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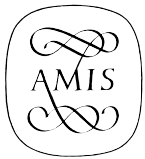

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The Boston Musical Instrument Manufactory/Company, 1869–1919 Part II: Mid-Range Brasses, Band Instrument Sets, Trumpets, Horns, Woodwinds, and Percussion

Robert E. Eliason, Robb Stewart, Richard J. Martz

Introduction

The Boston Musical Instrument Manufactory (BMIM) was one of the great American brass instrument manufacturers of the late nineteenth and early twentieth centuries. Part I of this article covered company history and the development of the E-flat and B-flat cornets.[1] Although much of the company's publicity centered on the popular cornets, it also produced a variety of middle and low range brasses of quality and interest. Sets of instruments for the ubiquitous post-Civil War brass bands were the focus of the early years of the firm, but this focus changed in the late 1800s to designing each size of instrument specifically for the role it played in the new mixed woodwind and brass bands, dance bands, and parlor music ensembles.

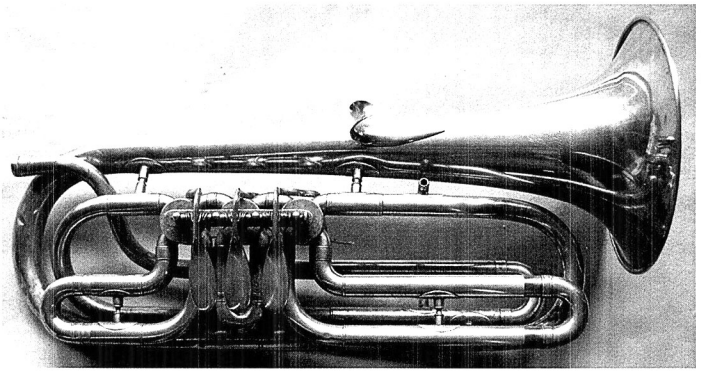
Alto Horns and Ballad Horns

Because of the changes in bands mentioned in Part I of this article, the former E-flat tenor had become an E-flat alto (fig. 1), but the solo role of this instrument in earlier type bands still demanded fine instruments and even a pocket model. In the late 1880s, a right-handed piston valve "Orchestra Horn" in F with crooks to E-flat and D—an instrument more commonly called a mellophone—was introduced along with a "Ballad Horn" in C and B-flat (fig. 2). The orchestra horn/mellophone was described as "a substitute for the French Horn in orchestral music, thereby saving the continued practice and difficult embouchure of the real French Horn . . . .[2]

1. Robert E. Eliason, Robb Stewart, Richard J. Martz, "The Boston Musical Instrument Manufactory/Company, 1869–1919 Part I: Company History, E-flat and B-flat Cornet Development," *Journal of the American Musical Instrument Society*, vol. xli (2015): 5–45.

2. Catalog of 1887, 60.

(A)



(B)

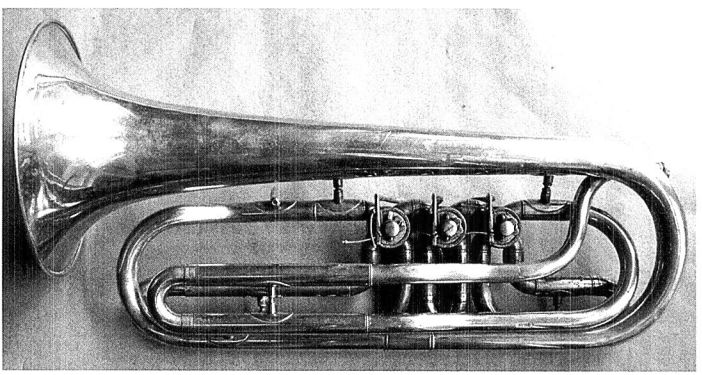


FIGURE 1A, B. Solo E-flat tenor or alto. Photos courtesy of Jon Hall, Portland, ME.

Trombones, Baritones, Euphoniums, and B-flat Basses

Trombones, excluded from the bands for so many years, returned with valves or slides (fig. 3) as the superiority of one or the other system was debated. Distinct features of these trombones included the offset bell bow, a distinctive bent brace, and on some models, a looped bell bow. A certain amount of confusion surrounds the tenor/baritone/bass/

(A)

(B)

FIGURE 2A, B. Ballad Horn. Photo courtesy of Robb Stewart, Arcadia, CA.

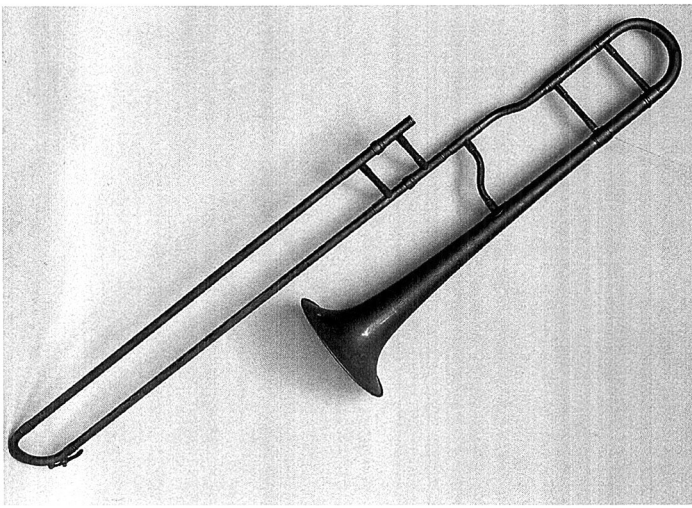


FIGURE 3. Tenor trombone in B-flat with offset bell bow and bent brace. Photo courtesy of Robb Stewart, Arcadia, CA.

euphonium group of instruments. While the tenors are clearly smaller in both valve bore and corpus, earlier catalogs add to the confusion with engraved images that show a fairly even gradation in size from E-flat alto through B-flat tenor, B-flat baritone, B-flat bass, and E-flat bass. In reality, the baritone, bass and, later the euphonium, all shared the same corpus. The difference between the baritone and bass is in the valve bore measurement: .550" in the baritone and .585" in the bass. The unique American tradition of having tenor, baritone, and bass instruments all at the same B-flat pitch probably resulted from copying instruments from the various traditions that were coming to the country during the last half of the nineteenth century. In the 1890s and until about World War I, the C. G. Conn company had tried to cover all the bases by making four different sized instruments at the same pitch without any overlapping bore or body parts. Its Wonderphone euphonium was very much like the largest English euphoniums but must not have sold well, based on the rarity of examples. This was a time when the band business was still booming, and there were American bands comprising immigrants from

all European and British traditions. When the economy slowed and competition grew more fierce, the US makers concentrated on the best seller. This was one basic design with the variations being in details such as front or top action valves, bell up or bell front, and, of course, three or four valves. There were many interchangeable parts among the various designs by a particular maker. The last American tenor horn was probably made before about 1930.

When the euphonium was introduced in the 1880s, it was a baritone with a fourth valve added (fig. 4). The catalogs never show a four-valve B-flat bass, but instruments are extant with four valves and larger bore. It seems likely that they also called this a euphonium, at least in the later years. A double-bell euphonium was introduced by 1890, with the fourth valve changing from euphonium to trombone bell. This instrument was never offered with a regular fourth valve in addition to the change valve, but it seems likely that such an instrument could have been custom ordered.

By 1919 the smaller tenor/baritone horns were being dropped and all US makers were offering baritone horns that were based on the proportions of the French bass, which was slightly smaller than the English euphonium. The same instrument with the fourth valve added was called "euphonium," even though it was still smaller than the English euphonium. Although the instruments were not unique, the terminology was. BMIM responded to these developments by adapting to the American idiom with three-valve baritones and four-valve euphoniums that otherwise had the same specifications. B-flat tenors and B-flat basses were discontinued. For catalog illustrations of all mid-range brasses offered, see tables 1–12 and figs. 5–19.

