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The American Piano-Supply Industry in the Nineteenth Century, with Particular Attention to the Career and Manufacturing Methods of Joseph P. Hale*

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Part 1

I called on an old and reputable piano maker recently and referring to the mystery of his art I said: "Where do you get the old spruce which you use for sounding boards."

"Oh!" he said, "we do not make the sounding boards, we buy them up in Vermont."

"Well, said I, "where do you get the fine white wood which you use for your actions."

"We do not make the actions, we buy them of Roth and Engelhardt," he answered.

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"Of course," I replied, "the action is a mere mechanical contrivance. Where your art is manifest, I suppose is in the hammers which I am told is one of the most important parts of the instrument."

"It is important of course," he said, "but we do not make hammers, we buy them of Dolge."

"And the keys," I asked.

"Oh! they come from Pratt, Read & Co."

"May I ask you if you make the iron frame," said I.

"Oh! no," he responded cheerfully, "we buy that from Davenport & Treacy."

"Well, certainly," said I, "you make some of the bolts, screws, pedal guards, pins, etc., do you not?"

"Not at all," said he, "we buy them of Hammacher, Schlemmer & Co."

"Then am I to understand," said I severely, "that of all this wonderful instrument you make only the outside shell."

"Hardly that," said he, "for we buy the cases from F. G. Smith."

"Then in Heaven's name," I exclaimed, "what do you make?"

"Well," said he, reflectively scratching his head, "when we sell an instrument, we—*a—make out the bill.*"¹

* * * *

The foregoing anecdote, delivered by Charles H. Parsons, president of the Needham Piano & Organ Co. (Washington, NJ), as part of his speech to the New York Piano Manufacturers' Association on February 14, 1899, was a humorous reminder of the large role played by the piano-supply industry in their business—a fact surely known to all Association members present, most of whom probably relied to some extent on the products of those suppliers. By the year 1899, American piano manufacturers' use of ready-made parts produced by independent supply companies had begun to be acknowledged publicly, but still only to a limited degree and chiefly by the makers of those parts. In fact, before the 1890s, the very existence of the piano-supply trade had been the best-kept secret of the piano industry, withheld from public cognizance by manufacturers and supply houses alike, as if following a strict, unwritten law of business ethics. This practice no doubt harked back to the

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1. *MTR2* [see the list of sigla for music trade journals, Appendix 1] 28, no. 7 (Feb. 18, 1899): 9, 11. Quoted verbatim.

storied time when pianos were hand-crafted to order, piece by piece, in shops—a process that was evidently considered preferable, in the mind of the public, to the mass-production method of factory manufacturing employed in the second half of the nineteenth century. Following this perception, piano manufacturers who made all or most of their own parts during this time² were looked upon with the greatest favor, in spite of the reasonable argument that a supply company that specializes in the making of a certain piano part over a long time is most able to produce the finest and most consistent examples of that part.

Already in 1890, in his monumental *History of the American Pianoforte*,³ Daniel Spillane had revealed the piano-supply trade to the general public in two chapters entitled “Kindred Branches,” an account of thirty makers of actions, hammers, keys, felt (and hammer covering), iron plates,⁴ and varnish.⁵ Twenty-one years later, in the first volume of his equally informative *Pianos and Their Makers* (1911),⁶ Alfred Dolge—himself having been a leading supplier of felts, cases, soundboards, and lumber—discussed wood used in piano construction, soundboards, piano cases, piano felt, piano hammers, piano wire, piano actions, iron plates, pins and other hardware, glue, varnish, and tools; and in his appendix he listed sixty-nine current American companies supplying such

2. The best-known examples were Chickering & Sons and Steinway & Sons.

3. Daniel Spillane, *History of the American Pianoforte: Its Technical Development and the Trade* (New York: D. Spillane, 1890), 311–43.

4. While the word “frame,” as found in the opening quotation in the present article, perhaps describes the function of this vital cast-iron part in the construction of nineteenth-century square, grand, and upright pianos better than “plate,” which describes the object itself, it was the latter term that was most used during the period, and therefore it is preferred here. Another term was “harp,” but it was most often (and has continued to be) used by non-specialists.

5. These are the following, in order and form of presentation. Forms and spellings of piano parts given here also follow the standard of the nineteenth century. *Actions*: Andrew Brunet, Francis Bonneau, Andrew Orlander, C. Rogers, Jesse Davis, [Frederick] Koth, [Martin] Herter, [L.] Westlund, [George] Bothner, Abbott Brothers, Strauch Bros., F. Frickinger. *Felt making and piano supplies*: Alfred Dolge, [A. K.] Smith, [E.] Chapuis. *Sounding boards*: Alfred Dolge. *Actions*: Wessell, Nickel & Gross, [George] Howe, George L. Darracott, Sylvester Tower. *Keys and actions*: Comstock, Cheney & Company, G. Seaverns & Son. *Hammer covering*: Schmidt & Company, Charles Pfriemer, Crane & Chapuis. *Plates*: T. Shriver & Company, Davenport & Treacy. *Plate finishing and hardware*: W. A. Conant. *Varnish*: P. B. Smith, Tilden & Hulburt, Hottop and Company. Particular attention is given to the firms Strauch Bros., Alfred Dolge, Wessell, Nickel & Gross, T. Shriver & Company, Davenport & Treacy, and Hottop & Company.

6. Alfred Dolge, *Pianos and Their Makers*, vol. 1 (Covina, CA: Covina Publishing Co., 1911; reprint ed., New York: Dover Publications, Inc., 1972), 115–28, 464–66.

products, fifty-six of which had been active during the nineteenth century. Thus, Dolge expanded Spillane's account, adding several additional categories and almost twice the number of companies in the nineteenth century. In spite of these auspicious first steps, however, subsequent writings on the history of the American piano either barely mention the piano-supply industry at all or, if they acknowledge it, they give only limited information.⁷ Nonetheless, in the nineteenth century, every reader

7. The list of subsequent twentieth-century publications that offer commentary on separately produced piano parts, their makers, and their users, includes the following, presented here in chronological order. (1) Arthur Loesser, *Men, Women and Pianos*: (New York: Simon & Schuster, 1954), in his short chapter 14 ("A Whole Is Made up of Parts," 520–25) identifies actions as the piano-supply specialty that was the first to be made in separate factories and purchased by piano manufacturers. He limits his citation of action producers to Schwander of Paris and the American companies Strauch Bros. and Wessell, Nickel & Gross. Relying largely on Spillane, he goes on to identify five additional categories of supply products and to cite five manufacturers of these products. In the category of legs and cases, B. N. Smith and Behr & Peck are cited; and for plates ("frames"), Thomas Shriver and Davenport & Treacy. Ivory for keys is mentioned, supplied by "not more than half a dozen manufacturers," although they are not named. A summary of the career of Alfred Dolge is given, crediting him with supplying felt and sounding boards ready for seasoning, and in chapter 15 ("Pianos—and Stencils—for the People," 525–31) the career of Joseph P. Hale is evaluated at some length. (2) William Leslie Sumner, *The Pianoforte*, revised (3rd) edition (London: Macdonald, 1971), mentions only a few European wire manufacturers (p. 74). (3) Craig H. Roell, *The Piano in America, 1890–1940* (Chapel Hill and London: The University of North Carolina Press, 1989), summarizes the contributions of Spillane and Dolge on the subject of the piano-supply industry (pp. 72–74) and goes on to chronicle the issue of the stencil piano (pp. 74–79). (4) Cyril Ehrlich, *The Piano*, rev. ed. (Oxford: Clarendon Press, 1990), in the chapter on the American piano (pp. 128–42), states in passing that many firms produced piano actions, and that "Wessel, Nichel and Gross" was the largest. Likewise, among the several branches of the supply industry, only plates, felts (and hammer covering), and soundboards are identified, with "Davenport Treacy" (again getting a company's name wrong) representing the first product and Alfred Dolge the last two. (5) Nancy Groce's very useful *Musical Instrument Makers of New York: A Directory of Eighteenth- and Nineteenth-Century Urban Craftsmen*, Annotated Reference Tools in Music, no. 4 (Stuyvesant, NY: Pendragon Press, 1991) lists a dozen members of the piano-supply trade, but only because these companies were also piano manufacturers. Otherwise, no New York manufacturers of piano parts are identified. (6) D. W. Fostle's comprehensive *The Steinway Saga: An American Dynasty* (New York: Scribner, 1995) covers the issue of piano stenciling and the production of piano parts and evaluates the career of Joseph P. Hale. (7) Cynthia Adams Hoover, in her fine essays on the American piano industry included in the anthology *Piano Roles: Three Hundred Years of Life with the Piano*, by James Parakilas et al. (New Haven and London: Yale University Press, 1999), mentions the supply industry in two sections. In "The Factory," she states that by 1852, Jonas Chickering "was obtaining his keyboards, wire, and iron frames from others" (p. 44). In "Promoting the Piano," she outlines the story of Joseph P. Hale, who "bought piano cases, keys, actions, and other parts from

of music trade journals would have been aware of this industry, for it was amply documented by a wealth of advertisements and articles contained in these publications. In addition, most directories of American cities of the time contained business registers, many of which listed manufacturers and dealers of piano parts under specific classified headings.

The present Part 1 of this article attempts to redress the lack of detailed knowledge of the American piano-supply industry in the nineteenth century by identifying the hundreds of such firms doing business at that time, by outlining the histories of significant companies, and by documenting individual relationships between suppliers and their customers. Part 2, which will appear in this JOURNAL, vol. 44 (2018), will present an extensive evaluation of the career and manufacturing methods of the most famous nineteenth-century client of this industry, Joseph P. Hale of New York.

* * * *

The check-list in Appendix 2 extends considerably beyond Spillane and Dolge to identify more than 900 American piano-supply companies of the nineteenth century. These entries include both makers and dealers, since many primary sources of information do not distinguish between these two types of businesses. Their known periods of activity range from c. 1815 through the end of the century (1900), and therefore some eighty-five years are covered. A number of these firms produced or provided products in two or more categories, and these are indicated by cross-references, raising the total number of entries in the check-list to 1,177. The sources of the presented information are so numerous that individual citation is not feasible. They include general and commercial directories both national and local, advertisements and articles in music trade journals and other publications, and individual books

specialists at low prices for cash and had pianos assembled in his large New York factory" (p. 60). Alfred Dolge is mentioned primarily as a historian of the American piano trade and only in passing as a maker of hammers and soundboards (p. 61). (8) Edwin M. Good, in his insightful *Giraffes, Black Dragons, and Other Pianos: A Technological History from Cristofori to the Modern Concert Grand*, 2nd ed. (Stanford, CA: Stanford University Press, 2001), views the emergence of the supply industry from the standpoint of technology: "[A]s the piano industry grew, some companies came to specialize in making frames or soundboards or actions for sale to firms that assembled the complete instruments. The supply industry fostered designs involving interchangeable parts, another aspect of the economy of scale, which lowered costs to purchasing manufacturers" (p. 27).

and studies. It should come as no surprise that New York firms represent almost two-thirds of the listings, for that city became the undisputed center of American piano manufacturing in the second half of the nineteenth century. Other manufacturing areas in the Northeast specialized to some degree in making specific products, such as Cambridgeport (actions) and Leominster (cases), both in Massachusetts. As the customer base increased in the Midwest in the latter part of the century, and new piano manufacturing firms sprang up in the largest cities in that wide geographical area, representatives of the supply industry also became established there.

As a supplement to Appendix 2, Appendix 3 lists 149 American piano and piano-parts manufacturers and documents their relationships with (other) members of the piano-supply industry. Also shown, where possible, are examples in which this relationship was nonexistent—that is, when piano manufacturers are known to have made their own parts. In interpreting the sources of this information (considerably harder to locate than those on which Appendix 2 is based), it has been necessary to make certain presumptions with regard to the manufacturing of piano parts: for example, when the sources show that a company had a steam engine and/or a supply of raw lumber, it has been assumed that the firm in question made its own cases and other large wooden parts. In Appendix 3, piano-supply firms are identified by name and the category designations found in Appendix 2.

The firms listed in Appendix 2 are presented in alphabetical order within each of nineteen categories of products, lettered A to S. The following is a summary of these categories.

* * * *

Pride of place, both alphabetically (category A) and topically, goes to actions, the most intricate and delicate part of the piano—the mechanism, in each case, that transfers motion and energy from the key to the hammer. The many procedures that went into making English and French actions for square pianos are detailed in *The New-York Book of Prices*, first issued in 1835.⁸ Among the 131 firms listed in category A, a few stand out. The longest surviving action firm under the same name

8. *The New-York Book of Prices for Manufacturing Piano-fortes by the Society of Journeymen Piano-forte Makers*. New York, 1835, Foreword by Henry Z. Steinway, Preface and Introduction by Laurence Libin (Malden, MA: The American Musical Instrument Society, 2009).

was that of Frederick Frickinger, a German who learned the action trade in New York City before settling in 1837 in Nassau, NY, near Albany. He seems to have made entire (square) pianos at first, but he was especially known for his fine actions and later limited his operation to that specialty. He hired young men who served as apprentices, Peter Strauch, William Gorgen, Jacob Grubb, and later the Kosegarten brothers Albrecht, Otto, and Charles. Strauch arrived in 1551, and after serving his apprenticeship he worked as a journeyman. Later he was made a partner with Frickinger, but he subsequently moved to New York City.⁹ After Frickinger's death in 1889, his business was carried on by Gorgen and Grubb under their own names. Gorgen went his own way in 1899, while Grubb teamed up briefly with a Mr. Meyer and then continued with Albrecht Kosegarten, who had bought Meyer's interest.¹⁰

The next-oldest action house that continued into the twentieth century was the George W. Seaverns Piano Action Co. (also known at times as the George W. Seaverns & Son Co.) of Cambridgeport, MA. When the company was founded in 1851,

nearly every firm made their own mechanism, and square pianos were the favorites. That was long before action making as a special branch was known in New York, and the difficulties and prejudices the Seaverns people had to encounter and overcome can hardly be realized. But they did overcome these difficulties, and proved to manufacturers that a Seaverns action was in every particular a safer and more reliable mechanism to use than those made in piano shops with limited facilities.¹¹

Seaverns's two sons, Walter G. and Frank H. Seaverns, were later active in the firm. Born in Brookline, MA, in 1819, George W. Seaverns died in 1899, after which the company was directed by his son Walter.¹² Other early action suppliers were in New York: Andrew Brunet (1842–56), Jesse J. Davis (1854–77), and the firm of the Bonneau family (1855–78), starting with Francis, Jr., and continued by Francis Bonneau & Brother, and then by Joseph J. Bonneau. Except for the Piano and Organ Supply Co. of Chicago (1871, very early for the Midwest), the other longest-

9. Spillane, *History of the American Pianoforte*, 312–13.

10. *MTR2* 28, no. 6 (Feb. 11, 1899): 23; Mary Kosegarten, "Early Piano Makers in the Townships of Nassau and Schodack," www.uhls.org/niche/NaPianomakers.htm (accessed January 1, 2009); Dolge, *Pianos and Their Makers*, vol. 1, 127.

11. *MTR2* 18, no. 9 (Sept. 23, 1893): 5.

12. *MTR2* 29, no. 15 (Oct. 7, 1899): 37; *ibid.*, 29, no. 16 (Oct. 14, 1899): 15; *ibid.*, 29, no. 17 (Oct. 21, 1899): 5.

surviving action houses were in New York. Among them, Francis W. Young began in 1861 and had factories in Brooklyn as well as in New York City. He is known to have supplied actions to Joseph P. Hale.¹³

George Bothner was born in Germany in 1826 and came to America in 1851. He served as the manager of Frederick Koth's action factory in New York starting in 1855, leaving in 1865 to go into partnership with Martin Herter.¹⁴ After Herter's death soon thereafter, Bothner bought out Herter's interest from his widow and became sole owner.¹⁵ His factory was praised for its use of unique machinery of Bothner's own invention, a claim that was made on behalf of many action firms. His specialized machines allowed the various parts of the action to be made so that they would fit together exactly when assembled, thus illustrating the principle of interchangeable parts, which governed the entire mass-production industry of the nineteenth century. Bothner died in 1897; his eldest son, George, Jr., had been managing the firm for some time.¹⁶

Another of the many Germans who became successful in the piano-action business in New York was Peter D. Strauch, mentioned above. Born in Germany in 1835, he emigrated to America along with his family (mother, brothers, and sisters) in 1851. The family settled first in Albany, NY, where Peter—trained in cabinet making as a boy—was apprenticed to Frederick Frickinger for five years. At the end of this time, he was taken into partnership by Frickinger, but he left some two years later to move on to New York City, which offered more professional opportunities. In New York, Peter worked for a time at the piano factory of J. & C. Fischer and then, together with his brother William, founded the piano-action firm of Strauch Bros. in 1867. William, three years older than Peter, had himself been trained in cabinet making in his youth and had worked as a superintendent at a large factory in Albany. At Strauch Bros., Peter handled the financial aspects, while William was in charge of manufacturing. The company became very successful and moved to increasingly larger facilities three times until 1882, when they acquired a building (on Tenth Avenue, between 13th and Little 12th Streets) in which they remained, and enlarged several times, until well into the twentieth century (they also had another property that served as a lumber yard). The year 1882 also marks the entrance of Peter's son Albert T. Strauch

13. *The Sun* (Sept. 6, 1877): 4.

14. *MTR* 24, no. 15 (Apr. 10, 1897): 15.

15. *AAJ* 36, no. 15 (Jan. 28, 1882): 271.

16. *MTR* 24, no. 15 (Apr. 10, 1897): 15.

into the firm, and he was followed by Peter's other son, William E. Strauch, in 1887. In this latter year, Peter purchased the interest of his brother William and became sole owner of the company. They were known especially for their improved upright actions, although they also produced actions for grand pianos and, in the early years, square pianos.¹⁷ In 1894, Strauch Bros. added two new lines to their production, ivory keys¹⁸ and hammer covering, for the latter purchasing the factory of Edwin D. Seabury and hiring Seabury as superintendent of what became a department of Strauch Bros.¹⁹

Wessell, Nickel & Gross was a partnership of Otto Wessell, Adam Nickel, and Rudolph Gross, all of whom had been born in Germany, had come to New York, and had worked for Steinway & Sons.²⁰ The three men were described by Daniel Spillane as "admirable examples of self-made manhood, liberal, upright, personally devoted one to the other, and model citizens of our great commonwealth."²¹ Their firm was founded in New York in 1874, a time when the square piano was the leading instrument in sales, and actions for grands and uprights were largely imported. Soon Wessell, Nickel & Gross began to make grand and upright actions and received patents for the latter in 1877, 1878, 1884, and 1887.²² Their large factory building, situated on the east side of Tenth Avenue between 45th and 46th Streets, was described as "probably the most extensive works of the kind in the world, and unquestionably so in the United States."²³ The building still stands, one of the few surviving remnants of New York's great piano industry.²⁴ The "Wessell, Nickel & Gross" name also lives on today, a tribute to the good reputation built by the company; dormant since the 1930s, this trade name was

17. "Fifty Years of Progress," *MTR2* 65, no. 23 (Dec. 8, 1917): two unnumbered pages between p. 66 and p. 67; Spillane, *History of the American Pianoforte*, 312–15; Alfred Dolge, *Pianos and Their Makers*, vol. 2 (Covina, CA: Covina Publishing Co., 1913): 223–24.

18. *MTR2* 18, no. 32 (Mar. 3, 1894): 6–7.

19. *MTR2* 19, no. 10 (Sept. 29, 1894): 6.

20. *MTR2* 27, no. 6 (Aug. 6, 1898): 29; *MTR2* 28, no. 21 (May 27, 1899): 15; *MTR2* 54, no. 21 (May 25, 1912): 24; Dolge, *Pianos and Their Makers*, vol. 1, p. 380.

21. Spillane, *History of the American Pianoforte*, 326.

22. *Ibid.*, 322–26.

23. *TMA* 5, no. 12 (Apr. 28, 1894): 19.

24. It now houses a luxury co-op development bearing the name "The Piano Factory." This is, of course, a misnomer, since whole pianos were never manufactured there, but real-estate developers are not bound to the principles of historical accuracy that scholars must observe.

recently acquired by a modern action manufacturer that otherwise has no connection with the original firm.²⁵

Later action companies that continued into the twentieth century were Wasle of New York (1877), Sylvester Tower of Cambridgeport, MA (1880), and Roth & Engelhardt of New York and St. Johnsville, NY (1888). As mentioned above, American piano manufacturers also used foreign actions such as the Schwander (Herrburger, Schwander & Son), made in Paris, which also had a New York outlet (1867) as well as a local agent, August Pallé, starting in 1897.

Category B comprises attachments, all dating from the late 1890s. Some of these, such as the “Plectraphone,” were tone-altering devices, which had a brief popularity at that time. They featured substances such as leather, parchment, or felt placed between the hammers and the strings, and some also had metal parts that vibrated against the strings. These mechanisms were variously touted as producing exact imitations of all sorts of plucked string instruments, including harp, guitar, mandolin, banjo, zither, and even autoharp. In a few cases, the new inventions were proprietary features exclusively of piano manufacturers and were available only on their instruments (therefore, they appear in Appendix 3, but not Appendix 2); examples of these are George P. Bent of Chicago (the “Crown” piano), as well as the Schubert Piano Co. and Wing & Son Piano Co., both of New York. The Schubert mechanism was contained in its upright model, style 22, called the “Mandolin-Piano,” and this particular effect was described as being “full of chic.”²⁶ The Wing mechanism was available in the company’s upright model 29, advertised as a “Concert Grand” because of its large size and fitted with five pedals. Known as the “Instrumental Attachment,” this compound device produced its various effects through the depressing of one or two pedals, either fully or half-way, in various combinations²⁷ Both the Bent and the Wing inventions also featured a “practice clavier” mode. A much earlier piano attachment, described in 1854 as a proprietary feature of Boardman & Grey, Albany, NY (see Appendix 3), was the “Dolce Compana,” a device that achieved a bell-like effect by causing weights to bear down on

25. This company builds its actions and hammer shanks of modern composite materials. www.wessellnickelandgross.com (accessed Aug. 21, 2015).

26. *Schubert Collection of Music Expressly Composed and Arranged for the Wonderful Schubert Mandolin-Piano* (New York: Schubert Piano Co., c. 1895).

27. *The Book of Complete Information about Pianos* (New York: Frank Wing, 1897), 76–79.

the bridge.²⁸ Aside from these examples, however, the majority of piano attachments in the 1890s were separate player mechanisms, like the “Pianola,” “Autono,” “Maestro,” and “Peerless.” These were the first models of their kind, as most of the piano players (mechanisms used in conjunction with existing pianos) and player pianos (mechanisms and instruments all in one) were developed in the early twentieth century.

The next category, C, contains only two firms that made ornamental perforated cast-bronze panels for the fronts of upright pianos. Most of the advertisements placed in trade journals by the Homer D. Bronson Co. of Beacon Falls, CT, in their first year of production illustrate a decorative rectangular panel in “landscape” format whose width is about one and one-half times the dimension of the height. This was meant to be inserted in the middle, moveable (in and out) panel of the piano directly above the keyboard, serving also as a music desk. Occasionally advertisements of this company presented larger illustrations²⁹ that also show two rectangular panels in “portrait” format intended for the flanking outer panels. The great majority of pictures of upright pianos accompanying the advertisements of many piano manufacturers of the time illustrate the configuration of three wooden panels, usually decorated in some way. Bronson claimed that his panels were available in “over 100 Different Designs now in use by the Leading Piano Manufacturers,” a statement that—even allowing for “puffery”—at least reveals that the bronze panels were purchased and installed by the piano manufacturers (in place of the wooden panels), and not by the public. This is suggested by an illustrated brochure put out by the Emerson Piano Company of Boston sometime in or after 1886,³⁰ which describes four styles of upright pianos as being available with either “fret engraved” or bronze panels. Pictures of both types of panels are included for two of these styles (each consisting of three pieces): the “engraved” wooden panels have bold two-dimensional geometric fretwork, while the bronze panels are pictorial and three-dimensional, but more subdued. Perhaps the latter

28. “Boardman & Gray’s Dolce Compana Attachment Piano-Fortes,” *Godey’s Lady’s Book* (January 1854): 5–13; (February 1854): 101–107. Reprinted, along with the original engravings, *American Musical Instrument Society Newsletter* 31, no. 2 (Summer, 2002): 5–10; and 31, no. 3 (Fall, 2002): 8–20.

29. For example, in *MTR* 2 13, no 2 (Aug. 20, 1889): 501.

30. *Established 1849, The Emerson Piano Company, Manufacturers of Grand, Square and Upright Pianos* (Philadelphia: Ketterlinus Printing House, n.d.). Although the brochure is undated, it includes an illustration of the company’s largest upright piano, which has an identification of two patent dates (Mar. 24, 1885, and Oct. 26, 1886) cast into the plate, thus establishing a terminus a quo for the publication.

were supplied to the Emerson Piano Company by National Papeterie Co. of Springfield, MA, known to have been active during the years 1886–87. Business seems to have been brisk for the Homer D. Bronson Co., whose factory was kept running in 1898 “night and day in order to keep abreast of the deluge of orders for their artistic products.”³¹

Category D encompasses 115 manufacturers of piano cases, tops, and backs, the last item being found exclusively in the upright piano. Some case manufacturers also made other wooden parts, such as legs, lyres, etc. (see category K). Among the firms listed, the earliest one (in fact, the earliest firm listed in Appendix 2) bears the name of an artisan well known outside of the piano industry, the Scottish-American furniture maker Duncan Phyfe (1768–1854). Cases of two pianos in the collection of the Metropolitan Museum of Art, by the New York firms Gibson and Davis (c. 1815) and John Geib & Son (c. 1816), are “reliably attributed” to the Phyfe workshop.³²

Piano-case manufacturing was a particular specialty in Leominster, MA, and it was largely an affair of families. The earliest maker was J. C. Lane, who began about 1845 and continued until 1857, being succeeded by his brother, Howard L. Lane, who carried on for about twenty years thereafter.³³ Another case-making family in Leominster, the Lockeyes, had a long and somewhat complicated history that is well documented.³⁴ J. C. Lane’s foreman, John H. Lockey, began for himself in 1851 and continued until 1861, when his factory was destroyed by fire. A decade later (1871), he and his brother, Joseph P. Lockey, resumed making cases as Lockey Brothers. Joseph subsequently sold his interest to John, who changed the company’s title back to his own name in 1887, the year in which his son, J. M. Lockey, entered the business. John H. Lockey died in 1890, and his son continued the company for a few years. Joseph P. Lockey, for his part, bought the old McCammon piano factory in Albany, NY, in 1892 and made cases for two years until his business was bought out by Alfred Dolge in 1894 and removed to Dolgeville, NY. Also active in Leominster were the brothers Sawyer Porter and Levi W. Porter, who began manufacturing piano cases in 1861. In the spring of 1880, the Porter piano-case business was purchased by Steinway & Sons. William Steinway

31. *MTR* 2 13, no. 1 (Aug. 5, 1898): 445.

32. Laurence Libin, *American Musical Instruments in The Metropolitan Museum of Art* (New York: The Metropolitan Museum of Art; W. W. Norton & Company, 1985), 168–71.

33. William Andrew Emerson, *Leominster, Massachusetts, Historical and Picturesque* (Gardner, MA: Lithotype Publishing Co., 1888), 256.

34. *Ibid.*, 256–57, as well as many articles in trade journals.

had developed his factory complex in Astoria, Queens, NY, in the early 1870s with the hopes of avoiding the labor problems that had earlier plagued him in his new Manhattan plant; this dream had not come true, however, and Steinway was now prepared to move at least a portion of his production out of the New York area. Included in the Leominster sale was the existing factory, with excellent water power (a typical feature of factories in New England), as well as a new building under construction. Unfortunately, Steinway's plans soon "went up in smoke"³⁵ when the old building was completely destroyed by fire in October, 1880. Steinway decided not to rebuild, and leased the surviving building back to the Porter brothers. In August, 1881, he sold the property to the piano manufacturer Freeborn Garretson Smith, who made cases there for his own instruments and also sold them to other manufacturers.³⁶ Another case manufacturer in Leominster was the short-lived Union Comb Co., which in 1880 retained its original name but made a dramatic switch in its manufacturing after hiring an experienced superintendent "thoroughly familiar with the whole system of pianoforte case making," under whose management "some of the most desirable customers" were secured. In spite of these encouraging signs, this company survived only until sometime before June, 1885, when Joseph P. Lockey leased its factory, fitted out for case making. Lockey remained there only until October 1, 1886, when the lease expired and the property was sold.³⁷

Like John H. Lockey of Leominster, J. E. Stone of Erving, MA, was also known to have founded his piano-case business in 1851, although the earliest documentations of the existence of his firm, J. E. Stone & Sons, come from 1882. One of these sources is an account of a tour of the Stone factory given by his son, Charles S. Stone, in which the company is praised for its "abundance of water-power" and "large grounds for seasoning lumber," as well as "the excellence of the material the firm uses, and the care and attention they display in the manufacture of the tops,

35. William Steinway's thwarted project is described in these words by Richard K. Lieberman, *Steinway & Sons* (New Haven: Yale University Press, 1995), 92. The name Porter is misspelled in this book as "Portes."

36. The history of the Porters' factory, its purchase by Steinway, the destruction of the old building, and the sale to Smith is chronicled in William Steinway's diary (entries in March, April, May, June, and October, 1880, and May, July, and August, 1881), *The William Steinway Diary, 1861-1896*, americanhistory.si.edu/steinwaydiary/diary (accessed Sept. 2, 2015). See also *AAJ* 35, no. 17 (Aug. 20, 1881): 337; as well as Emerson, *Leominster, Massachusetts*, 260-61.

37. Emerson, *Leominster, Massachusetts*, 262.

cases and legs.”³⁸ Charles ran the business himself under his own name starting in 1885, and it was he who later advertised that it had been established in 1851.³⁹ J. E. Stone died in 1887.⁴⁰ In early 1889 the factory was reported to be “running . . . to its full capacity.”⁴¹ The firm continued on through the turn into the twentieth century, but only barely; early in 1901 Charles filed a petition for bankruptcy, having liabilities of \$13,485.11 and assets of only \$122.54.⁴²

The earliest family case-making firm in New York that lasted through the nineteenth century was founded in 1867 by the German-born Charles F. Diehlmann. Although this was surely the original spelling of his surname, it also appears variously in different forms in the sources, with Dielmann being the version most frequently encountered.⁴³ The firm’s names at various times also indicate the participation of three additional partners. It started as Dielmann, Thurm & Funk and then became simply Dielmann & Funk in 1870. In 1873, the factory, located on Tenth Avenue, sustained fire damage. The building was owned by Joseph P. Hale and previously had been used by him as a piano factory.⁴⁴ In fact, Dielmann & Funk was identified in 1877 as having made nearly all of Hale’s cases “for several years, at the rate of about one hundred per week.”⁴⁵ Starting in 1879, the company bore only the name of the founder, who died at the age of fifty-three early in 1882; his disease was described as having been long and painful, and he had been confined to his house for the previous seventeen months, while his manager, O. D. Pearson (the name also appears in the sources as Person), had taken charge of the business.⁴⁶ One trade journal reported that Dielmann’s widow, Mary, had continued the business for the short time until February 11, 1882, when their factory at that time, located on 21st Street, was completely destroyed by fire.⁴⁷ Another journal reported that it was

38. *MTR* 25, no. 22 (June 20, 1882): 362.

39. Advertisements placed in *MTR* 2 in 1891 and 1892.

40. *MC* 14, no. 3 (Jan. 19, 1887): 46.

41. *MTR* 12, no. 11 (Jan. 5, 1889): 202.

42. *MTR* 32, no. 9 (Mar. 2, 1901): 29.

43. It cannot be determined if Diehlmann himself made the change, or if it was done carelessly by newspaper editors and directory compilers, but for the sake of consistency, this is the spelling used henceforth in the present article.

44. *New York Times* (Jan. 14, 1873): 8.

45. *The Sun* (Sept. 8, 1877): 4.

46. *AAJ* 36, no. 13 (Jan 21, 1882): 255.

47. *AAJ* 36, no. 18 (Feb. 25, 1882): 355.

the founder's son, William Dielmann, who had carried on the business after his father's death and now owned the building. Perhaps the truth of which Dielmann was really in charge was brought out in this source's none-too-flattering characterization of William's actions during the fire: "Mr. Dielmann is a young man, and when he learned that his factory was on fire he ran home like a dutiful boy and told his mother. His book-keeper, however, Mr. O. D. Person, who is also his general manager, broke in the building and risked his life to save important papers, and had just left the building when the walls fell in with a crash."⁴⁸ The same source reported that "young Dielmann" was turning out 135 piano cases per week, and that his company had the following customers: Grovesteen, Fuller & Co.; C. D. Pease; Joseph P. Hale; Christie & Co.; Bent & Co.; Nugent & Co.; Decker & Sons; Cable & Sons; George Peck (Hardman, Peck & Co.); and "a house in California."⁴⁹ The company continued as Dielmann & Lincks (with George Lincks), but eventually had to file for bankruptcy and be liquidated in April–May, 1900,⁵⁰ although it was still in existence at a different address in New York in late 1901.⁵¹

Another long-standing maker of piano cases in New York was Jacob Doll. Born in Germany in 1849, he came to this country at the age of fourteen.⁵² His piano-case firm was founded in 1871 and went on in 1879 to manufacture pianos (and eventually player pianos) also, continuing until well into the twentieth century. Doll was one of the many piano (and piano-supply) manufacturers who built factories in the Mott Haven and Port Morris sections of the Bronx in the late nineteenth century.⁵³ Doll's mammoth factory, erected in 1895, stood at the corner of 134th Street and what was then called Southern Boulevard, an area that literally teemed with piano factories. Jacob Doll died in 1911, having trained his five sons well in the trade and leaving his family well provided for.⁵⁴ The company went out of business in the 1930s, and the Doll factory and most of the surrounding buildings were soon sacrificed on the

48. *MTR*2 5, no. 14 (Feb. 20, 1882): 220.

