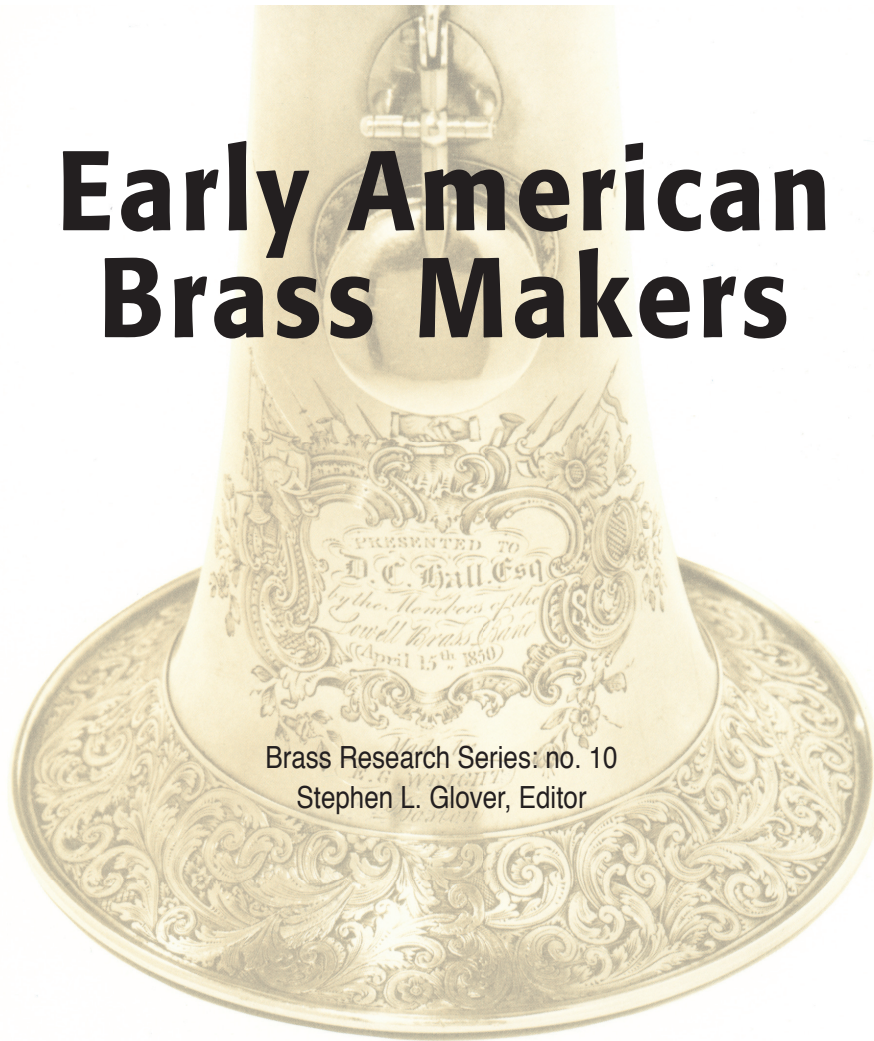


**Robert E. Eliason**

# **Early American Brass Makers**



Brass Research Series: no. 10  
Stephen L. Glover, Editor

*The Brass Press*

a division of

**Editions Bim**

[info@reift.ch](mailto:info@reift.ch)

**Library of Congress Cataloging in Publication Data**

Eliason Robert E.

Early American Brass Makers

(Brass research series; no.10 ISSN 0363-454X)

1. Brass instruments-Makers-United States-

Biography. I. Title. II. Series.

ML404.E47    788' .01' 20922 [B]    79-11880

ISBN 0-914282-256-54 pbk.

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**[www.reift.ch](http://www.reift.ch)**

**order reference: BrP9**

Printed in Switzerland

## Foreword

Unrecognized by most historians and almost unknown to Americans, the United States had a thriving musical instrument industry in the middle years of the 19th century. Brass bands became the rage throughout the country soon after 1840 and dozens of American makers of brass instruments set about supplying the demand for these products. Among the many makers, five who stand out for the importance of their contributions to the industry are Samuel Graves, Thomas D. Paine, J. Lathrop Allen, Elbridge G. Wright, and Isaac Fiske. Of these, Samuel Graves, whose manufactory was the earliest and most important in terms of production, size and variety of instruments, has been treated in a separate booklet: *Graves & Company Musical Instrument Makers* (Dearborn, Michigan: The Edison Institute, 1975); and a subsequent article: "Recently Discovered Information About Graves & Company, Musical Instrument Makers," *The Herald*, V (April, 1976) pp. 58-63. Thomas D. Paine has also been treated in an article in *The Herald*, V (October, 1976) pp. 15-25, which is presented here with recent revisions. Other chapters

on the remaining three makers—Allen, Wright, and Fiske—complete this survey of important 19th century American brass instrument makers.

Each of the four makers discussed contributed some significant invention or improvement toward the development of brass instruments. Thomas D. Paine was the first to produce rotary valves with string linkage—a combination which dominated American production for nearly half a century and is still in use on modern French horns. J. Lathrop Allen was distinguished for his invention of the Allen valve, popular among American players until late in the century. E.G. Wright carried the development of the key bugle to its zenith and was famous for the beautiful presentation instruments he made of silver and gold. Isaac Fiske was noted for his work on eliminating restriction in the bore of brasses and for attempts to provide the cornet with lighter, quicker valve action.

Aside from the technical improvements many of the instruments of this period are beautiful in form and color, and show the excellent handcraftsmanship of early American shop industries.

## Thomas D. Paine

Of the many inventions tried and patents obtained by American brass instrument makers before 1875, only one improvement found immediate and lasting success. This was the rather simple innovation of turning a rotary valve with something similar to a bowstring. The advantages of string linkage were quieter operation, simplicity, and better leverage. The concept is still in use on many modern instruments, particularly French horns.

Although music historians have always credited American makers with this invention, it was not known until recently who first utilized the method. The earliest patent mentioning string linkage is United States patent 12,628 of April 3, 1855, granted to Gustavus Hammer of Cincinnati, Ohio. However, in a book published in 1853<sup>1</sup>, the Dodworths, a family of well-known bandmasters in New York, claimed to have originated the idea.

The earliest instruments equipped with this improvement discovered to date were not made by either of these inventors, but by Thomas D. Paine & Co. of Woonsocket, Rhode Island. Furthermore, Paine's instruments show both the fully developed application of the idea and an earlier less refined version.

Paine was also the inventor of a unique rotary valve for brass instruments, patented in 1848. His inventions and improvements place him among the five foremost makers of brass instruments in mid-nineteenth century America. During his long life Paine was also a musician and composer, a jeweler, and a violin maker.

Thomas Dudley Paine was born in Foster, Rhode Island, October 9, 1812, the fifth of ten children in the family of John and Polly Paine. John Paine was a schoolteacher, justice of the peace, and sometimes a mechanic. He was evidently well liked and capable for he later served as representative in the Smithfield General Assembly.<sup>2</sup> He may also have been a musician for it is said that Thomas inherited his musical abilities from his father. At the age of ten Thomas was sent to live with an aunt, Sura Bates, in Woonsocket where he began his working career in the spinning room of the Lyman cotton mill. For the next ten years he was employed at the mill, eventually becoming overseer of the spinning room operations. Although the work was not hard, it was tedious, and long hours were the rule. It was said that "fighting and huckleberrying" were the chief

sources of "amusement"<sup>3</sup> in Woonsocket, but there must have been music as well, for somewhere in these years Thomas Paine learned to play the violin.

About 1832 John Paine moved to Woonsocket and acquired a small tract of land on the south side of the road from Woonsocket Falls to Union Village.<sup>4</sup> The property already had a dwelling on it and within a year John Paine added a small shop which city records indicate he rented to a watchmaker and a grocer.<sup>5</sup>

In this same year Thomas quit his job at the Lyman mill and apprenticed to Daniel Hubbard, a watch and clock repairman in Woonsocket. In 1834 he married the first of three wives, Perly C. Thayer.

Throughout these years Thomas was also playing his violin for dances. The following appeared in the *Woonsocket Patriot* from October 4, 1834, to February 7, 1835.

### Cotillion Parties

The subscribers would respectfully inform the young ladies and gentlemen of this village and vicinity that they have engaged the hall of Col. Holbrook on Tuesday evening October 14 and will continue to attend every other Tuesday evening through the fall and winter for the accommodation of cotillion parties. Hours of attendance from 6 to 12 o'clock. Tickets to be had at the bar of the hotel — price 75¢.

Thomas D. Paine  
Hiram J. Eddy

The end of Paine's apprenticeship in the watch and clock business is marked by an ad appearing in the *Woonsocket Patriot* from April 4 through June 6, 1835:

### New Establishment

The subscriber takes this method to inform the inhabitants of Woonsocket Falls and vicinity that he has taken the shop formerly occupied by Mr. Daniel Hubbard, 2nd door north of Comb's Hotel, where he is prepared to repair watches and clocks, and jewelry, and warrant his work to be done as well as at any other shop in this region.

