

*Manufacturing Guitars for the  
American Parlor:  
James Ashborn's Wolcottville, Connecticut,  
Factory, 1851-56*

PHILIP F. GURA

By the mid 1850s Americans were awash in popular music. With the spread of labor-saving technology and the concomitant extension of leisure, Americans not only flocked to musical theater and the minstrel shows but also purchased hundreds of thousands of pieces of sheet music intended for performance in the parlor, the center of the new domestic sphere. Familiarity with such folios, songs meant to be accompanied by piano or, with increasing frequency, the guitar, as well as purely instrumental music, marked those (particularly women) who aspired to middle-class respectability. The phenomena of such immensely popular performers as the Hutchinson Family singers and Jenny Lind, the 'Swedish Nightingale,' who toured the United States to packed houses, and of composers such as Stephen Foster, whose

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PHILIP F. GURA is Professor of English, and Adjunct Professor of American Studies and Religious Studies at the University of North Carolina at Chapel Hill, and serves on the editorial board of *A History of the Book in America*. He is also an old-time music enthusiast and stringed instrument collector. He would like to thank the following people for assistance on this essay: Margaret Banks, Edmund Britt, Robert E. Eliason, Gail Kruppa, Bernie Lehmann, Laurence Libin, Juris Poruks, Arthur Schrader, and Robert Winans.

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song sheets were eagerly purchased by his admirers, signaled the nation's infatuation with popular music.<sup>1</sup>

But while we recently have learned much about the cultural role of music (what we might term its varied 'consumption') in antebellum America, we know little about the production and distribution of the instruments used to accompany it, particularly those produced far from urban markets but clearly intended for them.<sup>2</sup> Given the pervasiveness of this interest in music in antebellum culture, it is important to understand who produced such parlor instruments and how.<sup>3</sup> Moreover, because the interest in popular music coincided with the rise of the manufacturing system, and thus with an expanding economy that both required and engendered new distribution and market systems, case studies of those who produced musical instruments allow us to understand better the transition from artisanal to factory production in this crucial period of America's economic history.<sup>4</sup>

1. See, for example, Russell Sanjek, *American Popular Music and Its Business: The First Four Hundred Years*, 3 vols. (New York: Oxford University Press, 1988), 2: 1-125 *passim*; Gerald Bordman, *The American Musical Theater* (New York: Oxford University Press, 1978); Carl Wittke, *Tambo and Bones: A History of the American Minstrel Stage* (Durham, N. C.: Duke University Press, 1930); Robert C. Toll, *Blacking Up: The Minstrel Show in 19th Century America* (New York: Oxford University Press, 1974) and *On with the Show: The First Century of Show Business in America* (New York: Oxford University Press, 1976); Nicholas Tawa, *Sweet Songs for Gentle Americans: The Parlor Song in America 1790-1860* (Bowling Green, Ohio: Bowling Green State University Press, 1980), and *A Music for the Millions: Antebellum Democratic Attitudes and the Birth of American Popular Music* (New York: Pendragon Press, 1984); E. Douglas Branch, *The Sentimental Years, 1836-1860* ([1934] New York: Hill and Wang, 1965), 175-88; Harry Dichter and Elliott Shapiro, *Handbook of Early American Sheet Music* (New York: R. R. Bowker, 1941); and W. Porter Ware and Thaddeus C. Lockard, Jr., *P. T. Barnum Presents Jenny Lind: The American Tour of the Swedish Nigbttingale* (Baton Rouge, La.: Louisiana State University Press, 1980).

2. Gary J. Kornblith, 'The Craftsman as Industrialist: Jonas Chickering and the Transformation of American Piano Manufacturing,' *Business History Review* 59 (Autumn 1985): 349-69, provides one of the few discussions of this subject.

3. Here I wish to distinguish the production of such parlor instruments as the pianoforte and guitar from that of brass or wind instruments intended for bands and orchestras, which have received more attention. See, for example, Robert E. Eliason, 'The Meachams, Musical Instrument Makers of Hartford and Albany,' *Journal of the American Musical Instrument Society*, 5-6 (1980): 54-73, and *Keyed Bugles in the United States* (Washington: Smithsonian Institution Press, 1972).

4. See, for example, Susan E. Hirsch, 'From Artisan to Manufacturer: Industrialization and the Small Producer in Newark,' in Stuart W. Bruchey, ed., *Small Business in American Life* (New York: Columbia University Press, 1980), 80-99; and Kornblith, 'The Craftsman as Industrialist,' *passim*.

In the antebellum period James Ashborn's guitar factory in Wolcottville (now Torrington), Connecticut, which he operated for almost two decades beginning in the late 1840s, became one of the country's chief sources of parlor guitars. Given this fact, Ashborn's career provides an important view of the evolution of rural artisanry to factory production through urban retailing in this period, and hitherto undocumented details of stringed instrument-making as well. In particular, his and his financial partner A. N. Hungerford's accounting journal from April 1851 to January 1856 outlines supply, improvement, and building accounts, expenses for labor, numbers and types of instruments manufactured, and Ashborn and Hungerford's financial arrangements with the music trade in New York City, where Ashborn's guitars were sold.<sup>5</sup> These records and his extant instruments themselves illuminate ways in which Ashborn, after identifying a large and dependable market, sought local investment from those who already were engaged in—and thus knowledgeable about—the ways in which manufactured goods could be distributed, and then modified a traditional craft to produce guitars in greater numbers and at a good profit. He accomplished this primarily through standardized and simplified construction of his instruments, consolidation of hitherto segregated segments of guitar manufacture in one factory, and the assembly of a work force whose labor was divided to expedite assembly of the guitars and their accessories. Ashborn's

5. James F. Bollman of Arlington, Mass., the present owner of the Ashborn and Hungerford account book, has generously allowed me to study and quote from it. I cite this book by monthly account rather than by specific page so that the date of a transaction is readily apparent.

Internal evidence indicates that the accounting journal is in the hand of Hungerford. Before each person or company's listing in the monthly accounting, for example, there is a reference number, which never changes throughout the years covered by the book. By Hungerford's name is the number '1.' Further, at p. 141 of the book an external auditor has written at the bottom of the page that he has examined the 'accounts of W[illiam] H[all] & Son & A. N. Hungerford April 20 to Feby 1st 1855 & find bal[ance] in favor of Wm H & Son 2113.09.' At the least, this indicates that Hungerford took care of the accounting of the business. For a good discussion of the different kinds of accounts kept in rural areas in antebellum America, see Winifred Barr Rothenberg, *From Market Places to a Market Economy: The Transformation of Rural Massachusetts, 1750-1850* (Chicago: The University of Chicago Press, 1992), 61-65.

career thus offers a unique starting point to reconstruct a little-studied aspect of American cultural and economic history.

## I

Ashborn's guitar works were located in the town of Torrington in northwestern Connecticut. Thirty miles west-northwest of Hartford and part of the 'Windsor Patent' that was incorporated into Litchfield County, Torrington had been settled in the 1730s when Connecticut's expanding population sought new farmland throughout the western regions of the colony. But by the late eighteenth century the town was not known as much for its agricultural improvements as for its extensive hardwood forests, which contributed to the success of Ashborn's guitar works as well as to the burgeoning wagon-making activity so prevalent in the area, and its plentiful mill sites, situated as it was on the Naugatuck River. Like so many New England communities blessed with these resources, by the 1820s Torrington grew in importance as its grist and saw mills, and its artisanal workshops for the production of tool handles, carriages, and other wooden goods, were joined by factories built specifically for the manufacture of woolen and cotton yarn and cloth, and shortly thereafter of other goods.<sup>6</sup>

Thus, from an early date mill sites and craft workshops were strung up and down the Naugatuck River from Torrington proper, giving rise to numerous factory villages which, though technically part of the incorporated communities, quickly assumed identities of their own. One such was Wolcottville, on a site north of town where the road from Litchfield met that to New Haven. In 1813 Joseph Allyn, who had purchased the water-power privileges in the area, in turn sold them to members of the prominent Wolcott family. Caught up in the spirit of entrepreneurship that marked the period, they lost no time in erecting a sizable woolen mill. As

6. My historical information about Torrington comes primarily from Samuel Orcutt, *Torrington, Connecticut, From Its First Settlement in 1737, with Biographies and Genealogies* (Albany, N.Y.: J. Munsell, 1878). I also have used the manuscript United States Censuses (Population) of 1850 and 1860, primarily to ascertain the ages and occupations of people involved with the guitar works.

a gesture of thanks to its chief proprietors the residents named the community after them.<sup>7</sup>

By the mid 1830s Wolcottville had become the 'principal village' of Torrington and, by John Warner Barber's account, contained (in addition to the woolen factory) about forty dwelling houses, a Congregational meetinghouse, another meetinghouse used by other denominations as well as for an academy, four stores, and two taverns. Barber also noted that a short distance from the factory 'an establishment for the manufacture of brass' was being built. After several reorganizations, this became, in 1841, the Wolcottville Brass Company, owned by Israel Coe and John Hungerford of Wolcottville, and Anson G. Phelps of New York City, and the largest manufacturing enterprise in the area.<sup>8</sup> It joined the Alvord Carriage Manufactory, begun in 1831, and soon thereafter other establishments for the manufacture of woolen and cotton goods, and of chairs.

Torrington's forests and water power in themselves do not suggest an overriding reason why James Ashborn chose to manufacture guitars there, for the town shared these resources with any number of communities throughout western Connecticut. His reason may have been personal, for born in England circa 1816, in Torrington he could have joined those of his countrymen who had been recruited by Israel Holmes, the principal manager of the projected brass works. In the late 1830s he had crossed the Atlantic to procure machinery and workmen, and after much hindrance from those who sought to prevent export of the requisite technology and labor, he finally succeeded in bringing to Wolcottville thirty-eight English men, women, and children.<sup>9</sup> Given Ashborn's skills as a designer and draftsman, evident in the two

7. In *The Roots of Rural Capitalism: Western Massachusetts, 1780-1860* (Ithaca, N.Y.: Cornell University Press, 1990), Christopher Clark comments on how frequently such communities were named after 'a leading craftsman or entrepreneur' (231). Clark's study, although restricted to western Massachusetts, is germane as well to the economic development of the region around Torrington.

8. John Warner Barber, *Connecticut Historical Collections* (New Haven, Conn.: Durrie and Peck, 1838), 495-97.

9. Orcutt, *Torrington*, 101-102.

patents he secured for improvements to his musical instruments (see below), he may well have found his way to Wolcottville to join the recruits.