49. *Ibid.*

50. *MTR*2 30, no. 14 (Apr. 7, 1900): 17; *MTR*2 30, no. 17 (Apr. 28, 1900): 15; *MTR*2 30, no. 19 (May 12, 1900): 11.

51. *MTR*2 33, no. 21 (Nov. 23, 1901): 17.

52. *MTR*2 53, no. 20 (Nov. 18, 1911): 21.

53. Even before the consolidation of the four outlying boroughs with Manhattan to form greater New York City in 1898, this part of the Bronx, erroneously called "Harlem" by some, was considered to be the "north side" of Manhattan.

54. Dolge, *Pianos and Their Makers*, vol. 2, p. 81; *MTR*2 64, no. 23 (June 9, 1917): 36.

altar of "urban renewal," in this case to provide open space for the Bronx entrance to the Triborough Bridge in the late 1930s.

A founding date of 1872 is given for the New York piano-case company of Joseph N. Courtade by Alfred Dolge,⁵⁵ and this date ("since 1872") is corroborated in an advertisement by the company's successor, Joseph N. Courtade & Sons, in 1922.⁵⁶ Thus, his company would seem to have had an existence as a piano-case manufacturer in New York almost as long as that of Jacob Doll. Determining the history of Courtade's firm is particularly difficult, however, because his name is totally absent from the New York directories before being listed in the volumes covering the years 1884–86, 1889–1892, and 1894, in which he is identified variously as a carpenter or a sawyer, with only his home address given. Not until the volume for 1896 is there an indication of his company's existence, for from then on into the twentieth century he is referred to as a superintendent, and the address of the company is also provided. In giving 1872 as the date of founding of the Courtade firm, Dolge may have relied on an earlier statement from the firm, perhaps a bit of advertising license representing only the year in which Joseph N. first began work as a laborer somewhere other than in New York.

Piano-case manufacturers were the primary customers of other members of the supply industry: makers of glue (category G); legs, lyres, desks, mouldings, and wooden panels (K); varnish, stain, and polish (Q); and raw materials such as veneer and lumber (R).

Category E, cloth, leather, and (felt) punchings—all used in actions—comprises a number of importers and dealers, including several New York firms whose wares were diverse: Calm & Blath; John F. Doellner; Louis Gehlert; George Gueutal; Hammacher, Schlemmer; Frederick Koth; Richard Ranft; Robert M. Webb; and Charles Weickert.

Many of these same dealers are also listed in category F, felt, hammers, and hammer covering. Piano felt is the finest variety of that substance. Early dealers such as Francis Bonneau, John F. Doellner, George Gueutal, and Charles Weickert (all in New York), acted as agents for European felt makers. But Alfred Dolge⁵⁷ realized that there could be a

55. Dolge, *Pianos and Their Makers*, vol. 1. p. 465.

56. *The Music Trades* 64, no. 25 (Dec. 16, 1922): 140.

57. The principal sources on Dolge and his business are Henry Roland, "Six Examples of Successful Shop Management. VI. The Insurance and Endowment Features of Dolgeville," *The Engineering Magazine* 13, no. 1 (April 1897): 10–19; Spillane, *History of the American Pianoforte*, 315–22; and Eleanor Franz, *Dolge* (Herkimer, NY: Herkimer County Historical Society, 1980).

ready market for American-made felt of good quality, and he capitalized on his dream. Trained at his father's piano factory in Leipzig, he came to this country at the age of seventeen in 1866, worked in the shop of Frederick Mathushek, returned to Germany in 1868, and soon came back again to New York with a resolve to become successful in the piano business. In 1869, he opened a piano hardware store in New York, where he imported Poehlmann's music wire, among other things. In 1871, he began to manufacture piano felt in Brooklyn, and it was good enough to win a first prize at the Vienna Exposition in 1873. In the following year he established a factory in the Adirondack village of Brockett's Bridge, NY. In his honor, the town was renamed Dolgeville in 1881. The author of a number of patents, Dolge worked diligently to improve the quality of his felt, and a "factory visit" article in a trade journal in 1880 commented: "To Mr. Dolge himself alone may all the credit of being the first and foremost in his line of business be given, and well he deserves it."⁵⁸ By this time he had already experienced considerable success, selling his felts not only to American piano manufacturers, but also to firms in Germany and England, among the latter, Brinsmead & Sons in London.⁵⁹ Dolge's company went on to expand to the manufacture of autoharps, piano mouldings and cases, sounding boards, and even felt shoes and slippers. Daniel Spillane characterized the Dolge enterprise in 1890: "Mr. Dolge's business is to-day practically a supply centre for the music trades of piano and organ building, and is the largest special business of that nature in the world."⁶⁰ In 1893, he brought his eldest son, Rudolf, into the firm (the company becoming Alfred Dolge & Son), which in the following year began to market "blue felt," the highest grade. To make room for the increased felt production, the firm sold off its case and sounding-board factories in 1896. Dolge became famous for the liberal benefits he offered to his employees, but this expense, in addition to his losses from unwise investments, caused his financial ruin in 1898. He also claimed that certain "friends" in Dolgeville had manipulated his downfall, and a full chronicle of this sad course of events is revealed in a book published anonymously but bearing every evidence of having been written by him.⁶¹ The Dolge felt factory was sold and became the American Felt Manufacturing Co., which soon joined with five

58. *MTR* 23, no. 3 (Aug. 5, 1880): 12.

59. *MTR* 13, no. 12 (Apr. 18, 1877): 208.

60. Spillane, *History of the American Pianoforte*, 322.

61. *History of a Crime: Written by Request* (Los Angeles, CA, 1900).

other firms (including Tingle, House of New York, established 1873) to create a trust, called the American Felt Co., with offices in New York. Dolge moved to California, where he pursued various business interests, but his chief accomplishment in his later years was the production of two volumes of his book, *Pianos and Their Makers: A Comprehensive History of the Development of the Piano*.⁶²

For a brief period, beginning in 1898, Armour & Co., the Chicago meat-packing firm, entered the felt business as a way of making use of the by-products of its immense stockyards, and it seemed to some observers that they would become a worthy competitor of the American Felt Co. But Armour left the business in less than a year's time. The movement toward the creation of trusts affected many American industries in the years around the turn of the century, and piano manufacturing was no exception. After several attempts in the 1890s, the American Piano Co. was created in 1908 to control the business of a number of piano makers, including some with distinguished reputations, for example Chickering & Sons of Boston, William Knabe & Co. of Baltimore, and Haines Bros. of New York.

Category F also includes hammer covering, the application of felt to the wooden hammer heads according to an exacting method. Dolge's description of the process in the first volume of his book gives also an account of several machines—including his own—invented to accomplish the task quickly and consistently.⁶³ A number of firms listed in category F most likely did not manufacture their own felt, but relied on firms like Dolge's (or dealers of foreign products) to supply it. A long-standing hammer-covering firm in New York was the succession of Ole Syverson, Syverson & Lydecker, Lydecker & Schmidt, Frederick Schmidt, and David Schmidt, starting in 1856 and continuing through the end of the nineteenth century.⁶⁴ The German-born Charles Pfriemer, who had learned his craft as a hammer coverer at Steinway & Sons and had worked for Albert Weber, started his own business in New York in 1874.⁶⁵ Joseph Pfriemer, probably a son, was active later at the same address, and their company also survived into the twentieth century.

No division of the piano-supply industry was more diverse than the combination of hardware, tools, and materials (category H). The firms

62. Covina, CA: Covina Publishing Company, 1911 and 1913.

63. Dolge, *Pianos and Their Makers*, vol. 1, 97–106.

64. Spillane, *History of the American Pianoforte*, 328.

65. Dolge, *Pianos and Their Makers*, vol. 1, 382.

representing this category in Appendix 2 include many dealers, and in this case, the most closely related categories are E, cloth, leather, and punchings; F, felt; M, plates; and P, strings or music wire. It is often difficult to distinguish between piano hardware manufacturers and dealers, since so many of them seem to have been involved with both wholesale and retail aspects of the trade. Among the piano hardware sellers, O. J. Faxon in Massachusetts (see also in category M) had the earliest and most long-lasting business, from 1847 to 1896. A. & H. S. Thorp was also established in 1847 and (if the firm was the same as A. & T. S. Thorp) it lasted until 1861. Edwin L. Mansfield of Boston was in business from 1850 to 1874. Three other early firms were in New York: William Wake, starting in 1849 or possibly 1847; John Gill, 1850; and William A. Conant, 1853 (also in category M). Two additional New York companies also had longevity into the twentieth century through their successors: Charles Tollner, C. Tollner & Hammacher, Albert Hammacher, and Hammacher, Schlemmer, starting in 1857; and Henry Haas and Henry Haas & Son from 1859. Chickering & Sons even sold (or at least advertised) hardware as well as piano stools at their New York location in 1861. Richard Ranft (importer of European piano materials), whose father was a felt maker in Germany, was the brother of William Steinway's second wife, Elizabeth (married 1880, died 1893); as such, he enjoyed a close relationship with the Steinway family.⁶⁶

The myriad products offered for sale by purveyors of piano hardware are well illustrated in extensive catalogues issued in the 1890s by two leading New York firms: Hammacher, Schlemmer & Co. in 1898 and G. F. Goepel & Co. in 1893.⁶⁷ The latter publication is all the more remarkable because George F. Goepel had founded his business only one year before, in 1892 (after his death in 1907, the company was led by his

66. Lieberman, *Steinway & Sons*, 79, 92, and 115.

67. *Hammacher, Schlemmer & Co., Importers and Dealers in Piano Materials and Tools* (New York: Hammacher, Schlemmer & Co., 1898), x + 106 pp. *Illustrated Catalogue and Price List of G. F. Goepel & Co.* (New York: G. F. Goepel & Co., 1893), xi + 100 pp. (variously numbered). I am greatly indebted to Ms. Liana Marie Sive for allowing me to examine both catalogues from her collection. Although no longer in the hardware business, the first company still exists in New York (as Hammacher Schlemmer & Co.), selling a wide variety of merchandise at its retail store in midtown Manhattan and through its mail-order and online services; www.hammacher.com (accessed Oct. 28, 2015). Practically all of the items illustrated in the Goepel catalogue bear the abbreviation "C. F. G. & Co.," this may be more a matter of identifying and protecting the images in question than an attempt at photographic realism.

sons, Walter E. Goepel and Frederick N. Goepel).⁶⁸ Both catalogues list and illustrate several brands and types of music wire; all kinds and sizes of pins, screws, bolts, hinges, butts, props, and brackets; casters, pedals, and locks; cast-iron pedal guards and ornate candle holders; an assortment of spoons, rails, catches, knobs, springs, nails, buttons, and handles; parts for actions of squares and uprights; key leads, ivory and celluloid slips, and ebony sharps; felts, hammers, skins, and punchings; and glue, sandpaper, and emery cloth. Also included are wooden piano parts ready for finishing (“in the white”): ornamental legs and trusses for uprights as well as old-fashioned fret-work music desks, carved lyres, and heavy cabriole legs for grands and squares (at a time when such styles were going out of fashion and, in fact, most manufacturers had ceased making square pianos altogether). Hammacher, Schlemmer adds washers, covers, and wax, while Goepel adds music-wire gauges and tools for manufacturers and tuners, as well as fancy cast-iron, nickel-plated “piano protectors” (evidently meant to be attached to the wooden sides of the instrument to keep them from being damaged by coming into contact with walls or other items of furniture). The most expensive single item in the Hammacher, Schlemmer catalogue is a piano truck, a tilting rack on a heavy base with casters, designed for moving uprights in piano factories and showrooms, for sale at \$10.00. Goepel offers a piano-maker’s work bench at \$24.00—with drawers at \$32.00. Both catalogues include lists of additional tools of a general nature that the respective companies supplied for sale.

Category I comprises ivory, celluloid, and keys. Central to the ivory trade, of course, was the killing of elephants. An interview in 1886 with an American hunter who had spent eight years in Africa revealed that at that time, about 50,000 elephants were being destroyed there annually for the ivory they provided, although the opinion of the time seemed to be that there was no danger of extermination of the species. An elephant tusk might weigh up to 200 pounds. A large proportion of the African ivory was sent to London, where it was auctioned off, with American companies taking about 500,000 pounds annually, most of which was reported to go to the three largest producers of piano keys (in the world): Comstock, Cheney & Co.; Pratt, Reed & Co., and Sylvester Tower—all in New England.⁶⁹ Some American companies established their own direct

68. *MTR*2 46, no. 12 (Mar. 21, 1908): 37.

69. “How Ivory Is Obtained,” *MTR*2 9, no. 21 (June 5, 1886): 297.

connections to the African suppliers. Before being cut for piano keys, ivory had to go through a process of drying and bleaching in order for the desired white, opaque color to be obtained. In the 1870s, the substitute product of chemistry known as celluloid first started to be commercially viable. The Celluloid Piano Key Co. of New York was formed at that time and continued into the twentieth century, having large showrooms at Fifth Avenue and 14th Street, just a few blocks west of Steinway Hall. The firm was also located in New Jersey in the 1880s, at about the same time that the Zylonite Co. was selling a related material under its own trade name in North Adams, MA.⁷⁰ Celluloid had difficulty competing with traditional ivory at that time because the latter was plentiful and competitively priced.⁷¹

All three New England piano-key firms mentioned above were long-lasting. Sylvester Tower of Cambridgeport, MA, started making ivory keys in 1853 and continued into the twentieth century. In 1881 he was described as using ebony from Africa as well as celluloid in his keys;⁷² in fact, his advertisements from that time proudly proclaim "The Manufacture of Celluloid Keys a Specialty." In Connecticut, the company that began as Comstock-Cheney (first starting to make piano keys in 1861) and continued as Comstock, Cheney & Co. ended up in the aptly named Ivoryton and also survived until well into the twentieth century. In 1899, the firm reported that it was cutting 8,000 to 10,000 pounds of the "best African ivory" every month.⁷³ Pratt, Read & Co., of Deep River, CT, began in 1863 with the merger of two firms that had originally made ivory combs: George Reed & Co. (which had first started making piano keys in 1839) and Pratt Bros. Co. (founded in 1861).⁷⁴ A glowing report of this company written in 1893 stated: "By the aid of improved and modern machinery they are enabled to produce a high quality of goods, at reasonable prices, and consequently have attained such prominence and popularity that they are now supplying some of the largest and leading pianoforte houses."⁷⁵ Pratt, Read & Co. continued in operation well into

70. Robert Friedel, *Pioneer Plastic: The Making and Selling of Celluloid* (Madison, WI: The University of Wisconsin Press, 1983): 68.

71. *Ibid.*, 61 and 63.

72. *AAJ* 35, no. 11 (July 9, 1881): 215.

73. *MTR* 29, no. 19 (Nov. 4, 1899): 23.

74. Don Malcaine, Edith De Forest, and Robbi Storms, *Images of America: Deep River and Ivoryton* (Charleston, SC: Arcadia Publishing, 2002), pages not numbered.

75. *MTR* 28, no. 11 (Dec. 2, 1893): 7.

the twentieth century.⁷⁶ In New York, the succession of George Lange, George Lange & Son, and Anne (Annie) Lange ran from 1865 to 1899. George Lange died in 1889,⁷⁷ and Annie, most likely his widow, continued the business until filing for bankruptcy in November, 1899.⁷⁸

Category J is another small one, containing producers of labels, stencils, and decalcomania (this being the original term used for the transfer process). Stencils got a bad name in the piano industry (see Part 2 of this article), and in this context, William W. Fields of New York admitted making them for Joseph P. Hale.⁷⁹ Decals were made by the Meyercord Co. of Chicago, with branches in New York and St. Louis, whose products were considered to be “of international repute.”⁸⁰ Given the extent to which this product eventually superseded the stencil in the late nineteenth century, it is surprising that there was only one such producer identified with the piano industry.

Legs, lyres, desks, mouldings, wooden panels, props, and other miscellaneous wooden parts are gathered together in category K. Since these products are so similar, several of the eighty-two listed firms are also found in category D, cases. Most of these companies were short-lived, and only two continued to the end of the century. One of these, George Bothner, was also well known as an action manufacturer; in 1898 he acquired the business of Ehrhard & Hagen (founded in 1854), which in 1895 had been called “indisputably the largest manufacturers of piano-forte mouldings in this country.”⁸¹

Most of the machinery made by the companies listed in category L was designed for wood-working. An example is the Union Carving Machine Co. of Indianapolis, which advertised a machine with which “it is possible to get the most artistic piano panel designs at a cost that is surprisingly low.”⁸² Paul Pryibil of New York also built equipment for

76. The company supplied keys (no longer ivory) to Steinway & Sons until the early 1980s and had ceased making piano parts by the end of the decade. See Michael Lenehan, “K 2571: The Making of a Steinway Grand,” revised 2003, www.sherwinbeach.com/lenehan/K2571.htm (accessed Sept. 1, 2015) and connecticuthistory.org/ivory-cutting-the-rise-and-decline-of-a-connecticut-industry (accessed Sept. 30, 2015).

77. *MC* 18, no. 22 (May 29, 1889): 446.

78. *MTR* 2 29, no. 21 (Nov. 18, 1899): 15. Annie is identified as the widow of “Reinhold” Lange (no such person appears otherwise in the sources).

79. *The Sun* (Sept. 6, 1877): 4.

80. *MTR* 2 29, no. 22 (Nov. 25, 1899): 15.

81. *MTR* 2 21, no. 21 (Dec. 14, 1895): 12.

82. *MTR* 2 26, no. 6 (Feb. 5, 1898): 21.

working with metal. His improved plate-drilling machine was publicly exhibited in New York in 1897 by Julian Scholl & Co., which had purchased from Pryibil the right to use this new equipment in the finishing of piano plates cast by O. S. Kelly (Springfield, OH), of which Scholl was the New York agent. A number of piano manufacturers inspected the machine in operation and "considered the invention a move in advance in piano building." In fact, the firm of Kranich & Bach of New York was reported already to have pianos in their factory whose plates had been drilled by means of the Pryibil system (whether the plates were cast by Kelly and drilled by Scholl is not reported).⁸³

Equipment for winding piano strings was also produced for sale to piano manufacturers, chiefly by the New York string maker Charles Reinwarth. Steinway & Sons bought three of Reinwarth's machines in 1881. A representative of *The Musical Critic and Trade Review* called on William Steinway to ask his opinion of this equipment: "Mr. Steinway said that it was important in such a matter to have a direct opinion from the factory, and as Mr. Henry Steinway [Junior] was at the factory, the telephone connecting it with the office was put in requisition and a reply received stating that the machines were giving perfect satisfaction in every respect."⁸⁴

Category M, iron plates, includes not only casting, but also drilling, bronzing, japanning, and other processes of finishing. Some firms did all of this work, but others did only the casting or only the finishing. Many of the companies also made and sold hardware, and the earliest firm in this category was that of O. J. Faxon in Massachusetts, whose business started in 1847 and continued for almost a half-century. William A. Conant of New York, established in 1853, was known for finishing plates, although he may not have cast them all himself. He was identified in 1877 as having Joseph P. Hale as one of his clients.⁸⁵ No doubt exists about Thomas Shriver & Co., whose iron foundry in New York was characterized in 1890 by Daniel Spillane: "Years ago, when they were without competitors of any note, they ranked as the best piano-plate men in the United States. They were unquestionably a large factor in improving the quality of plate castings in this country."⁸⁶ An earlier evaluation of Thomas Shriver & Co. of "years ago" is given in an important book about American manufacturing published in 1864, which singles out several

83. "The Pryibil System of Plate Drilling," *MTR* 24, no. 14 (Apr. 3, 1897): 21.

84. "The Manufacture of Piano Strings," *MTR* 4, no. 10 (June 20, 1881): 150.

85. *The Sun* (Sept. 6, 1877): 4.

86. Spillane, *History of the American Pianoforte*, 331–32.

iron foundries of New York “distinguished for the fineness and beauty of their castings.”⁸⁷ The fact that no other New York foundry turning out piano plates at that time is mentioned in this source gives special prominence to the Shriver enterprise. Thomas Shriver had a multi-faceted career. Born in 1789 near Westminster, MD, he worked as a surveyor as a young man and was the inventor of several devices used in wagons and stage coaches. He went on to build a macadamized road out of Baltimore, known as the “Franklin Road,” later supervised the construction of the immense “Great National Road” across the Alleghenies, and subsequently established stage-coach lines in several areas. In Cumberland, MD, he bought farm land, which he developed into building lots that he sold at nominal prices to “the industrious poor.” He also served as the city’s mayor from 1843 to 1849.⁸⁸ He is documented in only one volume of the Philadelphia directories as living in that city in 1855, serving as the founder and proprietor of an omnibus line. Likewise, documentation in the New York directories indicates that his foundry in that city was established in 1861. It is remarkable that he had made a name for himself in the piano-plate industry by 1864 (see above), since no evidence has been found that he had had any prior experience in foundry work. The New York directories show that he was already a resident of that city in 1859–60, although no affiliation or occupation is reported; perhaps he spent those years gaining experience as an employee of another iron foundry. The firm of Shriver & Co. prospered, and his son Walter was by his side from 1863 on. Walter Shriver led the company, after his father’s death in 1879, into the twentieth century. Spillane mentioned, however, that by that time the firm had begun to rest on its laurels, and “other firms appeared and began to take possession of the field by virtue of enterprise, push, and absolute capacity.”⁸⁹

Chief among the firms that competed with Shriver was Davenport & Treacy. John Davenport and Daniel F. Treacy had both had experience as foundry-men by the time they met in 1873. Treacy served for a short time as Davenport’s superintendent in his factory located in Jersey City, NJ, and in 1874 they became equal partners. In the same year, Davenport & Treacy began to cast iron piano-plates, which they produced exclusively

87. J. Leander Bishop, *A History of American Manufactures from 1608 to 1860*, vol. 2 (Philadelphia: Edward Young & Co., 1864), 616.

88. *Ibid.*, 591–94. See also “A Register of the Shriver Family Papers at the Maryland Historical Society,” www.unionmills.org/findersaid/history.htm (accessed Aug. 29, 2015).

89. Spillane, *History of the American Pianoforte*, 332.

for the firm of William A. Conant, which, in turn, drilled and finished them and sold them to piano manufacturers. This arrangement continued until 1884, when Davenport & Treacy began to sell its plates directly to the piano manufacturing houses, already drilled and finished. The company was said to have turned out 275 finished plates during that year,⁹⁰ which seems a small output. In 1887 they built a large plant in Stamford, CT, where production rose in 1889 to 16,000 plates annually (an astounding increase over 1884), along with “a correspondingly large output of piano hardware.”⁹¹ Plates intended for the New York and Midwestern trade were shipped by water to the company’s plant in New York, where they were drilled and finished. By 1892 the annual output had reached over 26,000 plates.⁹² Daniel Spillane lauded the ability and character of Davenport and Treacy, the men, with the following words: “Both gentlemen, in addition to possessing high business qualifications, have always taken pains to merit the good-will and esteem of the piano trade and the musical press, and are highly esteemed as private citizens.”⁹³

On the subject of supplying iron plates to piano manufacturers, an interesting document casts light on the origin of the plates used by Steinway & Sons before they opened up their own foundry in the new factory complex in Astoria in the early 1870s. On September 17, 1886, a newspaper in Lincoln, Nebraska, printed a lengthy statement by the New York piano manufacturer Kroeger & Sons dated April 1 of that year.⁹⁴ It begins with advice to the reader: “Read carefully and don’t fail to see the exhibit of Kroeger pianos at the State fair. These instruments are unequalled in quality of tone or general construction, and have been justly admired and favorably commended by all who have seen them.” The statement continues with a reference to a circular “sent to dealers throughout the country” in early January, 1885, signed by Steinway & Sons and warning that a certain company was attempting to palm off its inferior piano as “being the same as Steinway.” Although the authors of the circular decline to mention names, they supply enough information to identify this company with “a certain party” who came to this country

90. Ibid., 332–35. The year in which Davenport & Treacy began to make piano plates is derived from Spillane’s comment—in his book, whose “Introductory” is dated February 17, 1890—that the date was “sixteen years ago” (p. 335).

91. Ibid., 336.

92. *MTR* 218, no. 47 (June 23, 1894): 41.

93. Spillane, *History of the American Pianoforte*, 338.

94. *Daily Nebraska State Journal* (Sept. 17, 1886): 6. I am indebted to Mr. William Schull for having informed me of this statement and sent me a copy of it.

in 1855, was given a job “as an ordinary workman” by Steinway & Sons, was later made a foreman “over certain branches” in one of that firm’s factories, but was discharged in the spring of 1879 “for weighty and salient reasons.” Shortly thereafter, according to the circular, he “went into the business of renting and buying and selling pianos in New York, buying cheap and trashy pianos, stencilling them with his own name and selling them as instruments of his own manufacture.” Knowledgeable readers of the circular would easily have identified the maligned individual as Henry Kroeger, whose annual salary of \$6,000 at Steinway & Sons had certainly placed him above the level of an ordinary foreman, but—although he had continued to be favored by William Steinway—he had had a falling out with Henry W. T. Steinway, who had lowered his salary to \$5,000, and this had precipitated his leaving the company in 1879.⁹⁵

Kroeger proceeds, in his statement, to set the record straight, documenting his side of the issue on every point brought up by Steinway & Sons. To prove the quality of his own pianos, he makes the following claim:

We are buying our actions of the very best makers in New York City, the low price at which foreign actions can be obtained is no temptation for us to import actions or parts thereof as Steinway & Sons have done. Our metal plates are cast by one of the most experienced piano-plate manufacturers, who has been engaged in the business for over 30 years, and supplies nearly all the first-class houses, and previous to Steinway & Sons’ opening a small foundry of their own, formerly supplied them as well. His facilities are naturally far superior.

Kroeger’s comments thus indicate that he has acquired his actions from New York suppliers, while Steinway & Sons has obtained theirs, or some of theirs, from abroad (most likely from Schwander in Paris). On the issue of iron plates, he has dealt with only one foundry, which also supplied Steinway & Sons until they began making their own plates. Only two known suppliers of piano plates satisfy the criteria of experience and longevity—O. J. Faxon, begun in 1847, and William A. Conant, 1853, although it is possible that both companies did no more than to finish plates that were cast by other firms. The criterion of having supplied “nearly all the first-class houses” is much more difficult to determine.

A tantalizing hint of another possible source of plates made for Steinway & Sons is found in William Steinway’s diary.⁹⁶ On May 25, 1869,

95. Fostle, *The Steinway Saga*, 330.

96. *The William Steinway Diary* (accessed Oct. 9, 2015).

he wrote "With Theo. at Motts foundry," referring to the J. J. Mott Iron Works, Bronx, NY, dating from 1828 (Mott created the village of Mott Haven);⁹⁷ and on May 27 he recorded the receipt of a "Grand Casting from foundry." Of course, one visit and one sample casting do not prove the establishment of a business agreement.

The firm of Brown & Patterson in Brooklyn, NY, is known to have sold plates to Joseph P. Hale in 1877.⁹⁸ Two iron foundries were located in Springfield, OH. Wickham & Chapman, considered in 1892 to be "doing a magnificent business, . . . shipping piano plates to all parts of the country,"⁹⁹ was reported in 1894 to be turning out 400 piano plates per week;¹⁰⁰ in 1895, between ninety and ninety-five per day;¹⁰¹ and in 1897 160 per day, with expansions of the foundry underway to reach a capacity of 250.¹⁰² O. S. Kelly Co., also in Springfield, had a branch in New York beginning in 1899, and subsequently moved to the Mott Haven section of the Bronx in the first decade of the twentieth century.¹⁰³

Among the twelve suppliers of sounding boards and wrest planks listed in category N, the succession of Alfred Dolge, Alfred Dolge & Son, and Julius Breckwoldt in Dolgeville, beginning in 1874 and continuing into the twentieth century, seems to have been the longest-lasting.¹⁰⁴ The German-born Breckwoldt bought Dolge's sounding-board business in April 1896, having served there as supervisor for the previous twenty years. The capacity of the factory in 1896 was reported to be 150 sounding boards per day.¹⁰⁵

Category O, predominantly stools and scarfs, is the largest, comprising 216 listings. The combination of these two items may seem surprising, as they are intrinsically so different from each other, but these acces-

97. "The J. L. Mott Iron Works," www.waltergrutchfield.net/mott/htm (accessed Oct. 9, 2015). See also Elliot Willensky and Norval White, *AIA Guide to New York City*, 3rd ed. (San Diego: A Harvest Book, Harcourt Brace & Company, 1988), 482.

98. *The Sun* (Sept. 6, 1877): 4.

99. *MTR2* 15, 20 (May 20, 1892): 480.

100. *MTR2* 18, no. 44 (June 2, 1894): 11.

101. *MTR2* 21, no. 3 (Aug. 10, 1895): 5.

102. *MTR2* 25, no. 24 (Dec. 11, 1897): 13.

103. Both Wickham & Chapman and O. S. Kelly made plates for Steinway and Sons in the twentieth century. O. S. Kelly, now owned by Steinway & Sons, continues this process.

104. Dolge, *Pianos and Their Makers*, vol. 1, p. 465, lists Parker & Young, Lisbon, NH, as beginning in 1857, but there is no further trace of this company in the sources until 1891.

105. *MTR2* 23, no. 7 (Sept. 5, 1896): 15.

sories were invariably paired together among the wares offered directly to the public by dealers, who make up a large percentage of the firms listed in this category. The retail nature of their business probably explains why they were so numerous and why so many of the small stores did not last. It may even explain the enticing and original nature of the language used to advertise their products. For example, Francis Neppert, the second in a family of four Nepperts, with Edward N. Martin, representing seven companies engaged in this trade over a period of more than fifty years in New York (1848 through the end of the century), placed a notice in the *Music Trade Review* in 1889 that promised "pleasing novelties in piano stools in Bamboo style with brass claw feet, . . . fashioned and embellished so as to match any style of piano or furniture, whether of rosewood, walnut, mahogany, oak, ash, white and gold, all gold, or otherwise." He also offered new styles in scarfs that were "extremely elegant and chaste"¹⁰⁶ (the latter quality seems to have been especially prized in *fin de siècle* America). Another, more complicated succession of companies merged two separate lines of piano-stool manufacturers: Peter M. McDonald, New York (1854–61), and the partnership of George P. White and William Kraft, New York (1857–61), existed simultaneously and separately up until 1861, when White continued alone, remaining at his former address (1861–97), while Kraft parted company from White to succeed McDonald at the latter's address (1861–65). George P. White was subsequently succeeded in 1899 by Henry P. White in Brooklyn, NY. Other firms were both manufacturers and dealers, such as the Garden City and the Chicago Stool Companies, as well as Henry Holtzman & Sons, all located in the Midwest. Agents such as William Tonk of New York and Chicago and Lyon & Healy of Chicago did a good business.

Category P, strings (also known as music wire), includes a number of dealers and agents, as well as manufacturers. Some also dealt in hardware (category M), such as John Gill and George Gueutal in New York. Among the manufacturers, an early firm was that of Charles Reinwarth, born in Russia, who came to this country and established his string business in New York in October 1858. He is cited above as the inventor and marketer of a string-winding machine used with good results by Steinway & Sons. An article about Reinwarth published in June 1881 reports that his business during the previous three months had increased fifty

106. *MTR* 2 13, no. 2 (Aug. 20, 1889): 476.

percent over that of the corresponding period in the preceding year.¹⁰⁷ He died "highly respected and popular" on October 21, 1898,¹⁰⁸ and on January 1 of the following year, Rudolph C. Koch, an associate of Reinwarth for many years, announced that he had purchased the business from Reinwarth's heirs.¹⁰⁹ It continued well into the twentieth century under Koch's name, with "Reinwarth" strings being the prized product. A large producer of wire was the Washburn & Moen Wire Works of Worcester, NY, and Waukegon, IL. In 1898, it became part of the American Steel & Wire Co.,¹¹⁰ a new wire trust founded with a capital of \$87,000,000.¹¹¹

Francis Ramacciotti started his string business in New York in 1867. He was known for improving the sound of the bass strings, as well as scaling the wires over the entire piano. He died in 1891 and was succeeded by his son.¹¹² Charles A. Wessell of New York (no known relationship to Otto Wessell, of Wessell, Nickel & Gross) began his piano-string business under his own name in 1884; it was also known briefly as the Wessell Metal Company in 1889.¹¹³ He was the son of Charles Wessell, "one of the best known metallurgists in this country," who was associated with metal companies in Riverside, NJ, and Philadelphia and Pittsburgh, PA.¹¹⁴ Charles A. Wessell produced "covered strings for grand, square and upright pianofortes";¹¹⁵ thus, his company did not manufacture wire, but carried out the process of winding wire already made. In 1899 he became a piano manufacturer, with factory and offices in the former Haines Brothers building in Mott Haven, Bronx, New York City.¹¹⁶ Included in category P is Lawrence A. Subers of Camden, NJ, who patented a type of twisted, three-strand music wire that he exhibited at a number of places in 1891 and 1892. In spite of extensive advertising and press coverage, it seems not to have been successful. It was tried and rejected by Washburn & Moen.¹¹⁷

107. *MTR* 24, no. 10 (June 20, 1881): 150.

108. *MTR* 27, no. 18 (Oct. 29, 1898): 8.

109. *MTR* 28, no. 1 (Jan. 7, 1899): 37.

110. *MTR* 29, no. 20 (Nov. 11, 1899): 27.