On March 31, 1837, a statement indicated that Paine made no mention of

Paine's interest kindled by the brass bands



the Massachusetts Charitable Mechanic Association exhibit in 1841, Paine's instruments are not known to have been entered in any mechanic exhibitions until 1852. In that year, the following appeared in the *Report of the 22nd Exhibition of American Manufacturers Held in the City of Philadelphia* by the Franklin Institute, page 22:

No. 2751 A full set of 12 pieces German silver cornet instruments, rotary valves with extra crooks and keys, by Thomas D. Paine & Co. of Woonsocket, Rhode Island, deposited by Beck's Philadelphia Brass Band. These instruments possess the following necessary qualifications in a very eminent degree, viz: superiority of finish, purity and correctness of tone and the important improvement in the valve affords greater facility for execution than any now in use; they well deserve the award of a 1st Premium.

Evidence has recently been found that at least one other maker tried producing Paine valves or perhaps bought valves to use on his own instruments. There is an oversoulder tuba in the Berkshire Museum, Pittsfield, Massachusetts, signed "Graves & Co., 18 Harvard Pl., Boston", with four early-type Paine valves (figure 5). Graves & Co. were at that address from 1851 to 1854 and were well known for their work with various types of valves.

So far seven of Thomas Paine's brass instruments as well as one by his brother Emery, have been found. Since each tells something about the maker and his work they will be examined individually, approximately according to date.

What appears to be the earliest of the surviving instruments by Paine is a tuba in F (air column 380 cm) found in the D.S. Pillsbury Collection at the Henry Ford Museum (figure 6). It is surprisingly large in bore and is not based on proportions of the saxhorns or any known European tubas of that time. Its bell and bore proportions correspond fairly accurately, however, to that of the common American key bugle, and it is a safe guess that Paine took his dimensions from that source. In fact all of Paine's instruments, except the C cornet (figure 9), show this relationship to key bugle proportions.

The construction of the Ford Museum tuba indicates a certain lack of skill not noticed on other instruments by Paine. The bell displays some crinkling which seems to have occurred when it was shaped, and the joint lengthways on each section of tubing is irregular and large. The finish has not been polished to a high gloss and remains dull. There are four Paine valves on this instrument very much like the patent of 1848 except that the



Fig. 6 — Tuba in F by Th  
Rhode Island, circa 1847.  
Paine valves. Figure 2 sh  
courtesy of the Henry

once around the collar on the rotor shaft (figure 4). This version of the string linkage was widely used by many makers over the next century.

One other instrument by Paine, also a tuba or bass in C (air column 242 cm), is in the collection of Dr. G. Norman Eddy, Cambridge, Massachusetts.

This instrument is made entirely of brass and has common type rotary valves turned by the improved string action. Its proportions, however, are those of the Paine instruments and it has the same narrow rounded ferrules at its main joints as are found on the tubas at the Henry Ford Museum and the Rhode Island Historical Society. The inscription around the bell garland is "Thos. D. Paine & Co. Woonsocket, R.I. Patented 1848."

Paine's early success quickly faded as other makers entered the brass instrument trade in the early 1850s. Better proportioned instruments were designed and the common European rotary valve proved superior to Paine's three passage rotaries. String linkage was promptly adopted by virtually all of the other makers and when Paine & Co. offered no further improvements, they lost business and gradually ceased production. In 1857 John Paine sold the shop and lot to Thomas<sup>9</sup> and retired. Thomas returned to watchmaking, and Emery continued mostly as a performer and teacher.<sup>10</sup> The census of 1860 listed John Paine, 75, without occupation; Emery A. Paine, 38, musical instruments; And Thomas D. Paine, 47, watchmaker.

A valve bugle signed "Emery A. Paine, Woonsocket, Rhode Island. Patented 1848" recently found by Eric Selch of New York City probably dates from the late 1850s after the brothers and their father separated. It is almost identical to the bugle shown in Figure 8, but has a bell garland instead of a rolled bell edge and is without the additional key bugle keys.

T. D. Paine's first wife, Perly, died March 2, 1861, and on April 8, 1863, he married Mary Arnold, a widow of some means; she purchased about half of John Paine's property.<sup>11</sup>

The latter part of T. D. Paine's long life is of little interest to music historians except that he began making and repairing violins. This new venture probably developed as a hobby, for until 1885 Paine's principal activity seems to have been watch and clock making and repairing. City directory and business directory listings, as well as census reports and two marriage records, from 1858 to 1885 all list his profession as jeweler and watchmaker.

Beginning in 1885, when he was 73, Paine began listing himself in city and business directories as a violin maker and repairer. A book published the following year listing prominent businessmen of



*Fig. 12 — Violin by Thomas D. Paine, Woonsocket, No. 11, 1856. (Photo courtesy of Herbert K. Goodkind, Larchmont, New York)*

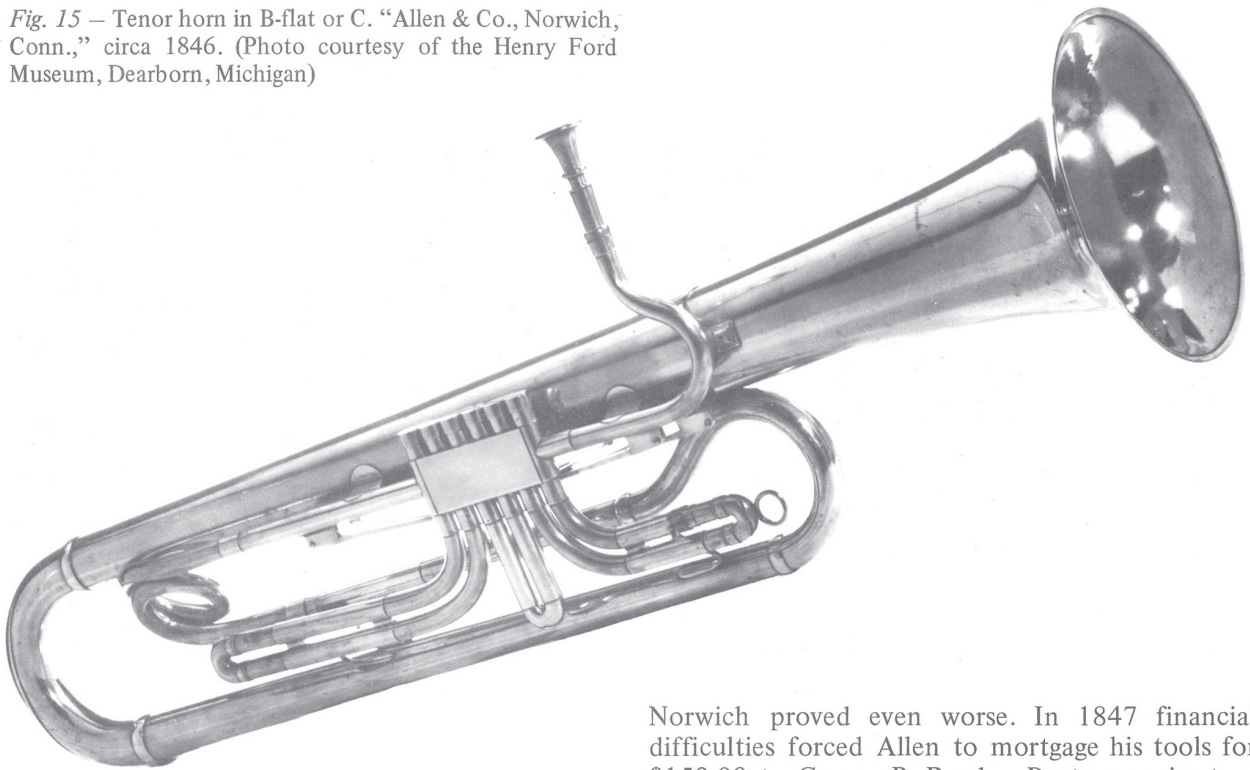
Rhode Island included the following in an article on Paine:

Mr. Paine has long been known as a watchmaker, a manufacturer of violins, and as a general mechanic . . . as a manufacturer of violins, his patronage is widely extended. These instruments are made in the best style of the art, and recommend their own merits on trial.<sup>12</sup>

A check of violin dealers and collectors turned up only one violin by Paine (figure 12) in a private collection in Rhode Island. It is labeled "Thom D. Paine Musical Instrument Maker No. 11 Woonsocket R.I. 1856." Even though it was made in Paine's violin making career, it shows fine craftsmanship, good proportions and beautiful workmanship. The maple back is of one piece with a nice figuration. The scroll is distinctive. The quality is good although not the quality of Paine's violins numbered 11 to number 134 some months. An inventory of his estate after his death included fifteen violins. Paine's workshop has been traced. Paine died in the Cranston, Rhode Island.



