter Monday men worked corner pieces finished
4-Apr-20	Crank in & tried in with the spring does admirably // [CODE] // This evening Hutton forging 6 springs / Old man had a stone fall on his toes in moving his wood and lamed him very badly -
5-Apr-20	Springs going on / [CODE]
6-Apr-20	Springs going on _ Went to Collinges & Coades coming back over Westminster & the Park just hit upon the procession of chairing Sir Francis Burdett & Hoffman? for Westminster going along Piccadilly at the top of St James St at 2½ which we had been taking all possible pains to avoid _ / At night went to the French plays at Argyll rooms saw "Bruis et Palapras" [Bruis et Palaprat] & the "maison en loterie" very much amused got box No 16 - Miss Stephen there below the Duke of Devonshire refused to subscribe wales?? she was admitted & there she sat unnoticed by the company except one gentleman & talking louder than anyone else _ making herself very conspicuous
7-Apr-20	Springs finished and one in its places does as well as the other // In the evening two patterns made for spring cranks // [CODE]
8-Apr-20	four cranks nearly done drilled slit and fitted / In evening three cranks Do Do Do

10-Apr-20	Cranks going on to finishing Spring crank corner piece tightened & finished gave direction about washers how to prevent them from turning round
11-Apr-20	This morning washer in cranks all finished / Beale and his nephew came this evening at 8 both played. Miss Sidebottom to meet them staid till 11½ / Rained very hard lent them umbrellas and William my old great coat as he had to go to Prestons on the Strand
27-Feb-20	[List of Books]
12-Apr-20	This morning spring pieces cut Hutton going on with leaders // Booth and Miss Nicholson this evening
13-Apr-20	Springs in & leaders all done Hutton going about upper leaders began after 4 o clock
14-Apr-20	Went to Abbot & paid him 5.4.4 for Schwiesos affair his patent quite stopped / went to Holtzapfels [sic] paid him is to send a man to look at my lathe this evening 6 o clock _ / At Erats leaders all bent beginning to finish them // [CODE] // caught Hutton drawing up seen thro the back window because since the wood is moved the back door is visible from the house / man came to look at lathe
15-Apr-20	Hutton finished all the leaders & all ready to hang together - / old gentleman down for the first time since his accident Tuesday week / lathe fetched away this morning
17-Apr-20	A new set of regulations for the men at Erats A door is put up at the bottom of the stairs & a set of rules framed A large dustmans bell is provided - 10-6 - with which to ring them to & from meals & the back door is nailed up _ They are sulky about but have done nothing in opposition / Erats slept 23 Berners St last night - plate taken off the door this morning _ / Mr Le Bergen cam to look at our picture this morning gave note for mine / Ordered Nicholsons Landscape drawing & Taxidermy
18-Apr-20	Booth came to see our drawings gave note for Mary / my lathe came back again _ // Springs spr cranks & motion cranks all hung and adjusted about to hang first note motions _
19-Apr-20	All first note motions hung & adjusted solid leaders cut plates files and holes filled up // Bricklayers began to pull down the chimneys in Wardour Street without giving due & sent a torrent or soot down into all the rooms which put Maunders fire out almost poisoned Draycott - covered the harps with soot in the showroom & Mrs Erats cloak & bonnet in the parlour & spoilt the porters dinner which was preparing in the kitchen // Recd Nicholsons landscape drawing
20-Apr-20	All hung together plates finished pillar made & adjusted new nuts made old ones being work out & the whole hung together by night.