111. *MTR* 26, no. 6 (Feb. 5, 1898): 29.

112. *MTR* 25, no. 15 (Oct. 9, 1897): 8.

113. *MTR* 12, no. 15 (Mar. 5, 1889): 258.

114. "Death of Chas. Wessell," *MTR* 36, no. 1 (Jan. 3, 1903): 30.

115. *MTR* 12, no. 15 (Mar. 5, 1889): 255.

116. *MTR* 29, no. 17 (Oct. 21, 1899): 12.

117. *MC* 23, no. 11 (Sept. 9, 1891): 281.

Among the makers and dealers in varnish, stain, and polish listed in category Q, one firm stands out for its longevity. Hotopp Co. of Hoboken, NJ, was founded in 1854 by William Hotopp, and in 1856 Henry Hotopp entered the firm, which continued at least until 1887 as a supplier to the piano trade.¹¹⁸ The piano manufacturers Steinway, Weber, Steck, and Lighte & Bradbury were reported to be among its customers.¹¹⁹ Of course, it is possible that many piano makers simply bought varnish from local companies that never advertised or otherwise made known their connection to the piano trade.

Category R, veneer and lumber, includes a long-standing firm well known in New York, Isaac I. Cole & Son, in business from 1886 until well into the twentieth century. Described in 1879 as “probably the oldest veneer cutter in the trade,” Cole invented two types of veneer-slicing machines over the course of his career, but these were evidently for his own use, as there is no evidence that he developed them for sale to other companies. He was assisted in his business by his son, George, who was known as “an expert in fancy woods.”¹²⁰ A crowning achievement for the firm—especially in the area of public relations—was the importing of an enormous mahogany log thirteen feet long, weighing eleven tons, in November, 1899. An illustrated article announcing this event in the *Music Trade Review* includes a spirited invitation to all piano manufacturers to inspect the veneers made from the log at the Cole mills on the banks of the East River in lower Manhattan. “We are sure they will become enthusiastic over them and that Mr. Cole’s tremendous log transformed into cases will ere long be commanding admiration in the ware-rooms of some of our leading manufacturers.”¹²¹ Less spectacular, but still newsworthy, was the shipment of 93,000 feet “of the finest sounding board lumber that could be procured” from Julius Breckwoldt to Steinway & Sons in July 1898. The seven railroad cars that transported the shipment from Dolgeville down to New York carried posters identifying “Julius Breckwoldt, manufacturer of Sounding Boards and Sounding Board Lumber.”¹²² As mentioned above under category N, Breckwoldt had bought Alfred Dolge’s soundboard business in 1896.

118. In fact, the Hotopp Paint and Varnish Company still exists, located in Bayone, NJ.

119. Spillane, *History of the American Pianoforte*, 340–42.

120. *MTR* 2 10, no. 15 (Mar. 5, 1879): 225.

121. *MTR* 2 29, no. 22 (Nov. 25, 1899): 9.

122. *MTR* 2 27, no. 5 (July 30, 1898): 14.

Finally, category S, transposing keyboards, contains only one firm that made this unusual device. It was no doubt a mechanism that shifts both keyboard and action simultaneously, similar to the one employed by Weser Brothers, New York, in the upright piano made expressly for Irving Berlin in 1940.¹²³

* * * *

The direct forerunner of the piano-supply industry was the practice, mentioned above, of certain piano manufacturers who had their parts made by their own employees, each limited to a particular specialty, all within the same factory, or at least within the same company. A notable adherent of this method of production was Jonas Chickering,¹²⁴ whose manufacturing process in his factory on Washington Street in Boston was described by an observer in 1852.¹²⁵ According to this account, Chickering's "finishing" of pianos was

divided into upwards of twenty different departments, or classes. To each department a certain number of men is assigned, and they never do anything that does not come under their department. The same men always do the same things from year's end to year's end. For example: The man who makes *hammers* never does anything else. He simply hammers away at his hammers from day to day and month to month and year to year.¹²⁶

In addition, all of the steps in the making of cases were accomplished by Chickering employees, although the process involved work done in two separate factories before final finishing in the main building on Washington Street. Keys were also made in a separate Chickering factory.¹²⁷ Notwithstanding the specialization of his employees, however, Chickering also relied on the supply industry for his iron plates, his

123. National Museum of American History, Smithsonian Institution, no. 73.30. See Cynthia Adams Hoover, Patrick Rucker, and Edwin M. Good, *Piano 300: Celebrating Three Centuries of People and Pianos* (n.p.: The National Museum of American History, Behring Center, Smithsonian Institution, and NAMM-International Music Products Association, 2001), 59 and 78.

124. See Gary J. Kornblith, "The Craftsman as Industrialist: Jonas Chickering and the Transformation of American Piano Making," *Business History Review* 59, no. 3 (Autumn, 1985): 349–68.

125. "A Chapter on the Pianoforte," *TMW4*, no. 16 (Dec. 18, 1852): 143–5.

126. *Ibid.*, 244. This passage has been often quoted and is well known, but it is especially appropriate in the present context. Obviously, much more went into the production of hammers than hammering, but the author may perhaps be allowed a degree of literary license for the effect.

127. *Ibid.*, 245.

music wire, and the ivory for his keys.¹²⁸ By the time this report was published, Chickering's factory had been destroyed by fire,¹²⁹ and the industrialist had begun to plan a considerably enlarged new factory—although he would not see its completion, as he died unexpectedly a year later, in December, 1853.¹³⁰ In-house production of piano parts was entirely centralized in the magnificent new Chickering factory on Tremont Street, as described in *Frank Leslie's Illustrated Newspaper*:

The whole of this grand building is devoted exclusively to the manufacture of pianofortes. . . . The rough stock is taken in at a lower door in one wing, and passing up this wing, through the main building, and down the other wing, will be delivered in the warerooms finished; so that, almost literally, "forests enter at one end of the building, and come out perfect pianofortes at the other."¹³¹

As far as quality was concerned, action-making in the new factory was described as "a very different process from that employed by the makers of cheap instruments, who purchase their action parts by the barrel, and put them together, so to speak, on the run."¹³²

Another piano manufacturing firm that made all (or almost all) of its own parts was Steinway & Sons, especially after their factory in Astoria went into operation in the early 1870s. During the same decade, Steinway's intense competition with Albert Weber came to a head in the events of the Centennial Exhibition in Philadelphia in 1876, where each manufacturer scandalously bribed the judges responsible for giving awards for pianos. The enmity between the two companies was also heightened by Weber's alliance with the notorious Joseph P. Hale, identified by John Christian Freund (in his *Music Trade Review*) as a producer of "bogus" pianos (see Part 2).¹³³ A manifestation of this conflict, and a further example of the attitude of bestowing greatest favor on piano

128. *Ibid.*, 244.

129. This had already been reported in "Destruction of Chickering's Piano Manufactory," *TMW*4, no. 15 (Dec. 11, 1852): 226.

130. "Death of Mr. Chickering," *TMW*7, no. 16 (Dec. 17, 1853): 121.

131. "The Manufacture of Pianofortes: Chickering & Co.," *Frank Leslie's Illustrated Newspaper* (April 16, 1859): 305. This passage has also been quoted often.

132. "The Manufacture of the Chickering Piano," *Scientific American* 39, no. 17 (Oct. 26, 1878): 258.

133. The whole intriguing story of the battle between the two major piano houses is told by Cynthia Adams Hoover, "The Great Piano War of the 1870s," in *A Celebration of American Music: Words and Music in Honor of H. Wiley Hitchcock*, ed. Richard Crawford, R. Allen Lott, and Carol J. Oja (Ann Arbor: The University of Michigan Press, 1990), 132–53.

makers who make their own parts, is a letter submitted by Steinway & Sons to the *New York Daily Tribune*, containing the following opening salvo: "Mr. Weber's pretensions to rank as a first-class maker are simply absurd. He buys his actions and many other important parts of his pianos in the open market of the same dealers who furnish these articles to the well known 'bogus' makers of this city."¹³⁴ Thus, Steinway chose to condemn Weber for the unforgivable sin of buying piano parts from the supply industry!

The policy of looking favorably on piano manufacturers who made their own parts was also practiced by proprietors of some small companies, such as the firm of Hattersley Brothers of Trenton, NJ, established in 1879. Charles M. and Thomas S. Hattersley boasted in an interview that they manufactured everything in their pianos that affected the tone, leaving only the inert cases to be "made to order" by another firm. The brothers were asked: "Wouldn't it be cheaper for you to buy the case, action, key-board, sounding-board and wires, and simply put the thing together?" Their answer: "Yes, sir, it would, and the instrument would produce a noise; but it is a question whether it would ever give any satisfaction." That method of manufacture would "never do for a first-class instrument."¹³⁵

An analysis of the relationship between the manufacturing of entire pianos and the production of individual parts making up those pianos during the nineteenth century yields four different business models that were followed:

- (1) The first model was employed in the traditional shops: the piano maker and his employees constructed all of the parts in the same factory, whether the latter were required to have multiple skills or (as illustrated above in the case of Chickering) were expected to specialize.
- (2) The second model was a variation of the first and is also illustrated to a degree by the Chickering firm: all of the parts were made by the employees of the piano maker, but at least some of this activity took place in factories in separate locations, sometimes even in separate cities.
- (3) In the third model, piano parts were made by a number of independent firms, which sold and delivered them to the piano

134. "Rather Plain Talk: A Card from Steinway & Sons," *New York Daily Tribune* (Jan. 28, 1878): 5.

135. *MTR* 10, no. 8 (Sept. 20, 1879): 28.

maker for assembly and finishing. This, of course, is the main thesis of the present article. Even in this category, not all delivered parts were finished; cases, for example, often required the multi-step process of filling, varnishing, sanding, and rubbing by the piano maker.

- (4) This fourth model is the contract system, which was followed by Joseph P. Hale. He purchased his parts from suppliers (as in model 3), but many of these items were physically produced on the premises of his factory by workers hired not by him, but by his contractors. Thus, Hale functioned also as a landlord, providing his contractors/suppliers with space in his factory as part of his contracts with them.

In summary, it can be seen that in terms of business arrangements, models 1 and 2 are most similar, and likewise models 3 and 4. To the eye of the casual observer, however, models 1 and 4 would seem most alike, and likewise models 2 and 3.

Perpetuating the practice of the “best-kept secret,” as described with reference to business model 3, above, the overwhelming majority of piano-parts makers in the late nineteenth century clearly were resigned to remaining behind the scenes, arranging their transactions with piano manufacturers in private. While this tactic no doubt reflected the tradition of hand-built pianos, it may also have been a result of the lingering stigma that had been attached to the first great exponent of the commercial piano, Joseph P. Hale, even though he was certainly not the only piano maker who depended on the supply industry, both at his time and later. In addition, an apparent distaste for the production of stencil pianos, also associated with Hale, was certainly part of this negative attitude. For the same reason, manufacturers on all levels of quality were loath to reveal any dealings they had with the supply houses. Within this restrictive atmosphere, the makers and suppliers of piano parts and raw materials could only have been accepted as a legitimate part of the piano industry if evidence of their existence had gone beyond directory listings and advertisements in trade journals, and had been acknowledged by their clients, the piano manufacturers themselves, as well as the customers of those clients. This could only have been accomplished fully if suppliers had been willing to reveal the identity of their clients and, likewise, if manufacturers had deigned to acknowledge their suppliers. History shows that only a few suppliers attempted this bold action, and—with even fewer exceptions—such revelation came from manufacturers

only indirectly and in adverse circumstances (e.g., identification of creditors after a bankruptcy and/or destruction of a factory).

It is revealing that as late as 1898 and 1899 the fledgling National Piano Manufacturers' Association included piano makers and dealers in its membership, but—to judge from the lists of attendees at its conventions in those years—absolutely no members of the supply industry.¹³⁶ Things were somewhat different even a decade earlier in New York City, where the firms representing the piano-supply industry outnumbered piano manufacturers by a sizeable margin. Here, the public celebrations of the George Washington centennial in 1889 featured two events involving the entire piano trade in which members of the supply industry openly participated. On May 1, 1889, a "Parade of the Piano Men" on Fifth Avenue, boasting some 2,500 marchers, included representatives from Henry Haas & Son (hardware) and Wessell, Nickel & Gross (actions) along with contingents from piano manufacturers. A banquet on May 6 likewise brought men together from a number of piano firms, including seven supply houses.¹³⁷ Six years later, among the 165 participants at a dinner of the Piano Manufacturers' Association of New York on March 28, 1895, twenty represented the supply industry.¹³⁸

The existence of the piano-supply industry in general was brought to the attention of the public—although in a negative light—in 1887 when the New York newspaper *The Sun* published an article entitled "How Pianos Are Built: Curious Facts Regarding their Manufacture and Sale." It begins with the following statement:

Pianos are no longer manufactured, but are built. Only two or three of the hundreds of piano factories in this country can justly claim to make their instruments from beginning to finish. Large establishments devoted to the manufacture of some particular portions of the instrument have sprung up of late, and have so revolutionized the art of piano making that in some shops not a single part of the completed instrument is made in the factory.¹³⁹

This is followed by an objective enumeration of many of the piano-supply specialties, but the report continues in a negative vein with a description of some of the unscrupulous practices committed by certain companies associated with the supply industry, whether as producers, as

136. *MTR2*, 26, no. 24 (June 11, 1898): 10–20, 22. *MTR2* 28, no. 15 (April 15, 1899): 5–13, 17–19.

137. *MC* 18, no. 19 (May 8, 1889): 372–7.

138. *MTR2* 20, no. 13 (Mar. 30, 1895): 11.

139. "How Pianos Are Built," *The Sun* (Nov. 20, 1887): 6.

clients, or as agents. The sins thus revealed include, for example, the methods used by some case makers to counterfeit the appearance of expensive woods, the manufacturers who employ deceiving stencils, and the dealers who make fraudulent claims to make a sale. The article was reprinted verbatim in the *Musical Courier*, whose editors appended a rebuttal: "This article, like nearly every article in the daily papers on the subject of pianos, is replete with gross errors and inexact statements."¹⁴⁰ This criticism was clearly appropriate in many ways, although acknowledging the existence of piano suppliers was not in error.

Starting in the early 1880s, music-trade journals began to recognize the piano-supply industry positively in articles focusing on individual companies. A number of these were couched in the form of the popular literary genre of the "factory visit,"¹⁴¹ which—through literary descriptions of manufacturing processes, frequently accompanied by illustrations showing men at work in various departments—allows readers to participate vicariously in the experience of inspecting the factory in question, and by extension, of evaluating the products of that factory. After all, the implication of these publications in the industrial age is that the more mechanized and modern the factory is, surely the higher the quality of its product will be. This genre was first applied to piano manufacturers in America in 1852 in Oliver Dyer's account of his visit to the factory of Jonas Chickering in Boston, as described above,¹⁴² and it was continued in the illustrated article on the Boardman & Gray factory in Albany, NY, published in *Godey's Lady's Book* in 1854,¹⁴³ as well as the illustrated account of a visit to the new Chickering factory in *Frank Leslie's Illustrated Newspaper* in 1859, also mentioned above.¹⁴⁴ In 1880 and 1881, the trade journal then known as the *Musical Critic and Trade Review* published some short "factory visit" articles, with no illustrations, concerning Alfred Dolge's felt and sounding-board plants in Brockett's Bridge,

140. *MC* 15, no. 21 (Nov. 23, 1887): 346.

141. The genre seems to have stemmed from the book *Days at the Factories; or, the Manufacturing Industry of Great Britain Described* by George Dodd (London: Charles Knight & Co., 1843). In vol. 1, chapter 17 (pp. 387–408), Dodd included an account of his visit to the Broadwood piano factory in London, enhanced with a few engravings. The article had first appeared in print in the April 1842 issue of *Penny Magazine*; see G. S. Gadd, *The British Art Piano and Piano Design*, vol. 1 (n.p.: The Very Yellow Press, 2006), 61–62.

142. "The Pianoforte—Jonas Chickering," *TMW* 4, no. 16 (Dec. 18, 1852): 243–45.

143. "Boardman & Gray's Dolce Campana Attachment Piano-Fortes."

144. "The Manufacture of Pianofortes: Chickering & Co.," 305–309.

NY,¹⁴⁵ and the action factory of Wessell, Nickel & Gross in New York City. The latter contains a succinct apologia of the piano-supply industry that is remarkable for its early date: following a commendation of manufacturers of arms and watches for practicing the enlightened principle of interchangeable parts, the following statement is made concerning pianos:

It must be evident to any one that an intelligent workman who concentrates his attention upon one part of the mechanism of a piano will have an advantage in point of quality of the work turned out over another who has to give attention to several parts, and will also be able to turn out a greater amount of work in the same time, thereby lessening the cost of the instrument.¹⁴⁶

Even more significant than the foregoing articles about the piano-supply industry, at least to the public at large, was the brochure entitled *The Manufacture of Pianoforte Action: Its Rise and Development* and published by the New York action firm of Strauch & Sons in 1891: it was considerably larger (running to sixty-one pages), it was accompanied by a number of illustrations, and it was certainly intended for an audience not just limited to the piano trade, but encompassing a wide readership.¹⁴⁷ The brochure begins with an accurate outline of the history of keyboard string instruments with particular emphasis on their mechanisms, following which the reader's attention is drawn to the shining example of the most advanced piano action of the time—and, by unsurprising coincidence, this remarkable device is identified as the very product manufactured by the sponsors of the brochure! The text explains: "We have visited for this purpose the factories of Messrs. Strauch Bros, because they are the leading and the largest in the country, and also because the firm have an established reputation for maintaining the highest standard of excellence in manufacture as well as for being leaders in invention."¹⁴⁸ Readers are then led through the factory from room to room and department to department, the purpose of each of which is identified and pictured in one of the ten illustrations that decorate the brochure (they

145. "A Visit to Alfred Dolge's Works at Brockett's Bridge," *MTR* 2 3, no. 3 (Aug. 5, 1880): 11–12; "A Visit to Brockett's Bridge," *ibid.* 5, no. 3 (Sept. 5, 1881): 31.

146. "Action Making: A Visit to Wessell, Nickel & Gross' Action Factory," *MTR* 2 5, no. 1 (Aug. 5, 1881): 192.

147. *The Manufacture of Pianoforte Action: Its Rise and Development* (New York: Strauch & Sons, 1891). I am indebted to Mr. Bynum Petty for sending me copies of the illustrations in this publication (selections appear in this article as figs. 1–6) scanned from the exemplar in the Organ Historical Society Archives, Westminster Choir College Library, Princeton, NJ.

148. *Ibid.*, 33–34.

appear to be heavily retouched photographs). The tour leads from the firm's offices to the stock room (fig. 1; note the piano action "posing" on the bolts of cloth—as if to draw a visual connection between these raw materials and the product in which they will be used—and, similarly, the keyboard-and-action assembly leaning on the back wall), where, "on long tables, are rolls of felt, pieces of cloth and other materials used in the manufacture of the action. . . . The felt and cloth used are principally of domestic manufacture, for the Strauch firm thoroughly believe in supporting native industries wherever that is feasible."¹⁴⁹ The tour continues to the engine room, containing a 100-horse-power engine (fig. 2; note the diligent engineer with his oil can) and two boilers rated at a total of 300 horse-power. In addition, a "clever system carries all the shavings and cuttings of the factory through a 'blower' down here, so that they can be burnt up."¹⁵⁰ Next on the tour are the lumber yards, where some 100,000 feet of maple, mahogany, white holly, cedar, and apple are stored, the main stock of lumber (approximately half a million feet, mostly of maple) being kept at the firm's mills in the northern part of New York State.¹⁵¹ Adjoining the lumber yards is the drying room, whose capacity is about 75,000 feet of lumber. Readers are informed that no "firm in the trade keeps a finer stock of lumber than the Messrs. Strauch Bros., nor do any exercise greater caution in seeing that the lumber is thoroughly seasoned before it is used."¹⁵² Passing through the moulding room, readers are led to the mill, where "we find some dozen or more large wood-working machines, saws, planers, joiners, etc., for cutting up, trimming, joining and planing the lumber,"¹⁵³ and then the machine room, where more work is done on the parts of the action. In the finishing department, "as in all other departments, are a number of ingeniously constructed labor saving machines, specially invented and adapted to their different purposes by various members of the firm, which do their work in the most exact manner and in the shortest possible space of time"¹⁵⁴ (fig. 3; here, strangely, we see a number of men assembling actions by hand, in fact without any "labor saving machines"). Also described are the sandpapering and polishing department (fig. 4; the

149. *Ibid.*, 34.

150. *Ibid.*, 39.

151. *Ibid.*

152. *Ibid.*

153. *Ibid.*, 40.

154. *Ibid.*, 45.

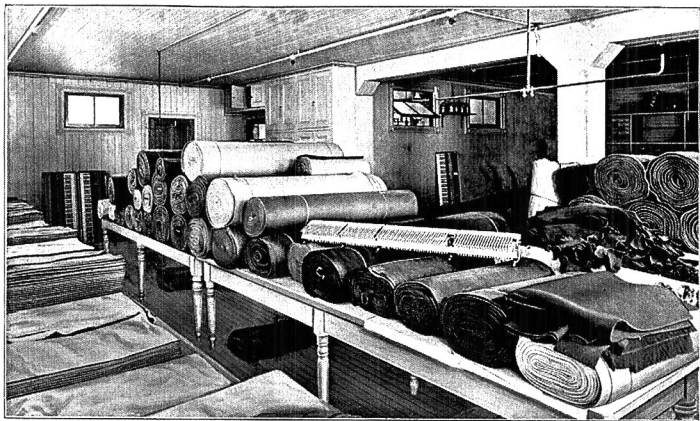


FIGURE 1. Strauch Bros., New York, The Stock Room. *The Manufacture of Piano-forte Action: Its Rise and Development* (New York: Strauch & Sons, 1891), 35. Courtesy of the Organ Historical Society Library and Archives.

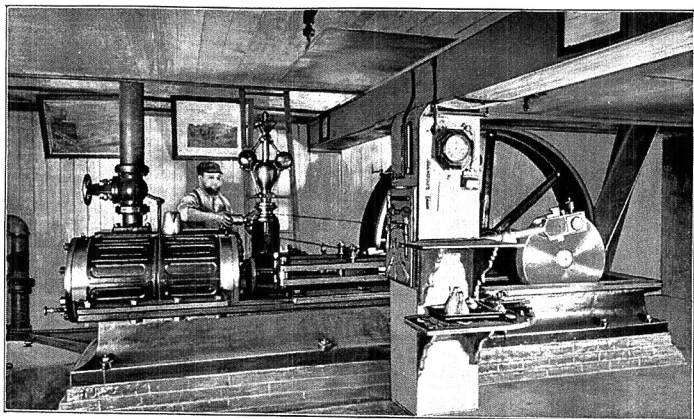


FIGURE 2. Strauch Bros., New York, The Engine Room. *The Manufacture of Piano-forte Action*, 37. Courtesy of the Organ Historical Society Library and Archives.

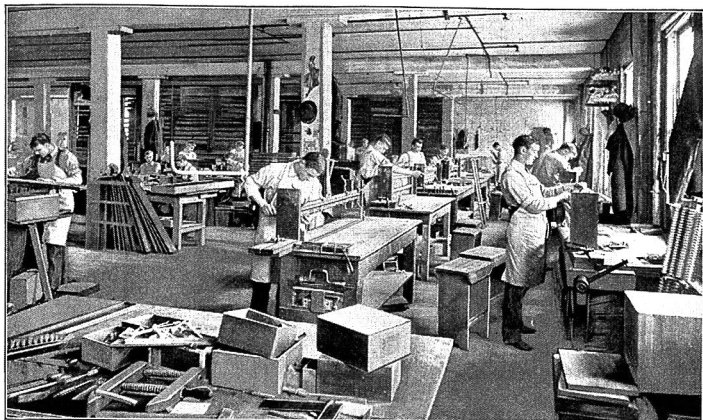


FIGURE 3. Strauch Bros., New York, A Corner in the Finishing Department. *The Manufacture of Pianoforte Action*, 47. Courtesy of the Organ Historical Society Library and Archives.

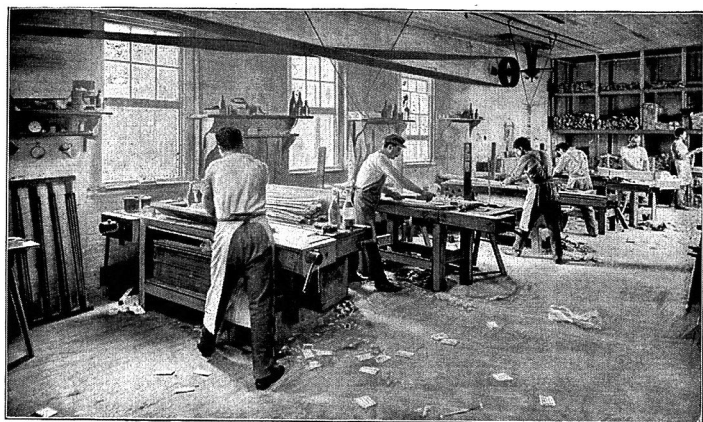


FIGURE 4. Strauch Bros., New York, Sandpapering and Polishing. *The Manufacture of Pianoforte Action*, 57. Courtesy of the Organ Historical Society Library and Archives.

“clever system” for vacuuming scraps and shavings has evidently not yet been deployed on this floor) and the department for general finishing and setting up, “where from 800 to 1,000 sets of finished actions are always on hand ready for shipment.”¹⁵⁵ The hardware department “is also fitted up as a general machine shop for the manufacture of special patented machinery and for doing general repairs.”¹⁵⁶ “The machines made here were all invented by Strauch Bros., and perform their work with human intelligence. They are mostly automatic, and merely require to be properly set, when they do the work themselves”¹⁵⁷ (fig. 5: note the maze of dangerously unshielded belts, pulleys, and shafts, so typical of nineteenth-century factory power from a central source). Of special interest is a final illustration with great human appeal entitled “A Consultation,” showing an office with the stately Peter D. Strauch, the founder of the firm, seated at the left and his equally handsome sons, junior partners William E. and Albert T. Strauch, standing at the center and right. Models of the firm’s upright and grand actions are shown, and the consultation seems to be about the latter (fig. 6).

In the late nineteenth century, piano-supply companies began to assert their positions of importance in the industry through advertisements claiming that their products were found in the pianos of the finest makers; but the great majority of supply firms still adhered to the “best-kept secret” etiquette of not revealing the names of those manufacturers. It is typical of the time that not only did most supply firms decline to identify their customers, but even the trade press tended largely to follow the understood rule of discretion. For example, in a short article on a piano-case company in 1882, the *Music Trade Review* maintained “It is outside of our province to mention the firms with whom the Union Comb Company deals. Suffice it to say, that they have among their customers some of the most prominent piano houses in this country.”¹⁵⁸ Similar discrete comments about the purchasers of piano actions made by the firm of George Bothner appeared in the same journal in 1887, although in this case at least the geographical location of one segment of his clientele is identified: “Mr. Bothner’s trade is by no means confined to the United States, for, besides supplying many of the leading manufacturers here, he furnishes nearly the entire Canadian firms. We have yet

155. *Ibid.*, 46.

156. *Ibid.*

157. *Ibid.*, 51.

158. *MTR* 25, no. 2 (Jan. 5, 1882): 165.

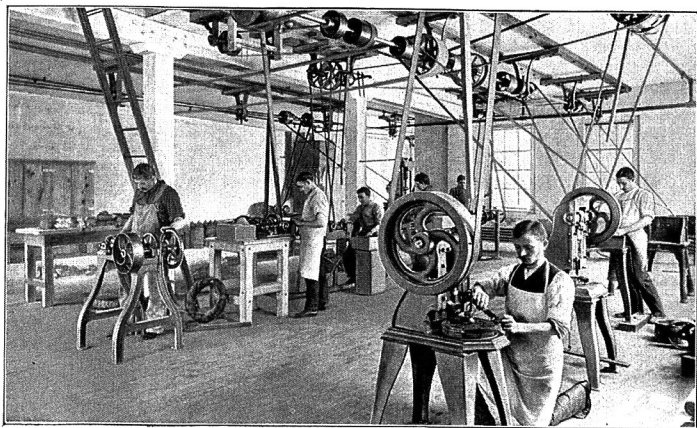


FIGURE 5. Strauch Bros., New York, The Hardware Room. *The Manufacture of Pianoforte Action*, 59. Courtesy of the Organ Historical Society Library and Archives.

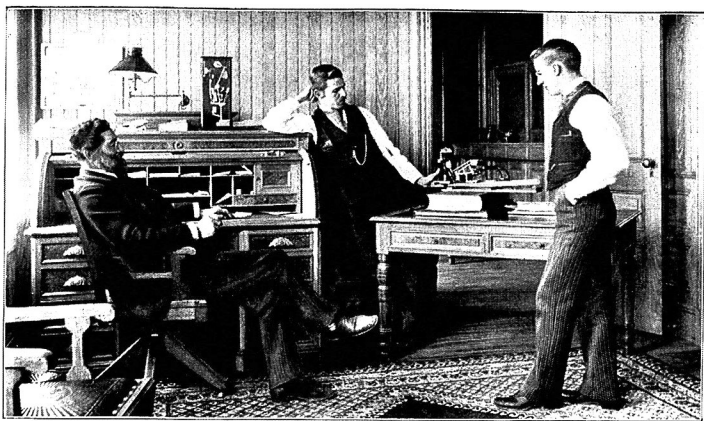


FIGURE 6. Strauch Bros., New York, A Consultation. *The Manufacture of Pianoforte Action*, 53. Courtesy of the Organ Historical Society Archives.

to learn of any house, after a trial, that is not perfectly satisfied with [the] quality and price of the Bothner actions.”¹⁵⁹

Starting in the 1890s and extending into the early years of the twentieth century, a few advertisements of supply houses went beyond a simple announcement of their wares, venturing to address manufacturers and dealers directly (although anonymously). An ad issued by the Staib-Abendschein company of New York in 1904 is a somewhat cautious example of this new direction: “Ask for the Staib-Abendschein piano action if you desire no complaints after the piano is sold.”¹⁶⁰ The prominent firm of Wessell, Nickel & Gross, known to be in the forefront of novel methods of public relations, went even a step further to address the buying public directly in a full-page ad appearing in the *Music Trade Review* in early 1898. It presented the firm’s trade-mark logo, along with the bold statement: “When Purchasing a Piano[,] See that the action bears this trade mark. Then you know that you have the best action that mechanical skill can devise. The Wessell, Nickel & Gross piano actions have won the title, Standard of the World.”¹⁶¹ This firm had already revealed the identity of a distinguished customer in February, 1895, when they issued a notice that they had “received a large order recently for their celebrated actions from the Broadwood house in London.”¹⁶² An extreme example of a music-trade journal that openly revealed the clients of a piano-supply house had appeared a dozen years earlier, in 1883, in an article on the action maker George W. Seaverns published in the *Musical Courier*. Seaverns’s customers at the time are identified as Henry F. Miller; Mason & Hamlin; C. C. Briggs & Co.; Woodward & Brown; Guild, Church & Co.; Vose & Sons; Hallett & Cumston; and Wm. Bourne & Son (all of Boston); as well as J. & C. Fischer (of New York).¹⁶³ Wessell, Nickel & Gross appeared once again in the spotlight in two unusual testimonial letters from piano manufacturers published in the *Musical Courier* in 1886. These were in response to a previous letter to the editor that asked whether Behr Brothers & Co. and Augustus Baus & Co. both used the Strauch action in their pianos.¹⁶⁴ The responses of both firms appeared in the next issue. From Augustus Baus & Co. came the statement:

159. *MTR*2 10, no. 15 (Mar. 5, 1887): 225. We are led to believe that, even if the *Music Trade Review* editors had heard any such complaints, they were surely too polite to reveal their authors.

160. *MTR*2 39, no. 22 (Nov. 26, 1904): 33.

161. *MTR*2 26, no. 3 (Jan. 15, 1898): 8.

162. *MTR*2 20, no. 8 (Feb. 23, 1895): 17.

163. *MC* 7, no. 25 (Dec. 19, 1883): 368.

164. *MC* 12, no. 12 (Mar. 24, 1886): 194.

We desire to state that we are not using Strauch Brothers' action, but that we have been using the Wessel, Nickel & Gross action almost from the day we started to manufacture pianos, and we believe them to be the best American action manufacturers. We have lately also used some Bothner actions, and have furthermore imported the Herrburger & Schwander celebrated French action, which in our opinion is the *finest and best made action the world can produce*.

An identified member of the direction of Behr Brothers & Co. wrote the following:

In answer to your inquiry we will state that we have used only one kind of action ever since the foundation of our business, and that is the action manufactured by Wessel, Nickel & Gross, the renowned action makers. We will take advantage of this opportunity to state to you that, for elegance of workmanship, precision of construction, completeness of details, scientific adaptability to the touch and remarkable durability, there is no action which, in our opinion, can equal it.

The statement continues with additional words, equally complimentary.¹⁶⁵ Whether this entire exchange was legitimate or instead a cleverly designed advertising campaign, the fact remains that Wessell, Nickel & Gross came out very favorably indeed.

One piano manufacturing firm that ignored standard practice and openly solicited suppliers before the fact was Herlich & Co., a small maker of upright pianos, which placed an advertisement in the *Music Trade Review* in three consecutive issues in February, 1887, announcing, to the trade, the opening of its factory in Patterson, NJ. It begins: "Important to Supply Manufacturers. We are now prepared to receive cash quotations for all kinds of piano materials of the highest quality only."¹⁶⁶ An account of a visit to the Herlich factory, published in the *American Art Journal* in September, 1888, reported:

They have a complete plant of wood-working, action making and case-making machinery, which is one of the secrets of their being able to furnish the excellent piano they turn out at so moderate a price. Herlich & Co. manufacture their own actions, cases, trusses and backs. In fact, nearly everything used in the construction of the piano-forte, with the exception of the ivory key boards and the casting of the iron frames.¹⁶⁷

Less than a year later, the Herlich factory burned down, plunging the seriously undercapitalized company into default. In the aftermath, a

165. Ibid.

166. *MTR* 210, no. 13 (Feb. 5, 1887): 201.

