

THE BRASS INSTRUMENT COLLECTION OF THE METROPOLITAN MUSEUM OF ART IN NEW YORK

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The Metropolitan Museum of Art houses a large, comprehensive collection of musical instruments. Managed by one of seventeen curatorial departments, the Musical Instruments Department, it contains approximately 4,500 instruments. Roughly forty percent of them are of western, the rest of non-western origin. The Egyptian, Islamic, Arms and Armor, Medieval Departments, and a few other departments, house some additional instruments. Another resource consists of iconographic representations of musical instruments that are to be found in almost all departments. They are included in *The Performing Arts Index of RIdIM*.¹ The western brass, or “lip-vibrated” instruments of the Musical Instruments Department amount to only 283 items—an indication that this field was never a priority of the museum’s collecting activities.

The basis of The Metropolitan Museum of Art musical instruments collection was provided by Mary Elisabeth Adams Brown (1842-1918), who donated her collection from 1889 in successive installments in the name of her husband, John Crosby Brown. Beginning with 276 instruments in 1889, the gift ultimately amounted to more than 3400 items in 1918. To be precise, before Brown’s donation there was already a collection of forty-four instruments in the museum, given by Joseph William Drexel (1833-1888), a wealthy amateur musician and philanthropist in New York. The Brown family, of British origin, engaged in international banking and graciously supported American culture, including education and theology. Besides musical instruments, Mrs. Brown collected lace, embroidery, and portraits of musicians, which are now kept in the Prints and Drawings Department of The Metropolitan Museum of Art.²

A few years after the Crosby Brown collection began to arrive in 1889, the museum provided gallery space for its public display. Simultaneously, Frances Morris, a curator of the Textile Department, in collaboration with Mrs. Brown, compiled a comprehensive four-volume catalog of the exhibitions, which appeared anonymously between 1902 and 1913.³ Although it remains the only general, published catalog of the collection to date, many instruments appear in special publications and have been recorded in special checklists.⁴ Unfortunately the western brass instruments, which traditionally enjoyed a relatively low reputation among collectors and the general public until well after World War II, received little attention. After Mrs. Brown’s death in 1918, the museum stopped acquiring brass instruments until 1947, when the curators in charge, Emanuel Winternitz (1942-1972) and then Laurence Libin (1973-1999), continued collecting. Thirty-six brass instruments were thus added to the collection. The following table shows the frequency distribution of the dates of manufacture of the collection’s instruments:

Table I
Frequency distribution of dates of manufacture

before 1765	1765-1810	1811-1860	1861-1910	1911-1980	Sum
23	13	67	173	7	283

Mrs. Brown's goal was to establish a universal assortment of sound-producing instruments of all cultures, east and west, and of all times. The statistics show that she collected many brass instruments which had just gone out of style, and even ones that were still in use and, as it happens, unsigned. The brass-instrument collection has a high percentage of anonymous instruments. For example, among the ninety-three valve instruments, forty-three percent are unsigned. Quite a few of them are band instruments that were ordered by American dealers from European makers without the maker's name on them. Mrs. Brown procured replicas to fill gaps in the collection that could not be closed by original instruments. Nevertheless, leaving the replicas and mass produced instruments of the nineteenth century aside, we find quite a few interesting, fine, and rare pieces in the collection. We will focus on these pieces in the following sections.

1. Simple natural horns

In this group the most noteworthy items are a number of falconer's horns of the seventeenth and eighteenth centuries, five oliphants, and two crescent-shaped wooden hunting horns of the seventeenth century. Hunting cornettos or falconer's horns are straight, approximately a foot long, and made from animal horn, or even ivory (89.4.1645; see Figure 1). They were used by the hunter to call back the falcon, and thus were requisites of the hunt as an aristocratic privilege. Most of the collection's fourteen items are handsomely turned and embellished with metal mounts. Except for one—89.4.1146, which bears the maker's or a hunter's initials, "CW"—all of them are unsigned and have integral, turned mouthpieces, similar to those of cornettos. The instruments came from European castles (Figure 2).

Three of the aforementioned oliphants come from workshops in south Italy and were made by Muslim craftsmen in the eleventh or twelfth century. Their workshops produced these emblems of high birth and wealth, used more ceremonially than as real hunting horns, for export throughout Europe. The finest of these three horns, housed in the Islamic Department (04.3.177), is covered with carvings of animals encompassed by circles and as such similar to an oliphant of the Musée de Cluny in Paris. The other two items, kept in the Medieval Art and Arms and Armor Departments, are smaller and considerably less well preserved (17.190.218; 04.3.178). Much later but nevertheless beautifully decorated are two ivory horns in the Musical Instruments Department. One was made from the tip of an elephant's tusk, probably in France, about 1700 (89.4.1485; Figure 3). The other oliphant is a conspicuously large showpiece, made of three sections and entirely carved with hunting scenes in the style of Johann Elias Riedinger (1698-1767). This oliphant (07.103) resembles in motives, style, and workmanship one in the museum of the Univer-

sity of Leipzig, which is signed with the monogram of the ivory carver Leberecht Wilhelm Schulz (1774-1864). Schulz worked in Meiningen (Germany), and some of his chalices, powder-horns, and lamps survive in museums and churches. It seems that the New York piece is also the work of this master.