Ashborn evidently arrived in Torrington in the mid-1840s, for the Census of 1850 lists him as having four children, aged six to thirteen, all of whom had been born in the state of New York. We know nothing of his first wife, but in December 1847 he married Lucinda Smith of Torrington—he was then residing in neighboring Litchfield—and in 1859 Maria L. Cook, daughter of Luther and Bethiah Cook, also of Torrington, by whom he had one more child. In 1850, when he was thirty-four, he called himself a ‘Mechanic’—that is, a skilled artisan—and noted \$2,000 in real estate, an amount that had grown to \$7,000 by the next census, at which time he also noted \$2,000 personal estate. We also know that, true to his English upbringing, he was a member of the Trinity Episcopal Church in Torrington and of the Seneca Lodge of Masons. Coupled with his substantial real estate, his membership in these organizations suggests Ashborn’s prominence in the community, a fact to which his townsmen testified in 1864 when they elected him to the state legislature. For whatever reason, his guitar factory closed at about the same time, but the town historian noted that Ashborn continued to live in the community until his death on December 7, 1876.<sup>10</sup>

We also know that, like many other artisans in that entrepreneurial age, Ashborn sought financial backing from local sources to realize his ambitions, in his case, to build a guitar works to capitalize on the nation’s growing interest in popular music, particularly among those who found the cost of the piano, the major parlor instrument, prohibitive. Costing a tenth or less of this instrument, the guitar promised to bring music into even more American homes.<sup>11</sup> At a time when most of these instruments were

10. This information is gleaned from Orcutt, *Torrington, passim*, and from the manuscript United States Census (Population) of 1850.

11. The important point here is that, in the early phases of industrialization, artisans themselves took the initiative in moving towards factory production and themselves sought financial backing from local capital. That is, the impetus for industrialization only in-

made in Europe, Ashborn believed that he could produce them as well and at a profit, and he convinced the young Austin N. Hungerford of Torrington, whose family already was well established in large-scale manufacturing and thus who knew first hand what it took to make such a venture successful, to become his business partner.

Born October 20, 1824, he was the second child of John Hungerford, originally of Southington, Connecticut, and Charlotte Austin of Wolcottville, whom John married in 1820 after the death of his first wife, Elizabeth Webster. John had opened a store in Wolcottville shortly after its first woolen mill was constructed and before long had acquired an interest in the factory enterprise. From that point he turned his attention primarily to manufacturing. In 1844, for example, he and F. N. Holley formed the Union Manufacturing Company, another local woolen concern, and Hungerford also joined two others as an owner of the local brass mill, which he eventually bought outright. On his death in 1856 he was one of the wealthiest men in the community.

His son Austin, one of fourteen siblings, inherited his interest in business. In the Census of 1850, when Ashborn described himself as a 'Mechanic,' Hungerford prominently listed himself as a 'Manufacturer' (presumably of guitars), just as his father had, and for several more years he and Ashborn conducted a successful business. Sometime between 1856, when the extant guitar-factory record book ends, and 1860 Hungerford evidently left both the business and the area; and, his financial backer departed, Ashborn

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frequently came from capital itself. Clark, *Roots of Rural Capitalism*, chap. 7, comments on how frequently skilled craftsmen sought to expand their works by appealing to local sources of credit; see especially 238-39. Also see Hirsch, 'From Artisan to Manufacturer,' *passim*; Kornblith, 'The Craftsman as Industrialist,' 354, who notes that the piano-maker Jonas Chickering also sought such financial backing, and that, as in the case of Ashborn and Hungerford, he and his partner John McKay divided their attention between what each knew best, that is, production or finance; and Judith McGaw, *Most Wonderful Machine: Mechanization and Social Change in Berkshire Paper Making, 1801-1885* (Princeton: Princeton University Press, 1987), parts 1 and II.

Kornblith observes that Chickering's least expensive pianos cost in the neighborhood of \$200, while some of Ashborn's guitars wholesaled for one-twentieth that price. In July 1855 Ashborn and Hungerford secured for Clark Downs, a Torrington 'Trader,' a piano from New York, at the cost of \$276.25.

had no qualms about listing himself in the 1860 census as the sole 'Guitar Manufacturer.' We know little else of Hungerford, except that he married Sarah Prindle, of Rochester, New York, had one child, Harrie Prindle, and died in November 1873.<sup>12</sup>

We do know, however, that with Hungerford's capital and connections to the larger commercial world Ashborn manufactured thousands of guitars and shipped them to New York City via the newly completed Naugatuck Railroad, which by 1850 had transformed the economic landscape of the Naugatuck River valley.<sup>13</sup> With a rail head in Wolcottville, Ashborn and Hungerford, like other entrepreneurs in the area, gained direct and quick access to New York City, the nation's metropolitan center, and as well to its burgeoning musical industry. More than anything else, this railroad gave Ashborn the incentive to locate his guitar works in Wolcottville and thus made possible his prominence and financial success.

By 1851, if not a few years earlier, he and Hungerford, following a common pattern in this early period of American manufacturing, made exclusive arrangements with large-scale distributors in one commercial center—in this case, with the New York music retailers William Hall & Son, and Firth, Pond & Company—to distribute Ashborn's guitars; in so doing, they assured themselves of a large share of that city's trade in guitars as parlor instruments.<sup>14</sup> If

12. Orcutt, *Torrington*, 512–13, and *passim*. Because the extant account book ends before all its pages were utilized (see note 5 above), and with an accounting of the finances, it seems possible that it was indeed at this point that Hungerford quit the partnership.

13. The Naugatuck Railroad was completed in 1849 and ran from the manufacturing town of Winsted (north of Torrington) down through Waterbury to Bridgeport, where it joined the New York and New Haven Railroad. Obviously, this rail line, its connection to the New York and New Haven making possible rapid and easy transportation to New York City, made possible, and lucrative, Ashborn and Hungerford's guitar manufactory. See Sidney Withington, *The First Twenty Years of Railroads in Connecticut*, Connecticut Tercentenary Pamphlet No. 45 (New Haven, Conn.: Connecticut Tercentenary Commission, 1935); and for a larger view of the impact of railroads on the economy, Thomas C. Cochran, *Frontiers of Change: Early Industrialization in America* (New York: Oxford University Press, 1981), 100–10; and Albert Fishlow, *Railroads and the Transformation of the Antebellum Economy* (Cambridge: Harvard University Press, 1965).

14. Such arrangements were typical of the antebellum music trade. In Boston at around the same time, for example, both Elias Howe and Oliver Ditson similarly had established themselves as giants in the retailing world, acting as purveyors of instruments manufactured



the numbering system Ashborn used to mark his guitars is accurate, by 1851, when the extant record book commences, he already had built close to 2,000 guitars. His works, employing up to ten workers at any one time, had become not only an important part of Torrington's booming economy but the nation's largest supplier of parlor guitars. No other firm, not even that of the renowned Christian F. Martin, who like Ashborn manufactured instruments in a rural area (in Nazareth, Pennsylvania) and marketed them through New York City, rivaled Ashborn's production.<sup>15</sup>

II

Where and how did Ashborn make his instruments? At first his workshop was modest in scale. Sometime in the late 1840s, perhaps with Hungerford's support, he had bought from Lyman Clark a shop that had previously been used to make hayrakes, and fork and hoe handles. This building probably resembled any small early nineteenth-century woodworking shop—the one, say, in which one of his workers, Benjamin Smith, a cabinetmaker originally from Pennsylvania who had owned a small-scale Wolcottville furniture factory, had labored.<sup>16</sup> The large open work area would have been

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specifically for them as well as of sheet music and other accessories. See Christine Merrick Ayars, *Contributions to the Art of Music in America by the Musical Industries of Boston, 1640–1936* (New York: H. H. Wilson Company, 1937), 12–14, 28–34, 265–66, and *passim*; James F. Bollman, 'The Banjomakers of Boston,' in Robert Lloyd Webb, *Ring the Banjar: The Banjo in America from Folklore to Factory* (Cambridge: The MIT Museum, 1984), especially 47–48; and Sanjek, *American Popular Music*, 2: 107–11, 117–19.

It is interesting to note that though by 1830 New York City had become, as Nancy Groce has observed, the nation's center for instrument manufacture (surpassing Philadelphia), there in fact were few guitar-makers in the city, its reputation for instruments based primarily in piano manufacture. Indeed, once Christian F. Martin left the city in 1839, Louis Schmidt and George Maul, in partnership between 1839 and 1858, were the sole guitar-makers of any size and prominence. See Groce, *Musical Instrument Makers of New York: A Directory of Eighteenth- and Nineteenth-Century Urban Craftsmen*, Annotated Reference Works in Music No. 4 (Stuyvesant, N.Y.: Pendragon Press, 1991), xii–xiii, 107, and *passim*.

15. The manufacturing statistics of the United States Census of 1860 indicate that Martin produced only 33 guitars per year. See Peter Danna, 'Guitar,' *New Grove Dictionary of American Music* (New York, 1986), 4 vols., 2: 297. Also see Mike Longworth, *Martin Guitars: A History*, 3rd ed. (Nazareth, Penn.: Longworth, 1988), *passim*.

16. Smith is the only one of Ashborn's employees who in the United States Census of 1850 listed himself as a 'Cabinet Maker.'

dominated by a variety of saws and simple lathes run off leather belts and wooden shafts from a water wheel powered by the Naugatuck River, whose course had been dammed to turn it—hence, such entries in the factory's expense account as those for August 1851 in which the owners recorded the payment of \$10.00 for 'Repairing [the mill] Wheel' and for July 1854, when they noted \$4.37 for 'Repairs to Dam, etc.'<sup>17</sup>

For several years this old rake factory evidently served Ashborn's purposes, although the owners frequently noted repairs or modest physical improvements to it in a separate 'Improvement Account.' In May 1851, for example, Ashborn and Hungerford installed blacksmithing equipment to facilitate metal work—\$25.00 for a 'Blacksmith Shop and Tools'—and a year later paid Ralph Palmer for 'Repairing [a] Shed.' By the early fall of 1852 increased demand for Ashborn's guitars by the New York music houses and expanded manufacture of guitar strings led to construction of a new and presumably larger factory. In a new 'Building Account' Ashborn and Hungerford noted considerable expenditures for the factory's construction: 3,000 bricks (\$18.00), lumber (\$60.10), foundry castings (\$323.85), shafting (\$72.32), and belting (\$5.75), and pay not only for Russell Goodnow and his carpentry crew, but for a 'machinist,' an 'Irishman,' and the chief builder, Willys Curtiss, who received \$281.53. Within a few months there was a noticeable

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On woodworking in general in this period, see the bibliographical guidance of Brooke Hindle, *Technology in Early America: Needs and Opportunities* (Chapel Hill: University of North Carolina Press, 1966), and of Nina E. Lerman, 'Books on Early American Technology, 1966-1991,' in Judith McGaw, ed., *Early American Technology: Essays in the History of Making and Doing Things from the Colonial Era to 1850* (Chapel Hill: University of North Carolina Press, 1994), 358-429. In particular see Wayne Franklin, *A Rural Carpenter's World: The Craft in a Nineteenth-Century New York Township* (Iowa City: University of Iowa Press, 1990); and Nathan Rosenberg, 'America's Rise to Woodworking Leadership,' in Brooke Hindle, ed., *America's Wooden Age: Aspects of Its Early Technology* (Tarrytown, N.Y.: Sleepy Hollow Restorations, 1975), 37-62.