167. *AAJ* 50, no. 7 (Sept. 1, 1888): 109.

meeting of the firm's creditors was held, and the published list of attendees revealed the identity of Herlich's suppliers (see Appendix 3).¹⁶⁸ Thus, in contrast to a claim made in the article quoted above, it appears that Herlich Co. did not, in fact, make all of their own actions (cf. Strauch Bros., F. W. Young, and possibly also Hepburn & Co.). Other piano manufacturers listed in Appendix 3, whose suppliers were revealed similarly through adverse circumstances, are Joseph P. Hale; Grovesteen, Fuller; New England Piano; Haines Bros.; C. C. Briggs & Son; and Keller Bros.

An unusual document in which a leading piano manufacturing company openly revealed some of its suppliers, clearly with the consent of the latter, was published in the *New York Daily Tribune* in 1894.¹⁶⁹ Part of a full-page advertisement of Chickering & Sons Co., this takes the form of a testimonial statement by the listed supply companies that they have provided "sundry raw materials used in piano manufacturing" to Chickering & Sons, and that the said firm "invariably insist upon buying only the highest grade and quality of our goods." Seventeen companies, located in New England and New York, are listed, including six that are well known (Alfred Dolge & Son; Hammacher, Schlemmer; Richard Ranft; Comstock, Cheney; Tinguet, House; and Washburn & Moen), while the remaining eleven are known as piano-supply houses only through this association.¹⁷⁰ Clearly, by 1894, Chickering & Sons had become more reliant on the supply industry than it had been in the 1850s.

A decided step toward public acknowledgment of the piano-supply industry, including a statement in support of its legitimacy, was presented by Edward Lyman Bill, editor and proprietor of the *Music Trade Review*, in his announcement of a new continuing column, "The Supply Trade," starting in his journal in the issue for December 28, 1895. Bill wrote:

In no branch of the piano trade has there been greater activity displayed during the past year than in the line of supplies, embracing the manufactures of plates, actions, felts, sounding boards, ivory and ebony keys, veneers, varnish, strings, legs, trusses, ornamental panels, pedals, stools, knobs, pipes and reeds, etc. This is due chiefly to the fact that the tendency of the age is toward specialism in the trades, just as in the arts and sciences. Years ago

168. *MTR* 212, no. 22 (June 20, 1889): 397.

169. *New York Daily Tribune* (Dec. 9, 1894): 4.

170. All of the seventeen companies are identified in Appendix 3, which supplies the product category—not identified in the advertisement—from other sources for all companies except those few whose names include the product in question.

manufacturers found it necessary to manufacture the different parts of the instruments themselves, but the rapid growth and expansion of the piano and organ trade led to a systematic division of labor and to the growth of the different houses engaged in the manufacture of the supplies just enumerated. Makers of pianos and organs effected a saving of time and money and unnecessary effort in manufacturing all parts themselves, when they were able to secure these specialties just as well, if not better made, from those houses which are especially given to their production.¹⁷¹

This, it seems, is the antidote to the hardships that supply manufactures had to overcome, as illustrated by the action maker George W. Seaverns at the beginning of his career (see above).

The piano-supply industry thus gradually began to acquire a positive identity—both within the industry and in the public at large—that would continue through the prosperous early decades of the twentieth century, until the competition for home entertainment created by the invention of the phonograph and the radio, coupled with the financial hardships wrought by the Great Depression, changed the American piano business forever.

171. *MTR* 21, no. 23 (Dec. 28, 1895): 9. Although Bill gives lip service to organs in his inclusion of knobs, pipes, and reeds, the examples that follow in his column in this and subsequent issues exclusively concern the making of pianos. Four years earlier, Bill had published his *General History of the Music Trades of America* (New York: Bill & Bill, Publishers, 1891), which—like the *Music Trade Review*—concentrates mostly on the piano industry. The relatively small section of this book devoted to the supply trade presents biographies of selected (paying?) piano-parts manufacturers, not all of them major: Alfred Dolge (felt, hammers, hardware, etc.); Wessell, Nickel & Gross, Strauch Bros., and George Bothner (actions); Homer D. Bronson (bronze panels); Louis Gehlert and David. H. Schmidt (felt, hammers); Goddard & Manning (cases); and Augustus Newall (ivory, keys).

APPENDIX I

**American Music Trade Journals Cited in the Present Article
(Sigla, Consecutive Titles, and Consecutive Editors)**

*TMW**The Message Bird* (1849–51)*Journal of the Fine Arts* (1851)*Journal of the Fine Arts and Musical World* (1851–52)*The Musical World and Journal of the Fine Arts* (1852)*The Musical World and New York Musical Times* (1852–54)*Musical World* (1854–55)*New York Musical World* (1856–57)*The Musical World* (1858–60)

Richard Storrs Willis (1852–60)

Oliver Dyer (1852)

Augustus Morand (1855–57)

Edward Hodges (1856–57)

J. H. Wardwell (1860)

*AAJ**Watson's Weekly Art Journal* (1864–66)*American Art Journal* (1866–67)*Watson's Art Journal* (1867–75)*American Art Journal* (1876–)

Henry C. Watson (1864–75)

William M. Thoms (1876–)

*MTR1**Music Trade Review* (1875–80)

John Christian Freund (1875–80)

*MTR2**Music Trade Journal* (1879–80)*Musical Critic and Trade Review* (1880–1882/85)*Music Trade Review* (1882/85–)

Charles Avery Wells (1879–1886/87)

Jefferson Davis Bill (1882/85–1889/91)

William G. Carr (1886–87)
Edward Lyman Bill (1887/89–)

MC

Musical and Sewing Machine Gazette (1880)
Musical and Sewing Machine Courier (1880)
Musical Courier (1880–)
William E. Nickerson (1880–85)
Otto Floersheim (1885–94)
Marc A. Blumenberg (1885–)

FMD

Freund's Weekly (1883–84)
Freund's Music and Drama (1884–92)
John Christian Freund (1883–85)
Amelia Lewis (1885–86)
Harry Edward Freund (publisher 1883–92, editor 1886–92)

TMA

Freund's Musical Weekly (1893–96)
The Musical Age (1896–1914)
Harry Edward Freund (1893–14)

APPENDIX 2

**American Piano-Supply Manufacturers and Dealers of the
Nineteenth Century**

An initial "The" and a final "Co." or "& Co." or "Ltd." are omitted from names of companies. Companies are listed in alphabetical order (by first surname, or first word in a non-eponymous company name) within each category. Many categories comprise two or more items that are similar in function or in substance, or simply were always combined (e.g., "stools and scarfs"); in many (but not all) cases, these items were manufactured or retailed by all of the listed companies. Terms and spellings are from the period. Alternate forms of names are placed in parentheses when they appear with equal frequency in the sources; otherwise, obvious isolated errors are not reproduced here. States are not identified for well-known cities whose locations are unambiguous: Baltimore, Boston, Buffalo, Cincinnati, Chicago, Indianapolis, Minneapolis, New York, Philadelphia, and San Francisco. Where known, locations of factories are given here before locations of offices and/or showrooms. Years are cited by their last two digits. Since the latest year reported here is 1900 ("00"), citation of this year is not meant to indicate termination. Inclusive years indicate the known period of activity of the company in question in a given city, and they are normally arrived at by connecting the earliest and latest found dates corresponding to that company and city; a hiatus will be indicated here, however, for an intervening period that either 1) consists of five or more years, none of which are recorded in the sources, or 2) consists of any number of years, during which inactivity is shown in the sources. In some cases the latest date of activity coincides with the death of the company owner and is usually not identified as such. In cases in which the known period of activity is significantly earlier than the death date, however, the latter is placed in parentheses and identified by a "†" sign. In rare cases, a "?" sign appears in connection with a company known to have existed, but for which no dates have been found. Sources of information presented here are city directories; articles and advertisements in trade journals and other periodical publications; Daniel Spilane, *History of the American Pianoforte, Its Technical Development, and the Trade* (New York: D. Spillane, 1890); and Alfred Dolge, *Pianos and Their Makers*, vol. 1: A

Comprehensive History of the Development of the Piano from the Monochord to the Concert Grand Player Piano (Covina, CA: Covina Publishing Company, 1911), vol. 2: *Development of the Piano Industry in America since the Centennial Exhibition at Philadelphia, 1876* (Covina, CA: Covina Publishing Company, 1913). Information from city directories is credited not to the year of publication (unless independent evidence indicates that year), but to the previous year—i.e., the year in which the larger part of the information was collected. (Some directories are indicated as covering two consecutive years; in this case the first year is credited.) Not listed are piano lamps, separate music desks and racks, music-leaf turners, piano-moving equipment, and hand-strengthening devices. Patents are also omitted, unless the items in question were manufactured and marketed separately, or at least exhibited publically. Cross-references (in boldface) refer to letter (category) and number. Agencies are reported only for American companies or foreign companies with an American address. “Agt” = “agent for.” “Con” = “continued by.” “Cnt” = “connected with.” “Ope” = “operated by.” “Opt” = “operator of.” “Pre” = “preceded by.” “Sam” = “same as.” “See” = “see (also).”

A. Actions

1. Abbott Piano Action (James Abbott & Son). Fort Lee, NJ, and New York, 58–00.
2. American Piano Action. Boston, 92-97. *Ope* **A22**.
3. American Piano-Forte Action. New York, 82–83.
4. Barboen, Bates & Mayberry. Cambridgeport, MA, 89.
5. F. Behrens. New York, 78.
6. Frank Benjamin. New York, 61.
7. B. Bennett. New York, 59.
8. Francis Bonneau & Bro. New York, 74–77. *Pre* **A9**. *Con* **A10**.
9. Francis Bonneau, Jr. New York, 55–74. *Con* **A8**. *See* **F7**.
10. Joseph J. Bonneau. New York, 78. *Pre* **A8**.
11. Boston Piano Supply. New York, 98–00.
12. Boston Piano-forte Action Mfg. Cambridgeport, MA, 73.
13. Adolf A. Bothner. New York, 81.
14. George Bothner. New York, 65–00. *Pre* **A55**. *See* **K3**.
15. Bredehorst. New York, 85.
16. Benjamin J. Browning. New York, 62–72.
17. J. J. & W. T. Browning. New York, 72.

18. Andrew Brunet. New York, 42–56.
19. Calm & Blath. New York, 68–70. *See* **E2, F14, H26, I12, L3, P12.**
20. A. C. Cheney Piano Action. Castleton, NY, 92.
21. Comstock, Cheney. Centrebrook, CT, 85–92; Ivoryton, CT, 92–00.
Pre **A65.** *See* **F18, I18.**
22. Consolidated Manufacturers. Boston, 93. *Opt* **A2.**
23. George L. Darracott. Milford, NH, 60–61.
24. Davenport & Treacy. New York, 99.
25. Jesse J. Davis. New York, 54–77. *See* **A88, A90, D94.**
26. DeVine Bros. Buffalo, 75–76. *Con* **A27.**
27. P. F. DeVine. Buffalo, 77–00. *Pre* **A26.**
28. Dietrich & Staib. New York, 66. *Cnt* **A29?**
29. W. & L. Dietrich. New York, 64–65. *Cnt* **A28?**
30. Dippel & Schmidt. New York, 72–83. *Pre* **A31.** *Con* **A61.**
31. Dippel, Wihler & Schmidt. New York, 65–70. *Pre* **A95,** *Con* **A30.**
32. John F. Doellner. New York, 68–78. *See* **E4, F22, H44, I22.**
33. Dunn & Laudenberger. New York, 66.
34. Dyer & Hughes. Foxcroft, ME, 86.
35. Charles Eckert. New York, 56. *See* **D32, I24.**
36. Sylvanus Elliot. Winchester, MA, 77–97.
37. F. Engelhardt & Sons. St. Johnsville, NY, 89–.
38. Anton Fiesler. New York, 69.
39. Frederick Frickinger. Nassau, NY, 37–89. *Con* **A41.**
40. C. F. Goepel. New York, 93–00. *See* **B14, E7, G3, H60, I28, K19,**
L7, P27.
41. Gorgen & Grubb. Nassau, NY, 89–98. *Pre* **A39.** *Con* **A42, A45.**
42. Gorgen Piano Action. Castleton, NY, 99–00. *Pre* **A41.**
43. Bruno Greiner. New York, 85–86.
44. Grubb & Kosegarten Bros. Nassau, NY, 99–00. *Pre* **A45.**
45. Grubb & Meyer. Nassau, NY, 98–99. *Pre* **A41.** *Con* **A44.**
46. August Gruenberg. New York, 83.
47. Alfred Haines. New York, 55–61.
48. Hammacher, Schlemmer. New York, 98. *See* **E9, F30, G4, H67, I34,**
K22, L8, O81, P32.
49. L. F. Hepburn. New York, 83–97. *Con* **A50.** *See* **F31, H72, N8.**
50. L. F. Hepburn, Jr. New York, 97–99. *Pre* **A49.**
51. C. J. Heppe. Cambridgeport, MA, 82–93.
52. C. J. Heppe & Sons. Cambridgeport, MA, 92.
53. Herrburger, Schwander & Son. (Paris) & New York, 85–95. *Con*
A54. *See* **A84, A96, A116.**

54. Joseph Herrburger. (Paris) & New York, 98–00. *Pre* **A53**. *See* **A84**, **A116**.
55. Herter & Bothner. New York, 65. *Pre* **A56**. *Con* **A14**.
56. Martin Herter. New York, 57–65. *Con* **A55**.
57. George F. Holmes. New York, 61
58. George Howe. Boston, 54–67.
59. Imperial Piano Action. Boston, 96–97.
60. Improved Piano Action. Macon, MO, 00.
61. V. J. Ison. New York, 84–89. *Pre* **A30**.
62. Jorgensen & Nerwick. New York, 84. *Pre* **A63**.
63. Niels Jorgensen. New York, 83. *Con* **A62**.
64. Edward Keith. Buffalo, 61–62.
65. A. P. Kelley. Cambridgeport, MA, 77–86. *Con* **A21**.
66. Joseph Kohnle. New York, 65.
67. John S. Koons. New York, 54–56.
68. Frederick Koth. New York, 55–76. *See* **E11**.
69. Frederick Kraemer. New York, 86.
70. Kurtzmann & Hinze. Buffalo, 64. *Con* **A71**.
71. Charles Kurtzmann. Buffalo, 65–00. *Pre* **A70**.
72. Adolph Krumnow. New York, 98.
73. Gottfried Landenburger. New York, 77–80. *Pre* **A75**.
74. Landenburger & Hutchins. New York, 66–74. *Con* **A75**.
75. Landenburger & Son. New York, 75–76. *Pre* **A74**. *Con* **A73**.
76. Merkel & Mersman, St. Louis, MO, 92.
77. Jacob Meyer. New York, 78. *Con* **A78**.
78. Philip Meyer. New York, 79–82. *Pre* **A77**.
79. Carl Mitke. New York, 97.
80. Thomas Molineaux. (?), 85–91.
81. Andrew Orlander. New York, mid-century.
82. Osterberg Piano Action Mfg. Portland, ME, 91.
83. William F. Owen. New York, 54–56.
84. August Pallé. New York, 97–00. *Ag* **A53**, **A54** (*Agency Pre* **A116**).
85. Piano & Organ Supply. Chicago, 71–00. *See* **F43**, **I52**.
86. Joseph Rautenhaus. New York, 57. *See* **E20**, **I57**.
87. Julius Richter. New York, 56.
88. Charles H. Rogers. New York, 55–61. *See* **A25**, **A90**, **D94**.
89. Charles Rogers II. New York, 64.
90. Rogers & Davis. New York, 58. *See* **A25**, **A88**, **D94**.
91. Roth & Engelhardt. New York, 88–00; St. Johnsville, NY, New York, and Chicago, 89–00. *See* **B20**.

92. John [S]anter. Brooklyn, NY, 99.
93. William Schaffer. New York, 77.
94. George Schlemmer. New York, 77–78.
95. Schmidt, Dippel & Wiehler. New York, 64. *Con* **A31**.
96. Schwander Action. New York, 67–. *See* **A53**.
97. Seaverns Piano Action (George W. Seaverns & Son). Cambridgeport, MA, 51–00.
98. Jacob P. Setzer. New York, 69.
99. John Siemering. New York, 97. *See* **F51**.
100. David Smith. New York, 60–67. *Pre* **A107**.
101. John P. Spangler. New York, 65.
102. Spofford. Dolgeville, NY, 87.
103. Staib-Abendschein. New York, 99–00. *Pre* **A105**.
104. John Staib. New York, 61–67. *Con* **A105**.
105. Staib Piano Action Mfg. New York, 90–99. *Pre* **A104**. *Con* **A103**.
106. Standard Action. Cambridgeport, MA, 88–97.
107. Stebbins & Smith. New York, 54–59. *Con* **A100**.
108. Stedman & Kelly. Cambridgeport, MA, 73.
109. M. Steinert & Sons (“Steinertone”). Boston, 96–00; New York, 00.
110. Steinhart & Blankenburg. New York, 66–67. *Con* **A111**.
111. Steinhardt & Heyne. New York, 67. *Pre* **A110**.
112. Strauch Bros. (Strauch & Sons). New York, 67–00. *See* **F58**, **I70**.
113. H. W. Symmes. Winchester, MA, 77–97.
114. Syverson & Lydecker. New York, 61. *Pre* **A115**. *See* **F60**.
115. Ole Syverson. New York, 56. *Con* **A114**. *See* **F61**, **I71**.
116. William Tonk & Bro. New York, 85–97; Chicago, 95. *See* **A84**, **I73**, **O199**. *Agt* **A53**, **A54** (*Agency Con* **A84**).
117. Sylvester Tower. Cambridgeport, MA, 80–00; New York, 86. *See* **I74**.
118. Cornelius Vanriper. New York, 58.
119. Wasle. New York, 77–00. *Pre* **A120**. *See* **I80**.
120. Wasle, Gruber & Jörgensen. New York, 76–77. *Con* **A119**.
121. Weser Bros. New York, 82.
122. Wessell, Nickel & Gross. New York, 74–00.
123. L. Westlund. New York, 55–56.
124. Whyte & Dunn. New York, 64–65. *See* **F68**.
125. J. B. Wiggan. Cambridgeport, MA, 73.
126. Wilcox & White. Meriden, CT, & New York, 99. *See* **B31**.

127. Wood Bros. Cambridgeport, MA, 82–87. *See* **H164, I86.**
128. Woodman & Stedman. Cambridgeport, MA, 55.
129. Woodward & Brown. (?), 81.
130. Francis W. Young. Brooklyn, NY, and New York, 61–99. *See* **A131.**
131. Francis W. Young & John J. White. New York, 68–69. *See* **A130.**

B. Attachments and Player Attachments

1. Aeolian (“Pianola”). New York, 98–00.
2. Adek Manufacturing (“Pianotist,” “Pianartist”). New York, 00.
3. American Piano Manufacturing. (“Harmonist”). St. Johnsville, NY, and New York, 00. *Pre* **B20?**
4. American Self-Playing Piano. New York, 00.
5. Automaton Piano. New York, 95–97.
6. Autono Pneumatic Piano. Hazleton, PA, 98. *Pre* **B30.** *Con* **B20.**
7. John Church (“Plectraphone”). Cincinnati, OH, 94–97. *Con* **B11.**
8. Echo Music. New York, 97.
9. Elbridge Electrical Mfg. (“The Maestro”). Elbridge, NY, 98–99.
10. Electric Self-Playing Piano. New York, 95.
11. Everett Piano (“Plectraphone”). Boston, 97–98. *Pre* **B7.** *Con* **B15.**
12. Everybody’s Pianist. Boston, 97.
13. Friedenrich Adjustable Piano Mute. New York, 91–97. *See* **B14**
14. C. F. Goepel. New York, 96–98. *See* **A40, E7, G3, H60, I28, K19, L7, P27; Agt B13, B24, B27.**
15. Harvard Piano (“Plectraphone”). Boston, 98. *Pre* **B11.**
16. C. J. Heppe & Sons (“The Vibraphone”). Cambridgeport, MA, 92.
17. Ludwig (“Claviola”). New York, 00.
18. Maestro. Elbridge, NY, 99.
19. Melville Clark Piano (“Apollo”). Chicago, 00.
20. Peerless Piano Player (“Harmonist”). St. Johnsville, NY, and New York, 99–00. *Pre* **B6, B25.** *Con* **B3?** *See* **A91.**
21. J. H. Phelps (“Phelps Harmony Attachment”). Sharon, WI, 93–95.
22. Pianophone (“Twentieth Century”). New York, 95–00.
23. Polk Italian Harp. Valparaiso, IN, 92–94.
24. Robinson (“Patent Muffler Rails”). Richmond, IN. (?), 98. *See* **B14.**
25. Roth & Engelhardt (“Autono,” “Peerless”). St. Johnsville, NY, and New York, 99. *Con* **B20.**
26. Smith Lyraphone. Baltimore, MD, 00.
27. J. W. Stevens. New York, 96–97. *See* **B14.**

28. Tonograph. New York, 00.
29. Weber Electrical Manufacturing. Brooklyn, NY, 00.
30. Weber, Goolman ("Autono"). Brooklyn, NY, and New York, 97–98.
Con B6.
31. Wilcox & White ("Symphony," "Angelus Orchestral"). Meriden, CT, 94–00. *See A126.*

C. Bronze Panels

1. Homer D. Bronson. Beacon Falls, CT, 89–00. *See H24.*
2. National Papeterie. Springfield, MA, 86–87.

D. Cases, Tops, and Backs

1. Allen & Jewitt. Leominster, MA, 61–64; (?)–69.
2. Alton Mfg. Alton, NY, 91. *See O7.*
3. M. T. Anglin. Leominster, MA, 73.
4. Willett Barton. New York, 66.
5. Henry Behning. New York, 64–65. *Con D6. See I5.*
6. Behning & Klix. New York, 66. *Pre D5.*
7. Behr Bros. New York, 73–82. *Pre D8.*
8. Behr & Peck. New York, 75–78. *Con D7.*
9. Julius Breckwoldt. New York, 91. *See H22, N1, P9, R9.*
10. Alanson E. Brooks. New York, 56–58. *See K7.*
11. Burrell & Dennett. Boston, 79–90. *Con D76.*
12. Cable & Sons. 82–90+.
13. Campion Piano Case. New York, 94–95; Newburgh, NY, 94–95; Dolgeville, NY, 99.
14. Champion & Dale. New York, 93.
15. Champion Piano Case Works. West End, NY, 95.
16. C. J. Cobleigh Piano Case. Leominster, MA, 79–89; Terre Haute, IN, 90–96. *See D93.*
17. Joseph N. Courtade. New York, 72–00.
18. Cowdry, Cobb, Nichols. Winchester, MA, 77–85.
19. J. E. Davis. Cortland, NY, 99–00.
20. Julian Davis. New York, 65.
21. Robert V. Davis. New York, 61. *See K13.*
22. Denninger & Haaf. New York, 80. *Pre & Con D23?*
23. Francis (Frank) Denninger. New York, 79–90. *See D22.*
24. Dielmann & Funk. New York, 70–78. *Pre D26. Con D27.*
25. Dielmann & Lincks. New York, 82–00. *Pre D27.*

26. Dielmann, Thurm & Funk. New York, 67. *Con* **D24**.
27. Charles F. Dielmann. New York, 79–82. *Pre* **D24**. *Con* **D25**.
28. Alfred Dolge & Son. Dolgeville, NY, 94–96. *Pre* **D68**. *Con* **D29**. *See* **F24, H46, N3, P19**.
29. Dolgeville Piano Case. Dolgeville, NY, 94–98. *Pre* **D28**.
30. Jacob Doll. New York, 71–00. *See* **H47, K14, P20**.
31. Charles Durner. New York, 62.
32. Charles Eckert. New York, 64. *See* **A35, I24**.
33. Nathan Farley, New Boston, NH, 86.
34. Faxon Piano Case. Concord, NH, 90.
35. E. Flachman. New York, 92.
36. Emily Fleischmann. New York, 85–91. *Pre* **D37**.
37. Michael Fleischmann. New York, 84. *Con* **D36**.
38. Foster. Rochester, NY, 86.
39. George Frick (Frick Piano Case), Erving, Wendell, and Farley, MA, 93–97.
40. Friedery, Knudsen. New York, 98.
41. John Gertz. Chicago, 84.
42. Goddard & Manning. Athol, MA, 89–97.
43. J. C. Gove. Leominster, MA, 55.
44. Grand Rapids Piano Case. Grand Rapids, MI, and New York, 91–97.
45. S. Grollman & Sons. Chicago, 91.
46. Henry Haas & Son. New York, 98. *See* **H65**.
47. Edward C. Harris. New York, 74–78. *See* **H68**.
48. Herlich. Paterson, NJ, 89.
49. Heustis & Morse. Leominster, MA, 55.
50. Howard & Gove. Leominster, MA, 55.
51. Johannessen Manufacturing. Erie, PA, 96.
52. Kaler & Shaw. Hudson, MA, 73.
53. Kapp. New York, 93–94.
54. Kavill. Boston, 71.
55. Elizabeth Kern. New York, 91–92.
56. D. Krakauer. New York, 82.
57. Kruger & Son. New York, 86.
58. Howard M. Lane. Leominster, MA, 57–c.77. *Pre* **D59**.
59. J. C. Lane. Leominster, MA, c.45–57. *Con* **D58**.
60. Lang & Robinson. Meredith, NH, 61–94.
61. John A. Lang. Meredith, NH, 86–94†.

62. Philip J. Lawrence. Easton, PA, 87.
63. Leominster Furniture. Leominster, MA, 89.
64. Henry Lindemann. New York, 67.
65. J. C. Livingston. Little Falls, NY, 94
66. Lockey Bros. Leominster, MA, 71–87. *Pre* and *Con* **D67**. *See* **D68**.
67. John H. Lockey Piano Case. Leominster, MA, 50–61, 87–99. *Con* and *Pre* **D66**.
68. Joseph P. Lockey. Leominster, MA, 85–88; Albany, NY, 92–94. *Con* **D28**. *See* **D66**, **O116**.
69. Jared J. Looschen Piano Case. Paterson, NJ, 85–00.
70. Loring-Anderson. Chicago, 90.
71. Charles W. McGinnis. New York, 82. *See* **K36**.
72. J. H. Manson. Boston, 91–93.
73. Meginnis & Person. New York, 82.
74. William Miller. New York, 55. *See* **O138**.
75. Moore, Sweeney. Boston, 92–97. *Pre* **D76?**.
76. Moore, Sweeney & Grady. Boston, 90–91. *Pre* **D11**. *Con* **D75?**.
77. Morgenstern & Mangelmann. New York, 80–81.
78. Moses & Tedford. Boston, 82–83.
79. Charles Muller. Farmingdale, NY, 96–97.
80. New York Piano Case. New York, 95–98.
81. New York Pianoforte Key. Peterborough, NH, 97. *See* **F40**, **I49**.
82. John H. Niemann. New York, 84–85.
83. George R. Oliver. Cambridgeport, MA, 96–97.
84. Olson & Comstock. Chicago, 85–86. *See* **O156**.
85. Parker & Young. Lisbon, NH, 97. *See* **N10**.
86. M. S. Phelps Mfg. Brockport, NY, 91. *Con* **D87?**.
87. Phelps & Lyddon. Rochester, NY, 93–98. *Pre* **D86?**.
88. Duncan Phyfe (attribution). New York, c.1815–c.1835.
89. Sawyer & Levi W. Porter. Leominster, MA, 61–80.
90. A. G. Reckard. Leominster, MA, 86.
91. Charles G. Reichert. New York, 83.
92. Rice & Holden. Leominster, MA, 94–97.
93. Richardson Piano Case. Leominster, MA, 91–99. *See* **D16**.
94. Charles H. Rogers. New York, 61. *See* **A25**, **A88**, **A90**.
95. Henry Rogers. New York, 94.
96. Jacob Schwamb Jr. Arlington, MA, 73–77, 86.
97. Theodore Schwamb. Arlington, MA, 73–77, 86.
98. Ludwig Schwartz. New York, 86.

99. J. H. Shaw. Hudson, MA, 77.
100. Bernard N. Smith. New York, 81–86. *See* **K58**. *Con* **D102**.
101. Freeborn G. Smith. Leominster, MA, 81–99.
102. Smith & Shaw. New York, 84. *Pre* **D100**.
103. John P. Spanger. New York, 66.
104. Charles Stevenot. New York, 82–84.
105. Charles S. Stone. Erving, MA, 85–00; Stoneville, MA, 93. *Pre* **D106**. *See* **K63**.
106. J. E. Stone & Sons. Erving, MA, 51, 82–87†. *Con* **D105**. *See* **K64**.
107. W. E. Stone. Erving, MA, 73. *See* **K66**.
108. Stultz. New York, 98–00.
109. Twombly & Dore. Alton, MA, 91.
110. Union Comb. Leominster, MA, 80–85. *See* **H140**.
111. Wehde & Sautter. Boston, 82–84. *Con* **D112**.
112. Carl Wehde. Boston, 84–98. *Pre* **D111**.
113. Wellington Piano Case. Leominster, MA, 95–00.
114. Gustav H. Woll. Boston, 99–00.
115. Yorkland & Shults. St. Johnsville, NY, 95.

E. Cloth, Leather, and Punchings

1. William P. Butterfield & Son. Quincy, MA, 77.
2. Calm & Blath. New York, 68–70. *See* **A19**, **F14**, **H26**, **I12**, **L3**, **P12**.
3. Louis Cehlert. New York, 92–93. *See* **F15**.
4. John F. Doellner. New York, 64–71. *See* **A32**, **F22**, **H44**, **I22**.
5. Alfred Dolge. New York, 69–71. *See* **F23**, **H45**, **N2**, **P18**.
6. Louis Gehlert. New York, 86–00. *See* **F27**, **O69**.
7. C. F. Goepel (“Geyer’s Celebrated German Buckskins”). New York, 93–95. *See* **A40**, **B14**, **G3**, **H60**, **I28**, **K19**, **L7**, **P27**.
8. George Gueutal. New York, 65–67. *See* **F29**, **H62**, **I32**, **P29**.
9. Hammacher, Schlemmer. New York, 98. *See* **A48**, **F30**, **G4**, **H67**, **I34**, **K22**, **L8**, **O81**, **P32**.
10. Keller, Blessing & Schunk. New York, 64. *See* **I37**, **K32**.
11. Frederick Koth. New York, 55–76. *See* **A68**.
12. F. W. Kraft. Bronxville, NY, 84–85.
13. I. G. Marston. Boston, 90–94.
14. New England Piano & Organ Supply. Boston, 82. *See* **F38**.
15. Nichols & Leonard. Boston, 81. *Cnt* **E16**?
16. F. H. Nichols. Boston, 80–81. *Cnt* **E15**?
17. Joseph Noone’s Sons. Peterborough, NH, 99.

18. I. F. Palmer. Middletown, CT, 99.
19. Richard Ranft. New York, 55–78. *See* **F46, H114**.
20. Joseph Rautenhaus. New York, 64. *See* **A86, I57**.
21. Geo. H. Taylor. Gloversville, NY, 90.
22. Robert M. Webb. Brooklyn, NY, and New York, 90–97. *See* **F66, H151, O206, P81**.
23. Charles Weickert. New York, 60–67. *See* **F67, H152**.
24. White Bros. Boston, 82–87. *Con* **E25**.
25. White Bros. & Sons. Boston, 89–95. *Pre* **E24**. *Con* **E26**.
26. P. & O. White & Son. Boston, 95–00. *Pre* **E25**.

F. Felt, Hammers, and Hammer Covering

1. Alexander. New York, 89. *Pre* **F20**.
2. American Felt. Boston, 98–00; New York, 99–00. *Pre* **F3, F6, F8, F16, F64, F65**. *See* **H3**.
3. American Felt Mfg. Dolgeville, NY, 98–99. *Pre* **F24**. *Con* **F2**.
4. Armour Felt Works. Chicago, 98–99.
5. Binghamton Felting. Binghamton, NY, 00.
6. Bloodgood & Taylor (Essex Mills). Picton, NJ, 99. *Con* **F2**.
7. Francis Bonneau. New York, 63–64. *See* **A9**.
8. Boston Felting. Boston, 91–99. *Con* **F2**.
9. Boston Piano Hammer. Cambridgeport, MA, 94–97. *Pre* **F52**.
10. Boston Piano Supply. New York, 99–00.
11. Bowden Felting Mills. Millbury, MA, 99.
12. Boynton & Waggoner. East Aurora, NY, 95–97.
13. Byfield Felting Mills. Boston, 97–00.
14. Calm & Blath. New York, 68–70. *See* **A19, E2, H26, I12, L3, P12**.
15. Louis Cehlert. New York, 92–93. *See* **E3**.
16. City Mills. City Mills, MA, 99. *Con* **F2**.
17. Benjamin Colley. Boston, 82–86.
18. Comstock, Cheney. Centrebrook, CT, 85–92; Ivoryton, CT, 92–00. *See* **A21, I18**.
19. Crane & Chapuis. Paterson, NJ, 73; New York, 79–89. *Con* **F20**.
20. Harvey S. Crane. New York, 89. *Pre* **F19**. *Con* **F1**.
21. A. B. Crocker. Boston, 85–92. *Con* **F69**.
22. John F. Doellner. New York, 64–78. *See* **A32, E4, H44, I22**.
23. Alfred Dolge. Brooklyn, NY, 71–74. Brockett's Bridge (Dolgeville from 81), NY, 74–93. New York, 71–93. *See* **E5, H45, N2, P18**. *Con* **F24**.