21-Apr-20	Hutton all day easing the four pulls, broke the wire into the pipe & lost some time in making another
22-Apr-20	Hutton contrived to spend all this day in working the pulls & c so that I did not get it out of his hands til 5 o clock too late to begin
23-Apr-20	[LIST OF BOOKS]
24-Apr-20	Maunder got the machine on the wood before I came but had to take it off to clear it in the head _ got outside work on _ Screws which were ordered of Dockree Jacob has lost to see D to night & order more - gave Joyce direction to prepare patterns for slide pins & to make spare outside naturals - Maunder never came after dinner so only to to stringing up // [CODE] // Glover ex. to open

25-Apr-20	Glover from 10 to 2 / Maunder cut pedals in I having put them on & the swell after // got it all together & home by 8 o'clock a spring broke, a short one before we left Erats, but we got another one in place
26-Apr-20	Occupied in adjusting pedals _ outside work &c _
27-Apr-20	Got on with harp. / Recd notice of Schwiesos second application for a patent
28-Apr-20	Got on with harp pedals still heavy // 17th failure
29-Apr-20	Went down to Abbots to give notice of opposition to Schwieso // Called at Erats to get tumbler pedals for harp
1-May-20	Got all the pedals done this evening Taylor took bottom away this evening to take to Erats in the morning
2-May-20	Glover this morning from 8 till 1½ / [CODE] / bottom not done / Went to Miss Sharps benefit _ paid at the door
3-May-20	bottom not done till 3 today got it half notched by night
4-May-20	Finished notching bottom
5-May-20	Regulating // Caveat expires
6-May-20	Harp finished E spring broke obliged to get a new one made which also broke so got a long one cut short which did very well // John Taylor to see the Harp liked it very well / At night Miss N.J. Mr B.J & J _ // played to Beale this morning // May 6th 18th trial harp finished _
7-May-20	[PARODY OF THE CORONATION ANTHEM]
8-May-20	Shewed the old man the harp // [CODE]
9-May-20	Glover from 9 to 1 has had a severe fall from a gig on Friday // Harp went to Erats today about 3 o'clock / [CODE] / pedal broke put it in hand to be mended
10-May-20	Got pedal today by 11 o'clock // [CODE] // Bought Samson Walsh Macbeth Millars Th. Bass bound in 1 lot of Hamilton for 1.11.6. Samson wants last page L allegro il pensoroso selection wants title for 2s
11-May-20	Went to Cooks about the rumble Cook very angry & disconcerted at the fault found with his elliptical springs // Bought Joseph part 1 & Tim & Truth bound in 1 vol Walsh - for 7s
12-May-20	Went to the old man he has shown it to two professors they like the idea very much; say the silver strings must move _ // [Books]
13-May-20	Again to the old man met M Weippert on the stairs has shewn it to him _ E offers to manufacture the thing & give six or seven for every harp sold - To give his final decision on Tuesday morning Left him my specification to look over // Went to Glovers exhibition
14-May-20	[PATENT COSTS 1818 - 1820 - SEE SHEET 2)
15-May-20	Went to Somerset house and Spring garden
16-May-20	[CODE]
17-May-20	Determined to try long fork motion by means of outside work _ gave directions & got it on by about 4 o'clock _ answered so well that I ordered two more
18-May-20	Got the two on did very well old man things that it will return with common spring & pedal
19-May-20	Tried to make the machine come back with common pedal & spring below but it would not do so took it to pieces & gave it to Hutton to put in a fair crank & clock spring
20-May-20	Got it from Hutton by 2¾ Began to put it together by 5 got it done by 7 all by myself answers admirably
22-May-20	Taylor sent his harp here
23-May-20	Went to Richmond &c with Glover

24-May-20	Old man sent to take down greenhouse shewed him harp in evening likes it very much wants a drawing
25-May-20	Made a drawing & took it desired him to make out his bill // Went to attorney Generals Dizi there Erard not there // Complete set of Delphins sold at Evans today for 160 guineas
26-May-20	Bill nearly finished