17. In May 1852, for example, Charles Bradley paid twenty-five cents for 'use of Lathe,' indicating that Ashborn indeed used this tool, perhaps to turn his patented wooden tuners (see below). On water power in this period see Charles Howells, 'Colonial Watermills in the Wooden Age,' in Hindle, *America's Wooden Age*, 120-59; and Gary Kulik, 'A Factory System of Wood: Cultural and Technological Change in the Building of the First Cotton Mills,' in Hindle, ed., *Material Culture of the Wooden Age* (Tarrytown, N.Y.: Sleepy Hollow Press, 1984), 300-36.

increase in the size of shipments of both guitars and strings to New York, yet without a concomitant rise in expenditures for labor, suggesting that the innovations in production that Ashborn initiated in his factory (see below) were carried out even more expeditiously in the new plant.<sup>18</sup>

Within the factory, as one might expect in a business based on woodworking, saws were the most important, and most frequently mentioned, tools, and by far the most expensive. In August 1851, for example, the partners bought from J. Atkins & Company a '22 in[ch] veneer saw' for the considerable sum of \$17.00, and two months later from the same source secured a twelve-inch 'circular saw' for \$3.00 and 6 'scrapers' (edge tools used in lieu of sandpaper for smoothing wood before final finishing) for \$1.30. In July 1851 they bought 'files' for \$3.00, and in March 1852 paid out fifty cents for 'filing [a] saw' and at the same time purchased 'belting' (\$3.12) to turn machinery. In 1854, perhaps to outfit further the new factory building for increased production, they purchased a 'saw arbor' for \$14.00, a 'saw frame' for another \$12.00, and subsequently noted the acquisition of a 'cross cut saw' (\$3.38) and several more circular saws (\$15.00).

Such equipment itself brought Ashborn and Hungerford income from both local and distant sources. On several occasions, for example, they allowed the Alvord Carriage Manufactory, by the 1850s one of Wolcottville's largest employers, to use their saws

18. Although monthly production rates of guitars continued to fluctuate after the building of the new factory, on the average Ashborn and Hungerford were able to ship about two to three dozen more guitars per month immediately after its construction. In 1851, for example, the number he made varied from 36 to 77; but after the completion of the factory, in December 1852, he produced as many as 96, 112, and 119 instruments per month, with aggregates in the seventies quite common. As noted, in the year after the factory completion, the overall labor costs per month did not rise more than about \$20 (averaging about \$300.00) and in some months was actually lower than it had been in 1851.

The new factory, however, does not seem to have affected production of the strings as much. The factory shipped this item regularly between April 1852 and June 1853, and then more sporadically, often a few months going by before they sent another shipment. During that period of steady production, they shipped as few as 48 dozen (in September 1852) and as many as 252 dozen (in February 1853, shortly after the factory was completed). It seems more likely that Ashborn used the new space for the more expeditious manufacture of the instruments and perhaps sought the new building because, once he undertook to make strings, his space had become cramped.

to prepare wood for their own works. More often, however, ever alert to opportunities to enlarge their profit margin, Ashborn and Hungerford performed work for the New York companies with whom they already had established extensive business arrangements for the sale of their instruments and the procurement of raw materials not obtainable locally. In particular, they often sawed lumber for William Hall & Son's urban piano factories where the instruments were assembled, thus contributing in another way, as they did in their own factory, to the increased specialization of labor that had come to mark factory production.<sup>19</sup>

Their accounts with Hall & Son, for example, show them frequently 'sawing articles for piano forte work.' In February 1852 they charged the company \$19.00 for 'sawing long blocks' and another \$46.00 for '21 days sawing on piano work and lumber,' and in December of the same year, \$42.50 for 'sawing piano work.' Some of the lumber from which these pieces were cut had been sent by the company from New York City, some procured locally from the same lumbermen who sold Ashborn and Hungerford wood for their guitar work.<sup>20</sup> Even the by-product of such contract work had value. On several occasions Ashborn and Hungerford used hogsheads of sawdust as credit toward purchases at the Wolcottville Brass Company, which presumably used the material in their metal casting.

Aside from the 'scrapers' just noted and a reference to a lathe (see note 17 above), Ashborn and Hungerford never mentioned

19. Kornblith, for example, notes that in an attempt to economize by division of labor, the piano manufacturer Jonas Chickering utilized workers in several different locations around Boston to prepare the components of his instruments—see pp. 360–62. Also see Sean Wilentz, *Chants Democratic: New York City and the Rise of the American Working Class, 1788–1850* (New York: Oxford University Press, 1984), who observes that New York, 'with its immense labor pool, its credit facilities, its access to prefinished materials from Britain and New England, and its transportation lines, was a superb site for producing finished consumer goods, for local consumption or shipment elsewhere.' The out-of-shop contracting that characterized such work, he concludes, created a kind of 'bastard artisan system' in which the old distinctions among craftsmen on the basis of skill was undermined as manufacture was subdivided into various tasks (111–13).

20. The New York State Census (Manufacturing) of 1855 indicates that both William Hall & Son, and Firth, Pond & Company held large stocks of wood. The latter's inventory, for example, listed \$10,000 in 'lumber'; the former held \$2,000 in 'iron and wood stocks.' See Groce, *Musical Instrument Makers of New York*, 52, 70.

the various hand tools used by antebellum woodworkers, perhaps because, as was often the case in this period of transition from artisanal to factory production, many employees may have still owned their own.<sup>21</sup> But materials for the assembly and finishing of the guitars—hide glue and varnish—appear frequently in the accounts. Ashborn obtained his glue locally from the merchants Holcomb & Lyon (\$16.11 worth in July 1852, for example, and a large purchase, for \$47.72, in April 1853), and prepared his varnish, commonly made to an artisan's own specifications, from a variety of ingredients secured from Alvord and various contacts in New York City.

In August 1851, for example, as credit for some brass wire the Wadhams Manufacturing Company, a local cotton factory, had bought from them, Ashborn and Hungerford received amounts of 'vitrol' (sulfate, probably for coloring) and 'aqua fortis' (nitric acid for solvent), and in September took a gallon and a half of 'Japan' (a lacquer) from Alvord's carriage works, along with a gallon of turpentine. The next month Ashborn himself was reimbursed for securing two gallons of alcohol (\$1.40) and two gallons of shellac (\$.50) for the factory; later he bought 3 'glue pots,' and a 'varnish rack' from which to hang the instruments until dry. In October 1851 Ashborn settled on F. W. Parrott as his regular supplier of japan, buying thirty gallons, enough to last a year and a half.

Ashborn and Hungerford also purchased brass from which to manufacture frets and other guitar hardware. For some of this material, particularly the 'rolled brass' which might also have been used for the base of the guitar tuning machines, they turned to the nearby Wolcottville Brass Company, owned by Hungerford's father. They also employed others to prepare the metal to Ashborn's specifications. In April 1851, for example, Edward Langdon contracted to make forty-four brass castings for \$11.00; in July, fifty-seven for \$13.11; and as late as February 1854, another 104, at \$31.28. While we cannot be sure just what Langdon was casting, there is little doubt about what Emery Morris, a thirty-year-old

21. See, for example, Hirsch, 'From Artisan to Manufacturer,' 87.

employee who called himself a 'Mechanic,' provided. Listed in the 'Labor' accounts alongside other workers and paid at the high rate of \$1.25 per day, he also machined 'set screws and wheels' for the guitar tuning machines, a task for which he was paid separately. In July 1851, for example, the company paid Morris \$13.00 for eleven days' labor, and an additional \$18.00 for seventy-two 'sett screws and wheels,' a type of entry repeated every few months until April 1852, when his daily rate rose to \$1.50 and the days he worked per month increased significantly, which suggests that from that point on he machined these parts as his regular task.

The heart of the guitar-making enterprise, though, lay in the wood from which Ashborn constructed his instruments, and he used what was customary for nineteenth-century guitar-making: spruce, a softwood, for the top, sides, and back of the instrument; rosewood, mahogany, or (occasionally) maple for veneering the sides, back, and neck; maple, cherry, or some other hardwood for the neck itself; and dense and resilient ebony or rosewood for the fingerboard, and sometimes for peghead veneer. Ashborn obtained his stocks both from local sources and via rail through the New York firms to whom he and Hungerford sold their guitars and who received substantial credit for supplying exotic woods.

Ashborn got spruce, for example, from both local lumbermen and through Hall & Son of New York. In July 1851 he and Hungerford credited that firm's account for \$47.85 for 1,595 feet of spruce, and in June 1853 \$50.67 for another 1,528 feet. Moreover, in February 1852 they paid \$83.36 to Hall & Son for 'white wood,' that is bass, which Ashborn probably used for the blocks and braces inside his instruments; but he was as likely to get this wood locally, from the lumbermen Smith & Hawley, say, who in June 1853 brought in 502 feet of 'white wood' (\$22.59) as well as 146 feet of 'Spruce Plank' (\$2.34). Another frequent local supplier was Clark Downs, listed in the Census of 1850 as a 'Trader.' In March 1853 Ashborn and Hungerford bought 2,359 feet of 'Whitewood' from him.

Some of the maple that Ashborn occasionally used for the sides

and necks of his instruments, as well as for his 'piano work,' also was obtained locally, for it was one of the most common hardwoods in the region. Winthrop Cook, a 'Lumber Man,' frequently supplied it, bringing in 862 feet in December 1851, along with 1,295 of bass, netting him a total of \$30.13. The next winter he returned with 141 feet, for \$17.63; and in April 1854 he received \$20.51 for 167 feet. Occasionally, Ashborn got this wood from New York—a fifty-foot plank in June 1851, and 1,410 feet in January 1853; and at other times evidently took in a surplus locally for resale to Hall & Son, perhaps for their piano factory. That was the disposition of a load Cook brought in 1851. Cook also supplied local woods that could be used for instrument necks: 300 feet of cherry (\$9.00), 157 feet of apple (\$9.42), and 310 feet of maple (\$3.87) in March 1853; and more cherry and some butternut in August 1853 for \$7.15. On another occasion Ashborn and Hungerford purchased 106 feet of cherry for \$3.18 from the latter's father at the Wolcottville Brass Company. One last hardwood that appears in the accounts is holly, which Ashborn obtained through Hall & Son. It was inexpensive—100 feet for \$1.50 (June 1852).