Fig. 15 — Tenor horn in B-flat or C. "Allen & Co., Norwich, Conn.," circa 1846. (Photo courtesy of the Henry Ford Museum, Dearborn, Michigan)



Norwich proved even worse. In 1847 financial difficulties forced Allen to mortgage his tools for \$150.00 to George P. Reed, a Boston music store owner. The following list was found in the deed records of New London County, Connecticut. It has been rearranged to place related tools together and larger machines first.

- 1 Lathe and fixtures, including wheel and pulleys
- 2 Lots, milling tools including all that go in lathe
- 1 Polishing lathe
- 1 Bellows and forge tools
- 1 Anvil and block
- 3 Swage blocks
- 1 Draw bench and dies
- 1 Grindstone and frame, 1 oilstone
- 4 Tin benches
- 1 Rolling mill
- 16 Curved rods, 21 mandrils, stakes ing, and wood patterns
- 2 Plotting irons, 2 try square (measuring angles)
- 1 Pair dividers

Files, saws, scratcher bro  
shears, draw shave, re  
planes, mallets, a sc  
auger.<sup>18</sup>

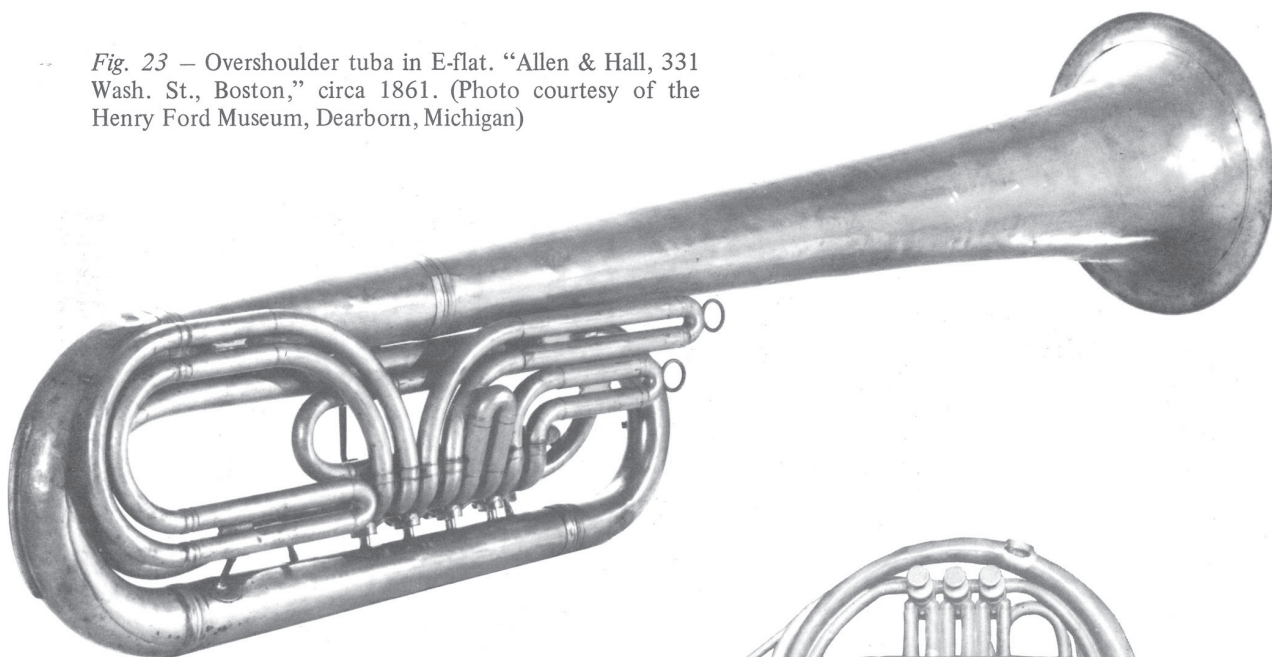
Allen ran a retail  
facturing busines  
Square (figur



FRANKLIN SQUARE, FROM EAST MAIN STREET.

Fig. 16 — View of Norwich, Connecticut, circa 1875. Lithograph reproduced from *The Leading Business Men of Norwich and Vicinity*. Boston: Mercantile Publishing Co., 1890, p. 19. (Photo courtesy of the Otis Library, Norwich, Connecticut)

*Fig. 23* — Overshoulder tuba in E-flat. "Allen & Hall, 331 Wash. St., Boston," circa 1861. (Photo courtesy of the Henry Ford Museum, Dearborn, Michigan)



Boston, exhibition by Messrs. Truax & Baldwin . . . The instrument made by J. L. Allen we find of superior workmanship, correct in its intonations, and the mechanical part admirably adapted for quick and rapid execution, the maker having, in a considerable degree in this instance, overcome the difficulty heretofore existing in this class of instrument . . . in accordance with his established reputation for making instruments superior to all others in this country.

One e-flat alto (silver), made by J. Lathrop Allen, and exhibited by Messrs. Truax & Baldwin, we find of superior workmanship and excellent tone, the mechanical part being perfect in its construction, giving utility and beauty to the instrument, and is but another evidence of the well deserved reputation of the makers.<sup>19</sup>

From 1852 until 1860 Allen's shop in Boston was located at the end of Harvard Place, a little dead-end street off Washington between Milk and School Streets. Harvard Place was also the address of E. G. Wright from 1861 to 1863, and at various times housed many of the other Boston makers of musical instruments (figure 21). It has now been entirely built over and not even one of those street signs of historic Boston remains to show where it once was located.

Allen's success during the 1850s enabled him to buy a house at 33 Porter Street in 1857, evidently the first real estate he had ever owned.<sup>20</sup> He continued to expand his business, calling it the Allen Manufacturing Co. (See figure 22)



*Fig. 24* — French horn. "J. L. Allen, Maker, N.Y.," circa 1870. (Photo courtesy of the Metropolitan Museum of Art, New York City)

During 1852 and 1853, Allen had a partner named Benjamin F. Richardson. Those who worked for him in 1858 included Anton, Erhard Franz Huttli; August Doelling; Joseph L. F. Hartman; and Henry Esbach. For at the beginning of the Civil War, a Boston band leader and key business partner in Allen's business. A number of instruments of this period are shown (See figure 23) Both Richardson continued their instruments after the death of these valves are B. F. Richardson's.

After the Civil War, Allen moved to New York City.



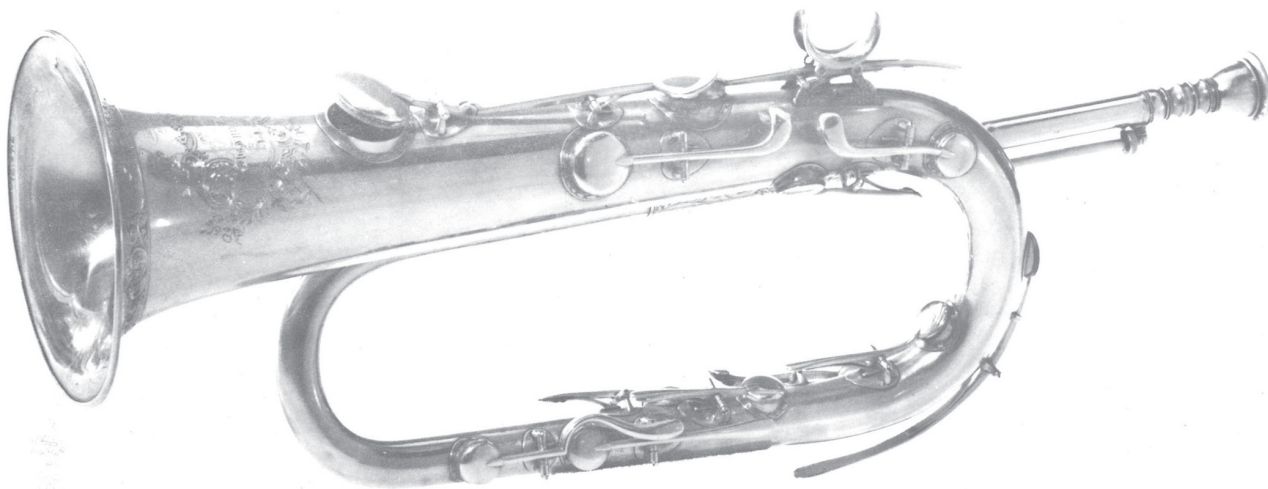


Fig. 27A, B, C — Key bugle in e-flat. "E. G. Wright, Boston," 1850. (Photos courtesy of the Henry Ford Museum, Dearborn, Michigan)