Band Instrument Sets

From the beginning, BMIM offered its band instruments in complete sets (tables 4–10), including the soprano instruments, or in some sets including only the five lower instruments, E-flat alto, B-flat tenor, B-flat baritone B-flat bass, and E-flat bass. Of the original sets offered in 1869, the bell up left model with side action rotary valves was gone by the late 1870s; the over-the-shoulder instruments, popular during the Civil War, were discontinued in the mid-1880s, and the bell up and right "Newly Improved Pattern" with side or top action rotary valves continued until the 1890s.

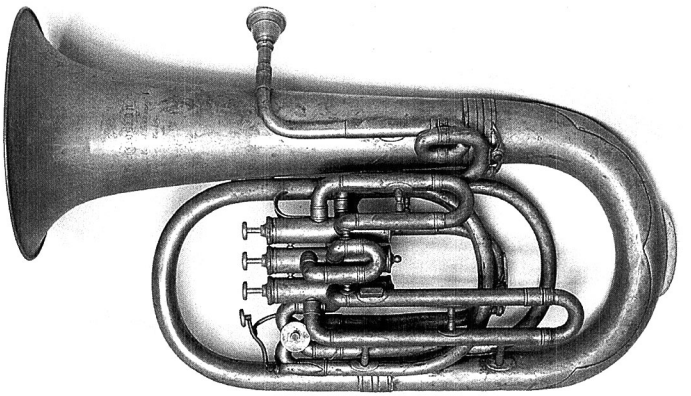


FIGURE 4. Euphonium with three piston valves and one rotary valve. Photo courtesy of Robb Stewart, Arcadia, CA.

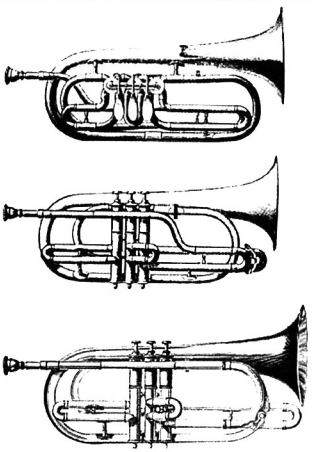
> In our newly Improved Pattern of Instruments, which we first manufactured in 1869, we have, by repeated experiments and improvements, brought them to a higher standard than ever acquired before, and we challenge any to produce their equals. . . .
>
> We have now the whole range of Instruments, from the E-flat Cornet to the E-flat Bass, a complete and perfect sett, —the tones of all being free, rich and brilliant, and in perfect tune; and are prepared to apply all our Improvements to whatever form of Instruments desired.[3]

The circular or helicon model was introduced with rotary valves in 1874, offered with both piston and rotary valves from 1882 until the early 1900s, and then in 1919, came with only piston valves.

In about 1887, a "New Model" with bell up and left and side action rotary valves angled at the bottom of the instrument was introduced, but it was not successful and did not appear in subsequent catalogs. From 1874 through the 1880s, rotary valve lower instruments were available in models with bells pointing left, right, backward, or forward (fig. 12). The first piston valve set was introduced in 1882, including a BB-flat bass. This set was redesigned for the 1919 catalog, and the redundancy of instruments

3. Catalog of 1874, 9.

TABLE 1. Catalog Illustrations of Solo Alto Instruments

Catalog 1869, p7, 12		Bell forward "solo" alto with side action rotary valves, Piston valve long model
Catalogs 1874, p7 1882, p9 1887, p26, 48 1890+, p20, 38 1903+, p16 1915, P22		Bell forward "solo" alto, 1874-1915; "recently improved style and model," 1874 Rotary or piston valves, 1874-1890+ Rotary valve "Celebrated Improved Pattern," 1887-1890+ Piston valve "Regular Model," 1887-1915

at the B-flat tenor pitch was finally resolved in favor of just the baritone and Euphonium. In the 1874 catalog, the company offered a set of imported instruments, though no illustrations were included.

IMPORTED INSTRUMENTS

(not our own make)

In order to meet the demands of parties who wish to procure instruments of a cheaper grade than our own, we are prepared to furnish them at the following prices; and in ordering them, parties will please distinctly state that they wish this class of instruments.[4]

4. Ibid., 3.

TABLE 2. Catalog Illustrations of Ballad Horns and a Pocket Alto Horn

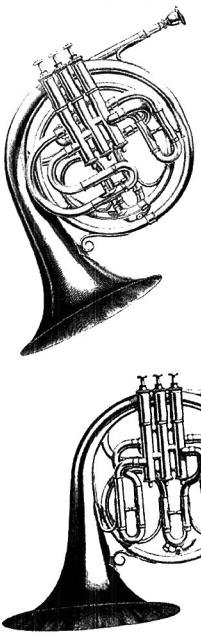
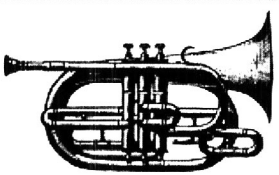
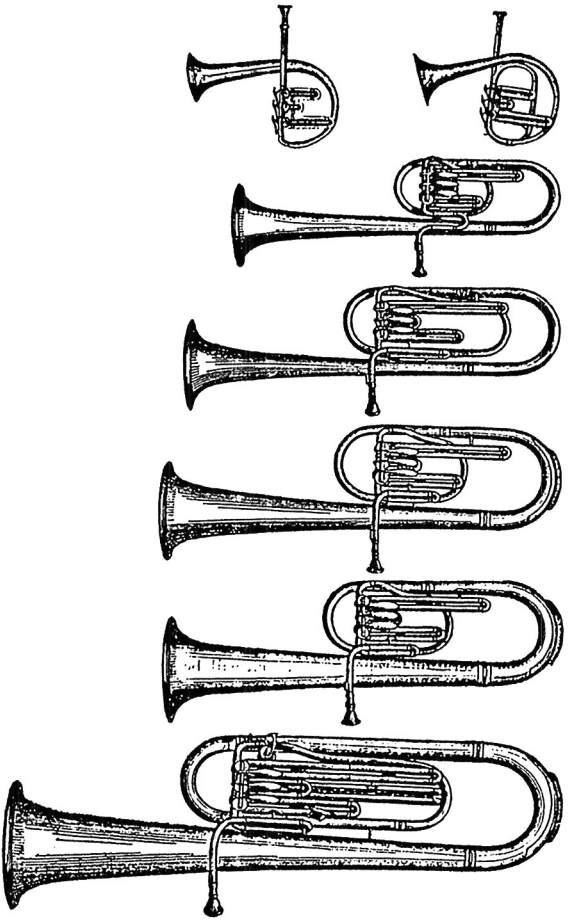
Catalogs 1887, p58, 60 1890+, p48,49 1903+, p36, 37 1915, p14, 15 1919, p13, 14		Ballad horn in C and B-flat; Orchestra horn in F with crooks to E-flat and D Piston valves
Catalogs 1882, p25 1887, p26 1890+, p20 1903+, p16		"Pocket" model E-flat alto, piston valves