Ashborn obtained the tropical woods favored by guitar-makers for the bodies and fingerboards of their instruments through the New York firms, and these goods constituted one of his and Hungerford's major expenses. At the same time that they bought a sizable amount of bass from Hall & Son in July 1851, for example, they also took '2 Rose wood Logs' for \$30.00 and '1 13 in[ch] Mahog[any] Plank' for \$8.16. A year later they acquired ninety feet of mahogany for \$14.40, and in January 1853 an unspecified amount for \$14.65. As this indicates, rosewood was very expensive—another log bought in April 1854 cost \$40.50—but essential. All of Ashborn's higher-grade guitars had rosewood veneer over their spruce sides and backs, and he utilized it as well for the fingerboards on some instruments. Ebony was equally dear, with \$22.19 paid for an unspecified amount in December 1853, and \$65.00 for an undecipherable amount in July 1854. More unusual yet was cocus wood, also known as Jamaican ebony, a wood favored

by flute manufacturers but which could be used in guitar work as well. In March 1852 J. Firth & Hall was given \$12.50 credit by 'Scrap Cocus.'<sup>22</sup>

Ashborn and Hungerford sometimes acted as brokers and sold smaller pieces of these exotic woods to local craftsmen. On several occasions Arvid Dayton, who since 1840 had manufactured pipe and then reed organs in a factory near Ashborn's, occasionally bought small pieces of ebony; and Downs took a 'block' of rosewood the day he brought in 3,600 feet of hemlock (a wood Ashborn may sometimes have substituted for spruce for the guitar tops or backs).<sup>23</sup> More anomalously, in February 1855 Ebenezer Welton, a 'Button Maker,' bought an entire rosewood log for \$22.00, a purchase that probably went a long way in his craft.

### III

With these materials Ashborn and his workmen manufactured an astonishing number of instruments. Until July 1854 he and Hungerford meticulously listed by serial number all guitars sent to Firth, Pond & Company, and William Hall & Son—a typical entry reads, '12 No 3 Guitars and Cases / Nos 2938 to 2949.' Even though they inexplicably stopped noting the serial numbers after that date, they continued to enumerate the guitars carefully. Between April 1851 and December 1855 the factory produced 3,152 instruments, an average of fifty-four per month, with as many as 119 shipped in June, as few as twelve in December 1854, and none at all in October and November of that year and in January of 1855, a slowdown that may bear some relation to an audit of their ac-

22. Evidently, even after they had formally separated their businesses, John Firth and William Hall continued to do some business under the name of J. Firth & Hall, for this designation occurs on a few occasions in the record book, never, however, concerning the receipt of goods produced by Ashborn and Hungerford.

23. On Dayton see Orcutt, *Torrington*, 84-85, 428-32. He built his first pipe organ in 1840, and in 1846 his first reed organ, evidently one of the earliest of its kind in America. In 1855 he developed a different sort of board for the organ's reeds which, Torrington's historian writes, 'has proved to be the greatest improvement in reed organs, that has been effected.' Orcutt continues, 'This invention consisted in arranging the reed board so as to have two and a half sets of reeds [or more] all to operate *with one set of valves*, having dampers placed over each half set to be raised by stops, so that either set or half set, can be played alone or at the same time.'



counts with Hall & Son (see below). Finally, Ashborn and Hungerford most often shipped instruments in increments of twelve, and the most common amounts per shipment were four and five dozen.

By the time that Ashborn was building guitars, the few American makers produced what was known as the 'Spanish guitar' (as opposed to the 'English' guitar or cittern), that is, a six-stringed instrument whose basic design, and popularity, had been established on the Continent in the early nineteenth century.<sup>24</sup> The bodies of such instruments were smaller than those of most twentieth-century guitars and ornamented in a variety of ways, accounting for significant difference in prices. This explains Ashborn's designation of six different grades for his guitars, identified by a numeral from one through six (stamped inside the guitar on its center strip) and increasing in cost upwards. During the period covered by the account book, the company shipped 916 No. 1's (priced at \$8.50), 1,016 No. 2's (at \$9.75), 576 No. 3's (at \$11.50), and 406 No. 4's (at \$14.25). Numbers 5 and 6 were quite expensive—\$17.50 and \$25.00, respectively—and were built in very small numbers, usually three and never more than six instruments sent to New York at one time, for a total of seventy No. 5's and sixty-six No. 6's.<sup>25</sup>

24. See Harvey Turnbull, *The Guitar: From the Renaissance to the Present Day* (New York: Charles Scribner's Sons, 1974), chaps. 4 and 5; Tom and Mary Ann Evans, *Guitars from the Renaissance to Rock* (New York: Facts on File, 1977); Tom Wheeler, *American Guitars: An Illustrated History* (New York: Harper Collins, 1990); and George Gruhn and Walter Carter, *Acoustic Guitars and Other Fretted Instruments: A Photographic History* (San Francisco, Calif.: GPI Books, 1993), 9–15.

25. Although the ornamentation varies somewhat within each grade of Ashborn's guitars, I offer the following general descriptions to indicate variations between the different grades themselves. Ashborn's least expensive guitar, the No. 1, had a minimum of decorative binding around the top perimeter and the sound hole. In addition, unlike on higher-grade models, the fingerboard sometimes was made of rosewood rather than ebony. The No. 2 had its maple sides and spruce back veneered with rosewood, had more decorative binding around the top of the instrument, and three-line purfling around the bottom edge. The fingerboard on this style was ebony, and the peghead veneered on the front with the same wood and with rosewood on the back.

No No. 3 instrument has yet been described, but the No. 4 also had the rosewood veneer over its sides and back, ebony binding and white side purfling around its body, three-line purfling around its back, neck and peghead veneered with rosewood, an ebony fingerboard, and many-lined rosette rings around the sound hole. The No. 5 was similarly appointed but with a nine-ply binding around the top, five-ply around the back, and five-ply around the edges of the sides as well. No No. 6 has yet been described.

Ashborn's guitars had a body size about the same as those popularized by Louis Panormo, a leading maker in England in the early nineteenth century. In many particulars, however, they differed, which suggests that the details of Ashborn's construction were his own and were intended to expedite construction of the instruments to meet the increasing demands of the New York market. For example, Ashborn simplified production by making his guitars all the same shape and size, eliminating the need for different sized molds and jigs for shaping the instruments' ribs or for different scales for marking the frets. Such standardization also suggests that the factory's price scale was set primarily by the degree of ornamentation on each instrument.<sup>26</sup>

Further, from extant Ashborn guitars it appears that their basic construction, whatever their grade, was remarkably consistent, as befitted factory production. The top was spruce, braced with a three-stave fan set into a peaked crossbrace, a design fairly common to contemporary 'Spanish' guitars. The sides were spruce or maple—if the former, usually veneered with rosewood or mahogany. The back also was rosewood or mahogany, from two pieces of closely matched grain, lined with spruce and joined without any center stripe.

Ashborn's guitar necks were assembled from three pieces of

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Ashborn occasionally made even more ornate instruments. Thus in October 1851, Hungerford noted '2 Extra Guitars and Cases' at \$25.00 and that December recorded '4 Extra Guitars & Cases / Ivory Bands' at the extraordinary price of \$42.75 apiece. These may well have been bound with the ivory that the company occasionally received from their New York retailers. In September 1855, for example, Hall & Son received \$20.00 credit for fifty pounds of 'Scrap Ivory.' None of Ashborn's highest grade instruments have come to light, however.

26. On Panormo, see Turnbull, *The Guitar*, 68–70; Alexander Bellow, *The Illustrated History of the Guitar* (Rockville Centre, N.Y.: Franco Colombo Publications, 1970), 173, 177–79; and Stewart Button, *The Guitar in England, 1800–1924* (New York and London: Garland Publishing Company, 1989), 210–41, 311–15. The only other guitar works for which we have records dating back to the mid-nineteenth century is the C. F. Martin Company of Nazareth, Pennsylvania, arguably the most famous guitar-maker in the world, who from the 1840s on manufactured guitars in a variety of sizes as well as with distinctive ornamentation. See Longworth, *Martin Guitars, passim*; and Gruhn and Walters, *Acoustic Guitars*, 16–28. As noted above (note 15), Martin's production was much smaller than Ashborn's, no doubt in part because he continued to make his instruments as a craftsman rather than a factory producer.

hardwood (like maple) and sometimes veneered with mahogany or rosewood, an appointment not common in antebellum guitars. Further, his manner of attaching the neck to the body offers a striking illustration of how he adapted traditional design to more rapid factory production. He performed this important task with the use of a dovetail joint and the addition of a short collar glued to the back, a particularly expeditious manner of assembly. In contrast, the 'Spanish' heel more commonly seen on antebellum guitars was attached by slotting the sides of the body into the neck, which then continues a short way into the body, a method that requires more tedious adjustment and thus allows for more variation among instruments.<sup>27</sup> Finally, Ashborn spliced the peghead to the top of the neck with a distinctive 'diamond' joint that permitted a large gluing surface and thus a strong bond, a method he used on his banjo work as well.

No doubt because their new factory helped them increase production without incurring significantly greater labor costs, Ashborn and Hungerford kept the prices of their guitars constant between 1851 and 1856, and sold the instruments to both of their New York buyers for the same price. Finally, it is worth noting that in their June 1855 account with Hall & Son, Ashborn and

27. For this insight, and for my general description of the construction of Ashborn guitars I am indebted to Juris Poruks of Montreal, Quebec, a collector and scholar of Ashborn guitars (letter to the author March 23, 1994).

Ashborn's banjos also display the same sort of technological resourcefulness, particularly with regard to the manner in which the calfskin head is stretched over the banjo's rim. In the 1840s, the first decade in which this instrument was commercially produced, most makers essentially modified a drum assembly for the banjo's rim; that is, they stretched the skin over the head by means of several individual brackets that were tightened with nuts. One extant Ashborn banjo in fact is constructed this way; but several others illustrate a novel modification, a wooden bracket band that is glued to the side of the rim, with the brackets tightened into it by means of a key that turned a small nut assembly inside the band. Thus, no holes had to be drilled through the rim, as in the other assembly, to hold the shoes through which the brackets fit. Ashborn's assembly thus kept down the overall weight by eliminating the shoes and larger nuts, and also preserved the integrity of the rim for acoustic purposes, no shoe holes being necessary. Ashborn's bracket band thus constitutes a notable increase in sophistication in the way the banjo assembly was conceived, and prevented him from having to manufacture or purchase more brass parts. Finally, it is worth noting that, though he did not patent this assembly, it performs the same function and is analogous to the rim of the famous A. C. Fairbanks 'Whyte Laydie,' c. 1901, an assembly patented by one of Fairbanks' employees.