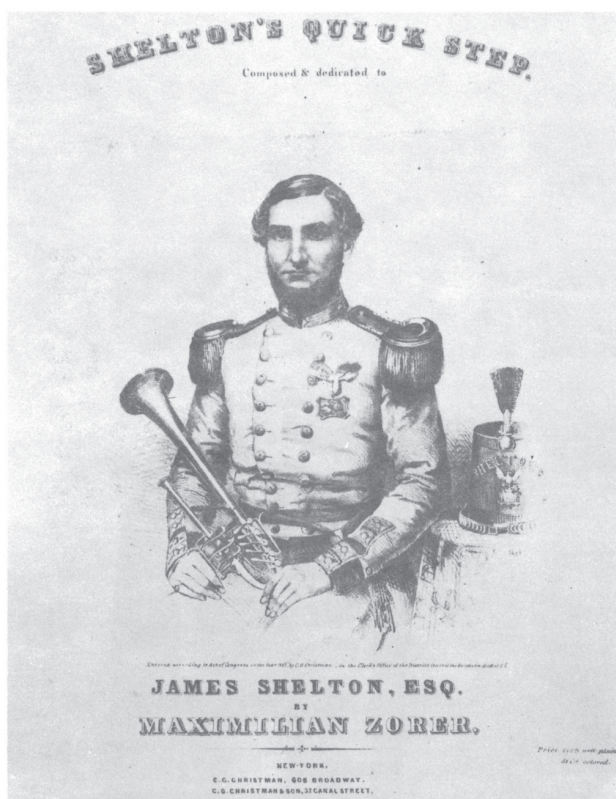


Fig. 33 — Title page of “Shelton’s Quick Step.” New York: C. G. Christman, 1852. (Photo courtesy of the Newberry Library, Chicago, Illinois)

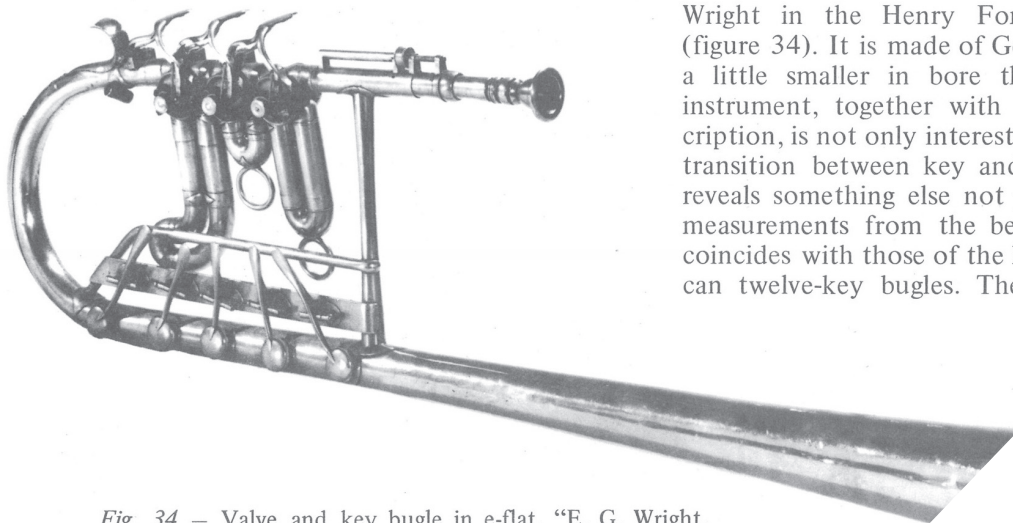


Fig. 34 — Valve and key bugle in e-flat. “E. G. Wright, Boston,” circa 1853. (Photo courtesy of the Henry Ford Museum, Dearborn, Michigan)

Allen. A trumpet in F with these valves is preserved in the Smithsonian Institution. It is signed “Wright & Baldwin makers, Boston,” a partnership which existed only in 1845 (figure 32). Late in the 1840s the development of string linkage for rotary valves made possible a very smooth, quiet valve action. In the early 1850s Wright began making instruments with string operated Vienna rotary valves almost exactly like those found in French horns today. He also made some instruments with both keys and valves in an attempt to gain the advantages of both systems. This attempt was described by Allen Dodworth in his *Brass Band School* published in 1853.

“Soprano cornets have lately been made in this country, combining the advantages of both valves and keys; they have three valves, like the ordinary cornet, with the addition of five keys for the upper notes; the one nearest the bell for the highest A-flat, that with the next for A, the second and third for B-flat, the third and fourth for B, and the fourth and fifth for C; this is a very great improvement as they combine the fullness of tone in the lower notes peculiar to valve instruments with the greater ease and facility of the upper notes which is peculiar to keyed instruments.”<sup>29</sup>

An illustration on the front of a piece of sheet music published in 1852 shows James Shelton, Esq., band leader and bugle soloist, holding a valve and key bugle (figure 33). So far, the only existing instrument that exactly fits Dodworth’s description is an oversoulder bugle in e-flat by E. G. Wright in the Henry Ford Museum collection (figure 34). It is made of German silver and is only a little smaller in bore than a key bugle. This instrument, together with Allen Dodworth’s description, is not only interesting documentation of a transition between key and valve bugles but also reveals something else not previously known. The measurements from the bell of each of the three valves coincides with those of the last five keys of a standard twelve-key bugle. The correct use





Fig. 40 — Overshoulder tuba in E-flat. "E. G. Wright, Maker, Boston," circa 1862. (Photo courtesy of The Stearns Collection, University of Michigan, Ann Arbor)

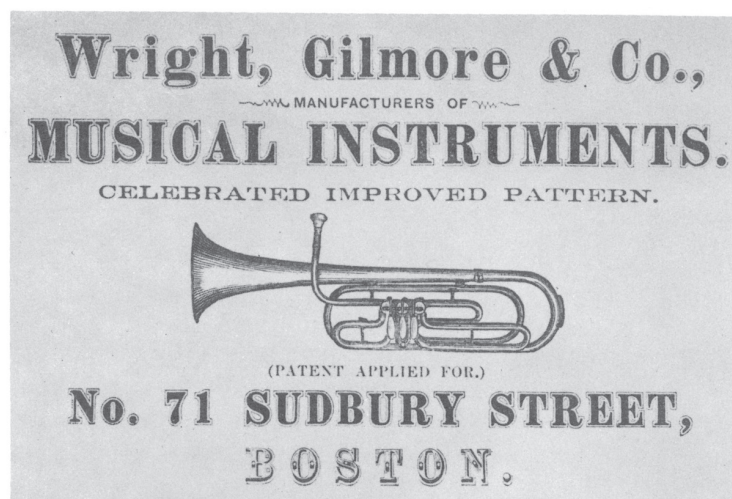


Fig. 41 — Trade Card, 1867. From the Warshaw Collection. (Photo courtesy of the Smithsonian Institution, Washington, D.C.)

keys has been a matter of some inexact knowledge and the best fingering chart discovered so far covers only eleven keys. The use of these five keys evidently coincides with key bugle usage and, therefore, suggests the proper fingerings for the twelve key bugle.

The latter part of the productive life of E. G. Wright was devoted more and more to valve brasses. Beginning in 1864 E. G. Wright & Co. at 71 Sudbury, Boston turned out large quantities of these instruments in all sizes from E-flat bass to e-flat soprano (See figure 35). At this time Louis F. Hartman and Henry Esbach were working for Wright. In 1865 a full set of brasses entered in the Massachusetts Charitable Mechanic Association exhibit was awarded a first silver medal for superior tone and workmanship<sup>30</sup> (See figures 36-40).

For a time in 1867 the well-known band leader Patrick Gilmore was associated with Wright (figures 41 and 42). About 1869 the firm Wright & Co. and Samuel Graves & Co. formed the Boston Musical Instrument Company. Wright withdrew in 1870, and was replaced by Quinby until his death in 1871.

Wright's finest key bugles were made where in the world. Their development reached its peak because European makers paid attention to valve instrument improvement and craftsmanship of

& Co. operated, nor was it difficult to get to Boston where E. G. Wright worked.

Examples of the earliest products of Fiske's shop have not been found. The advertisement of 1843 mentions e-flat and B-flat bugles (probably key bugles) and B-flat, C and E-flat posthorns (probably the small circular type without valves). If he was not making valve instruments at that time, it was not long before he began.

From 1846 to 1850 Fiske shared a shop near the railroad depot with Joel H. Litch, a sash and blind manufacturer. In 1846 and 1847 Fiske appears on the Worcester Tax Records and is taxed on \$300 worth of machinery and stock in trade. Another indication of his progress was his marriage on December 9, 1846 to Clara M. Wood.