TABLE 3. Catalog Illustrations of Bell Up Right Euphoniums

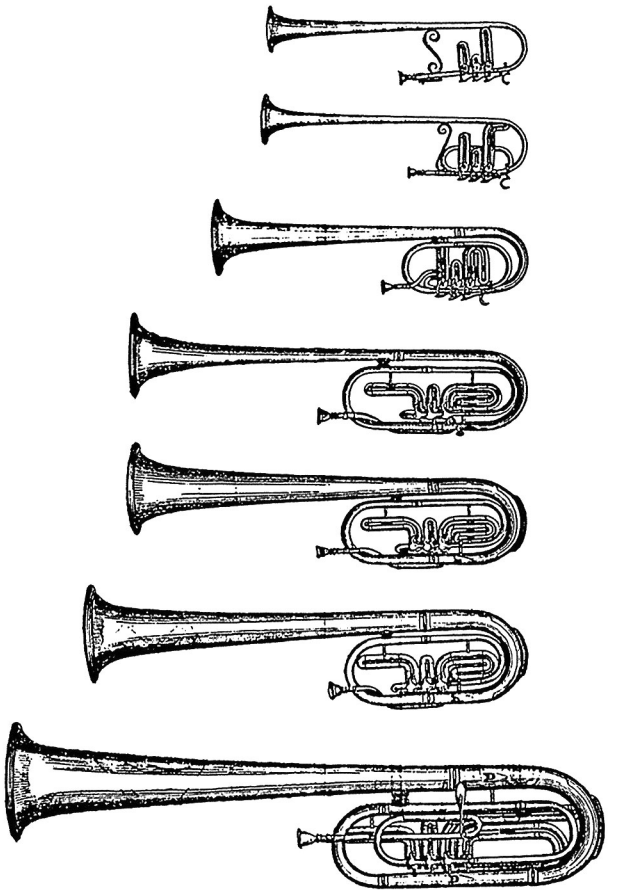
Euphoniums with four side action rotary valves or three piston valves and one rotary valve or four piston valves with one for the left hand; "regular" and "new" models. Catalogs of 1887, p30, 52; 1890+, p25,28; 1903+, p20, 21; 1919, p22, 23.

TABLE 4. Catalog Illustrations of a Set of Bell Up Left Instruments



Bell up, rotary valves, side action, Catalogs of 1869, 1874, p10.

TABLE 5. Catalog Illustrations of a Set of Bell Up Back Instruments

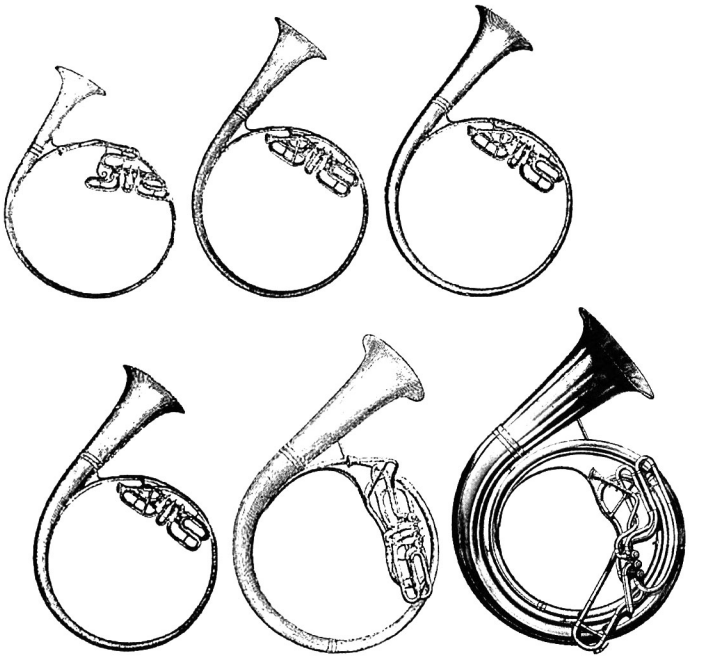


Bell up and back, rotary valves, top action, catalogs of 1869, p11; 1874, p11; 1882, p17.

TABLE 6. Catalog Illustrations of a Set of Bell Up Right Instruments

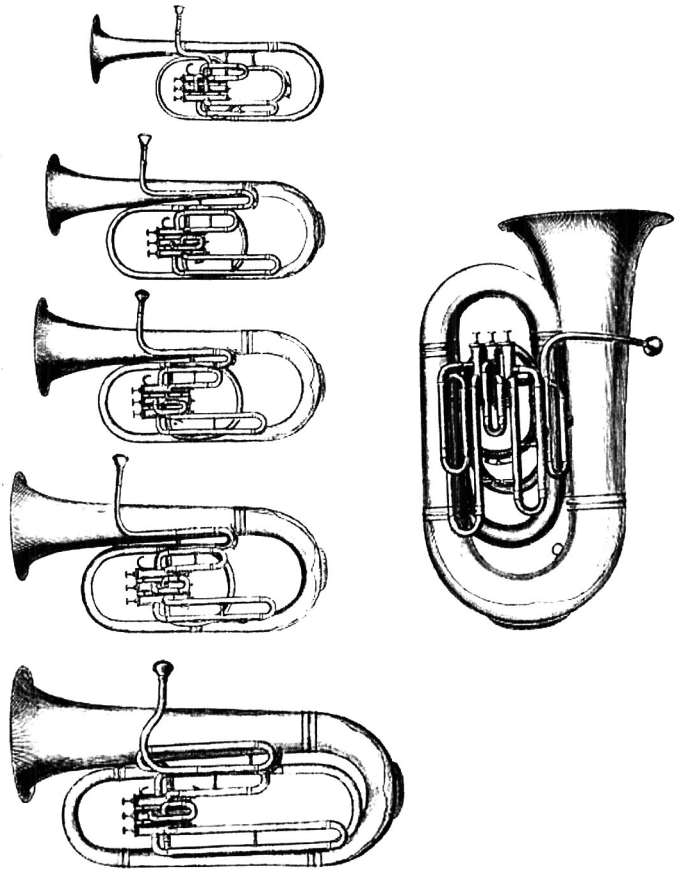
Bell up and right, rotary valves, side action, "celebrated Improved Pattern," catalogs of 1869, p8; 1874, p8; 1882, p16, 17; 1887, p49–55; 1890+, p39–45.

TABLE 7. Catalog Illustrations of a Set of Circular or Helicon Instruments



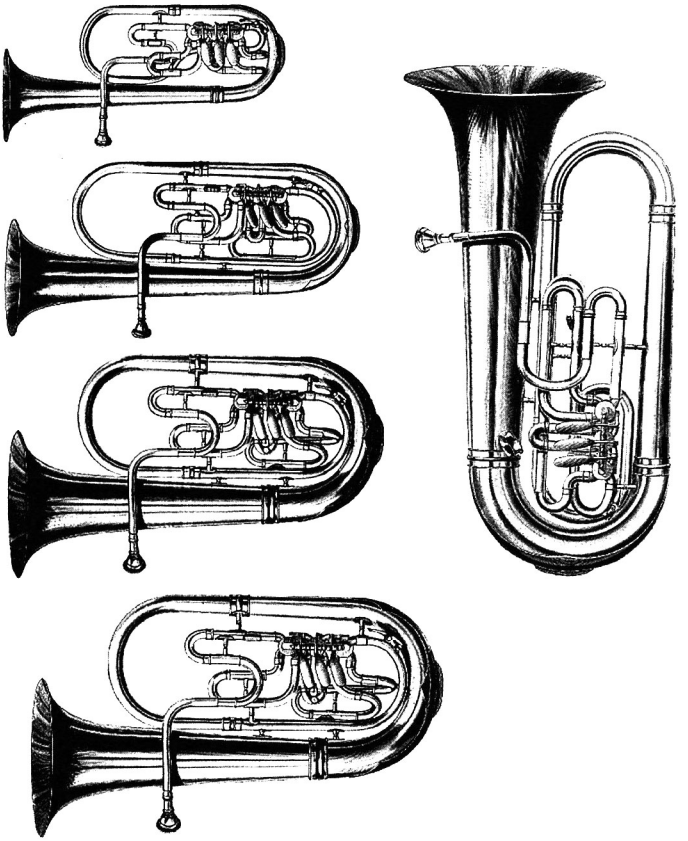
Bell up and forward, circular or helicon model, 1874–1919; rotary valves, side action, 1874–1903+; piston valves, 1882–1919; including BB-flat bass, 1887–1919; "Regular Model" and "New Model," 1919; catalogs of 1874, p22–24; 1882, p22–24; 1887, p61–66; 1890+, p54–59; 1903+, p28–31; 1919, p29–32.