24. Alfred Dolge & Son. Dolgeville, NY, and New York, 93–98. *Pre* **F23**.
See **D28, H46, N3, P19**. *Con* **F3**.
25. Frasier (Frazier) & Smith. New York, 66, 74–81; Cambridgeport, MA, 73–86. *Con* **F26**.
26. Daniel E. Frasier (Frazier). Cambridgeport, MA, 85–94. *Pre* **F25**.
27. Louis Gehlert. New York, 86–00. *See* **E6, O69**.
28. Arthur Geoffrey. New York, 96–00.
29. George Gueutal. New York, 65–00. *See* **E8, H62, I32, P29**.
30. Hammacher, Schlemmer. New York, 97–98. *See* **A48, E9, G4, H67, I34, K22, L8, O81, P32**.
31. L. F. Hepburn. Stratford, NY, and New York, 85–92. *See* **A49, H72, N8**.
32. George Jackson. Little Falls, NJ, 99.
33. Jones, Miller & Geyer. New York, 82
34. D. G. Kettell. Worcester, MA, 81.
35. Koeniges. New York, 94–97.
36. Lydecker & Schmidt. New York, 64–77. *Pre* **F60**. *Con* **F48**.
37. Augustus J. Miller. Newark, NJ, 92–97.
38. New England Piano & Organ Supply. Boston, 82. *See* **E14**.
39. New York Piano Hammer. New York, 96.
40. New York Pianoforte Key. Peterborough, NH, 96–00. *See* **D81, I49**.
41. Charles Pfriemer. New York, 74–00. *See* **F42**.
42. Joseph Pfriemer. New York, 82–00. *See* **F41**.
43. Piano & Organ Supply. Chicago, , 96–00. *See* **A85, I52**.
44. Plattekill Felting. Newburgh, NY, 99. *Con* **F59**.
45. Pratt, Read. Deep River, CT, 96–97. *See* **I56**.
46. Richard Ranft. New York, 55–99. *See* **E19, H114**.
47. David H. Schmidt. New York, 94–00. *Pre* **F48**.
48. Frederick Schmidt. New York, 77–94. *Pre* **F36**. *Con* **F47**.
49. Edwin D. Seabury. Rockville Centre, L.I., NY, & New York, 91–93.
Pre **F50**. *Con* **F58**.
50. Seabury & Spitz. Whitestone, L.I., NY, 75–84; New York, 84–86.
(*Sam* **F56?**) *Con* **F49** and **F54**.
51. John Siemering. New York, 96–00. *See* **A99**.
52. A. K. Smith. Cambridgeport, MA, 91–94. *Pre* **F53**. *Con* **F9**.
53. Smith & Owen. Cambridgeport, MA, 91. *Con* **F52**.
54. Reinhold J. Spitz. New York, 84–90. (*Sam* **F55?**) *Pre* **F50**.
55. Rinaldo J. Spitz. New York, 86. (*Sam* **F54?**) *Pre* **F50**.
56. Spitz & Seabury. New York, 76. (*Sam* **F50?**).

57. Stobbe & John. New York, 72.
58. Strauch Bros. New York, 94–00. *Pre* **F49**. *See* **A112, I70**.
59. Strook Felt. Newburgh, NY, 99. *Pre* **F44**.
60. Syverson & Lydecker. New York, 57–62. *Pre* **F61**. *Con* **F36**. *See* **A114**.
61. Ole Syverson. New York, 56. *Con* **F60**. *See* **A115, I71**.
62. W. S. Taylor & Bloodgood. Cranford, NY, 99.
63. N. W. T. Tileston. Dorchester, MA, 55.
64. Tingle, House. New York, 73–99; Glenville & Seymour, CT, 98–99. *Con* **F2**.
65. Waite's Mills. Franklin, MA, 99. *Con* **F2**.
66. Robert M. Webb. Brooklyn, NY, and New York, 90–97; Rockville Centre, L.I., NY, New York, and Brooklyn, NY, 95–97. *See* **E22, H151, O206, P81**.
67. Charles Weickert. New York, 60–67. *See* **E23, H152**.
68. John J. Whyte. New York, 72. *See* **A124**.
69. Williams & Page. Boston, 92. *Pre* **F21**.
70. E. Wilson. Boston, 79.
71. Anthony J. Wolf. New York, 74–86. *Pre* **F72**.
72. Anthony J. Wolf & Son. New York, 68–73. *Con* **F71**.
73. Woolen and Felt. Cazenovia, NY, 00.

G. Glue

1. American Glue. Boston, 94.
2. Peter Cooper. New York, 93. *See* **G3**.
3. C. F. Goepel. New York, 93–95. *See* **A40, B14, E7, H60, I28, K19, L7, P27, Agt G2, G5**.
4. Hammacher, Schlemmer. New York, 98. *See* **A48, E9, F30, H67, I34, K22, L8, O81, P32**.
5. Le Page. Gloucester, MA, 93. *See* **G3**.
6. Walker Glue Works. Boston, 92.

H. Hardware, Materials, Tools, and Supplies

1. Adams & Elting. Chicago, 97.
2. W. E. Alden. Boston, 76.
3. American Felt. New York, 99–00. *See* **F2**.
4. American Musical Supply. Jersey City, NJ, 97.
5. American Screw. Providence, RI, 93–94. *See* **H60**.
6. Charles Austin. Lowell, MA, 81.
7. Batavia Pedal. Batavia, PA, 93.
8. William Beiter. New York, 75.

9. Benedict & Burnham Mfg. Waterbury, CT, 94–99.
10. Benton. New York, 69.
11. Billings Spring Brass Flange. Milwaukee, ?.
12. Blake & Johnson. Waterbury, CT, 49, 95. *See* **H60**.
13. R. Bliss Mfg. Pawtucket, RI, 99.
14. John E. Bowker. Boston, 69–73.
15. John H. Bragg. New York, 47.
16. Braid & Meyer. Brooklyn, NY, 92–99. *See* **M4**.
17. William Braid. New York, 61.
18. Brainerd, Tanner. Albany, NY, & New York, 98–00. *Pre* **H19**. *See* **P7**.
19. Brainerd, Tanner, Gallien. Albany, NY, 97. *Pre* **H41**. *Con* **H18**.
20. F. J. & J. S. Brand. Milldale, CT, 85–86. *Con* **H21**.
21. Brand Mfg. New Britain, CT, 85–87. *Pre* **H20**. *See* **L1**.
22. Julius Breckwoldt. New York, 92. *See* **D9**, **N1**, **P9**, **R9**.
23. Bridgeport Brass. Bridgeport, CT, 94–99.
24. Homer D. Bronson. Beacon Falls, CT, 89–00. *See* **C1**.
25. R. J. Byram. Boston, 53–58.
26. Calm & Blath. New York, 68–70. *See* **A19**, **E2**, **F14**, **I12**, **L3**, **P12**.
27. Chicago Brass. Chicago, 96–97.
28. Chickering & Sons. New York, 61. *See* **O44**.
29. Church & Sleight. New York, 91–92. *See* **P13**.
30. Coffin & Dill. Boston, 57–58. *Con* **H31**.
31. Peleg P. Coffin. Boston, 59–61. *Pre* **H30**.
32. Benjamin Colley. Boston, 86.
33. William A. Conant. New York, 53–89; Lowell, MA, 55; Boston, 54–69. *See* **M6**.
34. P. & F. Corbin. New Britain, CT, 99. *See* **H60**.
35. Cornwall & Pattison (Patterson) Mfg. Bridgeport, CT, 86, 96–99.
36. Harvey S. Crane. New York, 86.
37. H. M. Darling. Boston, 74–87.
38. Darling, Brown & Sharp. Providence, RI, 93. *See* **H60**.
39. Davenport & Treacy. New York, 87–00; Boston, 96–97. *See* **M7**, **P17**.
40. Denison Bros. Deep River, CT, 96–97.
41. G. J. Dickson Mfg. Albany, NY, 97. *Pre* **H131**. *Con* **H19**.
42. Frederick Dietrichs. New York, 61.
43. P. F. Dodge. Boston, 53–58.
44. John F. Doellner. New York, 64–78. *See* **A32**, **E4**, **F22**, **I22**.
45. Alfred Dolge. New York, 69–93. *Agt* **H131**. *Con* **H46**. *See* **E5**, **F23**, **N2**, **P18**.

46. Alfred Dolge & Son. New York, 93–98. *Pre* **H45**. *See* **D28, F24, N3, P19**.
47. Jacob Doll. New York, 79. *See* **D30, K14, P20**.
48. Eagle Lock. Terryville, CT, 99.
49. Ela Bros. Boston, 79–81. *Pre* **H50**.
50. Richard Ela. Boston, 77. *Con* **H49**.
51. J. Erlandsen. New York, (61?), 94–97. *Pre* **H52**. *See* **L4**.
52. N. Erlandsen. New York, 93–94. *Con* **H51**. *See* **L5**.
53. O. J. (Geo. H.) Faxon. Everett, MA, and Boston, 47–99. *See* **M9**.
54. William W. Fields. New York, 78.
55. Foster, Merriam. Meriden, CT, 93. *See* **H60**.
56. Frasse. New York, 80–92. *See* **P23**.
57. William Gerner (*Agt* “Coleman Insulator”). Chicago, 94.
58. John Gill. New York, 50–78. *Cnt* **H59?** *See* **P26**.
59. William N. Gill. New York, 61. *Cnt* **H58?**
60. C. F. Goepel (“Allen’s Patent Piano Casters”). New York, 92–00.
See **A40, B14, E7, G3, I28, K19, L7, P27**. *Agt* **H5, H12, H34, H38, H55, H120, H124**.
61. H. & E. Goujon, Philadelphia, 57.
62. George Gueutal. New York, 60–78. *See* **E8, F29, I32, P29**. *Cnt* **H63?**
63. Louis C. Gueutal. New York, 79–82. *Pre* **H62?** *See* **O78**.
64. Henry Haas. New York, 59–84. *Con* **H65**. *See* **P30**.
65. Henry Haas & Son. New York, 84–00. *Pre* **H64**. *See* **D46**.
66. Albert Hammacher. New York, 64–84. *Pre* **H136**. *Con* **H67**.
67. Hammacher, Schlemmer. New York, 84–00; Chicago, 93–95. *Pre* **H66**. *See* **A48, E9, F30, G4, I34, K22, L8, O81, P32**.
68. Edward C. Harris. New York, 67. *See* **D47**.
69. Harvey & Tinkham. Boston, 88.
70. Heath & White. South Easton, MA, 96–97.
71. Edwin Hedges. Westfield, MA, 96–97.
72. L. F. Hepburn. New York, 84–94. *See* **A49, F31, N8**.
73. Hoggson & Pettis Mfg. New Haven, CT, 96–97.
74. Interior Conduit & Insulation. New York, 96–97.
75. C. Janke. Galveston, TX, 87.
76. Jersey City Smelting Works. Jersey City, NJ, & New York, 91–92.
77. John Jungermann. New York, 70–75. *See* **P36**.
78. Herman Kayser. New York, 93–97.
79. H. & C. Keller. New York, 93.
80. Knapp & Cowles Mfg. Bridgeport, CT, 95–96
81. Kraeuter. Newark, NJ, 99.

82. Lang & Heckenlauer. Chicago, 99.
83. C. H. Lang. Chicago, 00.
84. George Lange. New York, 68–75. *See* **I40**.
85. A. M. Leland. Boston, 93–95.
86. Charles Lugenbuehl. New York, 91–94, 96–97. *Con* and *Pre* **H87**.
87. Charles Lugenbuehl & Sons. New York, 95. *Pre* and *Con* **H86**.
88. Lyon & Healy. Chicago, 90–00.
89. Edwin L. Mansfield. Boston, 50–74.
90. I. G. Marston. Boston, 84–96.
91. Caleb Miller. Philadelphia, PA, 61.
92. James M. Montgomery. New York, 79–86. *See* **P47**.
93. George W. Moore. Boston, 83–00.
94. John T. Morse. New York, 81. *See* **P49**.
95. George Nash. Chicago, 92.
96. Nathusius, Kugler & Morrison. New York, 60–70.
97. William Neustaedter. New York, 64–65. *See* **I48**.
98. New Britain Hardware Mfg. New Britain, CT, 96–99.
99. New England Piano & Organ Supply. Boston, 81.
100. New York Pedal Guard. New York, 80.
101. R. F. Osborne. San Francisco, 90–93.
102. David Osterheld. New York, 82.
103. Piano Plating and Hardware. Springfield, OH, 00.
104. Samuel Pierce. Reading, MA, 96–97.
105. Plume & Atwood Mfg. Waterbury, CT, 99.
106. C. T. Powell. Boston, 57.
107. W. H. Pomeroy. Boston, 82–83.
108. D. G. Pratt. Boston, 76.
109. Kimball N. Prince. New York, 58–68.
110. Thomas L. Pye. New York, 71–84.
111. Charles Ramsey. Kingston, NY, 97–00.
112. Jacob B. Rand. Concord, NH, 61.
113. Fred M. Randall. Brooklyn, New York, 95–00. *See* **M20**.
114. Richard Ranft. New York, 68–98. *Pre* **H152**. *See* **E19**, **F46**.
115. Sidney D. Roberts. New York, 82–84.
116. John C. Robinson. New York, 31–35.
117. Chas. J. Root. Bristol, CT, 99.
118. George Ropes. Boston, 95.
119. Paul Ruehl. New York, 82.
120. Russell & Erwin Mfg. New Britain, CT, 98–00. *See* **H60**.
121. Sabin Machine. Montpelior, VT, 80–97.

122. August Sauer. New York, 86–87.
123. Charles Schirmer. New York, 79–80.
124. Scovill Mfg. Waterbury, CT, New York, Boston, and Chicago, 89–00. *See* **H60**.
125. George Sieburg. New York, 82.
126. Smith & Egge Mfg. Bridgeport, CT, 99.
127. Spofford. New York, 80–81; Dolgeville, NY, 84–88.
128. Standard Turning Works. Cambridgeport, MA, 84–95; Boston, 82–95.
129. J. H. Sternbergh & Son. Reading, PA, 99.
130. Frank A. Stratton. Sioux City, IA, 95–97. *See* **P68**.
131. Richard W. Tanner & Son. Albany, NY, 85–96. *See* **H45**, **M25**.
Dolgeville, NY, 95–96. *Con* **H41**.
132. A. & H. S. Thorp. New York, 47. *Sam* **H133?**.
133. A. & T. S. Thorp. New York, 58–61. *Sam* **H132?**.
134. John Toler. New York, 47.
135. Charles Tollner. New York, 57. *Con* **H136**.
136. C. Tollner & Hammacher. New York, 60–62. *Pre* **H135**. *Con* **H66**.
137. J. Warren Tuck. Boston, 85–89.
138. Tuners' Supply. Somerville, MA, 85; Boston, 93.
139. Owen I. Turtle. New York, 93–94.
140. Union Comb. Leominster, MA, 82. *See* **D110**.
141. Union Mfg. & Plating. Chicago, 91.
142. Charles H. Utley. Buffalo, 73–94. *Pre* **H143**.
143. Horace Utley. Buffalo, 60–72. *Con* **H142**.
144. Charles Wagner. New York, 94.
145. John Wake. New York, 55. *Cnt* and *Pre* **H147?**.
146. William Wake. New York, 49–76. *Sam* **H148?** *Cnt* **H145?** *Con* **H146**.
147. William Wake & Son. New York, 76. *Pre* **H146**.
148. William Wald. New York, 47. *Sam* **H146?**.
149. John Wales. Boston, 94.
150. E. S. Ware. ?, 60.
151. Robert M. Webb. Brooklyn, NY, & New York, 92–97. *See* **E22**, **F66**, **O206**, **P81**.
152. Charles Weickert. New York, 60–67. *See* **E23**, **F67**. *Con* **H114**.
153. Albert Well (Weil) New York, 65–66. *Sam* **H162?**
154. C. H. Whitcomb. Boston, 84.
155. Whitney Piano and Supply. Chicago, 95.

156. Whitney & Rogers. New York, 69–70.
157. M. Whitney. Boston, 86.
158. Wickham, Chapman. Springfield, OH, 90–96. *See* **M28**.
159. E. A. Williams & Son. Jersey City, NJ, 99.
160. Wilson & Blake. Concord, NH, 61.
161. Epaninondas Wilson. Boston, 67–99.
162. Albert Wirl. New York, 81. *Sam* **H153?**.
163. S. N. Wolff. New York, 74–75.
164. Wood Bros. Cambridgeport, MA, 82–87. *See* **A127, I86**.

I. Ivory, Celluloid, and Keys

1. Zedediah Abbott. Winchester, MA, 55, 86.
2. Aleithe. New York, 54.
3. George A. Ames. Norway, ME, 61.
4. A. V. T. Barberie & E. Bloomfield. New York, 58.
5. Henry Behning. New York, 67. *See* **D5**.
6. Bell Mfg. Peterborough, NH, 93.
7. Anthony Bernard. Philadelphia, 61.
8. Fidel Blessing. New York, 74–77.
9. Blyleven & Dik. Boston, 73–80.
10. David Boggs. Philadelphia, c.15, 30–31
11. Bornhoeft & Gollnik. New York, 89–91. *Con* **I29**.
12. Calm & Blath. New York, 68–70. *See* **A19, E2, F14, H26, L3, P12**.
13. Celluloid Piano Key. New York, 76–00; Newark, NJ, 85–90.
14. Celluloid Veneer. Boston, 78–79.
15. Chapius Bros. & Alleoud. New York, 58.
16. Church & Lane. Winchester, MA, 55.
17. A. W. Colburn. Northboro, MA, 86; Leominster, MA, 86–87, 94–97.
18. Comstock, Cheney. Centerbrook, CT, 73–92; Ivoryton, CT, 88–00. *Pre* **I19**. *See* **A21, F18**.
19. Comstock-Cheney. Essex, CT, 61. *Con* **I18**.
20. Dickinson Ivory. Peterborough, NH, Boston, 93–97. *Pre* **I59**.
21. Henry F. Dippel. New York, 65.
22. John F. Doellner. New York, 68–71. *See* **A32, E4, F22, H44**.
23. Nathaniel Dunbar. Canton, MA, 55.
24. Charles Eckert. New York, 61–65. *See* **A35, D32, I25, I26**.
25. Charles Eckert & Bro. New York, 61–63. *See* **I24, I26**.
26. Francis Eckert. New York, 57–60. *See* **I24, I25**.

27. Otto Gerdau. New York, 73–75.
28. G. F. Goepel. New York, 93–97. *See* **A40, B14, E7, G3, H60, K19, L7, P27.**
29. Adolph Gollnik. New York, 91–92. *Pre* **I11.**
30. Michael Grass. New York, 87.
31. Frederick Grote. New York, 66–75.
32. George Gueutal. New York, 65–67. *See* **E8, F29, H62, P29.**
33. Hagen & Rufer. Peterborough, NH, 97.
34. Hammacher, Schlemmer. New York, 98. *See* **A48, E9, F30, G4, H67, K22, L8, O81, P32.**
35. Thomas Houghan. St. Johnsville, NY, 89.
36. C. A. Houghton. Cambridgeport, MA, 99.
37. Ignatz Keller. New York, 65–73. *See* **E10, K32.**
38. W. Keller. San Francisco, 81.
39. Anne (Annie) Lange. New York, 91–99. *Pre* **I41.**
40. George Lange. New York, 65–77. *Con* **I41.** *See* **H84.**
41. George Lange & Son. New York, 79–89. *Pre* **I40.** *Con* **I39.**
42. James G. Leach. San Francisco, 82.
43. Alonzo Leavitt. Boston, 88–93.
44. James L. Lord. Canton, MA, 55.
45. William P. Lord. Canton, MA, 55.
46. John Maier. New York, 00.
47. Mason J. Matthews. New York, 80.
48. William Neustaedter. New York, 64. *See* **H97.**
49. New York Pianoforte Key. New York, 84–94; Peterborough (Peterboro), NH, 94–00. *See* **D81, F40.**
50. Augustus Newell. Chicago, 85–91.
51. Oelkers Mfg. Newark, NJ, 96–97.
52. Piano & Organ Supply. Chicago, 71–00. *See* **A85, F43.**
53. John F. Pierce. Boston, 59–67.
54. Charles H. Pierpont. New Haven, CT, before 76.
55. Pratt Bros. Saybrook, CT, 61–63. *Con* **I56.**
56. Pratt, Read. Deep River, CT, 63–99. *Pre* **I55, I58.** *See* **F45.**
57. Joseph Rautenhaus. New York, 58–80. *See* **A86, E20.**
58. George Read. Deep River, CT, 39–63. *Con* **I56.**
59. George L. Ropes. Peterborough, NH, ? ; Boston, 93–95. *Cnt* **I20.**
60. Charles Ruperich. New York, 56–81.
61. Jacob Ruperich. New York, 68. *Sam* **I62** and **I63?**
62. Jacques Ruperich. New York, 57. *Sam* **I61?**
63. Jacob Ruprecht. New York, 66–67. *Sam* **I61?**

64. John Sansom. Brooklyn, NY, 58.
65. Nicholas Schneider. New York, 58–65.
66. Chr. Sebald. New York, 62. *Pre* **I67?**.
67. Frederick Sebald. New York, 58. *Con* **I66?**.
68. Henry Shellard. Brooklyn, NY, 61.
69. Sumner Small. Northboro, MA, 73–92.
70. Strauch Bros. New York, 94–00. *See* **A112, F58**.
71. Ole Syverson. New York, 57. *See* **A115, F61**.
72. Thomas Tavener. Boston, 54, 64.
73. William Tonk & Bro. New York, 86–88. *See* **A116**.
74. Sylvester Tower. Cambridgeport, MA, 53–00. *See* **A117**.
75. George Towle. Northboro, MA, 80.
76. William S. Tyler. New York, 61.
77. Uhl & Walter. New York, 66–67.
78. Virgil Practice Clavier. Long Island City, L.I., NY, 99.
79. James W. Vose. Boston, 51–52, 63–72, 83–00.
80. Wasle. New York, 96. *See* **A119**.
81. Wehler & Weiss. New York, 72.
82. Milo Whitney. Boston, 56–97.
83. Charles S. Wilder. Lancaster, MA, 55.
84. Frederick Woehr. New York, 61. *See* **K78**.
85. Wood & Braendle. Cambridgeport, MA, 77.
86. Wood Bros. Cambridgeport, MA, 81–97. *See* **A127, H164**.
87. Zylonite. North Adams, MA, 86–90.

J. Labels, Stencils, and Decalcomania

1. William W. Fields. New York, 52?–79.
2. William F. Harrison. New York, 35.
3. Marston Sign. Boston, 86–88.
4. Meyercord. Chicago, St. Louis, MO, and New York, 98–00.
5. Palm, Fechteler. New York, 85–00.

K. Legs, Lyres, Desks, Mouldings, Wooden Panels, Props, Trusses, etc.

1. G. & T. Alling Piano Leg Manufr's. New Haven, CT, 68.
2. Automatic Piano Prop. Boston, 71–73. *Con* **K46**.
3. George Bothner. New York, 98–00. *Pre* **K15**. *See* **A14**.
4. John Brady. New York, 65–68.
5. Brainard & Ogden. New York, 58.
6. Brock & Miller. New York, 58.

7. Alanson E. Brooks. New York, 56–57. *See* **D10**.
8. William H. Brown. New York, 85–86.
9. James Campion. New York, 93–94; Newburgh, NY, 95.
10. G. Chevrel. Chicago, 95. *See* **K67**.
11. Gustav Daner. Brooklyn, NY, 95.
12. Robert Daner. New York, 89–92.
13. Robert V. Davis. New York, 61. *See* **D21**.
14. Jacob Doll. New York, 84–93. *See* **D30, H47, P20**.
15. Ehrhard & Hagen. New York, 54–98. *Con* **K3**.
16. Robert Ellis. New York, 74.
17. Falls City Veneer & Panel. Louisville, KY, 96. *See* **R18**.
18. B. Flach. New York, 74–75.
19. C. F. Goepel. New York, 93–95. *See* **A40, B14, E7, G3, H60, I28, L7, P27**.
20. Goodman, Hale. Dana, MA, 73.
21. J. Wesley Goodman. Dana, MA, 77; Athol, MA, 86.
22. Hammacher, Schlemmer. New York, 98. *See* **A48, E9, F30, G4, H67, I34, L8, O81, P32**.
23. C. F. Hanson. Worcester, MA, and Boston, 95.
24. George Hausz. New York, 77–81.
25. James L. Haven. Cincinnati, OH, 94–97.
26. Heitz & Voebel. New York, 69.
27. Charles Hoffman. New York, 66–70.
28. William Horn. New York, 70.
29. Johnson, Stimson. New York, 54–58; Dana, MA, 55.
30. Kapp. New York, 93–94.
31. George Keller. New York, 95–96.
32. Ignatz Keller. New York, 81. *See* **I37, E10**.
33. Herman Koechling. New York, 65–82.
34. Kohl & Witzel. New York, 68–70.
35. Charles Lindenberg. New York, 61–65.
36. Charles W. McGinnis. New York, 82. *See* **D71**.
37. Jacob Mark. New York, 58–67.
38. A. Menges. New York, 58–68.
39. John Nall. New York, 69.
40. Peter Nickel. New York, 64–65.
41. Gerald O'Connor. New York, 85–97.
42. Ohio Scroll Lumber. Covington, KY, 99.
43. J. M. Paige. Boston, 91–93.

44. Parker & Hesch. New York, 80. *Con* **K45?**.
45. Nicholas W. Parker. New York, 85. *Pre* **K44?**.
46. Theodore Parsons. Boston, 74–76. *Pre* **K2**.
47. William Proefriedt. New York, 81.
48. Mrs. F. Radle. New York, 89.
49. Francis Ramacciotti. New York, 92–98. *See* **P56**.
50. Randolph & Clowes. Waterbury, CT, 99.
51. Charles (Carl) Rauhenbuehler. New York, 78–97.
52. Henry Schappert. New York, 85–86.
53. John Schnecker. New York, 75.
54. David Scheele. New York, 68–97.
55. T. William Schmidt. New York, 75–76. *Sam* **K56?**.
56. William H. Schmidt. New York, 64–66. *Sam* **K55?**.
57. Shackley Bros. & Delaporte. Boston, 91–92.
58. Bernard N. Smith. New York, 74–00. *See* **D100**.
59. Standard Wood Turning. Jersey City, NJ, 99.
60. Charles N. Stimpson. Westfield, MA, 61–97; New York, 61. *Pre* **K61?**.
61. Stimson, Oakes. Westfield, MA, 61. *Con* **K60?**.
62. Andrew Stoeckel. New York, 55.
63. Charles S. Stone. Erving, MA, 85–97. *Pre* **K64**. *See* **D105**.
64. J. E. Stone & Sons. Erving, MA, 82. *Con* **K63**. *See* **D106**.
65. Luther Stone. Leominster, MA, 55.
66. W. E. Stone. Erving, MA, 73. *See* **D107**.
67. William Tonk & Bro. New York, 94; New York and Chicago, 95–97. *Agt* **K10**.
68. Augustus Trautz. New York, 65–69.
69. George F. Vath. New York, 73–76.
70. F. Wahl. New York, 61–62.
71. John Wahl. New York, 64–65.
72. Waldheim. New York, 79. *Con* **K73?**.
73. Walheim, Zimmer & Conradi. New York, 80–84. *Pre* **K72?** *Con* **K80?**.
74. Col. Caulfield B. Waring. New York, 80–82. *See* **O204**.
75. P. Weiler. New York, 61.
76. Willgohs & Bro. New York, 70.
77. Ferdinand Winter. New York, 68.
78. Frederick Woehr. New York, 78–97. *Pre* **K79**. *See* **I84**.
79. Woehr & Miller. New York, 67–75. *Con* **K78**.

80. Martin Zimmer. New York, 85. *Pre* **K73?** *Con* **K81?**.
81. Mrs. Martin Zimmer. Long Island City, L.I., NY, and New York, 96–97. *Pre* **K80?**.
82. George A. Zundel. New York, 66.

L. Machinery

1. Brand Mfg. New Britain, CT, 85–87. *See* **H21**.
2. Buss Machine Works. Grand Rapids, MI, 99.
3. Calm & Blath. New York, 68–87. *See* **A19, E2, F14, H26, I12, P12**.
4. J. Erlandsen. New York, (61?), 94–97. *Pre* **L5**. *See* **H51**.
5. N. Erlandsen. New York, 93–94. *Con* **L4**. *See* **H52**.
6. J. A. Fay & Egan. Cincinnati, OH, 99.
7. C. F. Goepel. New York, 93–97. *See* **A40, B14, E7, G3, H60, I28, K19, P27**. *Agt* **L12**.
8. Hammacher, Schlemmer. New York, 98. *See* **A48, E9, F30, G4, H67, I34, K22, O81, P32**.
9. New York Piano String. New York, 83. *See* **P53?**.
10. Paul Pryibil. New York, 87–98.
11. Charles Reinwarth. New York, 78–00. *See* **P58**.
12. Robinson ("Wood Carving Machine"). Richmond, IN (?), 97. *See* **L7**.
13. John Royle & Sons. Paterson, NJ, 99.
14. Schaum & Uhlinger. Philadelphia, 99.
15. John T. Towsley. Cincinnati, OH, 97–98.
16. Union Carving Machine; Union Embossing Machine. Indianapolis, 97–99.

M. Plates

1. Cyrus Alger's Foundry. Boston, 52.
2. Barrett's Sons. Wooster, OH, 94.
3. Braid Bros. New York, 65.
4. Braid & Meyer. Brooklyn, NY, 92–97. *See* **H16**.
5. Brown & Patterson. Brooklyn, NY, 77–97.
6. William A. Conant. New York, 53–89. *See* **H33**.
7. Davenport & Treacy. Jersey City, NJ, 74–87; Stamford, CT, 87–00; New York, 89–00; Boston, 96–97. *See* **H39, P17**.
8. Fairbanks. Springfield, OH, 90.
9. O. J. (George H.) Faxon. Everett, MA, and Boston, 47–99. *See* **H53**.
10. Garden City Foundry. Chicago, 93–96. *Pre* **M26**.

11. Haight & Clark. Albany, NY, 96–97.
12. Henry C. Harney. Brooklyn, NY, and New York, 86–00. *Agt* **M14**.
Con **M21**.
13. L. E. Hoyt. Walton, NY, 93–97.
14. O. S. Kelly. Springfield, OH, New York, 99–00. *See* **M12**, **M22**.
15. George E. Kemp. New York, 96–97.
16. McCammon Piano. Oneonta, NY, 94.
17. Francis Meyer, Brooklyn, NY, 89.
18. Frederick Niemeyer. Baltimore, 90.
19. Theodore Raeke. Baltimore, 96–97.
20. Randall. Brooklyn, NY, 95–00. *See* **H113**. *Sam* **M21**?
21. Randolph Iron. Brooklyn, NY, 00. *Pre* **M12**. *Sam* **M20**?
22. Julian Scholl. New York, 97. *Agt* **M14**.
23. Thomas Shriver. New York, 61–00.
24. Abiel Stevens. Lawrence, MA, 56.
25. R. W. Tanner & Son. Albany, NY, 85–96; Dolgeville, NY, 95–96. *See* **H131**.
26. Turner, Dickinson. Chicago, 93. *Con* **M10**.
27. Walker Foundry. Erie, PA, 96–99.
28. Wickham, Chapman. Springfield, OH, 90–00. *See* **H158**.
29. Wollaston Foundry. Boston, 96–97.

N. Sounding Boards and Wrest Planks

1. Julius Breckwoldt. Dolgeville, NY, 96–00. *Pre* **N3**. *See* **D9**, **H22**, **P9**, **R9**.
2. Alfred Dolge. Brockett's Bridge (Dolgeville from 81), NY, 74–93.
Con **N3**. *See* **E5**, **F23**, **H45**, **P18**.
3. Alfred Dolge & Son. Dolgeville, NY, & New York, 86–96. *Pre* **N2**.
Con **N1**. *See* **D28**, **F24**, **H46**, **P19**.
4. S. D. Goodwin. Colton, NY, 91–92. *See* **R20**.
5. S. Grollman & Sons. Chicago, 91.
6. Louis Gueutal. New York, 80–81.
7. Hammacher. New York, 84.
8. L. F. Hepburn. Stratford, NY, & New York, 85–97. *See* **A49**, **F31**, **H72**.
9. Parker & Hunt. Boston, 93
10. Parker & Young. Lisbon, NH, 57, 91–99. *See* **D85**.
11. Wm. H. Water. Little Falls, NY, 91.
12. J. M. Whipple. Lancaster, NH, 86.