Following the evolutionary trail, animal horns and tusks were succeeded by similarly bent versions of wood and metal. These versions usually served hunters until they were superseded by coiled horns of brass during the seventeenth through the nineteenth centuries. Nos. 89.4.1132 and 1133 are crescent-shaped versions of wood with leather wrapping, marked with coats of arms. Both instruments' authenticity has been doubted on the grounds that they (at least 89.4.1133) came from Franciolini's notorious store in Florence (see section 13). In spite of this I consider them original work of the seventeenth century, and regard Mrs. Brown's following note concerning 89.4.1132 as reliable: "source obtained—purchased in Paris ... huchet or cor de chasse, 17th century." However, with a length of 954 mm it corresponds more to the *grand cor* in Mersenne's *Harmonie Universelle* (1636) than to the small *huchet*. The punched coat of arms indicates former castle property. The smaller horn (89.4. 1133) with a length of 674 mm may perhaps be classed as a huchet. Its punch of a coat of arms is a different one and, unfortunately, also damaged. The upper half of the leather wrapping is embellished with leather pressings which are almost identical to those of the tenor cornetto 89.4.2090.

The short versions of the hunting horn in metal often assumed the form of "half moons." Commonly used by hunters, they were also introduced as signal horns in the military during the eighteenth century. Ignoring a dubious small item (89.4.2285), there are three regular-size half-moons of the period around 1800 in the collection. One is an unsigned mass-produced item in C (high pitch) (89.4.1120), while the others are two *Halbmonde* from the workshop of Christian Wilhelm Liebel in Dresden, dated 1790 (14.25.1620) and 1813 (89.4.2492), the latter made after Liebel's death when the activities of the workshop were continued under the direction of his widow. Liebel continued the tradition of Dresden makers such as Johann Christian Müller and Christian Friedrich Riedel, who built elaborate "half-moons" with cast game animals on the garland. It is a decorative style which followed older Nuremberg models.

2. Cornettos

Most of the cornettos listed in the 1904 catalog are reproductions made after originals in the Museo Civico at Verona, the Museo del Liceo Musicale at Bologna, and other institutions. The reproductions were later de-accessioned. The old catalog claims eight cornettos to be originals. Taking this claim for granted and adding three later acquisitions, the total amounts to eleven cornettos of the sixteenth through the eighteenth centuries. Edward Tarr lists these eleven instruments in his international cornetto checklist of 1981.⁵ He followed the museum's files where, however, already doubts were raised about authenticity and dating of 89.4.1669 and 53.56.8, cited as "19th c?" and "19th c.," respectively. In addition to these two—in my opinion—bogus instruments, I seriously doubt the authenticity of 89.4.1134 / 1670 / 2142 / 2288. Leaving these four instruments aside, five cornettos are left which can surely be considered as interesting originals.

Among those five pieces, 52.96.1 is outstanding because of its age and precious material (Figure 4). Made of ivory, it is furnished with an engraved gilt fitting at the mouthpiece socket. In the opinion of the art historian Helmut Nickel, it was designed around 1575 in Germany. The mouthpiece is apparently original. In 1953 another obviously German cornetto was among those instruments which came from the University of Pennsylvania collection in Philadelphia (53.56.9; Figure 5). Before its two wooden halves were covered with leather, they were strengthened with a brass ferrule at the beginning and with threads at the end. The stamp probably reads HWK. In terms of technology and style the instrument is related to cornettos with the IK and IKH stamps. They seem to represent a German cornetto-building tradition of the seventeenth century.

Although the authenticity of the following three tenor cornettos has been challenged on the grounds that they (at least two of them) come from Franciolini's store, I consider them as original (see section 13). Two of them have the common S-shape with a circular and, toward the end, octagonal cross-section (89.4.2090, 89.4.2201; Figures 7 and 6). The first one, with a length of 988 mm, sounds in E \flat when the six fingerholes are closed and the key stands open. It is adorned with leather pressings of almost the same pattern as the aforementioned *huchet* 89.4.1133. The second S-form tenor is smaller and follows a different concept: there is no thumbhole and instead of an open key it has a closed key. With its length of 750 mm it gives A \flat , like some bent or straight alto cornettos. The decisive feature of the tenor, however, is the width of the bore, which is approximately twice as wide as that of the alto. The bore makes it clear that the tenors are not only longer and differently shaped than altos but also significantly wider giving a fuller sound and greater volume. The third tenor is unusual; it is bent like an ordinary crescent-shaped cornetto (89.4.1130) and requires a player with long arms. It measures 889 mm in length and gives D with the six-finger application. Like 89.4.2201, it has a closed, single-lever key and no thumbhole. We have few clues regarding dates of construction for the three tenor cornettos, but manufacture during the seventeenth century seems most likely.

3. Serpents and keyed bass horns

This group illustrates the major evolutionary steps for these instruments and contains several typical items. Many of the novelties, which came on the market between about 1790 and 1840, were developed in France.⁶ The oldest items are two French (or Italian) *serpents d'église* without keys which may date to the second half of the eighteenth century, and perhaps even earlier (89.4.2537, 89.4.1090). One of them is a rare small item, which may sound a fourth or fifth higher than the common bass. Unusual in tubing and without a key is the serpent 89.4.1630, made by Wilhelm Schmidt in Mainz in about 1810 (Figure 8). This particular model was invented by the Paris maker Piffault in 1806 and was called in France *serpent militaire*. It was handier than the traditional serpent if more difficult to build. In Germany serpents were not employed in church music, nor were they widely used in military music before 1800. To understand this instrument, one has to consider that Mainz was under Napoleonic rule between 1797 and 1814. In that period, military bands of the French occupation forces prompted the use of French style instruments in

Mainz. According to local records,⁷ Schmidt (1766 to 1851) was a wood turner in Mainz, where he was admitted as master in 1790.