TABLE 8. Catalog Illustrations of a Set of Bell Up Right Piston Valve Instruments



Bell up and right, piston valves, including BB-flat bass, 1882–1919; four valve "Euphonium" and E-flat bass, 1887–1919; "light piston valves," 1887–1903+; no B-flat tenor or B-flat bass in 1919; catalogs of 1882, p18–21; 1887, p27–34; 1890+, p21–23, 29–31, 36; 1903+, p17–27; 1915, p23–25, 29–32; 1919, p18, 21, 22, 25, 27, 28.

TABLE 9. Catalog Illustrations of a Set of Bell Up Left "New Model" Instruments



Bell up and left, "new model," rotary valves, side action; catalog of 1887, p40–46.

TABLE 10. Catalog Illustrations of a Set of Bell Up Right Piston Valve "New Model" Instruments

Bell up and right, piston valves, "new model" (no tenor or B-flat bass); catalog of 1919, p19, 20, 23, 26.

TABLE 11. Catalog Illustrations of Trumpets

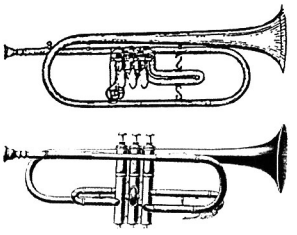
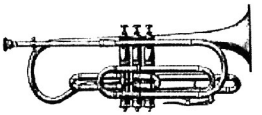
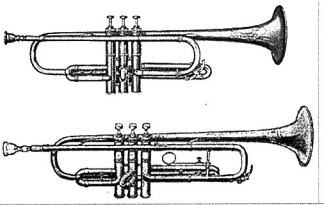
Date and page of Catalog	Model Illustrations	Valves & Type	Model Name/Comments
Catalogs 1869, p12 1882, p27 1890+, p60 1903+, p13 1915, p12 1915s, p[4]		Side action rotary Piston	Long orchestra model B-flat trumpet, 1869, 1882-1915s; rotary valve, side action, 1869; piston valves, 1882-1915; crooks to A and A-flat, 1882-1890+; with crook to A, 1882-1915; with quick change to A, 1915s.
Catalogs 1869, p12 1882, p27 1890+, p13 1915, p12 1915s, p[4]4		Piston	Trumpet in F with crooks to E and E-flat, 1882-1915; with crooks to E, E-flat, D, and C, 1882-1890+
Catalogs 1919, p11 1922, p2		Piston	"Boss-tone" and Model 11 trumpets in B-flat, 1919-1922; Boss-tone" model, "The tuning slide is at the back," 1919; "Model 11" in B-flat, A and C, 1922

TABLE 12. Catalog Illustrations of French Horns

Date and page of Catalog	Model Illustrations	Valves & Type	Model Name/Comments
Catalogs 1869, p12 1874, p15 1882, p31 1887, p59 1890+, p47 1903+, p38 1915, p13 1919, p12	 	Rotary, side action	French Horn; central slide on right, 1869-1882; central slide on left, 1887-1919

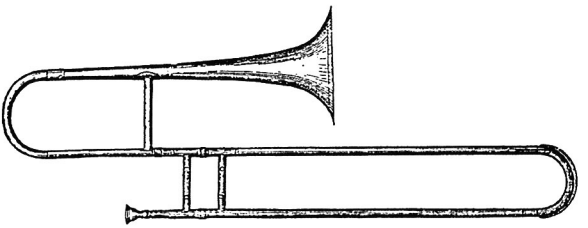


FIGURE 5. Straight brace slide trombone in B-flat. Catalogs of 1869, p12; 1874, p15.

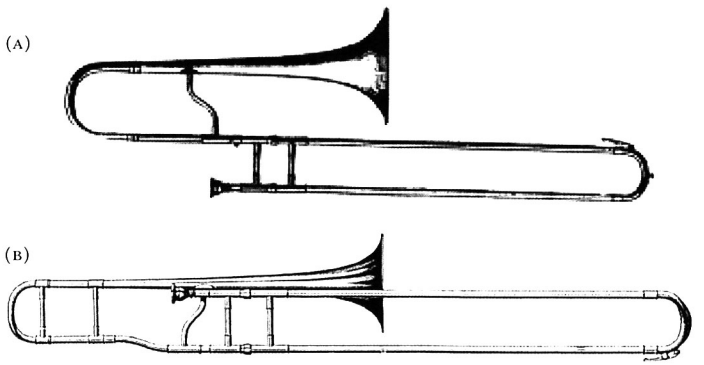


FIGURE 6A, B. Bent brace slide trombones, in B-flat soprano, E-flat alto, B-flat tenor, B-flat and F Bass with tuning slide, straight or offset back bow. Catalogs of 1882, p40; 1887, p84, 85; 1890+ p50, 51; 1903+ p30, 31; 1919, p15, 16.

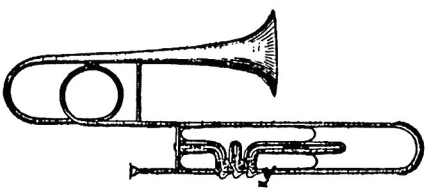


FIGURE 7. B-flat tenor valve trombone, rotary valves, top or side action, back bow loop. Catalogs of 1869, p5; 1874, p7.

FIGURE 8A, B. E-flat alto valve trombone, bent brace, rotary valves, side action or piston valves. Catalogs of 1882, p14, 15; 1887, p35. With piston valves only, catalogs of 1890+, p32; 1903+, p32.

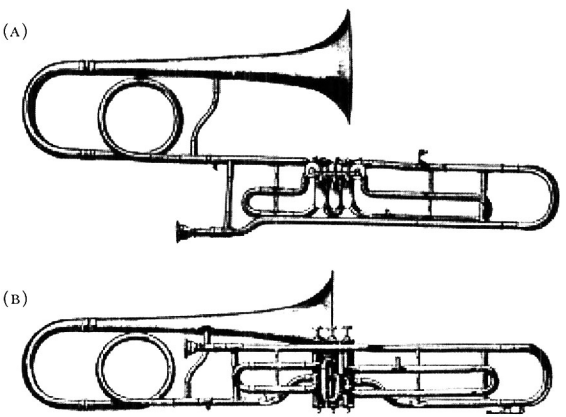
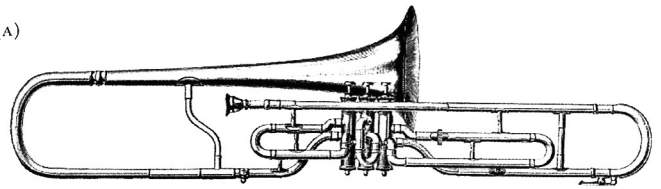


FIGURE 9A, B. B-flat tenor valve trombone, bent brace and looped back bow. Catalogs of 1874, p7 (rotary valves only); 1882, p14, 15; 1887, p69 (rotary valves only).