O. Stools, Scarfs, Covers, and Stool Backs

1. A. Adamson. Boston, 76–77.
2. Albroy & Hoyt. New York, 28.
3. American Store Stool. Chicago, 79.
4. George E. Allen. New York, 87–90.
5. Thomas R. Allen. Rochester, NY, 61.
6. Allen & Mackey. Chicago, 67.
7. Alton Mfg. Alton, NY, 91. *See* **D2**.
8. Alvord & Spear Mfg. Winstead, CT, 89–91; Torrington, CT, 91–96.
See **O85**.
9. J. C. Ameling. Chicago, 67.
10. American Store Stool. New York, 72–93; Chicago, 79.
11. A. H. Andrews. Chicago, 94–97.
12. Archer Mfg. Rochester, NY, 83–88, 96–99. *Pre* **O13**.
13. George W. Archer. Rochester, NY, 73–82. *Pre* **O14**. *Con* **O12**.
14. R. W. Archer & Bro. Rochester, NY, 70–72. *Con* **O13**.
15. J. D. Baldwin (“Baldwin Back Rest”). Cincinnati, 85.
16. G. & J. Ballin. New York, 73–74.
17. Julius Bauer. Chicago, 87.
18. H. D. Bentley. Freeport, IL, and Chicago, 91–99.
19. Leopold Bernard. New York, 99–99.
20. Frederick Blume. New York, 65–70.
21. Angus L. Bobo. New York, 73.
22. G. A. Bobrick. Boston, 87–90.
23. Boston Piano Stool. Boston, 78–96; Lowell, MA, 96–97.
24. William Bourne & Son. Boston, 90.
25. Daniel H. Bower. New York, 76–77. *Pre* **O163**.
26. Thomas N. Breckels. New York, 91–93.
27. Brenack Paper. New York, 96–98.
28. J. H. Brennan. Chicago, 65.
29. Peter Brenner. Atlanta, GA, 92.
30. Joshua Briggs. Peterborough, NH, 83–91. *Con* **O189**
31. Brooks & Denton. New York, 97.
32. J. & J. Burleigh. Tuftonborough, NH, 61.
33. Burnham & Tracy. Boston, 79.
34. Frank B. Burns. New York, 96–99. *Agt* **O86**.
35. Capitol Mfg. South Windham, CT, 96–97.
36. A. H. Castle. Minneapolis, 90–93.
37. E. D. Castelow. Meriden, CT, 86.
38. Century Piano. Minneapolis, 89–95.

39. Cyrus W. Chadwick. South Acton, MA, 85. *Con* **O40**.
40. Chadwick & Merrian. South Acton, MA, New York, & Boston, 86–92. *Pre* **O39**.
41. George H. Champlin. Boston, 98–00.
42. Chesterton Mfg. Chesterton, MD, 92.
43. Chicago Piano Stool. Chicago, 88–95. *Pre* **O68**.
44. Chickering & Sons. New York, 61. *See* **H28**.
45. Cincinnati Moulding. Cincinnati, 99–00.
46. Bernard Clark. New York, 51.
47. Clark Mfg. Rochester, NY, 92.
48. Clark & Rich. Chicago, 81.
49. C. A. Cook. Cambridgeport, MA, 93–97.
50. Conover Bros. Kansas City, MO, 86.
51. Conover Music. Minneapolis, 95.
52. Emmons M. Cundall. Boston, 90–00.
53. James Dalton. Chicago, 90.
54. Davis Chair. Marysville, OH, 94–97.
55. Denecke & Arnold. New York, 68.
56. Deyer & Howard. Minneapolis, 80. *Con* **O57**
57. W. J. Deyer & Bro. Minneapolis, 81–96. *Pre* **O56**
58. A. L. Deyton. Meriden, CT, 91.
59. John H. Doughty. New York, 55.
60. Edward Edwards. New York, 51.
61. Emerson Piano. Boston, 88–92.
62. Estey Organ. Boston, 88–92.
63. Everett Piano Warerooms. Boston, 88.
64. I. Falkenberg. New York, 87.
65. W. F. Falls. Boston, 83.
66. Fuertsch & Pitts. Chicago, 82.
67. O. A. Gamage. Boston, 78.
68. Garden City Stool. Chicago, 83–89. *Con* **O43**. *See* **O197**.
69. Louis Gehlert. New York, 85–87. *See* **E6**, **F27**.
70. Frank W. George. New York, 84–86.
71. Gise & Thomas. Frederick, MD, 91.
72. Goodyear Rubber. New York, 99.
73. Gordon & Cartoon. New York, 92–93.
74. Herman Gottschalk. New York, 85.
75. Grollman Mfg. Chicago, 91–92. *Pre* **O76**. *Con* **O77**.
76. S. Grollman & Sons. Chicago, 89–90. *Con* **O75**.
77. Sol Grollman. Chicago, 97–00 *Pre* **O75**.

78. Louis Gueutal. New York, 81. *See* **H63**.
79. Guild, Church. Boston, 72–75, 83–84.
80. Hallet & Davis Piano. Boston, 88–89.
81. Hammacher, Schlemmer. New York, 88. *See* **A48, E9, F30, G4, H67, I34, K22, L8, P32**.
82. Haines, Foster & Waldo. Minneapolis, 91.
83. C. F. Hanson. Worcester, MA, and Boston, 94–95.
84. C. C. Harvey. Boston, 88–97.
85. William F. Hasse. New York, 92–00. *Agt* **O8**.
86. James L. Haven. Cincinnati, OH, 81–96. *See* **O34**.
87. Wm. Heaps. Muskegon, MI, 91–99.
88. D. Hedgman. New York, 75.
89. Frank Heide. Philadelphia, 99.
90. Hering Double Piano Stool. Chicago, 93.
91. Hinman Bros. New York, 97.
92. C. H. Hollis. Boston, 98–99.
93. G. R. Holm. Minneapolis, 95–96.
94. Henry Holtzman & Sons. Columbus, OH, and Pittsburgh, PA, 89–93; Columbus, OH, 93–99. *See* **O127, O149, O151**.
95. Lewis F. Homburg. Chicago, 84–00.
96. Lorenzo Horne. Wolfborough, NH, 61.
97. House-Milner Mfg (“The Superba”). Cleveland, OH, 92.
98. Austin Huntington. New York, 89.
99. Ivers & Pond Piano. Boston, 87–00.
100. J. W. Jenkins & Son. Kansas City, MO, 89. *Con* **O101**.
101. J. W. Jenkins’ Sons. Kansas City, MO, 90–00. *Pre* **O100**.
102. W. W. Johnson. Rockford, IL, and Meridan, CT, 96.
103. Abraham Kaufman. New York, 83.
104. W. W. Kimball. Chicago, 65–00.
105. B. A. Kipp. Milwaukee, WI, 99.
106. Theophilus F. Kraemer. Steinway, NY, and New York, 82–92.
107. William Kraft. New York, 61–65. *Pre* **O124, O208**.
108. G. Landsdown. New York, 43–44.
109. E. H. Lansing. Boston, 00.
110. Lansing Piano Stool. Boston, 94–97.
111. Legg Bros. Kansas City, MO, 93–94.
112. Abner M. Leland. Boston, 87–96.
113. Fred W. Leonhard. New York, 70–00.
114. Ferdinand C. Leuchte. New York, 48.
115. Linden & Fritz. New York, 47.

116. Joseph P. Lockey. Leominster, MA, 86–88. *See* **D68**.
117. Loewenherz & Landsberg. New York, 85–86.
118. Loftus & Kaffenberger. New York, 92–00.
119. Loring-Anderson. Chicago, 90.
120. Lovejoy & Berry. New York, 65. *Pre* **O121**.
121. Lovejoy & Odell. New York, 64. *Con* **O120**.
122. Lowell-Spofford Mfg. Boston, 91–92.
123. Lyon & Healy. Chicago, 67, 89–00.
124. Peter M. McDonald. New York, 54–61. *Con* **O107**.
125. A. M. McPhail. Boston, 90–97.
126. E. L. Mansfield. Boston, 74.
127. Edward N. Martin. New York, 99–00. *Pre* **O151**. *Agt* **O94**.
128. Martin, Snyder. Kansas City, MO, 90–92.
129. William F. Masters. New York, 93–95. *Agt* **O162**.
130. Edward Maxon. New York, 72.
131. A. C. Merriam. Leominster, MA, 96; South Acton, MA, 96.
132. A. H. Merriams. South Acton, MA, 87.
133. A. Merriman. Meriden, CT, 86.
134. H. W. Metcalf. Boston, 96–97.
135. Metropolitan Music. Minneapolis, 97–00.
136. Ottmar Meyer (Mayer). New York, 70–72.
137. Henry F. Miller. Boston, 74–00.
138. William Miller. New York, 55. *See* **D74**.
139. Milner & Wolcott. Canton, OH, 95.
140. Moats-Brownell Piano. Kansas City, MO, 94.
141. Ernest J. Morgan. New York, 99–00.
142. J. N. Morse. Boston, 72–73.
143. William Morstaff. New York, 80.
144. Richard Muchell. New York, 47–51.
145. National Stool Mfg. Washington, NJ, 99.
146. Neppert Bros. New York, 90–96. *Pre* **O147**. *Con* **O148**, **O149**.
147. Francis Neppert. New York, 66–92. *Pre* **O150**. *Con* **O146**.
148. Francis Neppert, Jr. New York, 96–99. *Pre* **O146**.
149. George P. Neppert. New York, 97. *Pre* **O146**. *Con* **O151**. *Agt* **O94**.
150. John P. Neppert. New York, 48–70. *Con* **O147**.
151. Neppert & Martin. New York, 97–99. *Pre* **O149**. *Con* **O127**. *Agt* **O94**.
152. New England Piano. Boston, 97–00.
153. Newell & Wight. New York, 81.
154. North East Piano Stool. Boston, 88–97.

155. David W. Odiorne. New York, 85.
156. Olson & Comstock. Chicago, 94–97. *Pre* **O157**. *See* **D84**.
157. Otto A. Olson. Chicago, 94. *Con* **O156**.
158. Paine Furniture. Boston, 94–00. *Pre* **O159**.
159. Paine's Furniture. Boston, 85–93. *Con* **O158**.
160. Palmer & Embury. New York, 97–99.
161. Palmer, Jacobs. Boston, 71–72.
162. Charles Parker Piano Stool. Meriden, CT, 92–99; Boston, 99. *See* **O129**.
163. Pearson & Bower. New York, 74–75. *Con* **O25**.
164. Peterborough Mfg. Peterborough, NH, 94–96. *Con* **O202**.
165. Phoenix Novelty. New York and San Francisco, 91–94. *Cnt* **O182**.
166. Henry W. Plant. New York, 88–00.
167. L. Postawka. Cambridgeport, MA, 73–87; Boston, 86.
168. Prescott Bros. Concord, NH, 61.
169. Michael Prostler. New York, 51.
170. W. H. Pugh & Brothers. Chicago, 67.
171. Purcell (Pursell) Piano Stool. New Haven, CT, 86–87.
172. George A. Ramseyer. Dobbs Ferry, NY, and New York, 84–93. *Pre* **O183**.
173. C. Rechel Bros. Cincinnati, 77–86.
174. Philip Retz, Philadelphia, 87.
175. Sarah E. Richey. Chicago, 85–89.
176. Ridgely. New York, 80–87.
177. James Rodie. Chicago, 89.
178. Root & Cady. Chicago, 67.
179. Mayer Rosenberg. New York, 77.
180. Max Sass. New York, 89.
181. C. A. Schindler. New York, 76.
182. M. Schleissner. New York, 90–97. *Pre* **O165**.
183. Schmidt & Ramseyer. New York, 70–82. *Con* **O172**.
184. Schrenkeisen. Brooklyn, NY, 99.
185. Morris E. Schrier. New York, 89.
186. D. E. Sicher. New York, 99.
187. Robert Simon. New York, 89.
188. Jerome Smythe. Lowell, MA, 98.
189. Spofford Mfg. Peterborough, NH, 91. *Pre* **O30**.
190. M. Steinert & Sons Piano. Boston, 93–00.
191. Clayton S. Stevens. New Britain, CT, 96.
192. George W. Strobe. Kansas City, MO, 85–86.

193. Summit Mfg. (Summit Rubber). New York, 91–93.
194. Augustus Thuez. New York, 61.
195. Joshua Thurston. New York, 51.
196. S. M. Tinkham & Sons. Taunton, MA, 73.
197. Tonk Manufacturing. New York and Chicago, 81–00. *Agt* **O68**, **89**. *See* **O199**.
198. Max Tonk. Chicago, 82–83. *See* **O197**.
199. William Tonk & Bro. New York, 81–00; Chicago, 91. *See* **A116**, **I73**, **O197**.
200. Twombly & Dore. Alton, NH, 91
201. H. Vanarsdale. New York, 81–82.
202. G. W. Vinal. (Peterborough, NH), 96. *Pre* **O164**.
203. Vose & Sons. Boston, 89–00.
204. Col. Caulfield B. Waring. New York, 84. *See* **K74**.
205. Allen M. Warner. New York, 81–00.
206. Robert M. Webb. Brooklyn, NY, and New York, 90–97. *See* **E22**, **F66**, **H151**, **P81**.
207. George P. White. Brooklyn, NY, and New York, 61–97. *Pre* **O208**. *Con* **O209**.
208. White & Kraft. New York, 57–61. *Con* **O107**, **O207**.
209. Henry P. White. Brooklyn, NY, 99. *Pre* **O207**.
210. White & Robertson. New York, 72–73.
211. T. D. Whitney. New York, 85–86.
212. Wilson Braiding & Embroidery. Chicago, 97.
213. James H. Wilson. Chicago, 94–97.
214. Wolf Piano & Organ Stool. Muskegon, MI, 91–94.
215. E. B. Wood. Boston, 89–96.
216. Yalovitz & Cahn. New York, 92–93.

P. Strings (Music Wire)

1. American Musical String. Dolgeville, NY, and New York, 97–00.
2. American Steel & Wire. Chicago, 98–99. *Pre* **P79**.
3. American Union String. New York, 00.
4. Simon Berger, New York, 89.
5. Emil Bilhuber. New York, 91.
6. William Lloyd Bowron. New York, 95–97.
7. Brainerd, Tanner. Albany, NY, 98–99. *See* **H18**.
8. George W. Braunsdorf. New York, 00.
9. Julius Breckwoldt. Dolgeville, NY, 99–00. *See* **D9**, **H22**, **N1**, **R9**.
10. Bruno, Weissenborn. New York, 54–56.

11. California Piano Mfg. San Francisco, 90–93. *Pre* and *Con* **P55**.
12. Calm & Blath. New York, 68–70. *See* **A19, E2, F14, H26, I12, L3**.
13. Church & Sleight. New York, 91–97. *See* **H29**.
14. Thos. R. Collins. Milton, MA, 96–97.
15. Cooper, Hewitt. Trenton, NJ, 92–96. *See* **P81**.
16. John Costello. New York, 57–70.
17. Davenport & Treacy. Stamford, CT, New York, and Boston, 96–00.
See **H39, M7**.
18. Alfred Dolge. New York, 69–93. *Con* **P19**. *See* **E5, F23, H45, N2**.
19. Alfred Dolge & Son. New York, 93–98. *Pre* **P18**. *See* **D28, F24, H46, N3**.
20. Jacob Doll. New York, 81–00. *See* **D30, H47, K14**.
21. George D. Emerson. New York, 81–97. *Pre* **P48**. *Con* **P52**.
22. Geo. H. Faxon. Everett, MA, 99.
23. Frasse. New York, 80–99. *See* **H56**.
24. Christopher B. Garritson. New York, 91–94.
25. Rudolf Giese Wire. Dolgeville, NY, 94–97; New York, 98. *Con* **P52**.
26. John Gill. New York, 50–78. *See* **H58**.
27. C. F. Goepel. New York, 93–00. *See* **A40, B14, E7, G3, H60, I28, K19, L7, Agt P64, P77, P87**.
28. Henry Greenway. Brooklyn, NY, 96–97.
29. George Gueutal. New York, 65–97. *See* **E8, F29, H62, I32**.
30. Henry Haas. New York, 84. *See* **H64**.
31. Albert Hammacher. New York, 84.
32. Hammacher, Schlemmer. New York, 96–98. *Pre* **P49, P50**. *See* **A48, E9, F30, G4, H67, I34, K22, L8, O81**.
33. Hodgdon & Lockhart. Boston, 91–92. *Con* **P42**.
34. C. C. Houghton. Boston, 67–83.
35. Michael Howe. New York, 59–75.
36. John Jungermann. New York, 72–74. *See* **H77**.
37. Rudolph C. Koch. New York, 99–00. *Pre* **P58**.
38. James J. Lee. New York, 68–72. *Con* **P39**.
39. Lee & Leverich. New York, 77. *Pre* **P38**.
40. John Leyer. New York, 61.
41. Anton Livelli. New York, 61.
42. William J. Lockhart. Boston, 93–97. *Pre* **P33**.
43. M. S. Ludwig. Philadelphia, 84.
44. Manhattan Musical String. New York, 99–00.
45. Stephen S. Mapes. New York, 98–00.

46. Samuel May. Boston, 77–79.
47. James M. Montgomery. New York, 81–87. *See* **H92**.
48. Morse & Emerson. New York, 79–81. *Con* **P21**, **P49**, **P50**.
49. John T. Morse. New York, 87–89. *Pre* **P48**. *Con* **P32**. *See* **H94**, **P50**.
50. Morse Musical String. New York, 82–89. *Pre* **P48**. *Con* **P32**. *See* **P49**, **P51**.
51. Morse String. Jersey City, NJ, & New York, 91–95. *See* **P50**.
52. National Musical String (“Bell Brand”). Belleville, NJ, and New York, 97; New Brunswick, NJ, and New York, 98–00. *Pre* **P21**, **P25**, **P59**, **P65**.
53. New York Cooperative Piano String. New York, 92–00. *See* **L9?**.
54. Piano String. San Francisco, 93–00.
55. W. S. Pierce. San Francisco, 86–89, 95–00 *Con* and *Pre* **P11**.
56. Francis Ramacciotti. New York, 67–00. *See* **K49**.
57. Ernst Reinking. New York, 69.
58. Charles Reinwarth. New York, 58–98. *Con* **P37**. *See* **L11**.
59. Rice Musical String (R. M. S.). New York, 84–00. *Con* **P52**.
60. John Rossit. New York, 00.
61. John A. Schaff. Cambridgeport, MA, and Chicago, 89–97; New York, 00.
62. Alexander Schmidt. New York, 84.
63. Schomaker Pianoforte Mfg. Philadelphia and Chicago, 92.
64. Phillip J. Spitz (“Diamond Brand”). Paterson, NJ, 93–95. *See* **P27**.
65. Standard Musical String. Trenton, NJ, 92–97. *Con* **P52**. *See* **P68**.
66. Stedman. Cambridgeport, MA, 82–89.
67. Joseph Stegmaier. New York, 56–61.
68. Frank A. Stratton. Sioux City, IA, 94–96. *Agt* **P65**. *See* **H130**.
69. Lawrence A. Subers. Camden, NJ, 91–93.
70. Abner Tordorff. New York, 59–62. *Pre* **P72**. *Con* **P71?**.
71. Edward Tordorff. New York, 78–85; Halfmoon, NY, †92. *Pre* **P70?**.
72. Sharp Tordorff. New York, 54–58. *Con* **P70**.
73. J. Warren Tuck. Boston, 84–97.
74. Peter F. Turner. New York, 81–84.
75. Union Musical String & Gut Mfg. New York, 98.
76. Francis Ustick. New York, 75.
77. Vulcan Iron Works. San Francisco, 93. *See* **P27**.
78. Peter A. Wagner. San Francisco, 86–92.
79. Washburn & Moen (Wire Works). Worcester, MA, and New York, 66–97; Waukegon, IL, 99. *Con* **P2**.

80. T. Weaver. New York, 58.
81. Robert M. Webb. Brooklyn, NY, and New York, 90–97. *Agt* **P15**. *See* **E22, F66, H151, O206**.
82. J. Wenige. New York, 96–97.
83. Charles A. Wessell. New York, 84–97. *Pre* **P84**.
84. Wessell Metal. New York & Philadelphia, PA, 89. *Con* **P83**.
85. Ferdinand Wigand. New York, 76–79.
86. E. Wilson. Boston, 73–79.
87. R. H. Wolff (“Eagle Brand Wire”). New York, 95–00. *See* **P27**.

Q. Varnish, Stain, and Polish

1. American Varnish. New York, 97.
2. Berry Bros. Detroit, MI, 99.
3. Bridgeport Wood Finishing. New Milford, CT, 99.
4. Clarence Brooks. New York, Bridgeport, CT, 89–94.
5. Chase, Roberts. Brooklyn, NY, 92.
6. Chicago Varnish. Chicago, 99.
7. Cleveland Varnish. Cleveland, OH, 99.
8. Davis. Brooklyn, NY, 95.
9. Detroit White Lead Works. Detroit, MI, 99.
10. Dewey Polish. New York, 99–00.
11. Eclat Mfg. Chicago, 00.
12. Esty & Camp (Green’s “Acme” Polish). Chicago, 91.
13. Excelsior Polish. Boston, 73.
14. Flood & Conklin. Newark, NJ, 91–92.
15. German-American Piano Lustre Depot. New York, 89.
16. L. C. Gillespie. New York, 99.
17. Charles F. Glanville. Boston, 90.
18. Glidden & Joy. Cleveland, OH, 80–88. *See* **Q19**.
19. Glidden Varnish. Chicago, 94–97. *See* **Q18**.
20. A. H. Green. Chicago, 91.
21. Hartford Diamond Polish. Hartford, CT, 88–97.
22. Hastings & Winslow. Montclair, NJ, 89–97.
23. Hotopp Varnish. Hoboken, NJ, 54–87.
24. William Hune. Cincinnati, 96.
25. W. S. Lefavour. Salem, MA, 98.
26. Llewlyn & Payne. Kansas City, MO, 94.
27. Longman & Martinez. New York, 99.
28. C. M. Loomis. New Haven, CT, 80–82.
29. H. Louis. New York, 85.

30. Meyer & Loewenstein. New York, 99.
31. Moller & Schumann. ?, 97.
32. Mueller Music ("Turley's Piano Lustre"). Council Bluffs, IA, 89.
33. Murphy Varnish. Newark, NJ, & Chicago, 91–99; Jersey City, NJ, 96.
34. Parrott Varnish. Bridgeport, CT, 99.
35. Peek & Son ("Opera Polish"), New York, 96.
36. P. B. Smith. New York, 30.
37. Stimson, Valentine. Boston, 59.
38. Thresher. Dayton, OH, 99.
39. Tilden & Hulburt. Newark, NJ, ?.
40. S. M. Tinkham & Sons. Taunton, MA, 73.
41. Valentine. Brooklyn, NY, & New York, 82. 99.
42. V. Victorson. New York, 92; West Roxbury, MA, 92–97.
43. Vinton Bros. New York, 81–82.
44. William Zinsser. New York, 94.

R. Veneer and Lumber

1. S. J. Albright. New York, 91–93.
2. E. D. Albro. Cincinnati, OH, 93–97.
3. Astoria Veneer Mills. Louisville, KY, and New York, 89–93.
4. Atwater, Armstrong & Clarke. Rochester, NY, 96.
5. Auffermann. New York, 90–94.
6. Owen Bearse & Son. Boston, 71–72, 89.
7. Waldo H. Bigelow. Boston, 99–00. *Pre* **R46**.
8. J. J. Bonneau. New York, 00.
9. Julius Breckwoldt. Dolgeville, NY, 96–00. *See* **D9, H22, N1, P9**.
10. Burden & Couch. Cleveland, OH, 93.
11. William Burton. Cohoes, NY, 44–early 60s.
12. Central City Veneer Works. Central City, WV, 95.
13. Isaac I. Cole & Son. New York, 86–00.
14. Thomas Constantine. New York, 35.
15. John Copcutt. New York, 91–92; Yonkers, NY, 95.
16. Daniels. ?, 91.
17. J. B. Dixon. Boston, 91.
18. Falls City Veneer & Panel. Louisville, KY, 96. *See* **K17**.
19. Flood & Conklin. Newark, NJ, 91.
20. S. D. Goodwin. Colton, NY, 91–92. *See* **N4**.
21. Garrett Gordon. New York, 00.
22. J. R. Graham, Jr. New York, 91–92.

23. Grand Rapids Veneer Works. Grand Rapids, MI, 97–99.
24. Garret & George Green. New York, 34.
25. George Hagemeyer & Son. New York, 91–93; New York and Crawfordsville, IN, 95.
26. Willard Hawes. New York, 94.
27. H. Herrmann. New York, 92–93.
28. C. H. O. Houghton. New York, 89; Louisville, KY, and Chicago, 95–99. *Agt* **R30, R37**.
29. Charles Loos. New York, 00.
30. Louisville Veneer Mills. Louisville, KY, 94–95. *See* **R28**.
31. W. L. Marshall. Cincinnati, 00.
32. National Mahogany and Cedar. New York and Boston, ?.
33. Palmer, Parker. Boston, 33, 89.
34. Parkersburg Veneer & Panel. ?, 93.
35. Portsmouth Veneer. Chicago, 93.
36. J. Rayner. New York and Chicago, 91–97.
37. Roumaine Bros. & Mannie. Petersburg, VA, 89. *See* **R28**.
38. Rumbarger Lumber. ?, 93.
39. St. Johnsville Wood Working. St. Johnsville, NY, 95.
40. Josef Scheina. New York, 97–98.
41. Skillings, Whitneys & Barnes Lumber. Boston, 94.
42. Irving Snell. Harrisville, NY, 91–93; Little Falls, NY, 92.
43. Uptegrove & Bro. New York, 91–97. *Pre* **R44?**.
44. William E. Uptegrove. New York, 91. *Cnt* **R43?**.
45. William H. Waters. Little Falls, NY, 81–82, 91.
46. Weston & Bigelow. Boston, 89–98. *Con* **R7, R47**.
47. W. M. Weston. Boston, 99–00. *Pre* **R46**.
48. C. L. Wiley. Chicago, 96–97.
49. I. T. Williamson & Sons. Chicago, 97.
50. Wilshaw. New York, 91.

S. Transposing Keyboards

1. J. L. Hanauer. Buffalo, NY, 94.

APPENDIX 3

**American Piano Manufacturers (and a Few Piano-Parts
Manufacturers) of the Nineteenth Century and Their
Associations with the Piano-Supply Industry**

An initial "The" and a final "Co." or "& Co." are omitted from names of companies. Piano manufacturers are listed in alphabetical order (by first surname, or first word in a non-eponymous company name). Forms and spellings of names of piano parts are of the period. Alternate forms of names of companies are placed in parentheses when they appear with some frequency in the sources; otherwise, obvious isolated errors are not reproduced here. States are not identified for well-known cities whose locations are unambiguous: Baltimore, Boston, Cincinnati, Chicago, New York, and Philadelphia. A company that made only piano parts, but was also a client of another piano-supply company, is identified here by its corresponding symbol (in parentheses) as found in Appendix 2, along with an identification of the part in question, directly after its company name. This list is not a complete catalogue of all American piano manufacturers of the period, as the companies included here are only those for which information has been found regarding either (1) their making their own parts, or (2) their obtaining parts from identified (or unidentified) members of the supply industry. This information is presented here for each manufacturer, with each of the two categories designated by its own symbol, as follows. (1) The symbol "%" indicates parts that were made by the manufacturer. Where specific information about a given part for a given manufacturer is lacking in the sources, the description "(other) large wooden parts" (e.g., cases, wrest-planks, legs, etc.) is indicated here if it is known, at least, that the factory in question had a steam engine, and/or a large supply of lumber and/or veneer. If a piano manufacturer took out a patent for a certain part, the part in question is reported here only if evidence shows that it was actually produced. In a few instances, a piano manufacturing company that produced certain parts for its own use subsequently sold those parts to other manufacturers—or, alternatively, a piano-parts manufacturer that went on also to make whole pianos—will also be listed in Appendix 2. In such cases, the company's

corresponding listing from Appendix 2 is cited here in parentheses following the word “also.” (2) The symbol “\$” indicates suppliers from whom the manufacturer obtained materials (the parts are identified where known) or, in a few examples, at least the parts that were supplied, even though the vendors are not known. Information is presented in chronological order in each category. The symbol “?” placed after either “%” or “\$” indicates that the given information is only suggested in the source(s); placed after \$ it may also indicate evidence of a personal relationship between the manufacturer and the supplier. Footnotes cite the sources and give supporting information. Where, in some instances, the latter is already quoted or otherwise provided in the present article, this is indicated by the words “See article.” Suppliers are identified by references to their corresponding listings in Appendix 2; specific parts are listed only if they are given in the sources. Apparent contradictions between a company’s making certain parts and, on the other hand, obtaining those same parts from suppliers, are assumed to be owing to changes in that company’s manufacturing procedures over time. In fact, many manufacturers changed their locations over the period of their activity, and often such a relocation (usually to a larger factory building) brought about changes in their manufacturing processes that are reflected in the present list if they are documented in the sources.

1. John Abbott, New York

%? Actions.¹⁷²

2. Allen & Jewitt, Leominster, MA

% Cases.¹⁷³ (also D1)

3. D. H. Baldwin, Chicago, Cincinnati

% Cases, keyboards, sounding boards, wrest-planks.¹⁷⁴

\$ Robinson (L12), wood carving machine.¹⁷⁵ O. S. Kelly (M14), plate of upright style 40; Thomas Shriver (M23), plate of grands and upright style 33; Strauch Bros. (A112, I70), actions and keys of style

172. John Abbott’s brother, James, later of Abbott Piano Action, started out with John’s firm. Spillane, *History of the American Piano*, 160.

173. Emerson, *Leominster, Massachusetts*, 258–59.

174. *TMA* 19, no. 2 (Oct. 28, 1897): 12–13, 15.

175. *MTR* 25, no. 15 (Oct. 9, 1879): 19.

40; American Felt (F2), felt.¹⁷⁶ Melville Clark Piano (B19), "Apollo" attachment.¹⁷⁷

4. Augustus Baus, New York

% Large wooden parts.¹⁷⁸ All parts, except perhaps for the plates.¹⁷⁹

\$ Wessell, Nickel & Gross (A122), actions; George Bothner (A14), actions; Herrburger, Schwander & Son (A53), actions.¹⁸⁰

5. Henry Behning, Behning & Klix, New York

% Cases.¹⁸¹ Actions, keys, cases, other large wooden parts, sounding boards.¹⁸²

\$ Celluloid.¹⁸³

6. Behning & Son(s), New York

% Actions, keys, cases, other large wooden parts, sounding boards.¹⁸⁴ Cases, celluloid keys.¹⁸⁵ Large wooden parts.¹⁸⁶

\$? Celluloid Piano Key (I13), keys.¹⁸⁷ William Tonk & Bro. (A116), Herrburger, Schwander & Son (A53), actions.¹⁸⁸ Automaton Piano (B5), attachments.¹⁸⁹

176. *MTR* 2 30, no. 10 (Mar. 10, 1900): 13. Instruments displayed at the Paris Exposition, 1900.

177. *MTR* 2 31, no. 14 (Oct. 6, 1900): 8.

178. *New York Times* (June 17, 1886): 3.

179. *TMA* 2, no. 6 (May 13, 1893): 11. *Ibid.* 2, no. 9 (June 3, 1893): 14. *Ibid.* 3, no. 12 (Sept. 17, 1893): 13, "As every part of the pianoforte is manufactured in this establishment, under the personal supervision of the firm, all the work is finished in the most perfect manner."

180. See article. *MC* 12, no. 12 (Mar. 24, 1886): 194.

181. Behning made cases in 1864–65 before beginning piano-making in 1866. Groce, *Musical Instrument Makers of New York*, 11.

182. *MTR* 1 10, no. 7 (Sept. 13, 1879): 31.

183. *Ibid.*

184. *MTR* 1 10, no. 7 (Sept. 13, 1879): 31.

185. *AAJ* 36, no. 25 (Apr. 15, 1882): 491.

186. *MC* 19, no. 24 (Feb. 11, 1889): 496. Spillane, *History of the American Pianoforte*, 246–47.

187. Opening extensive showrooms on Fifth Avenue and 14th Street, one of which will be used by Behning & Son to show their pianos. *AAJ* 36, no. 9 (Dec. 24, 1881): 179.

188. Henry Behning, Jr., and Charles J. Tonk (of William Tonk & Bro.) visit Paris and are guests of Mr. Herrburger at his house. *MTR* 2 13, no. 2 (Aug. 20, 1889): 492.

189. *MTR* 2 22, no. 22 (June 20, 1896): 13.

7. Behr & Peck, Behr Bros., New York

% Cases.¹⁹⁰ Large wooden parts.¹⁹¹ Actions, cases.¹⁹²

\$ Wessell, Nickel & Gross (A122), actions.¹⁹³ V. Victorson (Q42), varnish.¹⁹⁴

8. George P. Bent ("Crown" pianos), Chicago

% The "Crown Orchestral Attachment and Practice Clavier," designed by M. H. McChesney, associate of George P. Bent.¹⁹⁵

\$ Charles F. Dielmann (D27), cases.¹⁹⁶ Wilcox & White (B31), "Angelus Orchestral" attachment.¹⁹⁷

9. Billings, New York

% Actions, cases, other large wooden parts.¹⁹⁸

\$ Actions, cases (before c. 1879; see above, %.)

10. Blake & Owen (piano dealer), Boston

\$ Frank B. Burns (O34), stools and scarfs.¹⁹⁹

190. Having "occupied a prominent position as piano case makers for the past eight years," Behr Bros. (D7) will start manufacturing pianos. *AAJ* 35, no. 15 (Aug. 6, 1881): 293. See also *New York Times* (Jan. 30, 1883): 8; *TMA* 5, no. 12 (Apr. 28, 1894): 19; and *TMA* 10, no. 6 (June 19, 1895): 10.

191. *AAJ* 38, no. 15 (Feb. 3, 1883): 291. *Ibid.*, 40, no. 3 (Nov. 10, 1883): 59.

192. Spillane, *History of the American Piano*, 272-73.

193. See article. *MC* 3, no. 12 (Mar. 24, 1886): 194.

194. *MC* 27, no. 15 (Oct. 11, 1893): 34.

195. *MTR* 2 19, no. 14 (Oct. 7, 1894): 9; *Musical Instruments at the World's Columbian Exposition . . . held in Chicago, May 1 to October 31, 1893*, edited and compiled by the editorial staff of *The Presto*, Frank D. Abbott, Managing Editor (Chicago: The Presto Co., 1895), 118; and *MTR* 2 40, no. 7 (Feb. 18, 1905): 27.