27-May-20	Bill finished [CODE] [Gross amount of expenses to this day - Sheet 3]
28-May-20	[Erat's bill to Willis - Sheet 4]
31-May-20	[CODE]
1-Jun-15	[CODE]
3-Jun-20	[CODE] / going thro the city called to look at Baynes patent gig without horses it is impelled by a couple of wooden legs moved by treadles a very good plan
4-Jun-20	[BOOKS]
6-Jun-20 (actually 5-Jun-20)	Resolved to begin another harp went down & got plate for drawing the pull // Went to see Maelyels rope dancer first day of exhibition // Barometer came home
7-Jun-20 (actually 6-Jun-20)	Drew the pull this morning & sent Harp away pull to be began tomorrow with Taylors two men // Went to Hampstead to sketch with Glover // Very wet day & did little or nothing [List of books purchased]
8-Jun-20 (actually 7-Jun-20)	Went to the Messiah concert with Mary this evening // Paid Erats bill 272..16..8 [List of books purchased]
9-Jun-20 (actually 8-Jun-20)	Took pattern to bind for Delphins - [Book]
12-Jun-20 (actually 11-Jun-20)	[List of books purchased]
22-Jun-20 (actually 21-Jun-20)	Set off to Kingston, Dorking, Leith Hill Dorking dined & slept _
23-Jun-20 (actually 22-Jun-20)	From Dorking to Boxhill - Guildford - London in the evening
24-Jun-20 (actually 23-Jun-20)	In the summer we visited Bognor _ the Decoy at Angmering _ Chanctonbury Ring _ Steyning and Bramber _ Arundel often for sketching - [CODE] - Arundel Castle _ Highdown Hill and Worthing with Miss Nicholson _ // Ockendons house burnt at Littlehampton the first fire there for very many years // A windmill began at the corner of Rustington Lane near the sea _
26-Jun-20 (actually 25-Jun-20)	[TRAVEL TIMINGS & EXPENSES]
2-Oct-20	Miss N to breakfast / [CODE] / Set off on my rounds met Taylor at Booths - wonderful surprise at seeing me!!! / Ordered trousers at Meeskii & to have new pockets put to my coat. / At Stodarts his cousin come back from America - Virginia _ to return in a week _ / At Erats my machine finished and very well made by Greigson & Jacob in 7 weeks about _ wood ready _ fine / new shops nearly finished _ At Booths Delphins bound & Reports ordered Fry on Wheel Carriages & Book on Rail roads _ / Delphins sent hom

3-Oct-20	At Booths looked out Carters sketches of Arundal & borrowed 5 inter?? for study // At Erats marked off steadypins screw holes & wrest pin holes Sent our harp to be regulated & got a new one instead _ to call again on Thursday
4-Oct-20	Began to copy Carters Sketches
5-Oct-20	At Erats Hutton gone Queening????? Only came to work this morning _ At Muskis Do Do Do _ Went to drink tea with Miss N & saw [CODE] _ / This morning I trimmed Erats for the badness of the harp they lent us / Determined to use Lithography for the plates [CODE]
6-Oct-20	At Erats - all remarkably civil! _ vide yesterday? discovered a black varnished and painted body of mine _ holes &c all drilled pins to be had next Wednesday or Tuesday _ Benefit club to go up to the Queen next Monday _ marked off outside work to be done by Joyce and _ Determined to string up another body
7-Oct-20	Lent Mr Nicholson Senefelders Lithography
8-Oct-20	DRAWING - STRING TENSION CALCULATOR
9-Oct-20	Wishing to obtain some contrivance for ruling shades in my Lithographic drawing I at last thought of converting my slide rest into a ruling machine _ accordingly I went down to Newmans & got a small mahogany ruler which I fitted to the bed of the slide rest & found it to answer very well _
10-Oct-20	Tried my ruling machine by shading a perspective view of the chess player which answers very well _ // Pins came from Dockree
11-Oct-20	First lesson of Glover this season - began a water colour drawing
13-Oct-20	Taylor having taken away our violin for the purpose of stringing it up took it by permission to a maker to have the finger board raised _ they say it is not a Stadivarius but a Gugliaroni or Gugliani? // P.s. on playing the bell springs a thought suggested itself to me that similar springs would make the best universal joints as they communicate motion <u>equally</u> and in every direction from the <u>strait</u> line to <u>parallel lines</u> !