Worcester, like so many other New England manufacturing towns had an association of mechanics which occasionally sponsored exhibits of products of all sorts. The First Exhibition of the Worcester County Mechanic's Association occurred in September of 1848. Although Isaac Fiske did not enter instruments, he was one of six people on the judging committee for musical instruments.<sup>35</sup> In the second exhibition held in 1849 three cornets by Fiske won a silver medal. Following is the judge's report:

1609 (a.b.c.) Cornets — (B-flat.) Isaac Fiske, Worcester. Very much admired for beauty of make and finish, and the light, elastic, and ready action of the valves. The tone is excellent. There is an improvement in the working of the valves, by which the execution of rapid passages and trills may be accomplished with great ease and perfection. Silver Medal<sup>36</sup>

Throughout his working life, improving the action of the valves and smoothing the air flow through the instrument were to be Fiske's major goals. The improvement described here was probably Fiske's version of the Vienna twin-piston valve produced by several American makers during the 1840s. A valve bugle in e-flat by Fiske dating from about 1848 is now in the collection of Mr. Fred Benkovic, Wauwatosa, Wisconsin (figure 43). It is made of German silver in upright shape and has three Vienna twin-piston valves manipulated by finger rods with coil springs. The arrangement of rods and enclosed coil springs might have been the improvement referred to since all other similar American valves of this type use a simple lever and flat spring arrangement. The valves are arranged with the shortest valve first, an arrangement still fairly common during the 1840s.

From 1851 until 1853 Fiske's shop was located



Fig. 44 — Bugle in e-flat, circular, by Isaac Fiske, circa 1850. German silver. Three rotary valves, half-step valve first. (Photo courtesy of Fred Benkovic, Wauwatosa, Wisconsin)

in a building at 236 Main shared by Alvan and Albert Allen, piano teachers and dealers, and Milton M. Morse, maker of Seraphines and Aeolians (reed organs).

The next Exhibition of the Worcester County Mechanic's Association held in 1851 included three more instruments by Fiske, one of them an horn.

No. 1508. A case of Brass Instruments by Isaac Fiske, Worcester, containing 1 F valve; 1 B-flat cornet, 3 valves; 1 E-flat 4 valves.

These beautiful instruments in order. By a peculiar construction which have a rotary motion succeeded in producing action, more than ordinary instruments have available for a liquid touch in Legato passages most defective



**FISKE'S  
CORNET BAND,**  
M. ARBUCKLE, LEADER AND DIRECTOR,  
—WILL GIVE A—  
**GRAND CONCERT,**  
Assisted by  
**MISS JENNIE TWICHELL, VOCALIST,**  
And  
**HERR SCHREIBER,**  
The greatest Cornet Player now living,  
**AT MECHANICS HALL,**  
On WEDNESDAY Evening, September 8th, 1858.

---

**PROGRAMME:**

**Part First:**

1. SCENA ED ARIA—"D'Amor Sull' ali Rose," from  
III Trovatore, *Verdi.*  
CORNET BAND.
2. TERZETTO—from Norma, *Bellini.*  
SERENADE BAND.
3. CAVATINA—"Ah si Pora," from Donna dell' Lago, *Rossini.*  
Miss Jennie Twichell.
4. SOLO, CORNET-A-PISTON—Grand Concerto, "Souvenir  
de Lexington," *Schreiber.*  
Herr Schreiber.
5. KATY DID POLKA, *Jullien.*  
ORCHESTRA.
6. VARSOVIANA, *Stany.*  
ORCHESTRA.

---

**Part Second.**

1. LA BELLE SUISSE WALTZ, *D'Albert.*  
CORNET BAND.
2. POTPOURI—from III Trovatore, Introducing Anvil  
Chorus &c. *Verdi.*  
CORNET BAND.
3. BALLAD—Kitty Tyrell, *Glover.*  
Miss Jennie Twichell.
4. SOLO, CORNET-A-PISTON—Fantasia on Katy Darling, *Schreiber.*  
Herr Schreiber.
5. VALSE L'HIVER—from "Les Vepres Siciliennes," *Laurent.*  
ORCHESTRA.
6. GALLOP DE BRAVURA, *Schulhoff.*  
ORCHESTRA.

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**TICKETS TWENTY-FIVE CTS.**  
To be had at Marsh's Music Store, and at the door of the Hall.  
**Doors Open at 7 1-4; to Commence at 8 o'clock.**

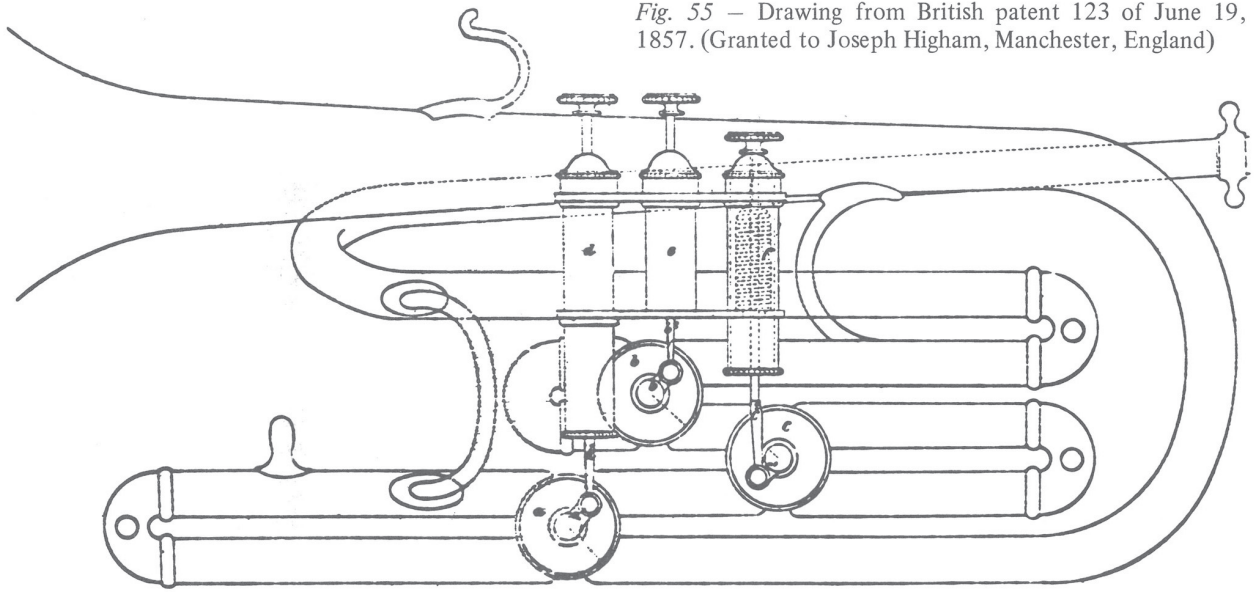
Printed by E. B. Fiske, Foster Street, Worcester.

Fig. 49 — Handbill advertising a concert of Fiske's band, September 8, 1858. (Photo courtesy of the Worcester Historical Society)



Fig. 50 — Baritone German silver. The Henry Forster

Fig. 55 — Drawing from British patent 123 of June 19, 1857. (Granted to Joseph Higham, Manchester, England)



Other American makers were also concerned about this aspect of brass instrument construction during the 1860s. Louis Schreiber of New York patented a cornet design in 1865 (No. 49925) with the tubing arranged so that the player's hand would not touch the bell and damp its vibrations. B. F. Richardson of Boston designed a cornet with the bell hanging under the valves without braces or other attachments for the same reason.<sup>42</sup> None of these ideas was found to be worth continuing.

Fiske's next patent was No. 70824 of 1867 and covered a manufacturing process by which small curved tubes or crooks could be formed easily from one piece of sheet metal. A flat piece of metal was cut in a particular shape, formed on a die and joined on the inside of the curve and part way from each end on the outside of the curve. None of the instruments found so far appear to have crooks formed by this process, so it can only be assumed that it was not very successful. Curved tubes in brass and copper were usually formed by bending, and in German silver, which is harder to work, by shaping two halves in a die and soldering them together. Later instruments were made of brass and then plated covering all evidence of seams and other marks of construction.

The Fifth Exhibition of the Worcester County Mechanic's Association was held in September of 1866 and Fiske entered an improved cornet described in the following report of the judges:

A soprano cornet made and contributed by Isaac Fiske of Worcester. Mr. Fiske in this instrument introduces what the judges believe to be one

of the best improvements ever introduced to any brass instrument. It is simply a newly shaped valve by which all sharp angles in the sounding tube are avoided, thus rendering the valve tones, nearly or quite as pure as the open or natural tones . . . highest diploma . . .

This improvement was subsequently protected by the United States patent 74,331 of 1868.

The invention consists in the construction and arrangement of the valve-passages with reference to their connections with the pipe, by which, through the valve passages and pipes, both in the open and valve-tones, a continuous wind-passage of uniform diameter, free at all times from sharp turns and corners, is formed.

Also in the construction and arrangement of a valve and valve-case, by which the instrument may be changed from one to another key in such manner that the same quality of tone may be produced in either key, and without increasing the number of crooks or turns in the wind passage.

Fiske was about ten to fifteen years ahead of similar work done in Europe.