Upright serpents first appeared in France, where—according to tradition—Regibo started building them as early as 1790. Regibo's concept proved to be more successful in England than on the Continent, and thus the instrument became known as the “English bass horn.” It flourished from approximately 1805 to the 1840s alongside other forms of upright serpents and bass horns. In the collection are an attractive, unsigned, most probably French specimen with a dragon's head, apparently built in the 1820s (89.4.312), and a very late English one by Frederic Pace in London (89.4.2028). According to the address enclosed in the stamp—“15 King St / Westminster”—the instrument was built between 1834 and 1849, though more likely during the earlier rather than the later portion of this span. Also noteworthy are a three-key *Serpent Forveille* of the 1830s (89.4.1094) and the younger version of the *ophimonocleïde* by Coeffet fils in Gisors, built probably in the 1840s (89.4.2305). In contrast to the original *ophimonocleïde*, which Jean Baptiste Coeffet in Chaumont en Vexin conceived as a version of the upright serpent in 1828, it has a wider bore and a larger bell.

While the traditional serpent was superseded in France by upright serpents of different kinds, England retained the unwieldy old form and upgraded it with ever more keys. The collection holds such a late English serpent, furnished with twelve keys, built by Thomas Key in London in the 1820s (89.4.1643). The largest number of keys ever mounted to a traditional serpent was fourteen, found on a serpent of about 1830 by the same maker. Gottfried Weber's essays of 1816 on practical acoustics of wind instruments helped to pave the way theoretically for the application of ever more keys and for key combinations. This new trend is represented not only by the S-shaped serpents with eight to fourteen keys but also by Gottfried Streitwolf's *Chromatisches Basshorn* (1820) and Halari's *ophicleïde* (1821). To this evolutionary path also belongs 89.4.1741, essentially an extremely wide-bore chromatic bass horn with eleven keys and a *d'amore* bell. The bore width recalls Heinrich Johann Haseneier's *Bass-Euphonium* (ca. 1850). The designer aspired to a mellow and voluminous sound, which he apparently believed could be achieved by the use of copper.

4. Bugles, keyed bugles, and ophicleïdes

After the keyed trumpet met the acid test with Joseph Haydn's trumpet concerto of 1796, little initiative was required to equip bugles with keys. The collection's five keyed bugles are average merchandise; the best of these is a small specimen with nine keys by Samuel Graves of Winchester (USA), made 1830-1850 (89.4.2326), and a seven-key “Harper's Improved Royal Kent Bugle” manufactured by Clementi & Co., London, in the 1830s (1998.354). Perhaps even more interesting than the keyed versions are two plain bugles that offer an idea of the type of instrument bandmaster Joseph Haliday of Dublin had in mind when he designed the keyed bugle (English patent, 1810). One has an inscribed reference to Johann Bernhard Logier in Dublin, pertaining to his business there between 1810 and 1817 (1998.352). Logier was a major figure in popularizing of the early keyed bugle. The other bugle is a silver gilt item by Thomas Key, dated 1811 (89.4.270).

As for ophicleides, two instruments stand out from the group of the regular nine- to eleven-key models. One of them, built by Bartsch in Paris between 1835 and 1854 (89.4.2369), features thirteen keys and a revised positioning of the sound-holes. The other is a small nine-key octave ophicleide by Adolphe Sax (89.4.2306). Moreover, there are three quite unusual hybrids of the ophicleide and bass horn. In essence, the bore is that of the bass horn, while shape and key work follow the ophicleide. The origin of this hybrid variant has not yet been studied extensively, but we can be certain that it emerged shortly after the invention of the ophicleide. The most interesting of these is a late and refined model, apparently from the 1840s, with the inscription *innové par Couturier*.

5. Coiled hunting horns, invention and valve horns

Few coiled horns of brass survive from before 1700. The Museum's oldest items in this category are two hunting horns in G (high pitch) each with "two and one-half" coils, made by Jacob Schmidt in Nuremberg, who worked from 1669 until his death in 1720. One of these *Waldhörner* or *Jagdhörner* (14.25.1623) is in almost mint condition and originates from the royal weapons chamber in Dresden. I assume that the court in Dresden bought the horn under Augustus the Strong (d. 1733), who was crowned Elector of Saxony in 1694 and King of Poland in 1697. However, the bell diameter of 230 mm and the fact that pitches below C hardly emerged before 1700 point to the later period of Schmidt's activity, around 1710/20. The cast brass game animals applied on the garland and the ring for a carrying strap make it clear that this horn, with a coil-diameter of 28 cm, was built for the hunt. The second horn (89.4.1117) follows the very same model, but its execution is slightly different, probably as a result of the pieces of sheet brass the maker had on hand at the time (Figures 9 and 10). Sometime during the eighteenth century the horn underwent a repair, in which the initial section of the lead pipe was replaced with a wider tube in order to accommodate a trumpet mouthpiece. It is not the only instance in which tone quality was exchanged for security of embouchure. Such "compromise horns" can be well documented in the eighteenth century, and they continued to be built in the nineteenth and twentieth centuries. It is obvious that the use of a wide leadpipe and a trumpet mouthpiece mattered less in the hunt than in concert and opera.

In the early eighteenth century a sophisticated horn playing technique gradually began to evolve through the use of external or internal crooks in connection with hand-stopping. The collection owns only a few late versions of invention horns, dating from the early period of the valve instruments. Worth mentioning are a horn by Carl Gottfried Glier of Markneukirchen (89.4.1110) as well as a fine specimen by Pierre Piatet of Lyon, with all its crooks and couplers in the original wooden box (1977.315). The former probably was manufactured in the 1830s, the latter between 1845 and 1850. Of interest historically is the *cor omnitonique* (89.4.2428), following the model invented by Charles-Joseph Sax (1825). This particular instrument, though anonymous, probably was made in the elder Sax' workshop. According to an unconfirmed source, the New York specimen was built in 1833.

Almost the only valve horn of significance in the collection is a well-preserved instrument by Halari-Antoine, manufactured in Paris about 1850 (before 1855). It is a *cor solo*

in G with two Stölzel valves and internal crooks for the keys down to C (1999.304, Figure 11). This horn is interesting also because of its painted bell, full set of crooks, and original wooden case.