Hungerford listed two new items, viz., eight dozen 'Maple Guitars & Cases' for \$720.00, making these the least expensive of the company's productions; and a dozen 'No. 3 Guitars & Cases New Style' for \$156.00, more expensive than the standard No. 3.

## IV

Ashborn's guitar construction thus indicates how he modified traditional artisanal production of his instruments to meet the demands of factory production by means of his standardization of the basic construction of all models and a novel assembly of the neck to the body. But his technological and entrepreneurial genius is evident as well in the guitar accessories that he and Hungerford provided the New York market.

The most important example of such innovation pertains to the instruments' tuning mechanisms, for Ashborn was so interested in their design that he obtained two United States patents for improvements to such devices. Presumably he installed these on many of his guitars, but he also sold them separately, for they appear in the business records as 'Pat Heads wood parts' or 'pat peg heads & wood parts,' shipped in batches of six or a dozen at the price of \$2.00 for each set (presumably to be resold to other guitar manufacturers in the city or elsewhere). These novel tuning mechanisms bespeak Ashborn's interest in mechanical design as well as his desire to simplify the manufacturing of his guitars. Rather than having to purchase or painstakingly machine what then were called 'patent heads,' that is, a set of metal (usually brass) geared tuners inserted in the peghead for tightening the strings, the components that Emery Morris machined for him, Ashborn replaced such costly items with modified, more efficient versions of wooden violin-style tuners that could be turned on his own wood-working equipment.

On April 16, 1850, for example, Ashborn obtained United States patent no. 7,279, for a 'Guitar-Head and Capo Tasto,' that is, a peghead tuning mechanism and a capo for changing the pitch of the strings (see below). This tuner is what one music historian

describes as a 'windlass,' a peg-and-spindle mechanism to enable one to tune more easily and precisely than with the older violin-peg-style tuner or the metal 'patent heads,' which Ashborn found undesirable not only because of the 'great cost of a guitar head thus constructed' but also because 'the weight of all these pieces of metal injuriously affects the vibrations of the instrument.'<sup>28</sup> His solution was to make a larger-sized spindle to attach to the head of the guitar but not protrude on the back side, connected by catgut to a regular-shafted violin tuner passing all the way through the peghead, slightly behind the spindle for that string. When the violin-type tuner was turned, the resulting action was like that of a windlass—easier, more accurate adjustment without the cost or weight of the brass tuners.

Ashborn's second patent, for a 'Tuning-Peg for Guitars,' is even more ingenious and, like his first innovation, is made wholly of wood in a shape that he could easily produce on a simple lathe. This patent is for what we might term a multi-ratio tuning peg. Citing the same defects in tuning mechanisms that he noted in his 1850 patent, in United States patent no. 9,268, issued September 21, 1852, Ashborn described a tuner with 'that part of the wooden peg which is fitted to and turns in the handle of the instrument, and which may be called the journal, of much greater diameter than the barrel or part on which the string is coiled or wound up, and thereby giving such leverage to the surface of which makes friction and which resists the tension of the string as effectually to hold the string without the necessity of wedging or driving the peg too hard.' The result was a larger hole in the peghead into which the 'journal' was fitted, but Ashborn obviously thought that the ease with which such pegs could be made and the efficiency and accuracy gained in tuning were significant.<sup>29</sup>

28. For information about Ashborn's patents I am indebted to Edmund Britt of Wakefield, Massachusetts, who generously shared his research with me.

29. It is difficult to gauge the success or popularity of Ashborn's patent innovations because most of his extant guitars carry the more traditional brass tuning machines, leading one to speculate that most of his instruments left the factory so equipped. It is interesting to note, however, that the one No. 5 guitar located to date in fact carries his pegs, as well as a stamp on the back of the peghead, 'J. Ashborn / Pat. 1852,' suggesting that he may

# UNITED STATES PATENT OFFICE.

JAMES ASHBORN, OF WALCOTTVILLE, CONNECTICUT.

GUITAR-HEAD AND CAPO TASTO.

Specification of Letters Patent No. 7,279, dated April 16, 1850.

To all whom it may concern:

Be it known that I, JAMES ASHBORN, of Walcottville, in the county of Litchfield and State of Connecticut, have invented certain new and useful Improvements in the Guitar-Head and Capo Tasto, and that the following is a full, clear, and exact description of my invention, of the principle or character which distinguishes it from all other things before known, and of the method of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, is a bottom view of a guitar head and handle on my improved plan, Fig. 2 a side elevation thereof and Fig. 3 a cross section taken at the line  $x x$  of Fig. 1.

The same letters indicate like parts in all the figures.

In the old-fashioned guitar the strings are wound directly onto the ends of what are called pegs, the spindles of which are fitted to, and turn in holes made in the head. The defect of this arrangement is that the hand has not sufficient leverage to overcome the tension of the strings, for the pegs must be fitted very tight to prevent them from being turned back by the tension of the strings. Hence it follows that the pegs are not sensitive, and that the accurate tuning of the instrument is a matter of great difficulty. To avoid these defects, what is known as the patent metal head was invented and has been introduced into almost universal use. But this improvement, while it gives the performer complete control of the strings by the leverage of the keys is seriously objectionable on account of its injurious effects on the tone of the instrument. The keys and their appendages, as well as their connection with the handle, must be made of metal, and the weight of all these pieces of metal injuriously affects the vibrations of the instrument. In addition to this the pieces are very liable to rattle and thereby to vitiate the intonation. Added to these objections is that of the great cost of a guitar head thus constructed.

The use of the capo tasto, (the clamp used on the handle of a guitar to determine the vibrating length of the strings to set the instrument for playing in difficult keys), as heretofore made, is attended with great difficulty, as is well known to all guitarists, in fact, so much so that many performers have abandoned the use of it.

The object of my invention is to remedy the defects above pointed out in the guitar head and the capo tasto and to this end

The first part of my invention consists in winding the strings on spindles that pass through and turn in the head of the guitar handle which spindles are of an enlarged diameter below the head, when these are combined with pins of the usual construction by means of cords attached to, and wound around both, the pins being of less diameter than the enlarged part of the spindles with which they are combined or connected thereby increasing the leverage of the pins to overcome the tension of the strings, while at the same time the tendency to turn back the pins by the tension of the strings is greatly reduced. I thus obtain all the advantages of the patent metallic head without its defects. And the second part of my invention consists in combining with the capo tasto, or plate for pressing the strings onto any particular fret of the handle, a metal or other strap attached thereto and passing down on each side of the handle, and an eccentric roller journaled to the said strap and acting against the under surface of the handle; so that the said plate may, with one hand only, be drawn down onto the strings, and adjusted or liberated therefrom by simply turning the said roller, the whole thing being put on and pushed back onto the head beyond the last fret where it does not interfere with the vibration of the strings.

In the accompanying drawings (*a*) represents the usual handle for a guitar with its frets, and (*b*) the head in which there are twelve holes (*c*) and (*d*) six of each. To the six holes (*c*) are fitted six spindles which project sufficiently above the upper surface of the head to admit of attaching and winding the strings (*e*) thereon. These spindles pass down below the head and are there made of an enlarged diameter as at (*f*) with small flanches at both ends. The diameter of the enlarged part should be from three to four times the diameter of the spindle on which the strings are wound.

To the six holes (*d*) are fitted pegs (*g*) of the usual kind used in old fashioned guitars except that they do not project above the guitar head. To each of these pegs is attached one end of a piece of catgut (*h*) which winds around it and then around the periphery of the enlarged part

Specification for guitar head and capo tasto patented by James Ashborn, April 16, 1850.

(f) of one of the spindles to which the other end of the said piece of catgut is attached, so that by turning the peg the piece of catgut is wound onto the peg which turns the spindle to tighten or loosen the strings. Each peg is connected and combined with one spindle in the manner just above described. By this arrangement all the objections to the use of the patent metallic head are avoided, while the advantages which it has of controlling the strings and preventing them from slipping are retained at much less cost.

The capo tasto plate (i) lined, as is usual with buckskin, is attached to a strap of metal (j) which only touches it about the middle of its length. This strap of metal is bent down on each side of the handle, and the ends pierced each with a hole to receive the journals of an eccentric roller (k), the periphery of which is turned down in the middle to correspond with the form of the underside of the handle; the periphery of the said roller when it acts on the handle being covered with buckskin or other kind of leather to prevent the handle from being injured. When the said roller is in the position represented in the drawings, the capo tasto or pressure plate is drawn

down tight onto the strings, holding them forcibly onto the edge of one of the frets on the handle; but when it is turned half way round, that is, when its shortest radius is toward the handle, then the plate is not drawn down onto the strings and the whole apparatus can be pushed back onto the head as shown by dotted lines.

What I claim as my invention and desire to secure by Letters Patent is—

1. The method, substantially as herein described, of tuning guitars by winding the strings each on a spindle, having a part below the guitar head of an enlarged diameter, connected and combined with a peg of the usual construction, by means of a cord, in the manner and for the purpose, substantially as described.

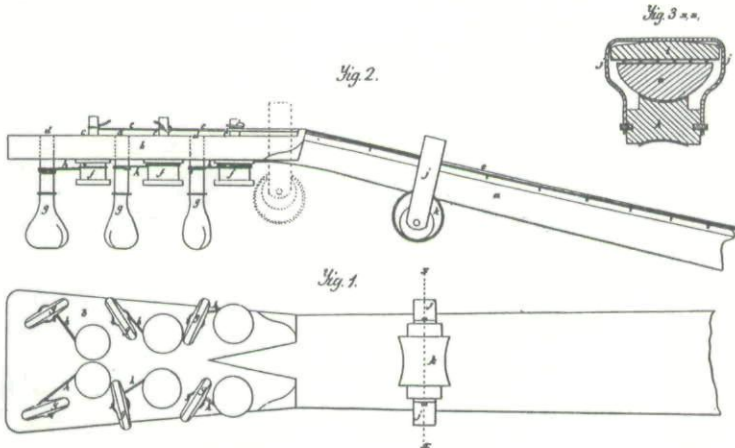
2. I also claim combining an eccentric roller with a capo tasto for moving and holding it down onto any desired part of a guitar handle, by means of a metal strap made to embrace the handle and capo tasto plate and attached thereto, substantially in the manner and for the purpose specified.