(A)



(B)

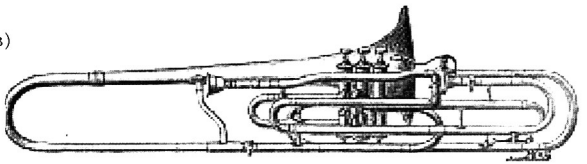


FIGURE 10A, B. B-flat tenor valve trombone, bent brace. Catalogs of 1882, p14, 15 (rotary or piston, looped or not); 1887, p31, 35, 36 , 37 (piston valves only); 1890+, p32 (alto), p33, 35; 1903+, p32–35; 1915, p18 (alto), 19-21; 1919, p17. Piston valves with rotary fourth valve, catalog of 1887, p31. "Short model," "Long model;" alto, tenor, and baritone; catalogs of 1887, p35–37; 1890+, p32–35; 1903+, p32–35; 1915, p18–21; 1919, p17.

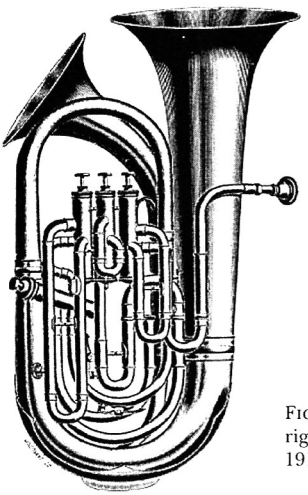


FIGURE 11. Double bell euphonium, bells up right. Catalogs of 1890+, p27; 1903+, p23; 1919, p24.

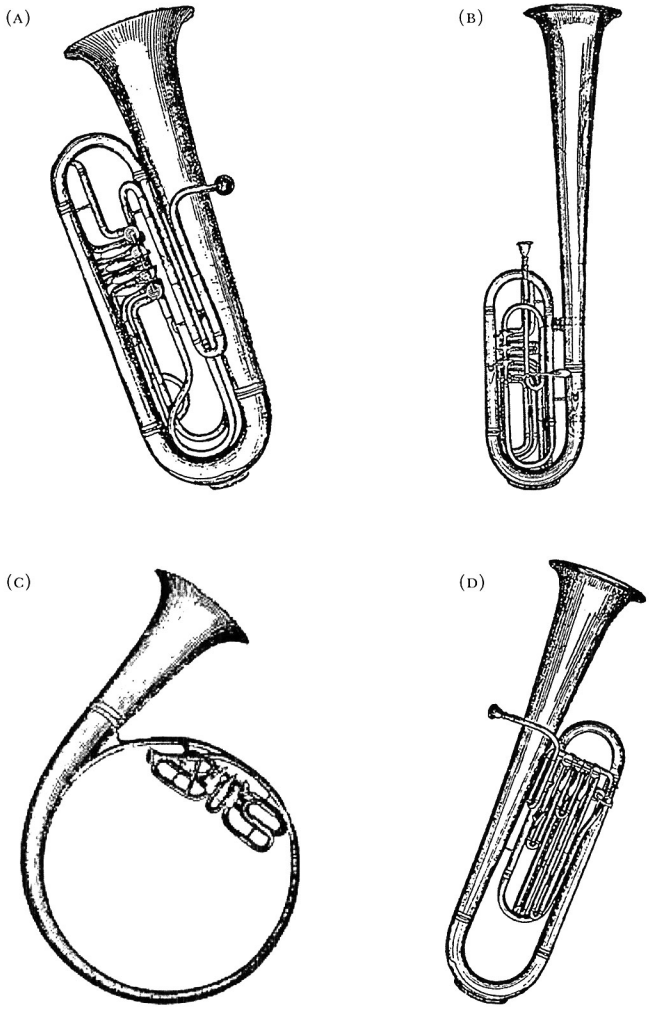
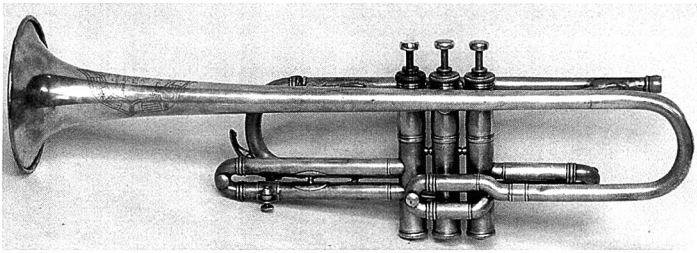


FIGURE 12A, B, C, D. Brasses with bells pointed up right, up back, up forward and up left.

(A)



(B)

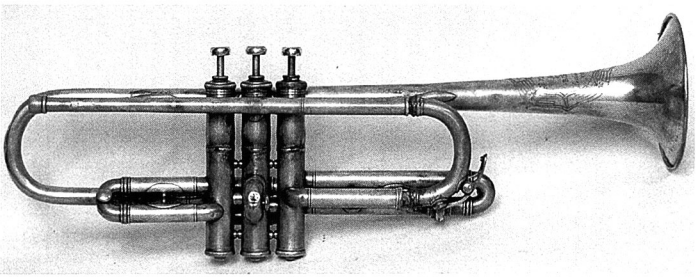


FIGURE 13A, B. Boss-Tone trumpet. Photo courtesy of Robb Stewart, Arcadia, CA.

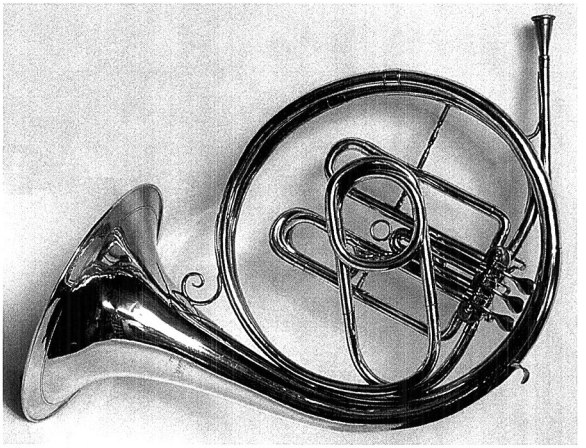


FIGURE 14. French horn by E. G. Wright, c. 1867. Photo courtesy of the Mark Elrod Collection, Germantown, MD.

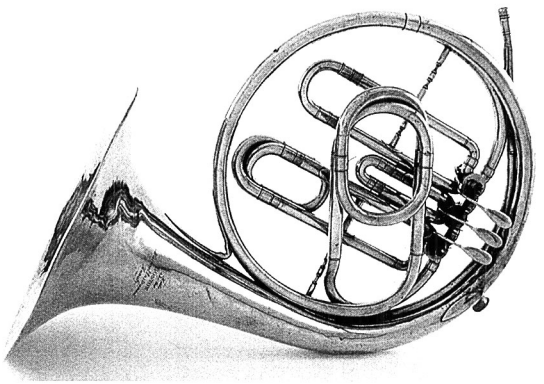


FIGURE 15. French horn by the Boston Musical Instrument Manufactory, c. 1870. Photo courtesy of the Dick Martz horn collection, Morrisville, PA.

(A) (B)

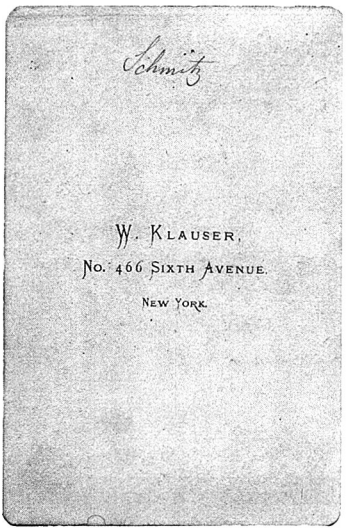


FIGURE 16A, B. Henry Schmitz trade card. The subject's age (b. 1823) and the type of trade card suggests that the photo was taken in the 1860s. The horn is identified by its tubing, bracing and layout as an E. G. Wright of the type produced by the Boston Musical Instrument Manufactory until well into the 1900s. Photo courtesy of the Dick Martz horn collection, Morrisville, PA. (Only "Schmitz" on the back identifies the photo. Gustavus, Henry's brother, also played horn, but was better known as an organist/choir director.)