14-Oct-20	Thought of trying bell springs for the harp & accordingly bought some gave 2d pp for them // This evening sent our harp and went to Nicholsons to play [CODE] Which we did for two hours without intermission / To go next Tuesday at twelve with Mr N to Hulmandels
15-Oct-20	Lent Mr Taylor Alexanders Feast & Boswell Johnson Vol 1st _ Erats have got a plan for applying a spiral spring to their harps in imitation of Dizis but no so good being enclosed in a tube intended to be pressed by the motion crank The following is a sketch of the plan on which I propose to try the bell springs on the harp [See drawing]
16-Oct-20	[LIST OF THE PLATES FOR THE ACP - CHESS LINK]
17-Oct-20	Went to Hulmandels with Mr Nicholson and am to go tomorrow morning at 10 to take a lesson of Hulmandel / Erat says he does not intend to go on with my soundboards till my harp is finished _ This proved to be a lie!!! Got a clock bell for an experiment gave 1s.9d // Taylor brought home our violin, it is beautiful indeed // Took my first lesson on the violin
18-Oct-20	Went to Hulmandels & took my lesson got ink & a stone &c came home to try & made some sketches // Got a new steel pen from Hills Charing Cross // Taylor lent me another violin to practise on

19-Oct-20	This morning took my stone down to Hulmandels he said it would not do at all the ink too thick - he lent me a card & recommended me to copy it upon another stone which he gave _ I brought it home and did it & took it back at 2½ & got some impressions from it _ My next trial to be in right earnest Told Mr Booth of my intentions of publishing - to print 500 _ probably expense about £15 My harp to be strung up on Saturday next
21-Oct-20	Hulmandel sent me another stone
23-Oct-20	Began the 10th plate on the new stone did two of the boards alike and had to scratch it out
24-Oct-20	Finished my drawing on stone but did not like it so had it rubbed off and got the stone to begin again // Went to Holtzapfels & got some tools put in order & three chucks // At Erats outside work finished // got 2 rulers at Newmans 1s each _ glued a piece of thick card at one end of one to raise it from the stone in my lithographic drawing in order to avoid blotting _
25-Oct-20	Glover finished his water color drawing // Went to Holtzapfels again to get my drills put in order got a set of figures 5/- paid for today & yesterday 18/6 _ nothing owing / At Booths put a sketch book in hand 6¼ by 9. / Maunder fitting wrest pins in
26-Oct-20	Did the 10th plate again will do very well / got Accums Brewing & Wine making _ // Had a part to tea - Miss Smith _ Ann Smith Peach Sidebottom Miss Fenning Booth Metcalfe &c &c - broke up at 1 // At Erats new rivets to make to bottom which retards the work
27-Oct-20	Took my drawing to Hulmandels, will do very well so ordered 500 _ and he sent me two double stones & a proof of my drawing _ // got my drills - // At Erats the bottom to be done today
28-Oct-20	Nearly finished the double drawing. // At Erats bottom nearly done will be dry to night // Got my album from Booths // Jacob promised to get the outside work done
29-Oct-20	[Hulmandels calculation of the probably expense of printing my plates - See diary]
30-Oct-20	Took the double drawing to Hulmandels
31-Oct-20	Long wires all in & marked C notches for cutting
1-Nov-20	Glover began his moonlight painting of Doyne Castle. the moonlight is from a sky last Sunday fortnight // At Erats the pedals all on beginning to cut notches // Paid Holtzapfel for a key 2.6 // Got at scraper for my lithography from Holtzapfels had it ground out of a point tool
2-Nov-20	At Erats put new outside work for the upper parts of the C pedal in hand _ eccentric wheel [SKETCH - SEE DIARY] which I think will look well & be cheaper because they may be turned // Maunder moved into the workshops from the house _ // I began a third stone
3-Nov-20	Screws came home _ put a set of eccentric upper note pins in hand _ to be began tomorrow // Went on with my third stone // Ordered at Booths _ An Analytical Calculation of the Solar Eclipse of the 7th September by Griggs The incomparable Game of Chess _ Bingham A Selection of 50 games of the Antom. Chess Player Select Cabinet of Nat Hist by Shaw _ Brookes guide to the stars _ // Saw Ellis' new picture at Erats 2 days work

4-Nov-20	Finished my 3d stone & took it to Hulmandels called again in a hour & found two proofs one of the 2d and one of the 3d 1st & 2d both worked off but not hot pressed _ / Got 4 badger tools at Middletons for 5-1- & paid my militia subscription 1.11.6 // Booth sent me word that the artic exp. was returned & that they had succeeded! in finding the passage but were compelled to return for want of provisions _ Captn Sabini is in very good health & altered from a very grave subject to a merry fellow!
6-Nov-20	My tool chest fell down just as I had got it out of its reach. No other damage done but that the three parts of the cupboard separated at the hinges & are a little split about three parts
8-Nov-20	Went down to desire Holtzapfel [sic] to send for my cupboard. got
11-Nov-20	Began regulating _ Don't like these springs
13-Nov-20	Took down the bell spring & set one in hand // The bell springs are not tempered & are made of iron wire // Illuminated with lamps - 6s a dozen to hire them & 1.6d a piece to buy. _
18-Nov-20	Schwieso's name gazetted about this time
21-Nov-20	Ordered drilling frame, Drilling slide & universal cutting frame 23g
23-Nov-20	My tool box came home
25-Nov-20	Harp came home this morning on regulating found the steady pins too long // <u>Dated a week too soon??!!</u>
27-Nov-20	Ordered the steady pins to be cut shorter
1-Dec-20	Found two cross grained soundboards finished for sale old man says he never promised to lay them by _ for which vide Oct.16.