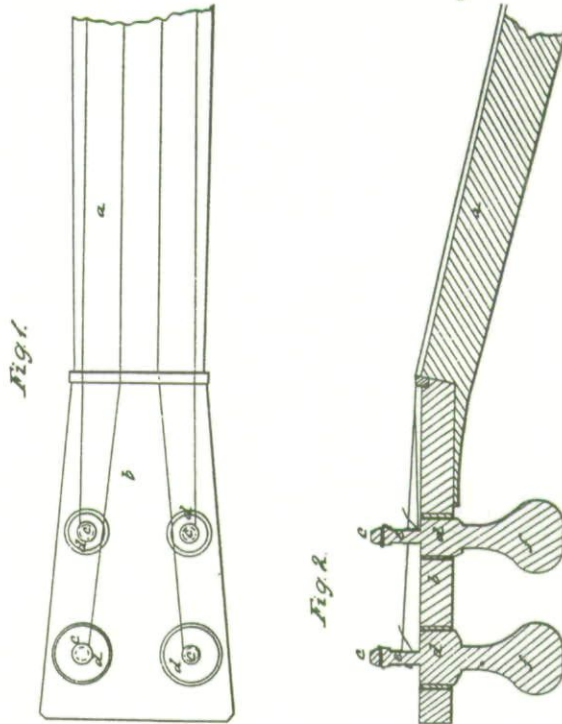
JAMES ASHBORN.

Witnesses:

A. G. BRADFORD,  
ALBERT BRADLEY.

BELOW: Three views of a guitar head showing Ashborn's patented improvements.



*J. Ashborn,**Guitar Key.**No. 2,268,**Patented Sept. 21, 1852*

In addition to producing novel tuners, Ashborn and Hungerford decided to manufacture other key components of the guitar, thus obviating the need to purchase them from other suppliers. As noted above, their decision to construct a larger factory building

have installed such pegs on his high-grade models. We also know that he sold his patented pegs separately, through the New York music dealers, so that other guitar-makers might adopt them on their own instruments. Further, Ashborn also used his patented pegs on his banjos, for Britt owns an Ashborn banjo stamped with the 1852 patent whose head is drilled for the pegs. Other of Ashborn's banjos, however, were fitted with brass tuning machines, and still others with regular violin-style pegs.



UNITED STATES PATENT OFFICE.

JAMES ASHBORN, OF WOLCOTVILLE, CONNECTICUT.

TUNING-PEG FOR GUITARS.

Specification of Letters Patent No. 9,268, dated September 21, 1852.

To all whom it may concern:

Be it known that I, J. ASHBORN, of Wolcotteville, Connecticut, have invented a certain new and useful Improvement in Tuning Pegs or Keys for Guitars, Violins, and other Stringed Instruments, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan; and Fig. 2 a section in the plane of the axis of the keys.

The same letters indicate like parts in the two figures.

The modes heretofore and now universally employed for tuning guitars and violins are the wooden pegs and the metallic keys. The former of these are defective for the reason that they are too apt to slip under the tension of the string, and if they be wedged in too hard then it is difficult to turn them, the fingers not having sufficient leverage to overcome the tension of the strings and the friction of the surfaces. And as it is a well known fact that in such cases the pegs can only be turned by jumps, as it may be termed, accuracy in the tuning becomes exceedingly difficult, particularly on the bass strings where a very slight variation in the tension produces a marked difference in the tone. And the latter of these modes is objectionable on account of the weight, expense and the injurious effects on the tone of the instrument, as it is well known that the presence of metal connected with any part of the instrument affects its vibrations, and besides this the slightest defect in the construction or wear will occasion a rattling sound which is very offensive to the ear.

Notwithstanding the metal key avoids entirely the difficulty of turning presented by the wooden peg, yet the other defects are so great, that for all good instruments the wooden peg is preferred by all good musicians.

The object of my invention is to combine all the advantages of both modes, and to this

end the nature of my invention consists in making that part of the wooden peg which is fitted to and turns in the handle of the instrument, and which may be called the journal, of much greater diameter than the barrel or part on which the string is coiled or wound up, and thereby give such leverage to the surface which makes friction and which resists the tension of the spring as effectually to hold the string without the necessity of wedging or driving in the peg too hard, and at the same time so enlarge the radius that if it be turned by jumps or jerks the effect will be so much reduced on the string as greatly to facilitate the accuracy of tuning.

In the accompanying drawings *a* represents the handle of a guitar, *b*, the head, and *c* the pegs fitted thereto. These pegs are in all particulars like the ordinary pegs, except that the part *d*, (which may be called the journal) fitted to the hole in the head is of a much greater diameter than the barrel part *e*, on which the string is coiled. The handle part *f*, may be made in the usual or any form desired, and as the surface of the journal part is much increased the holes in the head can be bushed with ivory or other hard substance which will be more durable.

When applied to violins, the pegs on this improved plan need not pass through both cheeks as heretofore, it can be done if desired, but they will be found to hold sufficiently by passing through one side only.

What I claim as my invention and desire to secure by Letters Patent, is—

Making the tuning pegs of guitars and other like stringed instruments, with the journal part of much greater diameter than the barrel on which the string is coiled, substantially as and for the purpose specified.

JAMES ASHBORN.

Witnesses:

GEO. D. WADSWORTH,  
HENRY I. BARLETT.

was based not only on their wish to produce more guitars more economically but also in their decision to expand their manufacture of wound guitar strings. After they discovered that it was more economical to produce these items for Ashborn's own guitars in their own factory rather than secure them through New York, they also realized that string-making per se could be profitable.<sup>30</sup>

30. Little is known about early American string manufacture. The music historian Arthur Schrader has indicated that in the United States in the 1850s the manufacture of

Prior to the summer of 1851, for example, they had received strings for Ashborn's guitars from either Firth, Pond & Company, or Hall & Son. After that date these items begin to appear as goods made in the Wolcottville factory to be shipped exclusively to Hall & Son with Ashborn's guitars (presumably Firth, Pond & Company had their own supplier of such strings). Indeed, string-making soon enough became so important a component of their business that, in April 1852, the partners started a separate 'String Account' in their ledger to record the purchase of the materials needed to make them. Their new building, completed that autumn, thus would have housed lathe-like machines, running at low speed, to perform the winding of strings, and Ashborn would have trained some of his employees in this specialized work, a further division of labor necessitated by bringing hitherto different parts of the guitar industry under one roof.<sup>31</sup>

Once Ashborn and Hungerford decided to manufacture strings on a large scale, they also began to take as credit from the New York firms large amounts of different-gauged silver wire, and of the silk thread around which the wire was wrapped to make the three lowest strings of the guitar.<sup>32</sup> In September 1851, for example, they paid \$4.50 for '16 [presumably a gauge] Silver wire' and \$6.75 for 'no. 18,' and that same month returned to Hall twelve dozen 'No. 6 Strings' for \$7.80, and the same quantity of 'No. 5' for \$6.60. They also purchased 'no. 13' gauge wire, presumably for the fourth strings. Interestingly, they never recorded the manufacture of first, second, or third strings, usually made from twisted strands of gut, but only the three larger-gauge strings.<sup>33</sup>

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wound strings was still very unusual, with most of these products imported from France or Italy (letter to the author, February 8, 1994). Laurence Libin, however, notes that he has found records in the Moravian Archives in Bethlehem, Pennsylvania, of string-making among the Moravians there in the eighteenth century (letter to the author, February 22, 1994).

31. On such division of labor see, for example, Kornblith, 'From Craftsman to Industrialist,' *passim*; and Hirsch, 'From Artisan to Manufacturer,' 87, and *passim*.

32. I am indebted to Libin and Schrader for information relating to the nineteenth-century manufacture of guitar strings, and of capos as well.

33. Nor do the records show Ashborn and Hungerford purchasing the lighter gauge strings or the material from which to manufacture them. Presumably, they continued to

In May 1852, for example, Ashborn and Hungerford sold Hall forty-two dozen 'Super Extra 4th' strings at \$31.50, twenty-four dozen 'Super Extra 5th Strings' at \$13.20, and the same quantity of 'Super Extra 6th Strings' at \$15.60. After April 1852 they used this designation—'Super'—for all their strings and shipped comparable amounts to New York each month, between September 1851 and January 1856 a total of 5,212 *dozen* strings.

Ashborn and Hungerford also manufactured and sent to New York three other items worth mentioning. First, virtually all the guitars Ashborn built were shipped in wooden cases made in the factory, items probably constructed by some of the lower-paid employees. From the few instances when he and Hungerford shipped the instruments without such protection (in November 1852, for example), we know that their wholesale price included \$2.00 for each case. Moreover, Ashborn sometimes had his employees work on special orders, for in July 1853 he and Hungerford shipped Hall & Son three dozen violin cases at a dollar each. On occasion, too, the company shipped wooden 'Bridges,' presumably for violins or violoncellos (which Ashborn occasionally repaired), but perhaps for guitars, to be sold like his patented tuners, to guitar-makers in New York or elsewhere. In March 1852, for example, Hall & Son gave \$2.00 credit for twelve of them. These were not, however, common items in the accounts.

More significant was production of what then was called a 'capo de astra,' to hold down the guitar strings at a certain fret to change the pitch of all strings played above that point, for in the manufacture of this item we again see Ashborn's technological genius. During this period capos usually consisted of a metal or wooden bar faced with buckskin (hence the \$4.00 purchase of this item in February 1854 from a local tanner) and attached around the guitar neck to hold down the strings at a certain fret. Tension was provided by a gut string wrapped once around the neck and tightened with a short fiddle-style peg fitted to a hole in the top of the bar. In his 1850

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acquire these from other sources, though the items do not appear in the credits of the New York firms' accounts, nor of anyone else's.

patent, however, Ashborn noted that hitherto the use of a capo is 'attended with great difficulty' because the tension on the strings might easily be lessened or released if the gut slipped. He modified this design so that the capo could be more easily adjusted by 'an eccentric roller, the periphery of which is turned down in the middle to correspond with the underside of the handle.' When the roller was properly positioned, as illustrated in Ashborn's patent drawing, 'the capo tasto or pressure plate is drawn down tight on the strings,' but when it was turned half way around, 'then the plate is not drawn onto the strings and the whole apparatus can be pushed back onto the head.'

Despite the seeming complexity of his description, Ashborn's capo is in fact a simple mechanism, a variation of which still is manufactured; though it did not bring him a great amount of income, he could market this essential item at a good profit.<sup>34</sup> In October 1851 Ashborn and Hungerford sent Hall & Son 400 'Cap de Astra' at twenty-five cents each. This was a sizable mark-up over the \$22.50 that they paid Morris, who also made parts for the firm's metal tuners, to produce them. In February 1852, Firth, Pond & Company got them at the same price—\$17.75 for seventy-one 'Capo de Astris'—and two years later Hall & Son took 1,000 for \$250.00.