6. Natural, invention, and keyed trumpets

This group is distinguished by two outstanding silver trumpets in largely original condition (54.32.1 and 2). Acquired in 1954, they follow the well-known design of the heavy German-Baroque-style trumpet with cast angel puttos and weaponry on the garland and fluted ferrules. Both trumpets bear the coat of arms of the House of Saxe-Wettin. Pitched in C, they served either as court trumpets or as parade trumpets in one of Saxony's cavalry regiments. Both have cords of white and green, the Saxon state colors. The older of the two trumpets is engraved "I. W. HAAS fec. Nor" with the monogram "IWH" and a hare jumping to the left (Figure 12). Thus the instrument was made in Nuremberg by Johann Wilhelm Haas the Elder, who died in 1719. There is no reason to attribute the instrument to a Viennese workshop, as one visiting scholar suggested in 1976. Not only is the signature clearly visible and authentic but the trumpet is also marked with two hallmarks of the Nuremberg *Rugamt*, the local trade office. The yards are soldered together, which was done either by the maker, or during ensuing generations. The bell diameter (115-117.5 mm) suggests a date of manufacture during Haas' late period.

The other trumpet is dated 1765 and engraved "ANTON KERNER / 17 IN WIEN 65" (Figure 13). There were not only intermarriages between the Houses of Habsburg and Wettin, but also military alliances, as in all three Silesian wars (1740-1742, 1744-1745, 1756-1763), which Prussia waged on Austria in order to snatch Silesia. Besides the applied cartouche with the Saxon coat of arms, the trumpet displays trophies with the Habsburg double eagle, armor, weapons, flags etc. It might well be that the trumpet was a gift of the house of Habsburg to the Wettins in Dresden.

There is in the museum a second Haas trumpet that is part of the Brown collection (89.4.2375). It is of brass, engraved "I. WILH. HAAS, in Nürnberg," and marked with a hare jumping to the left, but without a monogram. According to this stamp, this instrument, too, dates to the era of Johann Wilhelm Haas the Elder, who became master in 1676 and, as already mentioned, died in 1719. However, the absence of a word such as "fecit" or "Machts" in the signature indicates that the instrument was not made by Haas himself but in a different workshop by a sub-contractor who executed the instrument for Haas as main contractor.⁸ The instrument is representative of Haas' model of the medium price range, featuring spiral sleeves of sheet brass with spiral decorations, engraved festoons on the garland, and a beaded edge at its brim. One can assume that the instrument was built in C as well, but its tube length later was shortened by about 14 cm. Approximately 13 cm of the beginning of the lead pipe is a later replacement.

Among the other natural trumpets of the collections, two of the period between 1790 and 1840 are well worth mentioning. They come from an era when the natural trumpet had largely or entirely seceded from orchestral use and invention, slide, keyed, and valve trumpets had taken over. One of these trumpets was built by Andreas Plaesnig (location

unknown) in 1790. Its decoration with colored stones indicates that it originally served a ceremonial function in the context of a princely court. The other and later trumpet is engraved “IMR DAMPIER PARIS.” Nothing is known about this maker either. Another trumpet with this inscription in the Nuremberg Germanisches Nationalmuseum has been dismissed as a fake, or the maker’s name interpreted as a fictitious trade name. These judgments may prove to be premature.

As early as the eighteenth century, cavalry started to use handier two-loop trumpets, which gained preference over the standard one-loop form. The collection has two good examples of these “cavalry trumpets” from the first half of the nineteenth century. One is by Flemming & Schöngarth in Breslau (now Wrocław, Poland), ca. 1813-1830 (89.4.1101), the other by Michael Saurle in Munich, built soon after 1826 (see below).

There are two invention trumpets in the collection, an anonymous Saxon *trompette demilune* of about 1810/20 (89.4.2643) and a specimen with internal crooks for the upper bow of the second coil built by Courtois père (89.4.1102). The latter dates from before 1809, when Courtois had his business in the rue Mazarine in Paris. Neither survives with exchangeable crooks.

Finally, I shall mention a five-keyed trumpet, built by Leonardo Massarenti in Minerbio in about 1840 (89.4.2462). Italy was the last holdout of the keyed trumpet.

7. Trombones and slide trumpets

Although there are fourteen slide trombones in the collection, none of them was built prior to about 1820. The most remarkable of them are a few unusual tenor models of the second quarter of the nineteenth. They include an specimen with the bell pointing backward, made by Charles Kretzschmann in Strasbourg (89.4.2410), another with a circularly bent upper joint, made by Jeremias Franciscus Verhoeven in Lierre (89.4.2409), and a dragon’s-head tenor by José Ramis in Madrid (89.4.1301). A contrabass double-slide trombone by Jérôme Thibouville-Lamy (89.4.2071), made in 1893 according to the model of Halari-Antoine (1855), also deserves attention.

English trumpeters were more reluctant to espouse valve trumpets than their colleagues on the Continent. Instead they cultivated the slide trumpet. While it vanished on the Continent soon after 1800, it remained in use in England in some places until after 1900. The only slide trumpet in the collection follows the latest phase of design for this instrument. It features a tension spring inside the slender middle tube. This version came into use around 1840 at the latest and soon prevailed over the traditional models with clock-spring action. It remained the dominant type until the instrument’s demise. This particular item was made by the principal manufacturer of that type of instrument, Köhler & Son in London, between 1881 and 1890 (89.4.2533).