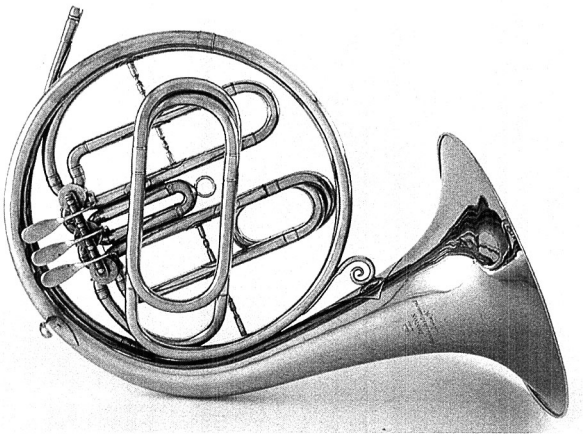
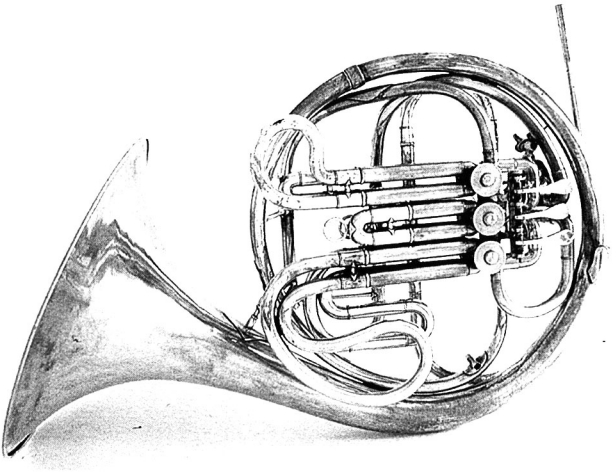


FIGURE 17. Right handed Boston Musical Instrument Manufactory French horn, *c*1870s. Made entirely of nickel silver. Photo courtesy of the Dick Martz horn collection, Morrisville, PA.

FIGURE 18. Boston Musical Instrument Manufactory French horn, serial number 12220, 1893. Photo courtesy of the Dick Martz horn collection, Morrisville, PA.

(A)



(B)

FIGURE 19A, B. Double French horn in F and B-flat signed "Made/by the /Boston/Musical Instrument/Company/25506/USQMC;" c. 1925–28. Photos courtesy of of the Dick Martz horn collection, Morrisville, PA.

Prices are given for imported E-flat cornet through E-flat bass for brass piston valve, brass rotary valve, and German silver rotary valve, and average about thirty percent less than BMIM's own comparable instruments. Evidently this did not prove to be a successful idea, for imports were not offered again in any of the later catalogs.

Tables 4–10 show the various models of band instrument sets and approximately when they were introduced and how long they continued to be offered.

Orchestra Trumpets

There was little demand for trumpets in the United States in the second half of the nineteenth century. They were rarely used in bands, and contemporary reports indicate that orchestral trumpet parts were usually played on cornets. Three of the four best American makers, Graves & Company, E. G. Wright & Company, and J. Lathrop Allen, made the small bore trumpets in F, B-flat, and even the high E-flat, known in the 1840s as valved post horns. These were considered outmoded and insufficient in the modern bands of the 1850s and 1860s.

The only evidence of E. G. Wright having made more modern trumpets is the existence of a long B-flat instrument, made about 1860, that retains its original G crook and mouthpiece. The mouthpiece is unmistakably in the style that Wright favored except that it has a pronounced cup-shaped interior, very distinct from the mouthpieces made for cornets or other band instruments at the time. It is possible that this was a special order for performance with a symphonic orchestra or similar situation.

The BMIM did eventually start listing a trumpet model in its 1882 catalog. This was a trumpet in F with crooks to E, E-flat, D, and C. The description mentions that this model was used in "Henschal Concerts" (presumably Georg Henschel [1850–1934]) and the [Theodore] Thomas Orchestra. No example of this trumpet has come to light, but the catalog illustration appears to show the same valve section developed for the Star model cornets, and the shepherd's crook curve of the bell bow gives it the appearance of an elongated cornet. European trumpets were made in this form at about this time, most notably by Gustave Auguste Besson in Paris. A similar listing in the 1887 catalog states that trumpets are also available in B-flat with crooks to A and A-flat. Once again, there are no known examples for examination.

The catalog published by BMIM ca.1903 reflects changing styles with an illustration of a trumpet in B-flat and statement that it comes with a crook to A. By this time, Sousa's Band had been using trumpets in B-flat to complement the cornets and trombones. Other bands were quick to follow. A trumpet in F was still offered, but with crooks to E and E-flat, no longer to D and C. The same two trumpets with the same illustration were still offered in the 1915 catalog, but a supplement sent with it (probably in 1916) introduced a newly designed B-flat trumpet with "quick change" to A, a stop rod on the main tuning slide. For the first time, it appears to have a valve section distinct from that seen in the cornets and an appearance much like trumpets made at the time. Casting a wide net, the catalog supplement states:

> For Concert Band and Symphony Orchestra it is especially recommended, while its extreme flexibility and ease of blowing and embouchure make it an admirable instrument for the many professional players who play the trumpet in less pretentious organizations than Symphony Orchestras.[5]

Presumably the less pretentious organizations were the theater and dance orchestras that were quickly becoming the more common source of the professional musician's revenue. By the time the 1919 catalog was printed, all previous trumpet designs seem to have been dropped in favor of the "Boss-Tone" B-flat trumpet. This small bell, small bore trumpet was part of a relatively short-lived trend of trumpets intended for popular music with a very bright and cutting sound, presumably to differentiate from the old fashioned cornet (fig. 13). Following purchase of the company, Cundy-Bettoney continued the manufacture of instruments under the Boston Musical Instrument Company name but began specializing in trumpets. A four-page brochure issued in 1922 describes this change.

> It is universally conceded that specialization of production is the only way to produce a commodity which can be positively declared the best. Anybody knows that specialists always excel in their particular line.
>
> With this idea in view and with the desire of placing on the market a trumpet that can truly be claimed the best in the world; the Boston Musical Instrument Co. has applied most of its skilled efforts, knowledge, and 81 years' experience in brass instrument manufacture to the development and production of highest grade hand made trumpets.[6]

5. Catalog 1915s, 3.
6. Brochure of 1922, 4.

The brochure describes and illustrates the new "Model 11" trumpet, "built in B-flat, with quick invisible change to A, made in low pitch, or in high pitch with low pitch slide. The instrument can be played in C without additional attachments." It then lists these "Characteristic Features":

1. Short, light valve action, permitting rapid execution.
2. Convenient position of second valve slide, preventing collection of water.
3. Moveable slide on 3rd valve with adjustable finger ring to enable player to tune while playing.
4. Perfect balance of weight when suspended by 3rd valve.
5. Ease of blowing in all registers, notes won't "crack" when overblown.
6. That wonderful trumpet tone, characteristic of the "Boston."
7. The metal of the bell is hand hammered by experienced workmen who have spent their lives perfecting this process.

THREE BORES

No. 1 Small bore—Adaptable for dance and light orchestra work.

No. 2 Medium bore—Adaptable for all-round general playing purposes and solo work.

No. 3 Large bore—Best for symphonic, choral, large band and orchestra work.[7]

Catalog illustrations of all trumpets are shown in table 11.