## v

Departing from earlier practice in musical instrument making, a highly specialized craft in which a master worked by hand on instruments from start to finish and trained apprentices in the

34. Evidently Ashborn did not think it efficient or profitable to manufacture a few other items necessary to the completion of his guitars if they could be obtained cheaply enough from specialized shops in the city. When the guitars were strung, for example, the strings were held in place at the bridge by bridge pins and at the peghead with either brass tuning machines (it is unclear if the factory produced its own) or Ashborn's patented pegs. If the former, the buttons used to turn these machines, like the bridge pins, were made from rosewood, ivory, or mother-of-pearl, and were acquired through Hall & Son or Firth, Pond & Company. In August 1851, for example, the factory got 1,000 'Ivory Buttons' from the latter company; but Hall & Son was a more frequent supplier: 1,200 'Guitar Pins' for \$15.00 in June 1852; two weeks later another 2,000 'Bridge Pins' for \$32.00; thirty-six 'Ivory Buttons' (\$1.13) in September; and \$7.00 for 500 'pearl pins'—that is, mother-of-pearl, probably for Ashborn's higher-grade instruments—in January 1854.

same steps, Ashborn produced his guitars in what we might term a mechanized workshop. He used some water-powered machinery and a small number of employees—in his case never more than ten—whom he supervised in tasks subdivided in order to produce the instruments more efficiently. In addition, some employees would have been assigned primarily to other tasks in the manufactory, the construction of wooden cases for the instruments, for example, or the winding of strings.

As we already have noted, from extant records we can discern some of the discrete tasks assigned to workers in the factory—Emery Morris's machining of parts for the brass tuners, for example. More striking is Isaac Thornton's work as a 'Polisher,' as he termed himself in the Census of 1850. An Englishman about the same age as Ashborn, and like him an immigrant to Torrington from somewhere in New York, Thornton, who remained in the factory throughout the period for which we have records, may well have come to the area with his employer. Ashborn paid him well for 'polishing' or 'polishing and bridging' the guitars, with his rate set by the style of instrument on which he worked. In June 1851, for example, he received \$10.08 for polishing twelve 'no. 1 guitars,' \$10.80 for twelve 'no. 2,' and \$12.00 for a dozen 'no. 4,' a pay scale that remained standard throughout the period. If Thornton 'bridged' the guitars as well—that is, properly set the height of the bridges and glued them in place—he received almost a dollar more per dozen instruments (November 1853).<sup>35</sup>

By 1852, though, Hungerford stopped noting such pay for individual jobs and simply listed the number of days these men worked. In Morris's case this eventuated, in April 1852, in a raise of twenty-five cents per day to \$1.50, while as early as October 1851 Hunger-

35. Ages given are those declared by the individuals in the United States Census of 1850 unless otherwise indicated.

There is little information on which to compare workers' wages in the music industry, but the New York State Census (Manufacturing) of 1855 indicates that William Hall & Son, who employed about twenty-five men and five boys at their New York piano works, paid an average of \$28.00 per month per worker; and that William Badger, a 'manufacturer of musical flutes' who employed only two men and one boy, paid all three a total of about \$65.00 per month. Groce, *Musical Instrument Makers of New York*, 70, 7.

ford simply listed the hours Thornton worked, at \$1.50 per day, the highest rate the factory paid. Such changes in the way Hungerford kept the labor account may have had something to do with the move toward a factory system in which specialized work that hitherto was performed in addition to one's regular duties now became one's main task.

The variation in pay among the employees gives further indication of the different kinds of work performed in the factory. At the top of the scale, at \$1.50 per day, were four employees whose names were listed in the labor account as long as Hungerford recorded the pay of individual workers (a practice he unfortunately halted in October 1852, when the new factory was being built, after which he recorded instead simply a monthly total for labor expense): Thornton, married and with three children (one of whom had been born in New York); Charles Lamb, a forty-two-year-old 'Mechanic,' married with one child; Cornelius Rinders (whose rate was raised from \$1.25 to \$1.50 in April 1852); and Burris Manville, who began work in August 1851. In May 1852 thirty-five-year-old John Huke, who recently had come from Prussia with his wife and three children, also joined the work force at the high rate. Interestingly, in the Census of 1860 Lamb, Thornton, and Huke all listed themselves as 'Guitar Makers,' a description presumably fitting their considerable responsibilities in the factory, while Manville, who left the establishment in the late 1850s, became a wagon-maker. Elisha Loomis, a 'Mechanic' who worked for Ashborn only from July 1851 through February 1852 but at the high rate, subsequently became a gunsmith.

Chester Smith, who at the age of thirty also had termed himself a 'Mechanic' but a decade later was another of Ashborn's 'Guitar Makers,' led a second tier of employees whose wages were set between \$1.00 and \$1.30 per day. A bachelor who boarded, as many lower-paid workers did, with a family in Torrington, Smith's peers were Ernest Young, who made \$1.30 a day, and Timothy Hart, who began at \$1.10 but soon worked himself to that same rate. Also, by July 1852, George Sherman, another 'mechanic' who

was with Ashborn throughout the period for which we have records, moved from \$1.05 to \$1.33, and thus was clearly a member of this second group of skilled employees, though he evidently left the firm before the Census of 1860, from which he is absent.

Employees whose wages were below \$1.00 a day, the rate of unskilled laborers in that period, occupied the final tier in the factory, and among this group there was not as much loyalty to the enterprise. Some, like Dennis Kelley and Andrew Booter, worked only two months at the rate of \$1.00; and Thomas Woodrow or Martin Judd worked fewer than six months at the rate of \$.50 per day. Alexander Inwood worked about a year, at \$.65 a day, leaving a Mrs. Brown, who worked for \$.50 a day, as the only steady employee among this group, who by their transience never moved up the wage scale as, say, Hart or Sherman had.

At its largest, Ashborn's work force numbered about ten but more regularly consisted of around eight employees. With very few exceptions—Thornton and Huke, and Benjamin F. Smith, the 'cabinet-maker' from whom Ashborn had purchased his first factory and who worked for him for seven months (April–October 1851) at the \$1.50 per day rate—the employees (a total of twenty-one over the period from 1851 to 1856) all were from Connecticut, and those for whom we have records were in their twenties or early thirties. Few listed any real or personal estate, with the exception of Loomis, an older man, who in 1860 listed \$2,000 in real and \$1,000 in personal estate; Manville, by then a wagon-maker, with \$1,500 personal estate; Benjamin Smith, who returned to cabinet-making and noted \$300 personal estate; and, most surprisingly, the immigrant Huke, with \$1,000 real and \$200 personal estate. Thus, as was the case in many of the region's factory villages, whose populations experienced considerable mobility, few of Ashborn's lower-paid employees had put down roots in the community. Virtually none of the lower-paid workers were present for either the 1850 or the 1860 census, indicating, again, their transience.

As was the case in other such mill villages, too, some of Ashborn's workers took part of their wages in goods, which he and

Hungerford provided either through their local connections or those in the city. Chester Smith and Thornton occasionally took barrels of flour, for example, at \$5.75 per barrel; and on one occasion Inwood secured a No. 1 guitar for \$8.00 (at the same price at which the factory sold them to New York and the only one of Ashborn's instruments we know of that did not go to New York), and a 'book and fork' for \$1.00 (March 1852). Other arrangements also were made between employer and employee. Hart, for example, rented a house from Ashborn, paying \$5.50 for fifty days (April 1852). And occasionally a worker was remunerated for performing some task for his employers that was unrelated to guitar work. In July 1851, for example, at the height of the haying season, Martin Judd got \$2.00 'extra for haying,' which suggests that his low wage at the factory was predicated on his being just such an unskilled 'laborer,' as many in Torrington identified themselves in census records.

It is difficult to be more specific about work inside the factory, but the employees evidently worked twelve-hour days, for Manville's account in January 1852 shows him paid for '14 7/12' days. Further, the core employees—Chester Smith, Lamb, Rinders, Sherman, Judd, and Manville, for example—worked on the average between twenty to twenty-five days per month, though in some months they dropped to from fifteen to seventeen days. Interestingly, such short work months do not seem to bear any relation to seasonal agricultural work, as they might have earlier in the nineteenth century. Often the longest work months at the factory were in the spring and summer and the shortest in the colder seasons, reversing our expectations about laborers who might work for the guitar factory while also managing their own farms, and suggesting that the factory operated less efficiently in colder months when the Naugatuck froze over, thus limiting the supply of water for power.

Finally, it is worth noting that Ashborn and Hungerford's average expenses in their 'Labor Account' from April 1851 to April 1854 were about \$290.00 per month, with as little as \$212.27 paid



out in September 1852, when the new factory construction began, and as much as \$388.29 in December 1853, the month before the company sent a particularly large order of instruments to New York.<sup>36</sup> As dear as some of their woods were, Ashborn and Hungerford's largest monthly expense went to the skilled labor force without which they could not have produced so many guitars.

VI

Ashborn and Hungerford's financial arrangements with Hall & Son, and Firth, Pond & Company were complicated, but it is clear that the scale of the Wolcottville guitar manufactory was the result of sales to these music retailers. In marketing their guitars through these firms, Ashborn and Hungerford connected themselves to the giants of America's music business. In 1855, for example, one of the years in which they sold guitars and other accessories to Firth, Pond & Company, a New York trade paper reported that firm's annual income at \$150,000: \$70,000 from sheet music, \$50,000 from pianos, and an additional \$30,000 from other musical merchandise.<sup>37</sup> Against these numbers the income from Ashborn and Hungerford's guitar factory looks small, but operations like theirs fueled the economic growth of such large music companies by providing merchandise that could not be made, or made as cheaply, in the city. Concomitantly, the New York merchants' willingness to market as many guitars as Ashborn produced (there is no evidence that he held any in inventory nor did he sell to any other company) verified his hunch that Americans would eagerly purchase well-made, indigenous instruments.

The owners of the two music companies with which Ashborn and Hungerford dealt—the only businesses comparable in size in New York were the music houses of Horace Waters, and Berry & Gordon—had a long and tangled history. John Firth and William Hall had met as soldiers in the War of 1812 and subsequently

36. Libin has suggested that this particularly large order may have been related to a surge of sales due to the famous New York Crystal Palace exposition (letter to the author, March 16, 1994).

37. *New York Musical Review*, cited in Sanjek, *American Popular Music*, 2: 71–72.

worked in New York City for the flute manufacturer and music publisher Edward Riley; both Firth and Hall married daughters of their employer and so became brothers-in-law.<sup>38</sup> In 1821 they opened a music store on Pearl Street in New York and by 1827 had become music publishers, capitalizing in particular, as one music historian has remarked, on the new public enthusiasm for minstrel music.<sup>39</sup> In 1832, they moved to Franklin Square and soon took in as a partner Sylvanus Pond, who had been associated with the Meacham piano factory in Albany and who headed up the firm's new piano-making venture at a branch store and music manufactory at 239 Broadway.