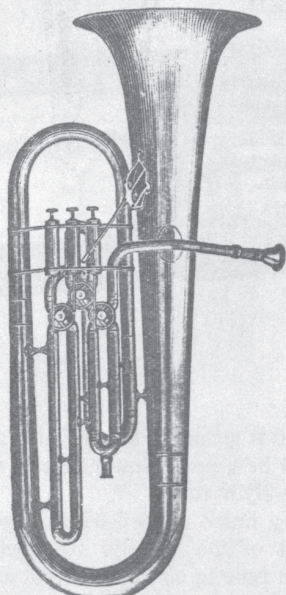
Fiske patented a set of piston valves in 1867, the main accomplishment was the same dimensions of bore and in all possible corners. Dr. J. P. Oates of Worcester, what he called equalizing Fiske's change of key, less American design by the

The 1867



### ROTARY VALVE B $\flat$ BARITONE.

Short, light action. The B $\flat$  Tenor is made in the same form as this, but with lighter calibre. Music Holder and Water Key.

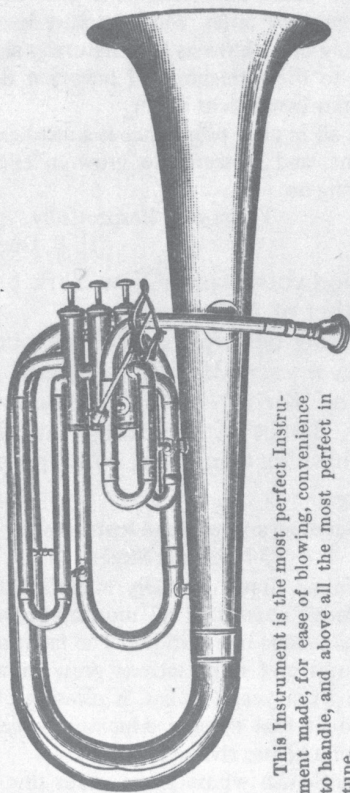


Length, 29 inches; weight, 5 $\frac{1}{2}$  pounds.

Price for Baritone, Brass,	\$75 00
" " " Silver Pl., Satin finish,	100 00
" " B $\flat$ Tenor, " Silver Pl., Satin finish,	70 00
" " " " Silver Pl., Satin finish,	90 00

### B $\flat$ BARITONE PISTON VALVE.

The B $\flat$  Tenor is made in the same form as this, but the calibre is a little smaller. Music Holder and Water Key.

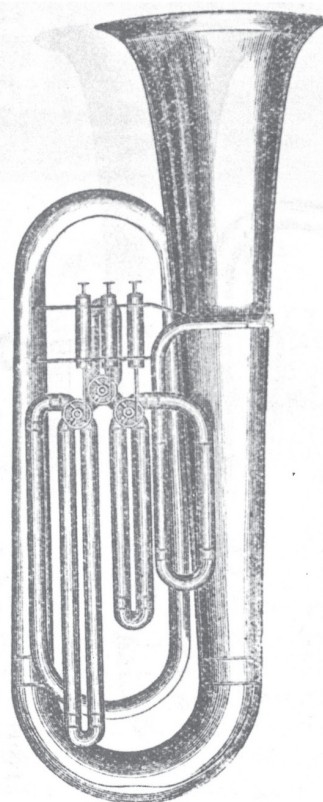


This Instrument is the most perfect Instrument made, for ease of blowing, convenience to handle, and above all the most perfect in tune.

Length of Instrument, 29 inches; weight, 5 $\frac{1}{2}$  pounds.  
Price for Baritone, Brass, \$75 00 | Price for B $\flat$  Tenor, Brass, \$70 00  
" " " Silver Pl., Satin fin., 100 00 | " " " Silver Pl., Satin fin., 90 00

### E $\flat$ BASS ROTARY VALVE.

Very short, light action. Water Key and Music Holder.



Price for E $\flat$  Bass, Brass, \$110 00  
" " " Silver Plated, 145 00

firms reported that Fiske had 10 employees and a payroll of \$350 per month. In the early 1870s Fiske's shop employed seven musical instrument makers.<sup>44</sup> Although his work force may have been somewhat larger for a brief time during the Civil War, the firm probably employed no more than a dozen people at any one time.

About 1872 Frederick Beaumont, one of the musical instrument makers employed for several years by Fiske, quit and set up his own shop with George McFadden, a merchant in hosiery and fancy goods. Unfortunately the instruments made and advertised were identical to those developed and patented by Fiske and a squabble ensued. In the Worcester Telegram of 1873 advertisements of the two firms on facing pages (figure 56). Advertisements reveal no action by Fiske against Beaumont were out of business.

Patents 138,389 and 138,390 were granted to Fiske in 1873, both in the layout of the instrument and as few sharp bends in the tubing.

By 1873 Fiske's instruments were his instrum

## Notes

- 1 Allen Dodworth. *Dodworth's Brass Band School*. New York: H. B. Dodworth, 1853.
- 2 Thomas Steere. *History of the Town of Smithfield*. Providence: E. L. Freeman & Co., 1881, p. 179.
- 3 E. Richardson. *The History of Woonsocket*. Woonsocket, Rhode Island: S. S. Foss, 1876, p. 73.
- 4 Smithfield deed records, Vol. 17, p. 558. Central Falls, R.I., City Center.
- 5 Ibid., Vol. 18, p. 38.
- 6 John F. Moore. *The Providence Almanac and Business Directory for the Year 1847*. Providence: J. F. Moore, 1847, p. 107.
- 7 Concert Program of the American Brass Band of Providence, Rhode Island, March 10, 1851. Rhode Island Historical Society.
- 8 Dodworth, p. 16.
- 9 Smithfield deed records, Vol. 32, p. 522.
- 10 American Brass Band clipping file, Rhode Island Historical Society Library, Providence, Rhode Island.
- 11 Smithfield deed records, Vol. 37, p. 36.
- 12 *Leading Manufacturers and Merchants of Rhode Island*. New York: International Publishing Co., 1886, p. 194.
- 13 North Smithfield, R.I., deed records, Vol. 19, p. 286.
- 14 Town of Holland, Massachusetts, birth records of 1815, p. 86.
- 15 Reverend Martin Lovering. *The History of Holland, Massachusetts*. Rutland, Vermont: The Tuttle Co., Marble City Press, 1915, p. 383.
- 16 Town of Sturbridge, Massachusetts, marriage records, May 7, 1839.
- 17 *American Journal of Music and Musical Visitor*. Boston, July 16, 1844, p. 343.
- 18 Norwich, Connecticut, miscellaneous records, Vol. 54, p. 403.
- 19 *Report of the 15th Exhibition of the Ohio Mechanic's Institute, Held in Cincinnati from September 10 to October 8, 1857*. Cincinnati: by the Institute, 1858, p. 109, 110.
- 20 Suffolk County, registry of deeds, Vol. 715, p. 234½-236.
- 21 Op. cit. (Note 15)
- 22 Ashby, Massachusetts, birth records of 1811.
- 23 Massachusetts, marriage records for 1864, Vol. 172, p. 116.
- 24 *The Third Exhibition of the Massachusetts Charitable Mechanic Association at Quincy Hall in the City of Boston, September 20, 1841*. Boston: T. R. Marvin, 1841, p. 84.
- 25 From the collection of the Tannahill Research Library of the Henry Ford Museum, Dearborn, Michigan.
- 26 Ibid.
- 27 "The Boston Brass Band." *Gleason's Pictorial Drawing Room Companion*. Boston, August 9, 1851, p. 225.
- 28 *Fifth Exhibition of the Massachusetts Charitable Mechanic Association at Faneuil and Quincy Halls in the City of Boston, September, 1847*. Boston: Dutton & Wentworth, 1848, p. 40.
- 29 Dodworth, p. 16.
- 30 *Tenth Exhibition of the Massachusetts Charitable Mechanic Association at Faneuil and Quincy Halls in the City of Boston, September, 1865*. Boston: Wright & Potter, 1865, p. 135.
- 31 Based on an article in the *Worcester Sunday Telegram*, October 13, 1918.
- 32 Worcester, Massachusetts, Superior Court Records, November, 1860, Isaac Fiske vs. Matthew Arbuckle.
- 33 Worcester County, deed records, Vol. 385, p. 495.
- 34 *Worcester Palladium*. October 13, 1841.
- 35 *Reports of the First Exhibition of the Worcester County Mechanics' Association at the Nashua Halls in the City of Worcester, September, 1848*. Worcester: Henry J. Howland, 1848, p. 34.
- 36 *Reports of the Second Exhibition of Worcester County Mechanics' Association at the Halls on Union Street in the City of Worcester*. Worcester: Tyler Hamilton, 1849, p. 12.
- 37 *Reports of the Third Exhibition of Worcester County Mechanics' Association at Halls on Exchange Street in the City of Worcester*. Worcester: C. Buckingham Webb, 1851, p. 55.
- 38 Dodworth, p. 23.
- 39 Charles G. Washburn. *Industrial Worcester*. Worcester: The Davis Press, 1917, p. 299.
- 40 *Worcester Palladium*. June 21, 1854, Col. 1, p. 1.
- 41 *Reports of the Fourth Exhibition of the Worcester County Mechanics' Association Held at the Hall in the City of Worcester, September*. Worcester: Henry J. Howland, 1857.
- 42 Examples are found in the Shriver Collection, Vermillion, South Dakota.
- 43 Phillip Bate. *The Truro*. Ernest Benn Ltd., 1909.
- 44 Florence T. Aller. *Worcester Directory Arranged Alphabetically*. Manuscript, 1954.