French Horns

The distinctive "Boston" French horn with valve cluster aligned with the bell and central slide angled but aligned with the mouthpipe was originally designed in the 1860s by E. G. Wright, and was produced throughout the history of the BMIM (figs. 14, 15). A testimonial by Carl Zerrahn, director of the Boston Philharmonic Orchestra, dated April, 1867 states, "The French Horn recently tested at the Music Hall, is the finest instrument of the kind I have ever heard, . . ."[8] suggesting that it was introduced in that year. This date is confirmed by another testimonial dated February 26, 1868 from Luke Murphy, President, Boston Musicians' Union and solo horn at Selwyn's Theatre. He said,

7. Ibid., 2.
8. Catalog of 1869, 14.

> Having given [the new French Horns] a thorough trial, almost a year in the best orchestras, I can assure you that for finished quality of tone, perfectness in tune, and the easy manner in which they are controlled, both in double "forte" or the most "piano" passages, render them the most excellent of European or American make.[9]

This design features a very long slow-tapered leadpipe extending from the mouthpiece around the entire circumference of the corpus to the first valve. The main tuning slide comes after the valve set and is placed on the front of the horn. On this example (fig. 15), the tuning slide has a loop not shown in the company's catalog drawing (table 12). It is made entirely of brass, in contrast with the original Wright & Co. horn (fig. 14) that contains nickel-silver ferrules, braces, and trim. This horn has an additional brace from the third valve casing to the bell tail that is not found on the Wright & Co. horn and is not shown in the catalog drawings until 1887. The valve levers are cantilevered over the top of the valve casings to the rotors on the opposite side. This is different from the original Wright design, where linkage to the rotor is on the outside in the typical manner. The bell flare has a clearly visible continuous single seam in contrast to contemporary European-made horns that often had a vee-gussett inserted.

Unlike the original Wright design, this horn does not have a bell garland, and the bell brace differs from those on the Wright horn and other examples from BMIM that may be an indication of the horn's date of manufacture. This horn does not have a serial number, which dates it to before *c*1880 when BMIM began numbering its instruments. The instrument has a full range from pedal to high C, and excellent relative intonation throughout at all volumes without "edging out;" the wide bell throat appears to eliminate any need for a garland. The particularly long mouthpipe gives a beautiful tone and favors the low register.[10] The third valve slide on Wright and BMIM horns has a distinctive double loop, similar to that of the contemporary Belgian maker Ferdinand van Cauwelaert. The horn is pitched fairly high with A = *c*448 with a moderate pull of the main slide.

9. Ibid.

10. According to a handout distributed by Walter Lawson at a clinic in 1980: "The first tapered tube of a brass instrument partially controls the ease of register–A short taper provides an easy high register, but the low register lacks power and concentration of sound. A long taper gives strong low notes but is difficult in the high register in that it requires precise lip control and intense mental concentration." Long

This model continued to be favored by many well-known conductors and horn players over the last half of the nineteenth and well into the twentieth century. Prominent names mentioned in this regard are Patrick Gilmore (1829–1892), Theodore Thomas (1835–1905), Carl Zerrahn (1826–1909),[11] Henry Schmitz (1823–1914),[12] August Hamann (1826–1892),[13] and Georg Henschel (1850–1934).[14] Henry Schmitz's trade card in figure 16 shows his age (b. 1823), and the type of trade card suggest that the photo was taken in the 1860s.[15] The horn is identified by its tubing, bracing and layout as an E. G. Wright of the type produced by the BMIM until well into the 1900s.

Theodore Thomas included this comment in his endorsement of the company's instruments in the 1874 and 1882 catalogs:

> The French horns of your construction are also used in my orchestra, and experience in orchestral use of instruments by all makers of repute, justifies the certainty with which I speak in praise of yours.[16]

The 1915 and 1919 catalogs included the following:

> In the Theodore Thomas Orchestra, the Boston Symphony Orchestra, the Philharmonic, and nearly all the prominent symphony orchestras in the United States the "Boston" horn is used in preference to the numerous imported varieties.[17]

Among examples known is a right-handed model (fig. 17) showing the company's willingness and ability to produce to special order. Although most French horns are left-handed, there is a long history of occasional use of right-handed instruments.[18] Except for its right-hand reversal, this

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mouthpipes from the mouthpiece to the valve section were common on valved horns in the second half of the nineteenth century. By the twentieth century, however, most makers of single horns had shortened the mouthpipe to about half the length found on this horn and moved the tuning slide before the valve set instead of after it.

11. Flautist and conductor of the Boston Philharmonic, Harvard Musical Association, Handel and Haydn Society, Worcester Music Festival, and other fine choral groups.

12. Solo horn of the New York Philharmonic 1848–1869, of the Theodore Thomas Orchestra 1866–1877, and several other well-known orchestras.

13. Horn virtuoso and music teacher in Boston 1852–1892.

14. First conductor of the Boston Symphony Orchestra.

15. Only "Schmitz" on the back identifies the photo. Gustavus, Henry's brother, also played horn but was better known as an organist/choir director.

16. Catalog of 1874, 17.

17. Catalogs of 1915, 13; 1919, 12.

18. Richard J. Martz, "Reversed Chirality in Horns, or is Left Right? The Horn, on the Other Hand," *Historic Brass Society Journal*, vol.15, 2003: 173–232.

horn is very similar in construction and playing qualities to the BMIM horn described above. It does not have a serial number, which dates it to before circa 1880 when BMIM began numbering its instruments. The spiral bell brace is upside down from Wright horn (fig. 14) and the catalog illustrations (table 12). One unusual feature of the horn is a water key. It is the only brass feature on this horn and might not have been a factory option. The key has a leaf spring instead of a spiral wire spring found on later water keys.

The right-handedness of the horn and nickel-sliver metal suggest this horn was intended for a military-style band popular following the Civil War. Such organizations would, however, more commonly prefer upright tenor or alto horns, especially when marching. In comparison to a left-handed high-pitched brass model of the same design, this horn has a slightly larger bell flare and throat, and cylindrical bore. This is probably intended to reduce the natural brilliance of nickel-silver. This horn is pitched at the modern standard (A = 440).

Although not shown in the catalogs, an example of a re-designed or special order model from 1893 has survived (fig. 18). This is a later model of the single horn made by the BMIM that does not appear in any of the catalogs examined so far. It is different in two significant ways. First the bore, measured at the inside diameter of the second valve tuning slide, is considerably smaller at 0.421" vs. 0.486" on the earlier horn. Second, it is pitched nearly a semi-tone higher at A = ca. 455. In addition, the configuration is slightly different: the mouthpipe is nearly at a right angle to the bell and the valve cluster and central slide almost square with each.

Another unusual characteristic for a horn made in this period is that it is made entirely of brass, with the sole exception of the hand guard, which is nickel-silver. This horn shares with its predecessor the extremely long, slow-tapered mouthpipe that follows the entire circumference of the body of the horn from mouthpiece to first valve. It is strikingly similar in bore, profile, layout, and pitch to a "Kölner Modell" horn by Friedrich Adolf Schmidt made in Cologne, Germany ca. 1880 now in the collection of Museum of Musical Instruments of Leipzig University (no. 1699).[19] No direct connection between this horn and the Schmidt horn has been established, however.

19. Herbert Heyde, "Horner und Zinken," *Deutscher Verlag für Musik*, Leipzig, 1982, 154f.

A double horn offered by the Boston Musical Instrument Company is shown in figure 19. Its serial number, 25506, places its estimated date of manufacture late in the company's history, well after the acquisition by Cundy Bettoney in 1919. This horn is the same design as the very popular C. F. Schmidt model double horn with one important exception: the change valve operated by the player's thumb is a rotary valve, whereas the distinctive feature of the original C. F. Schmidt design dating from 1900 was its Périnet piston change valve. In 1902 Firma Ed. Kruspe was issued D.R.G.M. 182 267 for a long rotary change valve mounted vertically in the same manner as on this horn. The horn is stamped U S Q M C (United States Quarter Master Corps) and was part of a contract with the U.S. Army. Despite the statement on the label that it was "Made by The Boston Musical Instrument Company" it was most likely imported. This is suggested by the use of metric thread screws in the valve assembly and by the four-pointed star-shaped feet on the braces that are peculiar to the instruments of A. K. Hüttl of Graslitz, Czechoslovakia. This horn appears to have been well used, since its silver plating shows considerable wear. It is interesting to note that all of the other high serial number instruments currently known were also French horns.[20] Table 11 show company illustrations from catalogs and the 1922 brochure of trumpets offered in various configurations, pitches and valve types.