2-Dec-20	Got on with re
3-Dec-20	Got on with regulating did 3 sharps // All a week too soon?? _ // <u>I have lost a week somewhere!</u>
12-Dec-20	[CODE]
13-Dec-20	Glover never came today
14-Dec-20	Began to copy the manuscript
15-Dec-20	Took my specimen of shade ruling to Hulmandel // met Maelyel or a man like him near Blenheim steps this morning
16-Dec-20	Got a proof of my shade ruling
18-Dec-20	[CODE] Got the harp ready to play upon.
19-Dec-20	Finished the transcript of the manuscript this evening // paid 7 to Holtzapfel [sic]s for Hardwood // Finished the Harp which was began in the middle of June _
20-Dec-20	Taylor took the harp away
21-Dec-20	Began the first Automaton plate on stone _ // Mrs Ay goes home tomorrow morning _
23-Dec-20	Booth promised to procure the heiroglyphics
24-Dec-20	Nicho 2 Kings 23.29.2 Chr. 35.20.Jer.46.2 Fablonoski // Magnificat - Litharge of gold - do of silver // Red lead - flakewhite - Pat. Yellow. Nap Do.
25-Dec-20	Xmas Day
26-Dec-20	Taylor brought the harp home again // [CODE]
27-Dec-20	Went to see Artaxerxes at the Harmonic Inst. Miss Wilsons second appearance _ a very promising singer.
29-Dec-20	Mr and Miss N to see the harp // Got 1st ed. Of Cotgrave 1611
31-Dec-20	Cotgraves French and English Dictionary and Sherwoods English and French Dictionary fol 1832 _ Royal. Inst. Cat. // Cotgrave Randle - A Dictionary of the French and English Tongues. Lond 1611. 1632. 1650. fol. Lond 1660.fol. Edited by Howell London 1673. fol. _ Watts Bibl. Brit

1-Jan-21	New Years Day / Welsh & his brother and Ries to see the harp / My lathe fetched away to add the drilling frame
2-Jan-21	Vulliamy to see the Harp
5-Jan-21	Henry Steil to see the harp
6-Jan-21	Got my feet warmer 15 by 9 inches
7-Jan-21	[THE WEIGHT OF SOME OF MY WIRE SPRINGS - SEE DIARY]
8-Jan-21	[BOOKS SENT TO BIND - SEE DIARY]
9-Jan-21	Gave Booth the mannes ??? This morning
10-Jan-21	Drilling frame and Lathe came home The rest of the apparatus positively next week // Ordered Nov 20 -
11-Jan-21	Gave models of brass for my new contrud [?] Lith.Pen to Holtzapfel [sic]s to cast // Paid Booths bill 83 -
12-Jan-21	Got brass this evening
13-Jan-21	1 Drawer put under my bench
14-Jan-21	Mem. Nov 10.1825 near Sion Chapel over Waterloo Bridge
15-Jan-21	Went to the Society of Arts to enquire after a harp // Got first proof // Began my pen
16-Jan-21	Rough finished my pen after working all day and night at it except going to Booths with proof & Erats _ saw my soundboard glued up yellow harps are stained with sp. Wine & saffron
17-Jan-21	got a new title page this morning & another at night. Pen answers very well
18-Jan-21	Finished plate 2 and 3, took it to Hulmandels got second proof. / Took pattern of paper to Booth
19-Jan-21	Holtzapfel [sic] has got an order for a <u>silver mousetrap</u> made after the fashion of the beehive but with a silver bottom and three little balls for feet!!! / Got Hulmandels proof this evening
20-Jan-21	Went to Hulmandels to get the blot scratched out // [CODE]!! // Got third proof this morning // Went to the Society of Arts. Harp not to come before the committee before <u>Th. Wk</u> // Began the next stone
21-Jan-21	Went on with the stone but sadly plagued at last with what afterwards proved to be the pen. // Sunday January 21 1821 R Willis