8. Valve trumpets

The Crosby Brown collection houses three valve trumpets that deserve attention because of their early—or relatively early—date. The oldest of them was manufactured by Michael Saurle in Munich in 1829 (89.4.1098; Figure 14). As the engraving reads, the trumpet

was used in the *Königliche Landwehr Jäger Bataillon* in Munich—the Royal Bavarian Rifle Battalion. Such military units emerged in many major German cities after the Napoleonic wars. In Munich, it existed from 1826 to 1869 and maintained a musical unit from, or almost from, its beginning. Saurle's aforementioned cavalry trumpet 89.4.1103 is another instrument from the very same military contingent. Saurle used a modification of the double piston valve as it was invented by Christian Friedrich Sattler in Leipzig about 1819. The trumpet operates with a clock-spring action of the very same kind that Leopold Uhlmann patented in Austria in 1830. There are some clues that suggest that the clock-spring mechanism is a later replacement for an older and different action, but the evidence is insufficient for a definitive judgment. If we could confirm the originality of this clock-spring action, Uhlmann would perhaps no longer be considered its inventor. At this point we should be aware that neither a national nor international patent law existed at that time, and further that patent right was not the same as copyright. The various states of the German federation, Bavaria and Austria included, had their own legal regulations for protecting inventions. As for the tubing, the trumpet retains the pattern of the two-coil cavalry trumpet. The aforementioned signal trumpet, which Saurle made for the same *Königliche Landwehr Jäger Bataillon*, is such a cavalry trumpet in E \flat (89.4.1103), while the present valve trumpet stands in D.

The two other trumpets, manufactured by John Augustus Kohler in London, are equipped with swivel and disc valves, one of Britain's major contributions to the evolution of valve instruments (Figures 15 and 16). The swivel valves are revised forms of the *plaques tournantes*, invented by Jean Louis Antoine in Paris in 1835. John Shaw was granted an English patent for a revised mechanism in the form of swivel valves in 1838. Not being a maker, Shaw sold the patent rights to Kohler. These two trumpets appear to be the earliest surviving items of their kind. Made around 1840, the swivel valve trumpet no. 89.4.2532 has two valves, which lower the pitch by one and two half-steps respectively. They operate with leaf springs, but the swivels must be turned by hand without the assistance of any mechanical lever. The valve slides are not extendible nor does the instrument have a tuning slide. The trumpet as such, built in F (high pitch), has the standard bore of 11.3 mm, a cylindrical leadpipe, and a small bell of 113-114 mm.

Kohler's second trumpet, built in F (low pitch), is technologically more advanced and elaborated (89.4.2531). Kohler eliminated the obvious shortcomings of the old system, abandoning the swivels, which easily became leaky, and exchanging them for a disc device. Only from this point on it is accurate to speak of a disc-valve trumpet. The insulation area in the discs is much larger, and the springs are housed within the disks. Upgrading the trumpet as such, Kohler furnished it with a main tuning slide, and stays were added to reinforce the structure. Nevertheless, it remains peculiar that Kohler still did not employ a mechanical action to operate the valves but retained the primitive handles. As it displays the serial number "3" on the nameplate, and Kohler displayed a much more advanced version with an action lever system at the Great Exhibition in London in 1851, this instrument stands quite at the beginning of the disc-valve period. As the signature—"KOHLER SOLE MAKER / 35, HENRIETTA STT / COVENT GARDEN LONDON / 3 / BY HER

MAJESTY'S / ROYAL LETTERS PATENT" [English coat of arms]—indicates, Kohler was the sole manufacturer.⁹ The company continued to be the sole manufacturer until disc valves were abandoned around 1860.

9. Cornets, fluegelhorns, altos, and tenors

Among the early valve instruments of the collection is a tenor horn in C (low pitch) by Melchior de Vries in Lierre (89.4.2412). De Vries went into business in 1838, and the instrument might well have been built in the 1840s. Furnished with two Stölzel valves, it is descended from Griesling & Schlott's *Tenortrompetenbass* (1821). When Stölzel, Blühmel, and the makers who executed their designs started developing valve instruments with bores different from those of traditional French horns, trombones, and trumpets, a wide-bore trumpet was one of the first attempts. Between the 1820s and about 1880/90, makers continually enlarged the bore. This gradual shift often makes it difficult to classify instruments. For a bell-front tenor, de Vries' instrument is quite wide for its period. The bore is largely conical, 11.8 mm is the minimum diameter at the beginning, 13.3 mm the valve bore, and the bell is 185 mm. From the perspective of the end of the nineteenth century, de Vries' instrument would pass for a bass trumpet rather than a tenor horn; but viewed from the perspective of early valve instruments, it is a tenor.

Valve instruments of the 1840s and 1850s saw an unprecedented wealth of new tubings and bores. One of the novelties was the *Baßflügelhorn* in the shape of a figure 8. Of Austrian-South German origin, it also entered the military bands of Lombardy, which belonged to Austria until 1859. In the collection is such a figure-8 *flügelhorn* in B \flat (high pitch) by Ferdinando Roth in Milan (89.4.2458; Figure 17). While the early types lacked a tuning slide and had a bell-front layout, this instrument is equipped with a tuning slide before the valves, and its leadpipe is arranged for a bell-up playing position. Furthermore, its bore is relatively large. All these signs point to a late model of about 1860. As was standard for this type, the instrument operates with double piston valves after Leopold Uhlmann's design (1830).