## Appendix

### Instruments Made by J. Lathrop Allen

- Key Bugle in e-flat. Allen & Co., Sturbridge, Massachusetts, ca. 1839, copper with brass trim, nine keys, Old Sturbridge Village Collections, Sturbridge, Massachusetts. (Figure 13)
- Trumpet in B-flat. J. Lathrop Allen, No. 16 Court Square, Boston, ca. 1843, brass, three Vienna twin-piston valves, Collection of Dr. Thomas R. Beveridge, Rolla, Missouri. (Figure 14)
- Tenor Horn with B-flat and C Slides. Allen & Co., Norwich, Connecticut, ca. 1846, copper with brass trim, three Vienna twin-piston valves for the left hand, Henry Ford Museum, Dearborn, Michigan. (Figure 15)
- Cornet in a-flat, oversoulder. Made by J. Lathrop Allen, 17 Harvard Place, Boston, for H. B. Dodworth, New York, ca. 1855, German silver with five Allen valves, Henry Ford Museum, Dearborn, Michigan. (Figure 20)
- Cornet in B-flat, circular. J. Lathrop Allen, No. 17 Harvard Place, Boston, 1853-56, German silver, four Allen valves, Kurt Stein Collection, Springfield, Pennsylvania.
- Tenor or Alto Horn in E-flat. J. Lathrop Allen, 17 Harvard Place, Boston, 1853-56, German silver, four Allen valves, Stearns Collection, Ann Arbor, Michigan.
- Baritone in B-flat. J. Lathrop Allen, 17 Harvard Place, Boston, ca. 1855, brass, three Allen valves, Fred Benkovic Collections, Wauwatosa, Wisconsin. (Figure 19)
- Baritone in B-flat, oversoulder. J. Lathrop Allen, 17 Harvard Place, ca. 1855, German silver, four Allen valves, Henry Ford Museum, Dearborn, Michigan.
- Valve Bugle in e-flat, oversoulder. Allen Mfg. Co., 18 Harvard Place, Boston, ca. 1859, silver or silver plate, three Allen valves, Don Essig Collection, Central Missouri State University, Warrensburg.
- Valve Bugle in e-flat. Allen Mfg. Co., Harvard Place, Boston, ca. 1859, German silver, three Allen valves, Moravian Museum, Old Salem, North Carolina. (Figure 22)
- Two Valve Bugles in e-flat, oversoulder. Allen & Hall makers, 334 Washington Street, Boston, ca. 1861, German silver, three Allen valves, Fred Benkovic Collection, Wauwatosa, Wisconsin.
- Cornet in B-flat. Allen & Hall, 334 Washington Street, Boston, ca. 1861, brass, three Allen valves, Don Essig Collection, Central Missouri State University, Warrensburg.
- Tuba in E-flat, oversoulder. Allen & Hall, 334 Washington Street, Boston, ca. 1861, brass, four Allen valves, Henry Ford Museum, Dearborn, Michigan. (Figure 23)
- Cornet in e-flat and f. Made by J. Lathrop Allen, No. 111 East 18th Street, New York, ca. 1870, silver plated, four Allen valves, Loyd Davis Collection, Prairie Village, Kansas. (Figure 25)
- French Horn. J. L. Allen, maker, New York, ca. 1870, brass with German silver trim, three Berlin valves, New York Metropolitan Museum of Art. (Figure 24)

### Instruments Made by E. G. Wright

- Ophicleide in C. E. G. Wright, Roxbury, Massachusetts, ca. 1839, brass, nine keys (mouth-pipe missing), Don Essig Collection, Central Missouri State University, Warrensburg. (Figure 28)
- Key Bugle in e-flat. E. G. Wright, Boston, ca. 1845, copper with brass trim, nine keys, Dale Music Company Collection, Silver Spring, Maryland.
- Key Bugle in e-flat. E. G. Wright, Boston, ca. 1845, copper with brass trim, case, ten keys, Henry Ford Museum, Dearborn, Michigan. (Figure 29)
- Key Bugle in e-flat. E. G. Wright, Boston, ca. 1845, copper with brass trim, ten keys, The Music Museum, Deansboro, New York.
- Key Bugle in e-flat. E. G. Wright, Boston, ca. 1845, copper with German silver trim, ten keys, Greenleaf Collection Interlochen, Michigan.
- Key Bugle in e-flat. E. G. Wright, Boston, ca. 1845, copper with silver trim, ten keys, William Gribbon Collection, Greenfield, Massachusetts.
- Key Bugle in e-flat. E. G. Wright for Graves & Co., Boston, ca. 1851, copper with German silver trim, ten keys, Browning Memorial Museum, Rock Island, Illinois.
- Key Bugle in e-flat. E. G. Wright, 8 Bromfield Street, Boston, 1845-47, copper with German-silver trim, eleven keys, Loyd Davis Collection, Prairie Village, Kansas.
- Key Bugle in e-flat. E. G. Wright, Boston, ca. 1850, copper with brass trim, eleven keys, Rhode Island Historical Society, Providence, Rhode Island.
- Key Bugle in e-flat. E. G. Wright, Boston, ca. 1850, silver-plated copper, eleven keys, Henry Ford Museum, Dearborn, Michigan.
- Key Bugle in e-flat. E. G. Wright, Boston, ca. 1850, eleven keys, silver with gold nameplate, elaborately engraved, Williams College, Williamstown, Massachusetts.
- Key Bugle in e-flat. E. G. Wright for Allen & Co., Boston, "Thomas B. Harris, Xenia, Ohio," silver, decoratively engraved, eleven keys, case, Fred Benkovic Collection, Wauwatosa, Wisconsin.
- Key Bugle in e-flat. E. G. Wright, Boston, 1853, "in honor of S. Wells Phillips, leader of the Greer Band, as a mark of respect by his fellow Greenport," silver, decoratively engraved, eleven keys, Greenleaf Collection, Interlochen, Michigan.
- Key Bugle in e-flat. E. G. Wright, for D. Chase by the inhabitant of Clinton Brass Band, Janu- tively engraved, eleven keys, Wauwatosa, Wisconsin.
- Key Bugle in e-flat. E. G. Wright, for A. R. Fitch by the Clinton Band, March eleven keys, Warrensburg, Missouri.
- Key Bugle in e-flat. E. G. Wright, for A. R. Fitch by the Clinton Band, March eleven keys, Warrensburg, Missouri.