Significance and Conclusion

The instruments of BMIM show from the start an eclectic variety of influences reflecting the nation's immigrant population and developments in brass instrument making abroad. Some of the company's soprano instruments retained, at first, the large proportions of the English keyed bugle, around which American brass bands were first formed. Most of its instruments were equipped with German round rotary valves turned by an American string action. Other instruments produced by the company were in proportions and sizes of the French saxhorns, and soon many were also equipped with French designed piston valves.

When E. G. Wright's shop was expanding production during the 1860s, both methods and design were state of the art. Because of the

20. Single horns in F sold on eBay in October 2005 and February 2008; a double horn sold in July 2010.

flourishing textile industry, machine tools and techniques had undergone rapid growth in the previous decades and small shops in the new world were able to produce consumer goods of increasing complexity and utility. While in both design of the musical instruments and mechanical techniques they were building on precedent, it certainly would have taken a considerable effort to produce such high quality products consistently in ever growing numbers.

Production numbers from the 1870s are not available, but based on the number of instruments that have survived, there appears to be an increase in production in the years after the introduction of serial numbers in ca. 1880. C. G. Conn got into the business in 1875, and if his serial numbers are to be believed, produced more than one thousand instruments a year by 1879 while BMIM's production never seems to have reached five hundred. All this was done while maintaining quality control that rivaled Boston and selling instruments at prices that were more than twenty percent lower.

By all other measures, BMIM was a healthy business producing high quality products, but it was missing out on the booming market. Maintaining the status quo at the time must have felt like the right thing to do, but C. G. Conn was expanding in shop size, numbers of employees, and also in modernization of production. During the 1880s and 1890s, Conn introduced new machines and methods to make production more efficient and was introducing new models almost every year. Production was up to about 6,000 instruments a year by 1900. All this was done while maintaining quality control that rivaled BMIM.

The Boston Musical Instrument Manufactory was justly famous for its fine cornets, horns, and sets of band instruments, examples of which are today sought out by collectors and players alike. Many of its instruments are still played today in recreations of bands of the nineteenth century. It earned its reputation through careful and creative business practices, but more so by producing quality products. It is apparent today that it put as much effort into the design—acoustic, mechanical, and artistic—of the less demanded instruments as it put into the best selling cornets. Every instrument made during the tenure of the original partners that has survived in good order has superior qualities, a lasting testament to the skill and dedication of the partners and employees of the Boston Musical Instrument Manufactory.

Appendix A. Company Catalog Sources

Among primary sources consulted for this article are the following catalog materials that are referred to throughout the article by date. Where a catalog date is uncertain any internal evidence for the given date is cited. Copies of these catalogs are now available in electronic form from the authors.[21]

Illustrated Catalogue of the Boston Musical Instrument Manufactory (Boston: Hollis & Gunn, Steam Job Printer, 1869).

Catalogue of the Boston Musical Instrument Manufactory Formerly E. G. Wright & Co. No. 71 Sudbury Street, Boston, Mass. (Boston: Boston Musical Instrument Manufactory, 1874).

Catalogue of the Boston Musical Instrument Manufactory (Boston: Boston Musical Instrument Manufactory, 1882).

Catalogue of the Boston Musical Instrument Manufactory (Boston: Boston Musical Instrument Manufactory, 1887).

Price Lists [of the] Boston Musical Instrument Manufactory (Boston: Boston Musical Instrument Manufactory, 1890+).

Price Lists [of the] Boston Musical Instrument Company (Boston: Boston Musical Instrument Company, 1903+). The firm became a "Company" in 1902.

Boston Musical Instrument Company Descriptive Catalog and Price List (Boston: Boston Musical Instrument Company, 1915). "Nearly three quarters of a century of continuous manufacture" since 1841, p. 4.

Supplement To General Catalog . . ., (Boston: Boston Musical Instrument Company, 1915), referred to as catalog 1915s.

Boston Musical Instrument Company Brass Band Instruments, Catalog H (Boston: Boston Musical Instrument Company, 1919). "For seventy-eight years the leaders . . . " p. 6.

Pages 10 and 11 from a 1921 catalog found pasted into a 1919 catalog, referred to as catalog 1921p; "over a period of 80 years," p. [11].

The Boston Three Star Trumpet (Boston: The Boston Musical Instrument Co. [The Cundy-Bettoney Co., Inc.], 1922; "81 years experience," p. 4; referred to as catalog 1922b.

21. Robert E. Eliason: roberteliason@cox.net; Robb Stewart: robb@robbstewart.com; Richard J. Martz: rjmartz@att.net.

Appendix B. Serial Numbers, Production, Events, Tax Valuations

Date	Serial Nos	Production	Events	Tax Valuation
1869			(company formation)	5,000
1870–72				6,000
1873				8,000
1874–79			(C.G. Conn formed, 1875)	9,000
1880	6363			9,000
1881	6638	426		10,000
1882	7064	426	(fire July 22, 1882; $1,200 loss)	10,000
1883	7490	426		10,000
1884	7916	426	(J.W. York Co. formed)	10,000
1885	8342	426		10,000
1886	**8768* &8818***	426	(Distin Mfg Co. formed)	10,000
1887	9249	481		10,000
1888	9730	481		10,000
1889	10212	482		10,000
1890	**10693***	481		10,000
1891	11135	442		10,000
1892	11576	441		10,000
1893	12018	442	(panic of 1893–98)	12,000
1894	12460	442	(panic of 1893–98)	12,000
1895	12901	441	(panic of 1893–98)	12,000
1896	13343	442	(panic of 1893–98)	(12,000)
1897	13785	442	(panic of 1893–98)	8,400
1898	14226	441	(panic of 1893–98)	8,400
1899	**14668* &14792***	442	(fire July 6, 1899; $7,000 loss)	8,400
1900	15022	354		(missing)
1901	15367	345		(missing)
1902	15731	364	(Hartman president, Company)	8,400
1903	16085	354		8,000
1904	**16439***	354	(Geo. W. Gale pres.; Willard N. Gale, treas.)	8,000
1905	16937	498		8,000
1906	17435	498		8,000
1907	17933 **18177*(Oct)**	498	(panic of 1907)	10,000
1908	**18287* 18431***	354		6,800
1909	18595	308		6,800
1910	18903	308		8,000
1911	19211	308		5,000
1912	19519	308		5,200
1913	19840	321	(Incorporation)	1,200
1914	**20113***	273	(WW I)	1,200

1915	20470	357	(WW I)	1,100
1916	20820	350	(WW I; W. Gale Pres.; P. Dean, clk)	(missing)
1917	21170	350	(WW I)	1,100
1918	21520	350	(WW I)	1,100
1919	21870	350	(Sold to Cundy-Bettoney)	(missing)
1920	22220	350		

Numbers in bold with asterisks (*) indicate actual dated instruments, others are interpolations. Numbers attributed to years after 1914 cannot be considered reliable until more data is found. Tax valuations are from the City of Boston Archives tax records. Many rotary valve and some piston valve instruments have no serial numbers. The highest serial number known to the authors so far is 25607,[22] the lowest, 6363.

22. Horn sold on eBay October 2007.