196. *MTR* 2 5, no. 14 (Feb. 20, 1882): 220. *Ibid.* 5, no. 15 (Mar. 5, 1882): 233.

197. *MTR* 2 31, no. 21 (Nov. 24, 1900): 11.

198. "Messrs. Billings & Company for a time ordered their cases made outside, and while doing so, experienced difficulty with the workmen. The lumber used was generally green and their customers complained. Finally, the firm concluded to manufacture their own cases, and last July started this branch of the trade." They had difficulty in making ready-made upright actions. "They therefore decided to manufacture their own actions, and the city factory not being of sufficient size to accommodate them, they secured a building for the purpose at Tremont, N.Y. They engaged a foreman who had had a long experience in France and Germany, and with a competent force of workmen, Messrs. Billings & Company are turning out actions which they pronounce inferior to none manufactured." *MTR* 1 10, no. 11 (Oct. 11, 1879): 29.

199. *MTR* 2 29, no. 10 (Sept. 2, 1899): 32.

11. Blasius & Sons, Philadelphia

\$ William Tonk & Bro. (**O199**), stools.²⁰⁰

12. Boardman & Gray, Albany, NY

% Actions, "Dolce Compana Attachment," bass string (winding), cases, hammers (covering), keyboards, legs, sounding boards, wrest-planks.²⁰¹ Plates and sounding boards.²⁰²

\$ Pratt, Reed (**I56**), ivory; William Burton (**R11**), veneer; Frederick Frickinger (**A39**), actions; Washburn & Moen (**P79**), wire.²⁰³

\$? Joseph P. Lockey (**D68**), cases.²⁰⁴

13. W. Bourne, Boston

%% Square actions.²⁰⁵

\$ George W. Seaverns & Son (**A97**), actions.²⁰⁶

14. Bradbury, New York

% Large wooden parts, including legs, lyres, and cases made by Freeborn G. Smith (**D101**).²⁰⁷ Cases.²⁰⁸

15. Brambach Piano, Dolgeville, NY

\$? Dolgeville Piano Case (**D29**), cases.²⁰⁹

200. *MTR2* 18, no. 15 (Nov. 4, 1893): 9.

201. "Boardman & Gray's Dolce Compana Attachment Piano-Fortes," 105–106.

202. James A. Gray introduced, in his pianos, his patented "insulated iron rim and frame" and "corrugated sounding-board." Spillane, *History of the American Pianoforte*, 142.

203. *Ibid.* Boardman & Gray's veneer supplier is identified only as "the mills at Cohoes, N.Y." William Burton (**R11**) operated the only veneer mill there from 1844 (its founding) up to at least the early 1860s. See Arthur H. Masten, *The History of Cohoes, New York, from Its Earliest Settlement to the Present Time* (Albany: Joel Munsell, 1877), 80, 85, 120, 128, and 173.

204. Boardman & Gray is quoted: "We have succeeded in getting Mr. J. P. Lockey, formerly of Leominster, Mass., to locate in Albany." *MTR2* 15, no. 14 (Feb. 20, 1892): 316.

205. Spillane, *History of the American Pianoforte*, 171.

206. *MC* 7, no. 25 Dec. 19, 1883): 368.

207. Smith owned the Bradbury Piano Co. starting in 1867. *MTR1* (July 3, 1878): 100.

208. *MC* 28, no. 5 (Jan. 31, 1894): 56.

209. Dolgeville Piano Case had been occupying part of the Brambach factory, but was about to fail in consequence of the failure of Alfred Dolge. Brambach sued to get them out of his building, but probably had used their cases earlier. *MTR2* 26, no. 18 (Apr. 30, 1898): 9. *Ibid.* 27, no. 4 (July 23, 1898): 11 and 19.

16. Braumuller Piano, New York

\$ Wessel, Nickel & Gross (A122), actions.²¹⁰ Davenport & Treacy (H39, M7, P17).²¹¹ Jared J. Looschen (D69), cases, and Bernard N. Smith (D100), cases.²¹²

17. C. C. Briggs & Son, Boston

\$ George W. Seaverns (A97), actions.²¹³ Alfred Dolge & Son (D28, F24, H46, N3, P19), John H. Lockey Piano Case (D67), Wessell, Nickel & Gross (A122).²¹⁴

18. Brown & Hallet, Boston

% Cases.²¹⁵

19. Brown & Simpson, Worcester, MA

\$ V. Victorson (Q42), varnish.²¹⁶

20. W. H. Bush, Bush & Gerts Piano, Chicago

% Transposing keyboard.²¹⁷

\$ George Bothner (A14), actions.²¹⁸ V. Victorson (Q42), varnish.²¹⁹

21. Cable & Sons, New York

\$ Charles F. Dielmann (D27), cases.²²⁰

22. Calenberg & Vaupel, New York

\$ Emily Fleischmann (D36), cases.²²¹

210. MC 31, no. 9 (Aug. 28, 1895): 30. MTR2 21, no. 14 (Oct. 26, 1895): 61, through Ibid., 26, no. 8 (Feb. 19, 1898): 15.

211. MTR2 26, no. 24 (June 11, 1898): 5.

212. MTR2 26, no. 25 (June 18, 1898): 13.

213. MC 7, no. 25 (Dec. 19, 1883): 368.

214. All creditors. MTR2 22, no. 17 (May 16, 1896): 9.

215. Spillane, *History of the American Piano*, 168.

216. MC 27, no. 15 (Oct. 11, 1893): 34.

217. "This feature is peculiar to the Bush & Gerts pianos and is one of the advanced ideas in piano-making." *Musical Instruments at the World's Columbian Exposition*, 128.

218. Have used Bothner actions "for the past ten or twelve years." MTR2 16, no. 9 (Oct. 8, 1892): 196.

219. MC 27, no. 15 (Oct. 11, 1893): 34.

220. MTR2 5, no. 14 (Feb. 20, 1882): 220.

221. *New York Times* (Feb. 7, 1885): 2.

23. A. B. Chase, Norwalk, OH

% Most parts.²²²

\$ Davenport & Treacy (M7), plates.²²³

24. Chicago Cottage Organ ("Kingsbury" pianos), Chicago

% Large wooden parts.²²⁴

\$ Alfred Dolge & Son (D28, F24, H46, N3, P19).²²⁵ Sol Grollman (O77), stools and scarfs.²²⁶

25. Jonas Chickering, Chickering & Sons, Boston

% Actions, cases, (covering) hammers, keys, legs, sounding boards, (winding) strings.²²⁷ All parts.²²⁸ Upright actions, grand plates, hammers.²²⁹

\$ O. J. Faxon (H53), hardware.²³⁰ Pratt, Reed (I56), ivory; Cyrus Alger's Foundry (M1), plates; Washburn & Moen (P79), wire.²³¹ Alfred Dolge (F23), felt.²³² Henry Haas (H64), tuning hammers.²³³ Walker Glue Works (G6), glue.²³⁴ American Glue (G1); American Screw (H5); Benedict & Burnham Mfg. (H9); Bridgeport Brass (H23); Clarence Brooks (Q4); Comstock, Cheney (A21, F18, I18);

222. In the Chase factory, "practically the entire piano is made." *Musical Instruments at the World's Columbian Exhibition*, 86.

223. *MTR2* 14, no. 17 (Apr. 5, 1891): 344. Messrs. Davenport and Treacy viewed the Columbian celebration procession in New York from the Chase warerooms. *MTR2* 16, no. 10 (Oct. 15, 1892): 210.

224. *TMA* 22, no. 4 (June 2, 1898): 14.

225. *MTR2* 25, no. 23 (Dec. 4, 1897): 31.

226. *MTR2* 28, no. 25 (June 24, 1899): 12.

227. *New York Times* (Dec. 3, 1852): 8. Chickering had separate factories at Lawrence, MA, and Boston for case-making, and a factory at Lancaster, MA, for key-making. *The Musical World and New York Musical Times* 4, no. 16 (Dec. 8, 1852): 243–45. See article. Richard Green Parker, *A Tribute to the Life and Character of Jonas Chickering* (Boston: W. P. Tewksbury, 1854): 83–84; *Frank Leslie's Illustrated Newspaper* (Apr. 16, 1859): 305–9. See article. *Scientific American* 39 (new series), no. 17 (Oct. 26, 1878): 255–59.

228. *MTR1* 7, no. 1 (Nov. 2, 1878): 238.

229. Spillane, *History of the American Pianoforte*, 264–66, 331.

230. Faxon, established in 1847, received his first patronage from Jonas Chickering. *AAJ* 35, no. 10 (July 2, 1881): 197.

231. *TMA* 4, no. 16 (Dec. 18, 1852): 243–45.

232. Starting "years ago." *MTR2* 22, no. 24 (July 4, 1896): 15.

233. *AAJ* 42, no. 1 (Oct. 25, 1884): 431.

234. Walker, who had been doing business with Chickering "for some time," closed, and Chickering bought up all of the remaining stock. *MC* 24, no. 1 (Jan. 6, 1892): 14.

Dickinson Ivory (**I20**); Alfred Dolge & Son (**D28**, **F24**, **H46**, **N3**, **P19**); Hammacher, Schlemmer (**A48**, **E9**, **F30**, **G4**, **H67**, **I34**, **K22**, **L8**, **O81**, **P32**); Richard Ranft (**E19**, **F46**, **H114**); Scovill Mfg. (**H124**); Skillings, Whitneys & Barnes (**R41**); Tingle, House (**F64**); John Wales (**H149**); Washburn & Moen (**P79**); William Zinsser (**Q44**).²³⁵ Alfred Dolge & Son (**D28**, **F24**, **H46**, **N3**, **P19**).²³⁶

26. Christie, New York

\$ Charles F. Dielmann (**D27**), cases.²³⁷

27. Clough & Warren, Detroit

% Large wooden parts.²³⁸

\$ V. Victorson (**Q42**), varnish.²³⁹ Schwander Action (**A96**), actions.²⁴⁰

28. William A. Conant, New York (M6), plates

\$ Davenport & Treacy (**M7**), plates.²⁴¹

29. Conover, Chicago

\$ V. Victorson (**Q42**), varnish.²⁴²

30. Conover Bros., New York

% Bridges, tuning pins, upright actions.²⁴³

\$ Wessell, Nickel & Gross (**A122**), actions.²⁴⁴

31. Cottage Organ, Chicago

\$ Sol Grollman (**O77**), stools and scarfs.²⁴⁵

235. See article. *New York Daily Tribune* (Dec. 9, 1894): 4.

236. *MTR2* 25, no. 23 (Dec. 4, 1897): 31.

237. *MTR2* 5, no. 14 (Feb. 20, 1882): 220.

238. *TMA* 25, no. 1 (Feb. 9, 1899): 13.

239. *MC* 27, no. 15 (Oct. 11, 1893): 34.

240. *MTR2* 30, no. 11 (Mar. 17, 1900): 16.

241. Spillane, *History of the American Pianoforte*, 335.

242. *MC* 27, no. 15 (Oct. 11, 1893): 34.

243. Spillane, *History of the American Pianoforte*, 279–81.

244. *MC* 20, no. 14 (Apr. 2, 1890): 38.

245. *MTR2* 28, no. 25 (June 24, 1899): 12.

32. Cummings & Canfield, New York

\$ E. S. Ware (**H150**), tuning pins.²⁴⁶

33. P. J. Cunningham, Philadelphia

\$ Wessell, Nickel & Gross (**A122**), actions.²⁴⁷

34. Curtis, Davis & Hall Piano, Redbank, NJ

\$ Adek Manufacturing ("Pianotist") (**B2**), attachments.²⁴⁸

35. Decker & Sons, New York

% Actions, cases.²⁴⁹ Actions, keys, keyboards, legs.²⁵⁰ Plates, wrest-planks.²⁵¹

\$ Thomas Shriver (**M23**), plates.²⁵² Charles F. Dielmann (**D27**), cases.²⁵³

36. Charles F. Dielmann, New York (D27), cases

\$ Isaac I. Cole & Son (**R13**), veneer and lumber.²⁵⁴

37. Jacob Doll, New York

% Cases.²⁵⁵ (also **D30**)

\$ Astoria Veneer Mills (**R3**), veneer.²⁵⁶ Robinson (**L5**), wood carving machine.²⁵⁷

38. Driggs Piano, New York

% Sounding boards.²⁵⁸

246. Tuning pins on a square piano, c. 1860. Laurence Libin (communication, July 7, 2016).

247. *MTR2* 15, no. 20 (May 20, 1892): 467.

248. *MTR2* 30, no. 17 (Apr. 28, 1900): 8.

249. *MTR16*, no. 4 (June 18, 1878): 82; *AJ33*, no. 2 (May 8, 1880): 27.

250. *MC* 14, no. 3 (Jan. 19, 1887): 42–43.

251. Spillane, *History of the American Pianoforte*, 241.

252. *MTR1* 6, no. 8 (Aug. 18, 1868): 152.

253. *MTR2* 5, no. 14 Feb. 20, 1882): 220.

254. *New York Times* (Feb. 22, 1882): 7.

255. Doll began making cases in 1870 and was making pianos by 1879. Groce, *Musical Instrument Makers*, 45. *MTR2* 29, no. 19 (Nov. 4, 1899): 19; *Ibid.*, 30, no. 16 (Apr. 21, 1900): 12.

256. *MTR2* 21, no. 5 (Aug. 24, 1895): 7.

257. *MTR2* 25, no. 15 (Oct. 9): 19.

258. Spillane, *History of the American Pianoforte*, 225–26.

39. Dyer & Hughes, Foxcroft, Maine

% Cases.²⁵⁹

40. Ellason & Ciegern, Oklahoma City, Oklahoma Territory

\$ Davenport & Treacy (**M7**), plates.²⁶⁰

41. Emerson Piano, Boston

\$ C. F. Goepel (**H60**), Allen's patent piano casters.²⁶¹

\$? National Papeterie (**C2**), bronze panels.²⁶²

42. Thomas Loud Evenden & Son, Philadelphia (see also Loud & Bros.)

\$ David Boggs (**I10**), keyboard.²⁶³

43. Everett Piano, Boston

% Actions.²⁶⁴ All parts, except perhaps for the plates and hardware.²⁶⁵ Cases, sounding boards, and wrest-planks.²⁶⁶ Actions and keys.²⁶⁷ Hammers.²⁶⁸

\$ Seaverns Piano Action (**A97**), actions.²⁶⁹ V. Victorson (**Q42**), varnish.²⁷⁰ Wessell, Nickel & Gross (**A122**), actions.²⁷¹

\$? Alfred Dolge & Son (**D28, F24, H46, N3, P19**) and Davenport & Treacy (**H39, M7, P17**).²⁷²

259. *MTR2* 19, no. 18 (Nov. 24, 1894): 16.

260. *MTR2* 14, no. 17 (Apr. 5, 1891): 344.

261. *MTR2* 21, no. 19 (Nov. 30, 1895): 15.

262. See article. *Established 1849, The Emerson Piano Company, Manufacturers of Grand, Square and Upright Pianos* (Philadelphia: Ketterlinus Printing House, n.d.).

263. Piano c. 1815 in Metropolitan Museum of Art has keyboard marked "D. Boggs." Libin, *American Musical Instruments*, 179.

264. *Musical Instruments at the World's Columbian Exhibition*, 67.

265. "We are among the few piano makers who have a complete manufacturing plant. We practically make every portion of our product, in our own factories, under our own supervision." *MTR2* 26, no. 11 (Feb. 12, 1898): 19.

266. *MTR2* 26, no. 13 (Mar. 26, 1898): 21.

267. *MTR2* 26, no. 15 (Apr. 9, 1898): 21.

268. *MTR2* 26, no. 16 (Apr. 16, 1898): 17.

269. *MC* 27, no. 15 (Oct. 11, 1893): 22.

270. *MC* 27, no. 15 (Oct. 11, 1893): 34.

271. *MTR2* 24, no. 25 (June 19, 1897): 25.

272. Col. Daniel Treacy and Karl Fink, the latter of Alfred Dolge & Son Co., were guests at the celebration of the twenty-fifth anniversary of the marriage of Melbourne A. Marks, superintendent of the Everett factory. *MTR2* 22, no. 22 (June 20, 1896): 12.

44. J. & C. Fischer, New York

% Cases, other large wooden parts.²⁷³ Probably all parts, except perhaps for the plates and hardware.²⁷⁴

\$ George W. Seaverns & Son (A97), actions.²⁷⁵

\$? Comstock, Cheney (A21, F18, I18).²⁷⁶

45. Fort Wayne Organ ("Packard" pianos), Fort Wayne, IN²⁷⁷

\$ Strauch Bros. (A112, F58, I70), actions, hammers, keys.²⁷⁸

46. Frasier & Smith, Cambridgeport, MA (F25), hammer coverer

\$? Alfred Dolge (F23), felt.²⁷⁹

47. Frederick Frickinger, Nassau, NY

% Actions (also A39).²⁸⁰

48. Ernest Gabler, Gabler & Bro., New York

% Cases, large wooden parts, sounding boards.²⁸¹ Cases, carvings, keys, sounding boards.²⁸²

\$ George Bothner (A14), actions.²⁸³

49. John Geib & Son, New York

\$ Duncan Phyfe (D88), case.²⁸⁴

273. *AAJ* 35, no. 22 (Sept. 24, 1881): 437; *Ibid.*, 37, no. 5 (May 27, 1882): 95; *New York Times* (Dec. 3, 1884): 1.

274. "Every important part of the instrument made at the manufactories of the manufacturers, and adjusted to the slightest detail." *MTR2* 30, no. 5 (Feb. 3, 1900): 20.

275. *MC* 7, no. 25 (Dec. 19, 1883): 368.

276. George L. Cheney attended a reception at the White House in Washington, DC, at the invitation of Mr. Fischer. *MTR2* 28, no. 15 (Apr. 15, 1899): 24.

277. *MTR2* 29, no. 12 (Sept. 16, 1899): 16.

278. *MTR2* 27, no. 9 (Aug. 27, 1898): 15.

279. A visit to the Dolge felt factory in Brockett's Bridge: "Messrs. Frasier & Smith, the hammer coverers, of Boston, and the representative of their New York house, Mr. J. R. Jones, were of our party, and were much surprised and pleased, and took great interest in all they saw in the manufacture of the article which they probably use more of than any other house in the country." *MTR2* 3, no. 3 (Aug. 5, 1880): 12.

280. See article. Spillane, *History of the American Pianoforte*, 312. Dolge, *Pianos and Their Makers*, vol. 1, p. 287.

281. *New York Times* (Oct. 25, 1880): 8.

282. *MTR2* 28, no. 9 (Mar. 4, 1899): 28.

283. Have used Bothner grand and upright piano actions "for more than twenty-five years." *MTR2* 16, no. 9 (Oct. 8, 1892): 196.

284. The case of a square piano c.1816 in the Metropolitan Museum of Art (attribution). See article. Libin, *American Musical Instruments*, 169–171.

50. Geib & Walker, New York

% Wrest-pins.²⁸⁵

51. Gibson Piano, New York

\$ Comstock, Cheney (A21, F18, I18); Davenport & Treacy (H39, M7, P17); Jared J. Looschen (D69); Francis W. Young (A130).²⁸⁶

52. Gibson & Davis, New York

\$ Duncan Phyfe (D88), case.²⁸⁷

53. Gilbert, Boston

% Actions.²⁸⁸

54. Gildemeester & Kroeger, New York

\$ Clarence Brooks (Q4); Comstock, Cheney (A21, F18, I18); Alfred Dolge & Son (D28, F24, H46, N3, P19); Henry Haas & Son (D46, H65); Richard Ranft (E19, F46, H114); Charles Reinwarth (L11, P58); Thomas Shriver (M23); Bernard N. Smith (D100, K58); William Tonk & Bro. (A116, I73, O199); I. T. Williamson & Sons (R49).²⁸⁹

55. Grovesteen, New York

\$ William W. Fields (J1), stencils.²⁹⁰

56. Grovesteen, Fuller, New York

\$ Charles F. Dielmann (D27), cases.²⁹¹ Sylvester Tower (A117, I74).²⁹² Joseph P. Lockey (D68), cases.²⁹³

57. Grubb & Meyer, Nassau, NY (A44), actions,

\$ Paul Pryibil (L10), machinery.²⁹⁴

285. Daniel Walker patented a wrest-pin that was introduced in the Geib & Walker instruments. Spillane, *History of the American Piano*, 160.

286. All creditors. *MTR* 2 30, no. 15 (Apr. 14, 1900): 5.

287. The case of a square piano c.1815 in the Metropolitan Museum of Art (attribution). See article. Libin, *American Musical Instruments*, 169.

288. Spillane, *History of the American Piano*, 38.

289. All creditors. *MTR* 2 22, no. 19 (May 30, 1896): 8.

290. *The Sun* (Sept. 6, 1877): [1].

291. *MTR* 2 5, no. 14 (Feb. 20, 1882): 220.

292. Creditor (see also Woodward & Brown). *FMD* 7, no. 11 (Jan. 15, 1887): 7.

293. Creditor. *FMD* 7, no. 19 (Mar. 12, 1887): 11.

294. *MTR* 2 27, no. 25 (Dec. 17, 1898): 19.

58. Guild, Church, Cambridge, MA

% Cases.²⁹⁵

\$ George W. Seaverns & Son (A97), actions.²⁹⁶

59. Haines Bros., New York

% Large wooden parts, including legs, lyres, and sounding boards.²⁹⁷ Cases.²⁹⁸ Actions, cases, keyboards.²⁹⁹

\$ Felt, ivory, tuning pins, and other materials.³⁰⁰ Isaac I. Cole & Son (R13), veneer and lumber.³⁰¹ Davenport & Treacy (M7), plates.³⁰² Pratt, Read (I56), keys.³⁰³ Sylvester Tower (A117, I74), actions and keys.³⁰⁴ Abbott Piano Action (A1) and Alfred Dolge & Son (D28, F24, H46, N3, P19).³⁰⁵ Jared J. Looschen (D69), cases.³⁰⁶ Robinson (L12), wood carving machine.³⁰⁷ George Bothner (A14, K3), Davenport & Treacy (H39, M7, P17).³⁰⁸

60. Joseph P. Hale, New York

% Sounding boards.³⁰⁹ Legs.³¹⁰ Stencils.³¹¹

295. AAJ 36, no. 4 (Nov. 19, 1881): 77; MTR2 5, no. 8 (Nov. 20, 1881): 106; AAJ 38, no. 15 (Feb. 3, 1883): 295.

296. MC 7, no. 25 (Dec. 19, 1883): 368.

297. MTR1 8, no. 10 (Apr. 5, 1879): 15.

298. *New York Times* (Aug. 22, 1882): 5; MTR2 13, no. 9 (Dec. 5, 1889): 202.

299. Spillane, *History of the American Pianoforte*, 208–209.

300. In 1863, anticipating coming difficulties in importing these items, Napoleon J. Haines purchased them in large quantities (vendors not identified), thus “cornering” the market and making a profit when he later sold them to other manufacturers (purchasers also not identified). Spillane, *History of the American Pianoforte*, 207.

301. MTR2 10, no. 18 (Apr. 20, 1887): 284; FMD 9, no. 15 (Feb. 11, 1888): 9.

302. MTR2 12, no. 13 (Feb. 5, 1889): 222.

303. Creditor. MC 28, no. 10 (Mar. 7, 1894): 30.

304. Creditor. Haines Bros. reported that Tower was to supply them with 250 keyboards, but Tower could ship only thirty-eight because he could not get enough ivory from Comstock, Cheney. Haines Bros. then gave the order to Pratt, Read, but Tower assumed Haines Bros.’ debt of about \$38,000 to that firm in order to get the whole contract for actions and keyboards. MC 28, no. 10 (Mar. 7, 1894): 30; MTR2 22, no. 22 (June 20, 1896): 9.

305. Creditors. MTR2 20, no. 11 (Mar. 16, 1895): 5.

306. Creditor. MTR2 24, no. 10 (Mar. 6, 1897): 21.

307. MTR2 25, no. 15 (Oct. 9, 1897): 19.

308. Creditors. MTR2 27, no. 4 (July 23, 1898): 7.

309. *The Sun* (Sept. 4, 1877): 1.

310. Carvers worked on the fourth floor of the factory. *The Sun* (Sept. 4, 1877): 1; *New York Times* (Sept. 4, 1877): 1.

311. Hale’s son-in-law, Charles H. Stone, now cuts his stencils for him. *The Sun* (Sept. 6, 1877): [4].

\$ William W. Fields (J1), stencils.³¹² Francis W. Young (A130), actions; Pratt, Reed (I56), keys; Sylvester Tower (I74), keys; Brown & Patterson (M5), plates; William A. Conant (M6), plates.³¹³ Behr & Peck (D8) and Behr Bros. (D7), cases.³¹⁴ Diehlmann & Funk (D24) and Charles F. Diehlmann (D27), cases.³¹⁵ All parts.³¹⁶

61. Hallet & Cumston, Boston

\$ George W. Seaverns (A97), actions.³¹⁷

62. Hallet, Davis / Hallet & Davis, Boston

% Cases and legs made in company's factory in Fitchburgh, MA.³¹⁸ Actions; cases, tops, and other large wooden parts; hammers; hardware; keys; plates (drilled and finished); sounding boards.³¹⁹ All parts, perhaps except for plates.³²⁰

\$ Cyrus W. Chadwick (O39), stools.³²¹ V. Victorson (Q42), varnish.³²²

63. Hardman, Dowling & Peck, New York

% Cases, other large wooden parts.³²³

\$? American Piano-Forte Action Co. (A3), actions.³²⁴

312. *The Sun* (Sept. 6, 1877): 4.

313. *The Sun* (Sept. 8, 1877): 4.

314. Ibid. "Behr has only been making a few cases for Hale, and if the supply were cut off from that source it would scarcely affect his business." *MTR* 2 3, no. 3 (Aug. 5, 1880): 10.

315. See article. *The Sun* (Sept. 8, 1877): [4]. "Hale does not care whether Diehlman makes cases for him or not, his principal object being to get rent for the Factory which Diehlman occupies . . . , although the cases can be made cheaper in Leominster, even after paying freight, than they can be made in New York." *MTR* 2 3, no. 3 (Aug. 5, 1880): 10; *MTR* 2 5, no. 14 (Feb. 20, 1882): 220.

316. *MC* 15, no. 21 (Nov. 23, 1887): 346.

317. *MC* 7, no. 25 (Dec. 19, 1883): 368.

318. *TMW* 6, no. 1 (May 7, 1853): 3.

319. *MTR* 1 10, no. 7 (Sept. 13, 1879): 27.

320. Reference to the factory, "where the whole piano, down to the minutest details, is made. There are only three piano factories beside that of Hallett & Davis in this country, of which such completeness in construction can be confirmed." *MTR* 2 31, no. 24 (Dec. 15, 1900): 9.

321. *MTR* 2 9, no. 2 (Aug. 20, 1885): 19.

322. *MC* 27, no. 15 (Oct. 11, 1893): 34.

323. *New York Times* (Aug. 20, 1882): 12.

324. Hardman, Dowling & Peck tried sets of actions made by this company, but found them unsatisfactory. *AAJ* 38, no. 11 (Jan. 6, 1883): 211.

64. Hardman, Peck, New York

%? Actions, cases, plates, strings, sounding board, and wrest-plank?³²⁵

\$ Wessell, Nickel & Gross (A122).³²⁶ Adek Manufacturing (B2), "Pianotist" attachment.³²⁷

65. Harvard Piano, Cambridgeport, MA

\$ V. Victorson (Q42), varnish.³²⁸

66. Hattersley Brothers, Trenton, NJ

% Everything but the cases.³²⁹

\$ Cases.³³⁰

67. Haynes Bros., New York

\$ Alfred Dolge & Son (D28, F24, H46, N3, P19).³³¹

68. Hazelton Bros., New York

% Large wooden parts.³³² Cases.³³³

\$ Charles N. Stimpson (K60), legs.³³⁴ Thomas Shriver (M23), plates.³³⁵ William Tonk & Bro. (A116), Herrburger, Schwander & Son (A53), actions.³³⁶ V. Victorson (Q42), varnish.³³⁷ C. F. Goepel (H60), Allen patent piano casters.³³⁸

325. Company's catalogue describes these parts as if they were made in the factory, but does not say so directly. *MTR2* 30, no. 19 (May 12, 1900): 19.

326. *MC* 27, no. 21 (Jan. 22, 1893): 28.

327. *MTR2* 30, no. 17 (Apr. 28, 1900): 8.

328. *MC* 27, no. 15 (Oct. 11, 1893): 34.

329. *MTR1* 10, no. 8 (Sept. 20, 1879): 28.

330. "Those we have made to order." *MTR1* 10, no. 8 (Sept. 20, 1879): 28.

331. Creditor. *MTR2* 22, no. 23 (June 27, 1896): 5.

332. *New York Times* (Jan. 30, 1883): 8.

333. *MTR2* 24, no. 12 (Mar. 20, 1897): 17.

334. A square piano, c.1870. Laurence Libin, "19th-Century Keyboards Suffer in New Jersey," *Newsletter of the American Musical Instrument Society* 22, no. 1 (Feb. 1993): 4.

335. *MTR1* 6, no. 8 (Aug. 18, 1878): 152.

336. A standing order for these actions, "which they have used almost from time immemorial." *MTR2* 12, no. 19 (May 5, 1889): 364.

337. *MC* 27, no. 15 (Oct. 11, 1893): 34.

338. *MTR2* 21, no. 19 (Nov. 30, 1895): 15.

69. Herlich, Paterson, NJ

% Cases.³³⁹ (also **D48**)

%? Actions, cases, and all but keyboards and plates.³⁴⁰

\$ Brown & Paterson (**M5**); Harvey S. Crane (**F20**); Davenport & Treacy (**H39, M7, P17**); Alfred Dolge (**E5, F23, H45, N2, P18**); Henry Haas & Son (**D46, H65**); Hammacher, Schlemmer (**A48, E9, F30, G4, H67, I34, K22, L8, O81, P32**); L. F. Hepburn (**A49, F31, H72, N8**); George Lange & Son (**I40**); Pratt, Read (**F45, I56**); Strauch Bros. (**A112, F58, I70**); Francis W. Young (**A130**).³⁴¹

70. Henry Holtzman & Sons, Columbus, OH (O89), stools and scarfs

\$ Sol Grollman (**O77**), stools and scarfs.³⁴²

71. C. Hinzie, Chicago

\$ V. Victorson (**Q42**), varnish.³⁴³

72. Hunt Bros., Boston

\$ Cyrus W. Chadwick (**O39**), stools.³⁴⁴

73. Huntington Piano, Shelton, CT

\$ All parts.³⁴⁵

339. "We . . . understand that at the Herlich factory in Paterson, which is conducted by [John J.] Swick, the only parts of the piano made are case parts. The action is made by a different concern, of course, and purchased by Herlich & Co—that is, Swick—and so are the other parts. We give this information for what it is worth, as we never had the pleasure to visit the factory." *MC* 18, no. 4 (Jan. 23, 1889): 76. "The case department of the Herlich factory is doing a large trade, and cases are being manufactured for many firms in the trade." *FMD* 12, no. 5 (June 1, 1889): 11.

340. "They have a complete plant of wood-working, action-making and case-making machinery. . . . Herlich & Co. manufacture their own actions, cases, trusses and backs. In fact, nearly everything used in the construction of the pianoforte, with the exception of the ivory key boards and the casting of the iron frame. . . . Last week the firm were putting in a new boiler of triple the capacity of their old one." *AAJ* 50, no. 7 (Sept. 1, 1888): 109. Note the considerable contrast between this statement (showing all signs of having been based on an on-site inspection) and the one quoted from *MC* in note 339, which reveals the unsupported opinion of Marc A. Blumenberg, known to have been very critical of John J. Swick and his several companies.

341. Creditors. *MTR* 2 12, no. 22 (June 20, 1889): 397.

342. *MTR* 2 31, no. 16 (Oct. 20, 1900): 48.

343. *MC* 27, no. 15 (Oct. 11, 1893): 34.

344. *MTR* 2 9, no. 2 (Aug. 20, 1885): 19.

345. *TMA* 13, no. 7 (Mar. 25, 1896): 21.

74. Ivers & Pond, Boston

% Large wooden parts.³⁴⁶

75. Frederick Kath, Union Hill, NJ

% Large wooden parts.³⁴⁷

76. Keller Bros. & Blight, Bridgeport, CT

\$ Comstock, Cheney (A21, F18, I18); Davenport & Treacy (H39, M7, P17); Alfred Dolge & Son (D28, F24, H46, N3, P19); Hammacher, Schlemmer (A48, E9, F30, G4, H67, I34, K22, L8, O81, P32); L. F. Hepburn (A49, F31, H72, N8); H. Herrmann (R27), Roth & Engelhardt (A91), Staib Piano Action Mfg. (A105).³⁴⁸ Veneer.³⁴⁹

77. W. W. Kimball, Chicago

% Actions, cases, other large wooden parts.³⁵⁰ Stools and scarfs.³⁵¹ All parts.³⁵²

\$ Wessell, Nickel & Gross (A122), actions.³⁵³ Strauch Bros. (A112), actions.³⁵⁴ Actions.³⁵⁵ Alfred Dolge & Son (D28, F24, H46, N3, P19).³⁵⁶

78. William Knabe, Baltimore

% Actions, cases, keys, hammers, legs, lyres, other large wooden parts, sounding boards, strings (winding), plates.³⁵⁷ Large wooden parts.³⁵⁸

346. MC 16, no. 17 (Apr. 25, 1888): 296.

347. *New York Times* (Oct. 29, 1867): 8; *New York Times* (Nov. 11, 1867): 8.