- Rufus Pond, leader of the Milford Brass Band, 1855," silver, decoratively engraved, twelve keys, Sousa Collection, Urbana, Illinois.
- Key Bugle in e-flat. E. G. Wright, Boston, ca. 1861, "presented to G. R. Choate, leader, 35th N.Y.V. Regimental Band, by its members," silver, decoratively engraved, gold nameplate, twelve keys, Loyd Davis Collection, Prairie Village, Kansas.
- Key Bugle in e-flat. E. G. Wright, Boston, "J. C. Green, Providence, November 5, 1850," silver with gold-plated keys and trim, twelve keys, Rhode Island Historical Society, Providence, Rhode Island.
- Key Bugle in e-flat. E. G. Wright, No. 115 Court Street, Boston, 1848-52, silver, decoratively engraved, gold nameplate, case, twelve keys, Henry Ford Museum, Dearborn, Michigan. (Figure 26)
- Key Bugle in e-flat. E. G. Wright, Boston, "presented to D. C. Hall Esq. by the members of the Lowell Brass Band, April 15, 1850," gold, decoratively engraved, twelve keys, Henry Ford Museum, Dearborn, Michigan. (Figure 27)
- Valve and Key Bugle in e-flat, oversoulder. E. G. Wright, Boston, ca. 1853, German silver, five keys and three rotary valves, Henry Ford Museum, Dearborn, Michigan. (Figure 34)
- Trumpet in F. Wright & Baldwin, Boston, 1845, brass, three Vienna twin-piston valves, Smithsonian Institution, Washington, D. C. (Figure 32)
- Valve Bugle in e-flat. E. G. Wright, Boston, ca. 1855, German silver, three rotary valves, Smithsonian Institution, Washington, D. C. (Figure 36)
- Valve Bugle in e-flat. E. G. Wright, Boston, "presented by the members of the 3rd Brigade Band, 3rd Division, 9th A.C. to William Critchly, Jr., leader, July 4, 1863," German silver, three rotary valves, Smithsonian Institution, Washington, D.C. (Figure 36)
- Cornet in B-flat. E. G. Wright, Boston, ca. 1865, silver, three rotary valves, Henry Ford Museum, Dearborn, Michigan.
- Cornet in B-flat. E. G. Wright, Boston, ca. 1860, brass, three rotary valves, Fred Benkovic Collection, Wauwatosa, Wisconsin.
- Cornet in B-flat, circular. E. G. Wright, Boston, ca. 1860, brass, three rotary valves, Henry Ford Museum, Dearborn, Michigan. (Figure 37)
- Cornet in B-flat, oversoulder. E. G. Wright, Boston, ca. 1860, German silver, three rotary valves, Fred Benkovic Collection, Wauwatosa, Wisconsin.
- Cornet in B-flat. Wright, Gilmore & Co., Boston, 1867, German silver, three rotary valves, John Brookfield Collection, Concord, New Hampshire.
- Tenor or Alto Horn in E-flat. E. G. Wright, Boston, ca. 1865, brass, three rotary valves, Don Essig Collection, Central Missouri State University, Warrensburg. (Figure 38)
- Tenor or Alto Horn in E-flat, oversoulder. E. G. Wright & Co., Boston, 1864-66, German silver, three rotary valves, Fred Benkovic Collection, Wauwatosa, Wisconsin.
- Tenor or Alto Horn in E-flat. E. G. Wright, Boston, ca. 1865, German silver, three rotary valves, Henry Ford Museum, Dearborn, Michigan. (Figure 39)
- Tenor or Alto Horn in E-flat. Wright, Gilmore & Co., Boston, for W. & W. Mfg. Co., 1867, silver-plated brass, three rotary valves, Henry Ford Museum, Dearborn, Michigan. (Figure 42)
- Tenor Horn in B-flat. Wright, Gilmore & Co., Boston, German silver, three rotary valves, Collection of Alfred F. Wood, Westerly, Rhode Island.
- Baritone Horn in B-flat. E. G. Wright & Co., Boston, 1st Div. Corp., German silver, three rotary valves, Collection of Alfred F. Wood, Westerly, Rhode Island.
- Baritone Horn in B-flat. E. G. Wright, Boston, ca. 1865, silver-plated brass, three rotary valves, Henry Ford Museum, Dearborn, Michigan.
- Bass in B-flat. E. G. Wright, Boston, ca. 1865, "presented to Daniel B. Davis by the non-commissioned officers and privates of Co. I, 24th Regt., Wis. Vol. Inf.," German silver, four rotary valves, Fred Benkovic Collection, Wauwatosa, Wisconsin.
- Tuba in E-flat, oversoulder. E. G. Wright, Boston, ca. 1865, German silver, four rotary valves, Stearns Collection, Ann Arbor, Michigan. (Figure 40)
- Tuba in E-flat. Wright, Esbach & Hartman, Boston, 1864-66, nickel-plated brass, three rotary valves, Janssen Collection, Claremont, California.

### Instruments Made by Isaac Fiske

(All are signed "Isaac Fiske, Worcester, Mass.")

- Valve Bugle in e-flat, upright. German silver, three twin-piston Vienna valves, half-step valve first, c. 1848, Fred Benkovic Collection, Wauwatosa, Wisconsin. (Figure 43)
- Valve Bugle in e-flat, circular. German silver, three rotary valves, half-step valve first, c. 1850, Fred Benkovic Collection, Wauwatosa, Wisconsin. (Figure 44)
- Valve Bugle in e-flat, oversoulder. Brass, three rotary valves, painted wood case, c. 1852, Henry Ford Museum, Dearborn, Michigan. (Figure 45)
- Valve Bugle in e-flat. German silver, three rotary valves, c. 1852, Henry Ford Museum, Dearborn, Michigan. (Figure 46)
- Valve Bugle in e-flat, oversoulder. German silver, three rotary valves, and one key, c. 1852, Fred Benkovic Collection, Wauwatosa, Wisconsin.
- Valve Bugle, oversoulder. Silver-plated brass, three rotary valves, c. 1855, Worcester Historical Society, Worcester, Massachusetts.
- Valve Bugle in e-flat, circular. Brass, three rotary valves, the additional one whole-step, c. 1855, Smithsonian Institution, Washington.
- Valve Bugle in e-flat. Brass, three rotary valves, c. 1855, Smithsonian Institution, Washington.



- Cornet in f and e-flat, circular. German silver, five rotary valves, additional valves provide whole-step-and-two-and-one-half-step additions, c. 1860, Henry Ford Museum, Dearborn, Michigan. (Figure 48)
- Cornet in B-flat. German silver, four rotary valves, c. 1860, Alfred F. Wood Collection, Westerly, Rhode Island.
- Baritone in B-flat. German silver, three rotary valves, c. 1855, Henry Ford Museum, Dearborn, Michigan. (Figure 50)
- Baritone in B-flat, oversoulder. German silver, three rotary valves, c. 1860, Sousa Collection, University of Illinois, Urbana.
- Valve Bugle in e-flat, oversoulder. German silver, three rotary valves, c. 1858, Michael Zadro Collection, New Paltz, New York.
- Baritone in B-flat, oversoulder. German silver, four rotary valves, two-and-one-half-step fourth valve, c. 1860, Don Essig Collection, Central Missouri State University, Warrensburg. (Figure 58)
- Cornet in e-flat. German silver, three rotary valves, Fiske arrangement, c. 1867, Greenleaf Collection, Interlochen, Michigan.
- Valve Bugle in e-flat, circular. German silver, three rotary valves, c. 1870, Smithsonian Institution, Washington, D.C.
- Valve Bugle in e-flat. German silver, three rotary valves—Fiske arrangement, but with spring casings below the valves, c. 1870, Alfred F. Wood Collection, Westerly, Rhode Island. (Figure 54)
- Cornet in e-flat. German silver, three rotary valves—Fiske arrangement, but with spring casings below the valves, c. 1870, Robert E. Sheldon Collection, Washington, D.C.
- Cornet in e-flat. Brass, three rotary valves, Fiske arrangement, c. 1870, Janssen Collection, Claremont, California.
- Cornet in e-flat. German silver, three rotary valves, Fiske arrangement, c. 1870, Shrine To Music Museum, Vermillion, South Dakota.
- Cornet in e-flat. German silver, three rotary valves, Fiske arrangement, c. 1875, Sousa Collection, University of Illinois, Urbana.
- Cornet in e-flat. German silver, three rotary valves, Fiske arrangement, c. 1880, Henry Ford Museum, Dearborn, Michigan. (Figure 52)
- Cornet in B-flat. Silver-plated brass, three rotary valves, Fiske arrangement, c. 1875, Alfred F. Wood Collection, Westerly, Rhode Island.
- Cornet in B-flat (Unsigned). Brass, three rotary valves, Fiske arrangement, c. 1870, Worcester Historical Society Collection, Worcester, Massachusetts.
- Cornet in B-flat. Silver-plated brass, three rotary valves, Fiske arrangement, c. 1867, Rhode Island Historical Society, Providence, Rhode Island.
- Cornet in B-flat. German silver, rotary change of key valve to A, three rotary valves, Fiske arrangement, c. 1870, Martin Lessen Collection, Rochester, New York.
- Cornet in B-flat. German silver, three rotary valves, Fiske arrangement, c. 1875, Dr. G. Norman Eddy Collection, Cambridge, Massachusetts.
- Cornet in B-flat. German silver, three rotary valves—Fiske arrangement, c. 1875, Sousa Collection of Illinois, Urbana.
- Alto Horn in E-flat. German silver, three rotary valves, c. 1870, Don Essig Collection, Central Missouri State University, Warrensburg.
- Baritone in B-flat. German silver, three rotary valves, Fiske arrangement, c. 1870, Robert E. Sheldon Collection, Washington, D.C.
- Cornet in B-flat. Nickel-plated brass, three rotary valves, c. 1883, Henry Ford Museum, Dearborn, Michigan. (Figure 56)

#### Addenda to Second Printing, February, 1981

- Key Bugle in e-flat. E.G. Wright for Graves & Co., Boston, c. 1855, silver, twelve keys, Michigan Public Museum, Grand Rapids, Michigan.
- Key Bugle in e-flat. E.G. Wright, Boston, 1853, "Presented to Miller Cook Leader of the L. Abington Brass Band by the citizens and members of the band," silver with gold nameplate, eleven keys, Yale University Collection of Musical Instruments, New Haven, Connecticut.
- Key Bugle in e-flat. E. G. Wright, Boston, c. 1855, silver, decoratively engraved, Camden-Rockport Historical Society, Camden, Maine.