The most unusual valve instrument of the collection is an anonymous four-valve tenor, which can be identified as a *clavicorno fagotto* (89.4.2589). It is an invention of the company Fratelli Rossano in Bari (Italy) and was intended to imitate the sound of a bassoon. The instrument stands at the end of a tradition which began in 1841 with Johann Heinrich Zetsche's *Fagotthorn*. It also has some features in common with the *Phonikon* (in particular the *d'amore* bell), which Červený developed in 1848, and Pelitti's *Pelittifero*, which had a narrow bore as well. Fratelli Rossano displayed their new model the first time in the industrial exhibition in Bologna in 1888. The basic idea of both Zetsche's *Fagotthorn* and the *clavicorno fagotto* was to produce a bassoon-like sound within an all-brass band. Fratelli Rossano offered the most convincing solution by creating a nasal tone that indeed conjures up the sensation of a bassoon's sound. The invention's characteristics were as follows: a very narrow bore for the entire instrument, a *d'amore* bell, a short funnel-shaped mouthpiece cup, and a special mouthpiece stem with a separate adapter placed between the mouthpiece and the lead pipe. Critical are two nicks at the end of the mouthpiece stem which fits the

adapter in such a way that some air can escape through the nicks. This escaping air makes the sound hoarse and nasal in a pleasant manner. The bore is in principle conical, beginning with an minimal inner diameter of 9.1 mm, a valve bore of 12.4 mm, and a bell diameter of 122 mm. Instruments such as this were not actually needed, as one could easily resort to the bassoon with its authentic sound quality. Rather, they are responses to an intellectual challenge to explore the potential and limits of the lip-vibrated instruments. Although its sound is far from that of the “real” bassoon, it has a specific tone quality of its own.

10. Valve basses

There is quite a variety of basses in the collections, most of them built for band music in the time after 1860. Included are American bell-over-shoulder basses, Italian helicons following Giuseppe Pelitti’s circular design of 1863, an anonymous Saxon three-valve tuba of the 1850s, and two six-valve Saxhorns (see below). Here I want to focus on a few basses that evolved around 1835, independently from the tuba at the same time. Before all kinds of valve basses became subsumed under the name “tuba” in the last third of the nineteenth century, most had different names. Those which were drawn from the ophicleide or bass horn were usually called “valve ophicleides,” “valve bass horns,” or *bombardons*. When valves were installed the new instruments first retained their predecessors’ well-trying bore and if possible also the tubing, at least to a certain extent.

There are three noteworthy valve ophicleides in the Crosby Brown collection. The oldest one is an *Ophicleide mit Maschine* by Leopold Uhlmann in Vienna. Uhlmann was the inventor of this kind of bass and began marketing it in 1835, the same year as the invention of the tuba. Starting with an instrument in F, he soon produced them in other pitches, among them the collection’s contrabass in D (89.4.2457; Figure 18). The instrument is similar to a dated specimen of 1839 in the Salzburg Museum Carolino Augusteum and can be assigned to the same early period. The valve section, which uses Uhlmann’s patent valves of 1830, is an independent unit; it is simply fitted onto the body without any screw attachment. Tuning is possible only by inserting bits in the leadpipe or by means of makeshift adjustments at the connection between valve section and body. In contrast to the early tuba with its wide cylindrical leadpipe and bore, valve ophicleides are largely conical. Uhlmann’s instrument begins with a minimum bore of 12.3 mm, a 15 mm valve bore, and a bell diameter of 290–291 mm.

The second bass (89.4.2269)—by another Viennese maker, August Beyde—displays the very same type. It is a bass in F (high pitch) and somewhat later, ca. 1845–1855. It is upgraded by a tuning slide and a much more convenient one-piece layout, thereby eliminating the shortcomings of the older versions. Beyde’s valve ophicleide represents the final form before this type stopped being manufactured in the 1850s.

The third instrument to be mentioned represents a different approach to the realization of a valve ophicleide. Instead of Vienna-style double piston valves, rotary valves were applied, which motivated the designer to use a different kind of tubing. In question is 89.4.2460, a valve ophicleide in B \flat (high pitch) by Franz Leibelt in Innsbruck, built in about 1855. It has three rotary valves with interior rotor-stops, following the model of

Ferdinand Hell (Austrian patent 1844). The newest features of the instruments are tension wheels, used to adjust the clock-spring action, a gadget which was quite modern at the time of its manufacture. The bores as well as the names of the different basses soon began to overlap and blend, so it is not always possible to determine the name given to them by the makers who built them or the musicians who used them. Names used for this instrument included *bombardon*, “small B♭ bass,” “baritone,” and even “tenor tuba.”

11. Instruments by members of the Sax family

The maker with the most popular name represented in the brass collection is Adolphe Sax. He was indefatigable in designing new forms of tubing, gadgets, and valve systems, and had a compulsive desire to attach his name to them. Leaving his invention of the saxophone aside and speaking only of brass instruments, his novelties exerted considerable influence. His most influential contribution was the saxhorn family. These instruments are only slight variants of the numerous similar forms designed by other makers, but their shape is clearly unique. Nevertheless, he contributed greatly to the international success of French brass instrument making, particularly in the American market.

As for the instruments that come directly from the Sax workshops, the Museum owns five instruments by Adolphe Sax, one by his brother Alphonse, and three by their father Charles Joseph Sax.¹⁰ Starting with the latter, the above mentioned *cor omnitonique* is the most interesting piece, while the ophicleide 89.4.2719 is average merchandise and 89.4.2411 is a composite. With the Crosby Brown collection came an unsigned *cornet à pistons* with two Stölzel valves (89.4.2413), which the old catalog erroneously lists as “Inscribed, ‘Sax, Bruxelles.’” It might be that the seller told Mrs. Brown that the instrument was made by Sax; judging from its style, such an attribution is certainly possible. Unfortunately, this cornet of about 1840 lacks all crooks and accessories.