This partnership, known as Firth, Hall, & Pond, lasted until 1847, when Hall withdrew and with his son James took over the Broadway store, selling and repairing musical instruments, publishing sheet music, and continuing to make pianos. Now competitors in their attempts to secure instruments for the trade, both Hall & Son and Firth, Pond & Company recruited Ashborn to provide guitars for their firms. Indeed, Firth and Hall may well have been introduced to him and his work through their interest, then as the partners Firth & Hall, in Asa Hopkins's flute manufactory in 'Fluteville,' a part of Litchfield adjacent to Wolcottville where Ashborn lived after his removal from New York but prior to locating permanently in Wolcottville in the late 1840s.<sup>40</sup> The New York firm in 1845 purchased this factory, which had been operating since 1834, Hopkins and his workers thereafter making wind instruments solely for Firth & Hall, just as Ashborn and his workers later produced guitars solely for Hall & Son, and Firth, Pond & Company, though their factory was not owned by either New York firm. Such specialized manufacture for one large and steady market, a hallmark of the transformation from craft to

38. This and the following information on John Firth, William Hall, and Sylvanus Pond comes from Groce, *Musical Instrument Makers of New York*, 51-52, 70, 126; Sanjek, *American Popular Music*, 2:59, 65-66, 71-72; and from the notes of Robert E. Eliason of Lyme, New Hampshire, who generously made them available. Evidently the detailed financial records of these firms are not extant, although some of Firth, Pond & Company's contracts with Stephen Foster are held by the Music Division of the Library of Congress.

39. Sanjek, *American Popular Music*, 2: 59.

40. On Asa Hopkins and Fluteville, see Groce, *Musical Instrument Makers*, 52.

industrial production, was common in this early period of American industrialization.<sup>41</sup>

Of course, Hall & Son's and Firth, Pond & Company's interests in Ashborn and Hungerford's guitar works comprised only a small part of their business empires, but because information about their arrangements with various suppliers of musical merchandise is virtually nonexistent, what we learn from the accounts of Ashborn and Hungerford is significant. Each month Hungerford meticulously recorded transactions with these two companies. Typically, he listed as debits the amounts of the different grades of guitars he and Ashborn shipped, noting as well the instruments' serial numbers, as well as the amount of strings (in dozens) and other items they provided or work their employees performed (numbers of patent tuners, capos, or bridges, for example, or the sawing for piano work or, occasionally, the repair of some instrument like a violin, accordion, or guitar that one of the companies had sent Ashborn). Hungerford also indicated the days on which the factory shipped the items or performed the work, for in any given month he and Ashborn often sent goods to the same firm in several different shipments.

The companies' credits to Ashborn and Hungerford were of two kinds, cash in the form of bank drafts payable in ten, twenty, thirty, sixty, ninety, and occasionally up to 120 days; and goods, usually materials Ashborn needed for his guitar work but had difficulty obtaining locally—exotic woods like mahogany, rosewood, and ebony, for example, or the silver wire and silk (an undecipherable amount, for example, for the considerable sum of \$110.00, from Hall & Son in June 1855) needed for string manufacture. Occasionally, the companies supplied Ashborn and Hungerford with other items—reams of paper, for example, or, in July 1852, three 'Refrigerators,' or most surprising of all, in April 1854 'Oysters,' for which Ashborn and Hungerford shared a cost of almost \$35.00!

When Hall & Son or Firth, Pond & Company wrote bank drafts

41. On such uni-directional manufacture for the new markets see, for example, Clark, *Roots of Rural Capitalism*, 232–36, and McGaw, *Most Wonderful Machine*, 117–27.

to Ashborn and Hungerford, they often issued a series of them on one day, payable at different times over the next few months, a standard practice in the contemporary business world, and they did so usually only once or twice in a given month, even if the guitar works shipped items in several different batches. Most commonly Hungerford seems to have handled such business affairs, for a frequent notation in the records shows him paid \$.50 for 'Going to Bank.' The institution Ashborn and he used was in Winsted, at the northern terminus of the Naugatuck railroad, and may have been a branch of the sizable Phoenix Bank, mentioned once by name in the records.<sup>42</sup> In addition to depositing drafts from New York, the two business partners also issued their own notes to local people in payment for other purchases for the factory, and frequently drew substantial amounts of cash—sometimes \$100.00 or more—for themselves, presumably salary as well as reimbursement for goods procured or work carried out for the factory.

For example, while it is unclear if Ashborn accompanied all the company's shipments to New York, he was frequently reimbursed for traveling to the city to deal with the music companies; in contrast, Hungerford made the trip only a few times. Indeed, 'Ex[penses] to NY' for Ashborn is one of the most common entries in the journal and is to be distinguished from payments for 'Cartage'—usually quite small—which probably indicate transport of the guitars to, or of supplies from, the train depot in Wolcottville. Oddly enough, there are no entries specifically for railroad freight charges, which must have been substantial but which, through previous arrangement with Ashborn and Hungerford, may have been absorbed by the New York firms, paid to the train company upon arrival of the goods.

Over the five years covered in this account book, Ashborn and

42. On Connecticut banking in this period see Francis Parsons, *A History of Banking in Connecticut*, Connecticut Tercentenary Pamphlet No. 42 (New Haven, Conn.: Connecticut Tercentenary Commission, 1935), and Joseph G. Woodward, 'Commerce and Banking in Connecticut,' in W. T. Davis, ed. *The New England States*, 4 vols. (Boston: Hurd, 1897), 2: 617-82.

Hungerford did approximately 85% of their business, worth \$40,000, with Hall & Son, and the remainder, about \$7,000, with Firth, Pond & Company. Because these parties presumably had been dealing with each other prior to April 1851, though, and as well after January 1856 (when this particular account book closes), it is difficult to assess the overall profitability of their venture. Further, Hungerford did not calculate elaborate yearly balances in this accounting journal, perhaps completing that work in a separate ledger.

But in February 1855, probably at the request of Hall & Son, the journal's accounts were audited: in another hand someone noted at the bottom of a page that 'We ex[amined] accounts of W. H. & Son and A. N. Hungerford April 20 to Feby 1st 1855 & find bal[ance] in favor of Wm H & Son 2113.09.' This might help explain why during the same years the two New York companies' payments in cash and goods to Ashborn and Hungerford totalled less than their debits, \$39,300 for Hall & Son, and \$8,150 for Firth, Pond & Company. Other evidence of such external audit appears on the very last page of the ledger. In yet another hand, in pencil, is written 'Cr[edit] by 2,578.26 bal[ance] as ex[penses].'

Finally, in addition to drawing cash from the factory's account, on three occasions Ashborn and Hungerford each took a substantial amount listed as a 'Dividend,' indicating that they were to share profits in the enterprise. In April 1852, for example, each took \$1294.62; the following April \$1324.74; and in November 1853, \$1869.67, at which time Hungerford also gave his partner a note for \$245.69 from the general account. These numbers indicate that, whatever the precise condition of Ashborn and Hungerford's accounts with the New York music retailers, their enterprise provided a substantial return.

## VII

Without doubt Hungerford kept other account books for this company. For example, standard numbers that are prefixed to each account throughout the journal indicate that he transferred the

information into a more formal ledger in which each party was debited and credited by corresponding number.<sup>43</sup> The information we have on James Ashborn's guitar factory, however, provides much insight into the ways in which a rural artisan, by securing local capital and entrepreneurial expertise, and locating a large and dependable market, adapted his craft from workshop to factory the better to produce goods for urban retailers. And in this regard Ashborn was representative, for with increased access to railheads, countless other skilled artisans who previously had plied their trades for a local or, at best, regional, market, now had the incentive to expand their operations as they could move their wares through the nation's largest entrepôts. Such uni-dimensional production, specialized for one market, provided the spokes that strengthened the nation's emergent commercial hubs.<sup>44</sup>

Moreover, Ashborn is highly significant in the history of the American music trade. In 1854, for example, John Weeks Moore, the compiler of an encyclopedia of music, noted that hitherto most guitars used in America had been imported from France, Germany, and Spain, but that these were 'weak in tone' and could not 'stand the severe changes of our climate.' But because of increased interest in the instrument, he continued, 'several American houses' had begun to manufacture guitars 'which we think will prove rich in tone, and being made here, will stand the severest tests of this

43. Further, we know that Ashborn made banjos, marked with his name as well as that of one of the New York firms through whom he sold his guitars. Yet in the extant records there is no mention of banjos, which suggests both that their manufacture was not something in which Hungerford had invested and that Ashborn may not have made that many of them. Despite the popularity of these instruments on the minstrel stage, for example, their market was nowhere near that of parlor guitars.

After the Civil War, however, the banjo became a very popular parlor instrument. See Karen Linn, *That Half-Barbaric Twang: The Banjo in American Culture* (Urbana: University of Illinois Press, 1991), chap. 1; and Robert Lloyd Webb, 'Confidence and Admiration: The Enduring Ringing of the Banjo,' in Webb, ed., *Ring the Banjar*, 1-36.

44. In her study of the industrial transformation of the Berkshire paper industry Judith McGaw observes that 'like Berkshire paper mills, most American factories during the Industrial Revolution were relatively small concerns, owned by proprietorships and partnerships, located in small towns and rural areas, and operated by relatively modest work forces and locally resident entrepreneurs.' She also notes that, thus considered, 'the tale of American mechanization is essentially a story of many small men and women making small decisions; accumulating capital, acquiring machines, and reordering work incrementally.' *Most Wonderful Machine*, 8. This of course precisely describes Ashborn's guitar works.

climate.<sup>45</sup> Whether or not he knew it, he most likely was speaking of Ashborn's instruments, among the earliest American guitars and those which could be found more commonly than any other. Thus, the simple facts of Ashborn and Hungerford's business—where they got their raw materials, how many workers they employed and at what tasks and daily rate, how the company's accounts with the large music retailers were conducted, to offer just a few examples—facts that we simply have not hitherto known or been able to verify for the antebellum stringed instrument trade, assume great importance.

We do not know what happened to Ashborn's guitars once Hall & Son, and Firth, Pond and Company received them, though some obviously were sold through their music emporiums and others shipped to outlets in other cities, along with the thousands of pieces of sheet music these companies distributed. Completing the circle of production, distribution, and consumption, we know that eventually the guitars found their way into the hands of those who used them to accompany popular music and, implicitly, to declare their allegiance to certain class values that parlor music had come to represent. Thus, if, as Weeks noted of the guitar, 'the demand for this beautiful and graceful instrument' had 'of late so increased' because it had come 'into very general use,' Ashborn's guitar works offer an important benchmark for considering how Americans before the Civil War came to acquire one of the musical instruments, and the genteel status, they so eagerly sought.<sup>46</sup>

45. John Weeks Moore, *Complete Encyclopedia of Music* (Boston: O. Ditson & Company, 1854), 353.

46. Moore, *Encyclopedia*, 353.

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