348. Creditors. MTR2 22, no. 18 (May 23, 1896): 7.

349. MTR2 27, no. 22 (Nov. 26, 1898): 19.

350. TMA 10, no. 9 (July 10, 1895): 9.

351. "Music Trade Directory," MTR2 23, no. 16 (Nov. 7, 1896): iv; MTR2 23, no. 20 (Dec. 5, 1896): 6; MTR2 24, no. 1 (Jan. 2, 1897): 6; through MTR2 25, no. 21 (Nov. 20, 1897): 5.

352. "The best materials only are used, and all the various parts are made in their own factories." MTR2 27, no. 20 (Nov. 12, 1898): 9.

353. MC 20, no. 14 (Apr. 2, 1890): 310; MC 20, no. 23 (May 28, 1890): 508. Wessell, Nickel & Gross actions not used in Kimball pianos, in spite of sales agents' claims. MC 22, no. 24 (June 17, 1891): 644.

354. MC 20, no. 26 (June 18, 1890): 576.

355. Seaverns actions not used in Kimball pianos, despite claims to the contrary. MC 23, no. 24 (July 8, 1891): 40.

356. MTR2 25, no. 23 (Dec. 4, 1897): 31.

357. MC 21, no. 23 (Dec. 3, 1890): 553. "Knabe & Co. manufacture all sections of their pianos." Spillane, *History of the American Pianoforte*, 299, 331.

358. Program book of Berlin Philharmonic concerts, 1891–92 season, engraving of factory.

\$ V. Victorson (**Q42**), varnish.³⁵⁹ Alfred Dolge (**F23**), felt.³⁶⁰ Isaac I. Cole & Son (**R13**), lumber.³⁶¹ Plates.³⁶² Alfred Dolge & Son (**D28**, **F24**, **H46**, **N3**, **P19**).³⁶³

79. Krakauer Bros., New York

% Cases, other large wooden parts.³⁶⁴

\$ V. Victorson (**Q42**), varnish.³⁶⁵ Paul Pryibil (**L10**), plate drilling.³⁶⁶ Robinson (**L12**), wood carving machine.³⁶⁷

80. Kranich & Bach, New York

% Keys, cases.³⁶⁸ Keys, cases, other large wooden parts.³⁶⁹ All except metal parts.³⁷⁰

\$ George Bothner (**A14**), actions.³⁷¹ V. Victorson (**Q42**), varnish.³⁷² Isaac I. Cole & Son (**R13**), lumber.³⁷³ Charles Loos (**R29**), veneer.³⁷⁴

359. *MC* 27, no. 15 (Oct. 11, 1893): 34.

360. "years ago." *MTR2* 22, no. 24 (July 4, 1896): 15.

361. *MTR2* 29, no. 26 (Dec. 23, 1899): 29.

362. *MC* 21, no. 23 (Dec. 3, 1890): 553.

363. *MTR2* 25, no. 23 (Dec. 4, 1897): 31.

364. *AAJ* 37, no. 5 (May 27, 1882): 97; *MTR2* 28, no. 6 (Feb. 11, 1899): 11; *MTR2* 28, no. 19 (May 13, 1899): 12; *MTR2* 29, no. 8 (Aug. 19, 1899): 17; *MTR2* 29, no. 10 (Sept. 2, 1899): 25; and *MTR2* 29, no. 12 (Sept. 16, 1899): 9.

365. *MC* 27, no. 15 (Oct. 11, 1893): 34.

366. *MTR2* 24, no. 14 (Apr. 3, 1897): 21.

367. *MTR2* 25, no. 15 (Oct. 9, 1897): 19.

368. *New York Times* (Sept. 18, 1879): 8.

369. *MC* 26, no. 14 (Apr. 5, 1893): 28.

370. "We are among the very few manufacturers who have a complete piano manufacturing plant. By this we mean that, excepting the metal parts, we make every portion of the piano, including the entire action, case, key-board, legs, top, sounding-board, bridges, mouldings, carvings and ornaments in our own factories and under our personal supervision, and we are therefore enabled to personally warrant every instrument." *MTR2* 26, no. 18 (Apr. 30, 1898): 31.

371. Have used Bothner grand, upright, and square piano actions for "many years." *MTR2* 16, no. 9 (Oct. 8, 1892): 196.

372. *MC* 27, no. 15 (Oct. 11, 1893): 34.

373. *MTR2* 30, no. 15 (Apr. 14, 1900): 12; *MTR2* 31, no. 24 (Dec. 15, 1900): 15.

374. *MTR2* 30, no. 25 (June 23, 1900): 17.

81. Krell Piano, Cincinnati

\$ Rice & Holden (**D92**), cases.³⁷⁵ W. L. Marshall (**R31**), lumber.³⁷⁶

82. Kroeger Piano, New York

\$ Francis Eckert (**I26**), Charles Eckert (**I24**), or Charles Eckert & Bro (**I25**), keys.³⁷⁷ Actions.³⁷⁸ Automaton Piano (**B5**), attachments.³⁷⁹ All wooden and metal parts.³⁸⁰

\$? New York Pianoforte Key (**I49**); Charles Pfriemer (**F41**); Wessell, Nickel & Gross (**A122**).³⁸¹ W. A. Conant (**M6**), plates.³⁸²

83. C. Kurtzmann, Buffalo

% Large wooden parts.³⁸³

\$ George Bothner (**A14**), actions.³⁸⁴

84. Lighte & Bradbury, New York

\$ Hotopp (**Q23**), varnish.³⁸⁵

85. Lindemann & Sons, New York

\$ Wessell, Nickel & Gross (**A122**), actions.³⁸⁶

375. Krell paid only about one-third of the bill of \$3,000, claiming that Rice & Holden had not lived up to their agreement to use thoroughly seasoned wood. Rice & Holden sued Krell and won the decision. *MTR2* 24, no. 24 (June 12, 1897): 97; *MTR2* 24, no. 25 (June 16, 1897): 10.

376. *MTR2* 31, no. 15 (Oct. 13, 1900): 19.

377. A harp-piano in the Metropolitan Museum of Art, attributed to Henry Kroeger and resembling one dated 1856 in a Kroeger advertising brochure of c.1890, has the stamp "85 Eckert" on its top key (the number refers to the key in question, not the date). See Libin, *American Musical Instruments*, 188-89, where Charles Eckert is identified. It could also have been his brother Francis, or both of them.

378. See article. *Daily Nebraska State Journal* (Lincoln, NB; Sept. 17, 1886): 6.

379. *MTR2* 22, no. 22 (June 20, 1896): 13.

380. *MTR2* 24, no. 7 (Feb. 13, 1897): 19.

381. Members of these companies were among those, mostly former employees of Steinway & Sons Co., who testified, in a document dated Apr. 1, 1886, that Henry Kroeger formerly had been the superintendent of the Steinway & Sons factory for many years. *Daily Nebraska State Journal* (Lincoln, NB; Sept. 17, 1886): 6.

382. See article. *Ibid.*

383. *MC* 22, no. 25 (June 24, 1891): 672.

384. Have used Bothner actions "for the past twenty-five (25) years." *MTR2* 16, no. 9 (Oct. 8, 1892): 196.

385. Spillane, *History of the American Pianoforte*, 340.

386. *MTR2* 28, no. 24 (June 17, 1899): 15.

86. Thomas Loud, Sr., New York

% Upright action.³⁸⁷

87. Loud & Brothers, Philadelphia

\$ David Boggs (I10), keyboards.³⁸⁸

88. Malcolm Love, Waterloo, NY

\$ Wessel, Nickel & Gross (A122), actions.³⁸⁹ J. H. Phelps (B21), "Harmony" attachment.³⁹⁰

89. Ludwig, New York

% Cases, "Claviola" attachments.³⁹¹

\$ Brown & Patterson (M5), plates; Pratt, Read (I56), keys; Staib-Abendschein (A103), actions.³⁹²

90. McCammon Piano, Albany, NY, and Oneonta, NY

% Actions, cases, keys.³⁹³ Large wooden parts, (preparing) plates (also M16).³⁹⁴

%? Gorgen & Grubb (A41), actions.³⁹⁵

91. McPhail Piano, Boston

% Actions.³⁹⁶

\$ Frank B. Burns (O34), stools and scarfs.³⁹⁷

92. John Christian Malthaner, Bethlehem, PA

\$ John Gill (H58), tuning pins.³⁹⁸

387. Spillane, *History of the American Pianoforte*, 180.

388. Square piano, 1830, and upright piano, 1831, both in the Metropolitan Museum of Art. Libin, *American Musical Instruments*, 179.

389. MC 20, no. 14 (Apr. 2, 1890): 38.

390. MTR2 18, no. 1 (July 29, 1893): 5, 7.

391. MTR2 30, no. 17 (Apr. 28, 1900): 16; MTR2 30, no. 25 (June 23, 1900): 9.

392. MTR2 30, no. 25 (June 23, 1900): 9.

393. MTR1 5, no. 12 (Apr. 15, 1878): 236–37.

394. MTR2 18, no. 47 (June 23, 1894): 28.

395. Probably will be used by McCammon. MC 23, no. 15 (Oct. 7, 1891): 398.

396. "The company have originated a novel idea at this time in having expert workmen at work in both their show windows, engaged in their manufacture of piano actions." MTR2 27, no. 25 (Dec. 17, 1898): 19.

397. MTR2 29, no. 10 (Sept. 2, 1899): 32.

398. Thanks to Laurence Libin for information (communication May 29, 2016).

93. Mason & Hamlin, Boston

% Sounding boards.³⁹⁹

\$ George W. Seaverns & Son (A97), actions.⁴⁰⁰ Automaton Piano (B5), attachments.⁴⁰¹

\$? Adek Manufacturing (B2), "Pianotist" attachments.⁴⁰²

94. Mathushek & Son, New York

\$? Herrburger, Schwander & Son (A53), actions.⁴⁰³

95. Mehlin & Sons, New York

% Upright plates.⁴⁰⁴

96. Henry F. Miller, Boston

% Cases, other large wooden parts.⁴⁰⁵

\$ Alfred Dolge (N2), sounding boards.⁴⁰⁶ George W. Seaverns & Son (A97), actions.⁴⁰⁷ Cyrus W. Chadwick (O39), stools.⁴⁰⁸

97. Needham Piano & Organ, Washington, NJ (factory), and New York

% Actions, cases, other large wooden parts.⁴⁰⁹

\$ V. Victorson (Q42), varnish.⁴¹⁰

399. *TMA* 22, no. 5 (June 9, 1898): 25.

400. *MC* 7, no. 25 (Dec. 19, 1883): 368.

401. *MTR* 22, no. 22 (June 20, 1896): 13.

402. Mr. Daniels of Mason & Hamlin visited the Adek showrooms. *MTR* 230, no. 17 (Apr. 28, 1900): 8.

403. In Paris, V. Hugo Mathushek, the grandson of Frederick Mathushek, visited Mr. Schwander, of Herrburger, Schwander, "who treated him with every courtesy possible." *MTR* 218, no. 7 (Sept. 9, 1893): 4.

404. Spillane, *History of the American Pianoforte*, 294–95.

405. *MTR* 110, no. 9 (Sept. 27, 1879): 29.

406. J. H. Gibson, head of the manufacturing department of Henry F. Miller, visited the Dolge factory in Brockett's Bridge, NY, and said that "he had used Mr. Dolge's boards ever since he began manufacturing them, and never ha[d] found a poor one or a blemish." *MTR* 23, no. 3 (Aug. 5, 1880): 12.

407. *MC* 7, no. 25 (Dec. 19, 1883): 368.

408. *MTR* 29, no. 2 (Aug. 20, 1885): 19.

409. *TMA* 7, no. 12 (Oct. 31, 1894): 9; Needham catalogue, c. 1898.

410. *MC* 27, no. 15 (Oct. 11, 1893): 34.

98. New England Piano, Boston

% Actions, cases, other large wooden parts.⁴¹¹ All parts.⁴¹²

\$ Owen Bearse & Son (R6); Homer D. Bronson (C1, H24); Comstock, Cheney (A21, F18, I18); Cornwall & Patterson Mfg. (H35); Davenport & Treacy (H39, M7, P17); J. B. Dixon (R17); Alfred Dolge (E5, F23, H45, N2, P18); O. J. Faxon (H53, M9); Hammacher, Schlemmer (E9, F30, G4, H67, I34, K22, L8, O81, P32); Hastings & Winslow (Q22); Palmer, Parker (R33); Parker & Young (D85, N10); Richard Ranft (E19, F46, H114); Clayton S. Stevens (O191); Charles S. Stone (D105, K63); Strauch Bros. (A112, F58, I70); Sylvester Tower (A117, I74); Weston & Bigelow (R46).⁴¹³ V. Victorson (Q42), varnish.⁴¹⁴ Robinson (L12), wood carving machine.⁴¹⁵

99. James B. Nugent, New York

\$ Charles F. Dielmann (D27), cases.⁴¹⁶

100. Nunns & Clark, New York

% Hammers.⁴¹⁷

411. *TMA* 6, no. 2 (Oct. 31, 1894): 9.

412. "Largest Producing Piano Factories in the World. Manufacturing the Entire Piano." *MTR2* 15, no. 4 (Sept. 20, 1891): 87. "We manufacture the entire piano, including case, keys, action, sound-board, etc., etc., in our own factories, thereby enabling us to fully warrant every instrument of our manufacture with a warrant which *means* what it says." *MTR2* 25, no. 23 (Dec. 4, 1897): 35.

413. All creditors. *MTR2* 12, no. 19 (May 5, 1889): 332; *MTR2* 12, no. 20 (May 20, 1889): 366. Both of the foregoing sources list James Cumston among the creditors ("James W." appears in the first, and the correct "James S." appears in the second). James S. Cumston was the son of William Cumston, who had combined with Russell Hallett (also spelled "Hallett" in some sources)—who had previously been associated, in turn, with Edwin Brown, George H. Davis, and Henry Allen—to form the partnership of Hallett & Cumston in about 1850. James S. Cumston was the director of this company in 1889. See Spillane, *History of the American Pianoforte*, 165–68. It is difficult to explain the presence of a rival piano manufacturer among the other creditors of the New England Piano Co. (largely piano-supply companies and a few banks), unless Cumston had simply invested money in the firm; another possibility is that Hallett & Cumston had supplied New England Piano with stencil pianos (in spite of the latter's advertising claims of high quality).

414. *MC* 27, no. 15 (Oct. 11, 1893): 34.

415. *MTR2* 25, no. 15 (Oct. 9, 1897): 19.

416. *MTR2* 5, no. 14 (Feb. 20, 1882): 220.

417. In 1850 Nunns & Clark began to use the hammer-covering machine patented by Rudolph Kreter, and in 1851 they purchased the invention. Spillane, *History of the American Pianoforte*, 153–54.

101. Osborn, New York

% Actions.⁴¹⁸

102. Pease Piano, New York

\$ Charles F. Dielmann (D27), cases.⁴¹⁹

103. Petit Bijou Piano, St. Johnsville, NY

\$ Roth & Engelhardt (A91).⁴²⁰

104. James Pirsson, New York

% Tuning pins.⁴²¹

105. Prescott Piano, Concord, NH

\$ Cases.⁴²²

106. Prince & Son, New York

\$ Jared J. Looschen Piano Case (D69), cases.⁴²³

107. Francis Ramacciotti, New York (K49), legs, lyres, desks, mouldings, wooden panels, props, trusses, etc.

\$ Robinson (L12), wood carving machine.⁴²⁴

108. Charles Reinwarth, New York (P58), strings

\$ Washburn & Moen (P79), wire.⁴²⁵

109. Ricca & Son, New York

% Cases.⁴²⁶

418. Spillane, *History of the American Pianoforte*, 157.

419. *MTR2* 5, no. 14 (Feb. 20, 1882): 220.

420. Creditor. *MTR2* 20, no. 8 (Feb. 23, 1895): 9.

421. Spillane, *History of the American Pianoforte*, 199.

422. The company just starting. "A large number of cases have been ordered, which will soon be ready to put into the varnish room." *MTR2* 22, no. 9 (Mar. 21, 1896): 7.

423. Prince sells his business to Looschen for \$10,680.19 to pay his debt. *MTR2* 23, no. 6 (Aug. 29, 1896): 13.

424. *MTR2* 25, no. 15 (Oct. 9, 1897): 19.

425. *MTR2* 4, no. 10 (June 20, 1881): 151.

426. *MTR2* 29, no. 19 (Nov. 4, 1899): 31.

110. Rice-Hinze Piano, Des Moines, IA

\$ Various parts.⁴²⁷

111. John Ruck, New York

% Actions.⁴²⁸

112. Schaaf Bros., Chicago

\$ V. Victorson (Q42), varnish.⁴²⁹

113. Schnabel & Lambert, New York

% Cases.⁴³⁰

114. Julian Scholl, New York (M22), plates

\$ Paul Pryibil (L10), machinery.⁴³¹

115. Schubert Piano, New York

% "Mandolin Attachment."⁴³² Cases, other large wooden parts.⁴³³

116. Schomaker Piano, Philadelphia

% Cases, plates, and other parts.⁴³⁴

117. M. Schulz ("Irving" pianos), Chicago

\$ Roth & Engelhardt (A91), actions.⁴³⁵

427. "The Rice-Hinze Company are laying in a large stock of piano materials. During his stay in the East, Mr. [I. N.] Rice will visit the various supply houses in New York, Boston, Mass., Ivorytown, Conn., and elsewhere." *MTR2* 13, no. 6 (Oct. 20, 1889): 134.

428. *Official Catalogue of the New York Exhibition of the Industry of all Nations, 1853* (New York: George P. Putnam & Co., 1853), 95.

429. *MC* 27, no. 15 (Oct. 11, 1893): 34.

430. Spillane, *History of the American Pianoforte*, 276.

431. Scholl, agent for O. S. Kelly, has bought permission to use Pryibil's machine for drilling piano plates cast by Kelly. *MTR2* 24, no. 14 (Apr. 3, 1897): 21.

432. Also imitates the banjo, zither, guitar, autoharp, and harp. Schubert Piano Co. Catalogue no. 15, c. 1890.

433. *MTR2* 26, no. 23 (June 4, 1898): 31.

434. They "manufacture within their own factory walls nearly everything that enters into the construction of a piano. They build their own cases, cast the iron frames, and practically construct all parts of the piano." *MTR2* 16, no. 9 (Oct. 8, 1892): 198.

435. Roth & Engelhardt sued Bloomingdale Bros. department store, claiming that the latter had offered Irving pianos with Roth & Engelhardt actions for sale at much below the usual price and advertised them in the *New York Herald*, whereas all but ten of them contained inferior actions. *MTR2* 28, no. 1 (Jan. 7, 1899): 20.

118. Shaw Piano, Erie, PA

\$ Adek Manufacturing (B2), "Pianotist" attachment.⁴³⁶

119. Singer Piano, Chicago

% Actions, cases, large wooden parts, sound-boards, keyboards.⁴³⁷

120. Bernard N. Smith, New York (K58), legs, lyres, desks, mouldings, wooden panels, props, trusses, etc.

\$ Robinson (L12), wood carving machine.⁴³⁸

121. Freeborn G. Smith ("Bradbury," "Henning," and "Webster" pianos), Brooklyn, NY,

% Cases and other large wooden parts, including legs and lyres.⁴³⁹
Cases (also D101).⁴⁴⁰

122. Smith & Barnes, Chicago

\$ Wickham, Chapman (M28), plates.⁴⁴¹

123. Sohmer, New York

% Keys.⁴⁴² Actions, cases, scroll and fret work, lyres, wrest-planks, legs, and other large wooden parts.⁴⁴³ Actions, keys, cases, legs, other large wooden parts.⁴⁴⁴ Actions, hammers, keys, cases, other large wooden parts, sounding boards, string winding, panel engraving.⁴⁴⁵ Keys, cases, scroll and fret works, panels.⁴⁴⁶ Pianissimo pedal.⁴⁴⁷

436. *MTR2* 30, no. 17 (Apr. 28, 1900): 5.

437. "Not to be confounded with so-called 'manufacturers' who do not manufacture at all, but simply assemble parts (such as cases of unseasoned materials, actions, key-boards, sound-boards, trusses, panels, etc.) bought at lowest prices." *TMA* 26, no. 1 (May 11, 1899): 13.

438. *MTR2* 25, no. 15 (Oct. 9, 1897): 19.

439. *MTR1* 6, no. 5 (July 3, 1878): 100.

440. See article. *AAJ* 35, no. 17 (Aug. 20, 1881): 337; Emerson, *Leominster, Massachusetts*, 260. "Many of the leading houses buy these cases." *MC* 25, no. 18 (Nov. 9, 1892): 31; *MTR2* 18, no. 16 (Nov. 11, 1893): 4; *MTR2* 18, no. 39 (Apr. 28, 1894): 7; *MTR2* 28, no. 12 (Mar. 25, 1899): 15. Capacity of 1,800 cases per month. *MTR2* 29, no. 5 (July 29, 1899): 12.

441. *MTR2* 29, no. 24 (Dec. 9, 1899): 13.

442. *MC* 8, no. 5 (Jan. 30, 1884): 72.

443. *MC* 20, no. 11 (Mar. 12, 1890): 240-42.

444. *MC* 30, no. 8 (Feb. 20, 1895): 48.

445. *MC* 32, no. 11 (Mar. 11, 1896): 38.

446. *TMA* 17, no. 7 (Mar. 25, 1897): 12.

447. Spillane, *History of the American Pianoforte*, 256-57.

\$ George Bothner (A14), actions.⁴⁴⁸ Paul Pryibil (L10), machinery.⁴⁴⁹

124. Sebastian Sommer Piano, New York

\$ Automaton Piano (B5), attachments.⁴⁵⁰ Actions, cases, hammers, keys, sounding boards, and other wooden and metal parts.⁴⁵¹

125. Stark & Strack, Chicago

\$ V. Victorson (Q42), varnish.⁴⁵²

126. Starr Piano, Richmond, IN

% All parts except actions.⁴⁵³

\$ American Piano Action (A2), actions.⁴⁵⁴

127. George Steck, New York

% Cases.⁴⁵⁵

\$ Thomas Shriver (M23), plates.⁴⁵⁶ Hotopp (Q23), varnish.⁴⁵⁷ Wessell, Nickel & Gross (A122), actions.⁴⁵⁸ Adek Manufacturing (B2), "Pianotist" attachments.⁴⁵⁹

\$? Alfred Dolge (E5, F23, H45, N2, P18).⁴⁶⁰

128. Steger & Sons Manufacturing, Chicago

% The "Technicphone Attachment."⁴⁶¹

%? Actions, bridges, cases, plates, sounding boards.⁴⁶²

448. Have had "twenty (20) years experience" with Bothner actions. *MTR2* 16, no. 9 (Oct. 8, 1892): 196.

449. *MC* 30, no. 8 (Feb. 20, 1895): 48.

450. *MTR2* 22, no. 22 (June 20, 1896): 13.

451. *MTR2* 24, no. 7 (Feb. 13, 1897): 24.

452. *MC* 27, no. 15 (Oct. 11, 1893): 34.

453. *MTR2* 13, no. 4 (Sept. 20, 1889): 96.

454. *MTR2* 15, no. 17 (Apr. 5, 1892): 395.

455. *New York Times* (Oct. 8, 1878): 5; *MTR1* 6, no. 12 (Oct. 18, 1878): 238.

456. *MTR1* 6, no. 8 (Aug. 18, 1878): 152.

457. Spillane, *History of the American Pianoforte*, 340.

458. *MTR2* 18, no. 47 (June 23, 1894): 8b.

459. *MTR2* 30, no. 17 (Apr. 28, 1900): 5.

460. Mr. Nembach, of George Steck & Co., visits the Dolge factory in Dolgeville. *MTR2* 5, no. 3 (Sept. 5, 1881): 31.

461. *Musical Instruments at the World's Columbian Exposition*, 304.

462. A Steger & Sons catalogue describes these parts, but does not state whether they were made by the company. *MTR2* 24, no. 15 (Apr. 10, 1897): 17.

129. Steinway & Sons, New York

% Actions, cases, wrest plank, other large wooden parts.⁴⁶³
Cases.⁴⁶⁴ All parts, including the plates and metal hardware.⁴⁶⁵
Plates.⁴⁶⁶

\$ Pratt, Read (**I56**), keys.⁴⁶⁷ Charles Reinwarth (**L11**), machinery.⁴⁶⁸ Henry Haas (**H64**), tools (tuning hammers).⁴⁶⁹ Hotopp (**Q23**), varnish.⁴⁷⁰ Alfred Dolge (**F23**), felt.⁴⁷¹ Automaton Piano (**B5**), attachments.⁴⁷² Alfred Dolge & Son (**N3**), sounding-board lumber.⁴⁷³

\$? Richard Ranft (**E19**, **F46**, **H114**).⁴⁷⁴ W. A. Conant (**M6**), plates.⁴⁷⁵

130. Sterling, Derby, CT

% All parts.⁴⁷⁶ Large wooden parts, sounding boards.⁴⁷⁷

463. *Frank Leslie's Illustrated Newspaper* 18, no. 452 (May 28, 1864): 158; Steinway & Sons brochure, 1867.

464. Steinway & Sons' piano case factory at Leominster, MA, purchased by Freeborn G. Smith. *AAJ* 35, no. 17 (Aug. 20, 1881): 337.

465. Steinway's manufacturing works "are now conceded to be not only the most perfectly arranged, but also by far the most extensive of their kind in the world." Steinway & Sons brochure, 1881. *MC* 11, no. 4 (July 29, 1885): 58. "The only manufacturers who make all component parts of their pianofortes, exterior and interior (including the casting of the full metal frames), in their own factories." *MTR* 20, no. 12 (Mar. 23, 1895): 11 (advertisement continued through 1900).

466. Spillane, *History of the American Pianoforte*, 331.

467. In the midst of a strike by his keyboard makers, William Steinway contracted with Pratt, Read (**I56**) to supply what are reported as "parts of keyboards" (ivory slips?) in December, 1879, and January, 1880. See the entries for these months in "The William Steinway Diary, 1861–1896," www.americanhistory.si.edu/steinwaydiary/diary (accessed Sept. 2, 2015).

468. Steinway & Sons had three of Reinwarth's string-winding machines. See article. *MTR* 2, no. 10 (June 20, 1881): 151.

469. *AAJ* 42, no. 1 (Oct. 25, 1884): 431.

470. Customers "for ten consecutive years." Spillane, *History of the American Pianoforte*, 340.

471. "years ago." *MTR* 22, no. 24 (July 4, 1896): 15.

472. *MTR* 22, no. 22 (June 20, 1896): 13.

473. *MTR* 27, no. 5 (July 30, 1898): 14.

474. See article. Lieberman, *Steinway & Sons*, 79 and 92.

475. See article. *Daily Nebraska State Journal* (Sept. 17, 1886): 6.

476. *MC* 11, no. 4 (July 29, 1885): 58.

477. *TMA* 13, no. 3 (Feb 26, 1896): 21; *TMA* 14, no. 2 (May 20, 1896): 13.

131. Charles M. Stieff, Baltimore

% Actions, bass string winding, cases, other large wooden parts, keys, sounding boards.⁴⁷⁸

\$? Wessell, Nickel & Gross (A122).⁴⁷⁹

132. Story & Clark, Chicago

\$ Staib Piano Action Mfg. (A105), actions.⁴⁸⁰

133. Strascino Piano, Fond du Lac, WI

% Cases.⁴⁸¹

134. Strich & Zeidler, New York

\$? Automaton Piano (B5).⁴⁸² Alfred Dolge & Son (D28, F24, H46, N3, P19; C. F. Goepel (A40, B14, E7, G3, H60, I28, K19, L7, P27); Pratt, Read (F45, I56); Staib Piano Action Mfg. (A105); V. Victorson (Q42).⁴⁸³ Staib-Abendschein (A103).⁴⁸⁴

135. Stultz & Bauer, New York

\$ George Bothner (A14), actions.⁴⁸⁵

136. Swick, New York

% Cases.⁴⁸⁶

\$ Alfred Dolge & Son (D28), cases.⁴⁸⁷

478. *TMA* 13, no. 7 (Mar 25, 1896): 25.

479. Adam Nickel and Charles Muhlenfels of Wessell, Nickel & Gross attended a Stieff picnic. *MTR2* 31, no. 3 (July 21, 1900): 19.

480. *MTR2* 24, no. 3 (Jan. 16, 1897): 7.

481. Beginning c. Aug. 1, 1897. *MTR2* 25, no. 5 (July 31, 1897): 19.

482. Strich & Zeidler had a special display at the showrooms of Automaton Piano. *TMA* 12, no. 1 (Nov. 13, 1895): 13.

483. Members of these firms all spoke to the quality of Strich & Zeidler's pianos in a lawsuit between that company and M. Steinert & Sons. *MTR2* 24, no. 6 (Feb. 6, 1897): 19.

484. Strich & Zeidler occupied part of Staib-Abendschein's building. *MTR2* 31, no. 23 (Dec. 8, 1900): 10.

485. Have used Bothner actions "for several years." *MTR2* 16, no. 9 (Oct. 8, 1892): 196.

486. *MTR2* 9, no. 4 (Sept. 20, 1885): 42.

487. Swick calls Dolge "my case maker." *AAJ* 61, no. 5 (May 13, 1893): 119.

137. Swick & Kelso, New York

\$? Francis Denninger (**D23**), cases.⁴⁸⁸

138. Peter Tapper, Chicago

\$ Wessell, Nickel & Gross (**A122**), actions.⁴⁸⁹

139. Tryber & Sweetland, Chicago

\$ V. Victorson (**Q42**), varnish.⁴⁹⁰

140. Vose & Sons, Boston

% Cases, other large wooden parts.⁴⁹¹ Large wooden parts.⁴⁹²

\$ George W. Seaverns & Son (**A97**), actions.⁴⁹³ C. F. Goepel (**H60**), hardware.⁴⁹⁴

141. Waterloo Organ Co. (Malcolm Love pianos), Waterloo, NY

\$ Wessell, Nickel & Gross (**A122**), actions.⁴⁹⁵ J. H. Phelps (**B21**), "Harmony" attachment.⁴⁹⁶

142. William H. Waters, Little Falls, NY

% Large wooden parts, sounding boards.⁴⁹⁷

143. Weber Piano (William E. Wheelock, Stuyvesant Piano), New York

% Keys, cases.⁴⁹⁸ Cases, large wooden parts, wrest planks, keys, hammers, sounding boards.⁴⁹⁹

488. Given as a rumor. *MC* 20, no. 11 (Mar. 12, 1890): 268.

489. Creditor. *MTR2* 22, no. 24 (July 4, 1896): 5.

490. *MC* 27, no. 15 (Oct. 11, 1893): 34.

491. *AAJ* 37, no. 23 (Sept. 30, 1882): 471.

492. *TMA* (Oct. 6, 1898): 9.

493. *MC* 7, no. 25 (Dec. 19, 1883): 368.

494. Goepel was the agent for Allen's casters. *MTR2* 21, no. 19 (Nov. 30, 1895): 15.

495. *MC* 20, no. 14 (Apr. 2, 1890): 38.

496. *Musical Instruments at the World's Columbian Exposition*, 31.

497. *MC* 22, no. 23 (June 10, 1891): 621.

498. *New York Times* (Sept. 18, 1879): 8.

499. *TMA* 18, no. 11 (July 22, 1897): 14–15; *TMA* 18, no. 12 (July 29, 1897): 17, 19; *MTR2* 25, no. 10 (Sept. 4, 1897): 33.

\$ Thomas Shriver (**M23**), plates.⁵⁰⁰ Hotopp (**Q23**), varnish.⁵⁰¹
 George Bothner (**A14**), actions; Strauch Bros. (**A112**), actions.⁵⁰²
 Ivory.⁵⁰³

144. Weser Bros., New York

% Weser Bros. (also **A121**), actions.⁵⁰⁴

145. Charles A. Wessell, New York

% Charles A. Wessell (**P83**), strings.⁵⁰⁵

146. William E. Wheelock, New York

% Cases, legs, lyres, other large wooden parts, sounding boards.⁵⁰⁶

147. Wing & Son, New York

% "Instrumental Attachment," actions, pedals, hammers, and possibly other parts.⁵⁰⁷

148. Otto Wissner, New York

\$ Thomas Shriver (**M23**), plates (concert grand).⁵⁰⁸ Herrburger, Schwander & Son (**A53**), actions (concert grand).⁵⁰⁹

149. Woodward & Brown, Boston

% Actions.⁵¹⁰

\$ George W. Seaverns & Son (**A97**), actions.⁵¹¹ Sylvester Tower (**A117, I74**).⁵¹²

500. *MTR1* 6, no. 8 (Aug. 18, 1878): 152.

501. Spillane, *History of the American Piano*, 340.

502. Creditors. *MTR2* 22, no. 9 (Mar. 21, 1896): 16.

503. *TMA* 18, no. 11 (July 22, 1897): 7–8.

504. The 1883 issue (covering 1882) of the Business Directory of the City of New York lists Weser Bros. as a piano action maker.

505. Wessell had recently become a piano manufacturer. *MTR2* 29, no. 17 (Oct. 21, 1899): 12.

506. *AAJ* 36, no. 5 (Nov. 26, 1881): 95.

507. *The Book of Complete Information about Pianos* (New York: Frank Wing, 1897), 52–79.

508. *MC* 28, no. 18 (May 2, 1894): 26.

509. *MC* 29, no. 7 (Aug. 15, 1894): 26.

510. *AAJ* 36, no. 4 (Nov. 19, 1881): 77.

511. *MC* 7, no. 25 (Dec. 19, 1883): 368.

512. Creditor (see also Grovesteen & Fuller). *FMD* 7, no. 11 (Jan. 15, 1887): 7.