From Adolphe Sax’s factory comes a *Saxtuba* of 1854 (89.4.1109), a *Saxhorn basse* with six ascending valves of 1863 (1993.164), a *Nouveau Saxhorn contrebasse* of 1867 (89.4.2703), a *trompette de parade* of 1855 (89.4.1628), and a soprano ophicleide (89.4.2306). The *Saxtuba* imitates the shape of the Roman *cornu* and was first built for the premier of Halévy’s opera *Le juif errant* in 1852. The system of six ascending valves had some success in France and Belgium in spite of the different fingering. Sax’ six-valve design was also used by other companies, such as Charles Mahillon, Ferdinand van Cauwelaert, and Gautrot. From the latter maker a six-valve F-bass trombone of the years after 1875 was acquired in 1978 (1978.283). The soprano ophicleide in B♭ is one of the extant instruments with the $\frac{1}{A_S}$ punch supplemented by “190.” This punch may indicate that the instrument came from Adolphe Sax’ own collection (auctioned in 1877), or that it served as model in his factory.¹¹

The evolutionary offshoot of horns and trumpets with extremely compact tubing saw new developments during the nineteenth century in the form of the *cornet-trompe* and *trompe de Lorraine*.¹² The former was an invention of Alphonse Sax in Paris, 1862, the latter of Pierre Théodore Grégoire in Nancy, 1867. The Museum owns specimens of both novelties. Although unsigned, the *cornet-trompe* comes most probably from Alphonse Sax’s

workshop (89.4.1105). The *trompe de Lorraine*, in the shape of a steer horn but with the pipe spirally wound inside, was built by Raoux between 1885 and 1895 (89.4.1143).

12. Valve instruments made of wood

When physical acoustics evolved as a momentous issue in instrument making about 1815, the perennial question of the material's influence on the sound properties imposed itself again and again. It is our innate perceptive predisposition that we tend to believe that soft materials, such as wood or copper as opposed to brass, make the sound softer than hard materials. The science of acoustics—as Victor Charles Mahillon taught us in his *Elements d'acoustique* as early as 1874—tells us otherwise.

Serpents and some of their scions continued to be built of wood, Joseph Dupré made a keyed trumpet of wood in 1824, the *Pelittifero* was furnished with a wooden bell. In 1840 Charles-Joseph Sax was granted a Belgian patent and in 1878 Albert Steiner a German patent concerning the combined use of wood and brass. The underlying idea was that wood should soften the sound. Following Richard Wagner's stage instructions about the execution of the "merry tune" in *Tristan and Isolde* usually a woodwnt trumpet or horn is used. Defying the technical difficulties involved in building such instruments, a few sets of wooden valve instruments for band music have been manufactured. In addition to the Metropolitan Museum's set (89.4.2421-4), we know of one that was built for the *Erste Schlesische Musikfest* (First Silesian Music Festival) in Hirschberg (Silesia, now Poland) in 1876. Prince Albrecht von Preußen (Prussia) commissioned Adolphe Sax in Paris to build this set of four instruments with Berlin valves. Later, the instruments came to the Musikinstrumenten Museum of the University in Leipzig, where they perished in World War II. The New York instruments are made of wooden bodies and have Berlin valves of brass. Unfortunately, the instruments are unsigned, and no records survive to offer clues as to their provenance. The New York catalog of 1904 calls them "saxhorns," though this is wrong because tubing and bore clearly prove them to be German-style models. Nevertheless, it is possible that the term "saxhorn" was applied in this instance, not in reference to the specific design of that name developed by Adolphe Sax and patented in 1845, but merely as an indication that they were made by (Charles-Joseph?) Sax.

The catalog of 1904 (p. 195) answers the question of the material's influence on sound qualities in this way: "Although cleverly constructed of wood, the tone does not greatly differ from the ordinary brass Sax Horn." This is basically what the science of acoustics teaches, but contrary to that what people usually think: the material has little influence on the sound properties.

Today, the instruments are no longer playable and in need of conservation and restoration. Judging pitch from the tube lengths, the set consists of a trumpet in G with two valves, a bell-front alto horn in E \flat , a bell-front tenor horn in B \flat , and a tuba (or *bombardon*) in F, each with three valves. The wooden slides are connected to the valve casings of brass by straps of leather or parchment. Although there is little to go on to date the instruments, they seem to fit best the years around 1850.

13. Instruments from Leopoldo Franciolini's store

Mrs. Brown tapped a variety of sources to acquire instruments: missionaries throughout the world, dealers, manufacturers and collectors in Europe. One of the dealers was Leopoldo Franciolini in Florence. He eventually earned notoriety when he was convicted of forgery in 1910 and had to serve a four-month prison term and cover the costs of the trial. After Edwin M. Ripin reprinted Franciolini's catalogs in 1974,¹³ museum curators discovered in their collections much bogus work from Franciolini. It is understandable that instruments tended to be dismissed as spurious if not as fakes when it was discovered that they came from Franciolini's store. However, Ripin warned of a one-sided judgment:

It must be emphasized that Franciolini did not by any means deal only in forgeries. To characterize every instrument that he sold as either a fake or hopelessly corrupted is at least as great an error as to have believed that all his merchandise was genuine. Although many crude forgeries can be traced to Franciolini's shop, a number of genuine pieces of great importance were sold by him to some of the same customers.¹⁴

So far we can identify with certainty only a few brass instruments which Mrs. Brown bought from Franciolini; in other cases further research is required. The latter are instruments with unique and particular tubings which do not fit our common experience and may easily strike us as fantasy and/or forgery:

89.4.2546. Composed of a baritone bell and unusually wound tube without valves. Pitched in B \flat tenor, bell diameter = 195 mm. Signed by Franz Serpek in Vienna and built in about 1860/70. This and the following instruments are illustrated and described in Franciolini's *Catalogo de Prezzi Correnti* (1895), series D8: *Genis con rapporto sulla campana, di Ottone*.

89.4.2367. An unusually wound horn of brass, somewhat recalling a serpent without fingerholes. B \flat tenor, bell diameter = 200-203 mm. Unsigned, second half nineteenth century. Corresponds to Franciolini's catalog 1895, series D6: *Basso in Ottone*.

89.4.1107: Horn imitating a Roman cornu, ending in a cast dragon's head. Italy, eighteenth century. Corresponds to Franciolini's catalog of 1895, series F10: *Serpon in Metallo*.

These instruments are—in my opinion—neither Franciolini's fakes nor fantasy products he foisted upon his patrons, but belong in the context of *mascherate*, carnival, and historical pageantry. Instruments in this context have a long tradition in Italy, but we also find them north of the Alps. For example, a pageant presented on the occasion of the marriage of the Saxon crown prince in Dresden in 1719 included trumpets wound in a bizarre fashion, which were called *Inventionstrompeten*.¹⁵ In a municipal context belongs the aforementioned *trompette de parade* by Adolphe Sax of 1855.

Another group of instruments that can rather safely be identified as coming from Franciolini's store comprises instruments already mentioned:

89.4.1133. Huchet, corresponds to Franciolini's catalog of 1895, series H4: *Corno grande da caccia, ricoperto in pelle*.

89.4.2201. Tenor cornetto, corresponds to Franciolini's catalog of 1895, series H12 or 15: *Cornetto torto ricoperto in pelle con una chiave in Ottone*.

89.4.1130. Tenor cornetto, corresponds to Franciolini's catalog of 1895, series H31: *Corno ricoperto in pelle ad una chiave*.

In addition to these three instruments, the tenor cornetto 89.4.2090 and the *grand cor* (*buchet*) 89.4.1132 also apparently passed through Franciolini's store. This is suggested by the fact that all five instruments received the same kind of embellishing ivory or horn rings at the beginning of the tube. The five instruments entered Franciolini's shop obviously in poor condition, and he "fixed them up." Exactly what Franciolini did in detail requires further study.

14. List of signed instruments

Only six of the Metropolitan Museum's instruments are recorded in *The New Langwill Index of Wind Instrument Makers*, consequently it is no surprise that Andreas Plaesnig and the monograms "CW" and "HWK" are not represented at all. The following list gives an overview of the 113 signed brass instruments in the collection. The unsigned *cornet-trompe* attributed to Alphonse Sax, and the *clavicorno fagotto* attributed to Pietro Borsari are added as nos. 114 and 115. In these two cases their attribution appears quite secure.

If not otherwise noted,

- the instruments are made of brass,
- the valve trombones follow the common shape of the trombone.

Alexander, Gebr., Mainz

Valve trumpet in B \flat , 3 rotary valves. 1920s (1983.107).

Allen, Joseph Lathrop, New York

Valve horn, 3 Berlin valves. Terminal crook not original. 1862-1872 (89.4.2198).

Bartsch, Paris

Ophicleide, tenor, 13 keys, 1835-1854 (89.4.2369).

Beyde, August, Vienna

Valve ophicleide, bass in F (high pitch), 3 Vienna valves. 1845-1855 (89.4.2269).

Borsari, Pietro, Bologna:

Tenor horn (swan horn) in B \flat (high pitch), 3 rotary valves. 1870/80 (89.4.2146).

Valve trombone, tenor in B \flat , regular form, 3 rotary valves. 1880s (89.4.2144).

Valve trombone, tenor in B \flat , tuba form, 3 rotary valves. 1880s (89.4.2145).

Clavicorno fagotto (attributed), tenor in B \flat , 4 rotary valves, ca. 1888
(89.4.2589).

Cauwelaert, Ferdinand van, Brussels

Valve horn in B \flat , 3 Périnet valves, ca. 1880s (?) (1974.230.1).

Clementi & Co., Muzio, London

"T. Harper's Improved Royal Kent Bugle" in E \flat (high pitch) with crook for C.
7 keys. Copper. Serial # 380. 1820s? (1998.353).

Coeffet fils, Gisors

Ophimonocléide, 1840s (89.4.2305).

Conn, C. G., Elkhart (Ind.)

Double bell euphonium B \flat , 4 Périnet valves. Silver plated. Serial # 276618.
1936 (1989.322).

Courtois, Antoine & Mille, Paris

Echo cornet in B \flat , 3 Périnet valves. 1895 (48.27).

Courtois père, Paris

Invention trumpet in F, designed for internal crooks. Only crook for C has
survived. 1789-1803 (89.4.1102).

Couturier, Lyon:

Ophicleide with bass horn bore, 10 keys; "*innové par Couturier*." 1840s
(89.4.2464).

Cuvillier, St. Omer

Basson russe, 3 keys. Maple, bell of brass. 1820s (89.4.2946).

CW

Falconer's horn, 17th c. (89.4.1146).

Dampier, IMR, Paris

Natural trumpet in D, 1st half 19th c. (89.4.3600).

Delcourt, H., Ath

Invention horn with solid leadpipe and internal crooks. Ca. 1858 (89.4.2419).

Devaster, C., Brussels

Keyed bugle, 6 keys. Mid-1800s (90.4.1099).

Distin, Henry, Williamsburg (PA)

Shepherd's crook cornet in B \flat /A. 3 Périnet valves. Serial # 15149. Ca. 1897
(1988.248).

Distin, Henry / J. W. *Pepper*, Philadelphia

Valve trombone, bass, 3 Périnet valves. Serial # 1766. 1882-1890 (89.4.2325).

Eschenbach, Gustav, Berlin

Posthorn in E \flat (F), after 1877 (89.4.2283).

Fedorow, N. N., Moscow

Russian horns, 1873-1889 (89.4.1894/1895/1896). The other items of the

9-piece set apparently were also made by Fedorow, on commission of Mrs. Brown.

Firth Hall & Pond, New York

Keyed bugle in C (high pitch) with crook for B \flat , 6 keys. Copper. 1833-1847 (1998.353).

Fiske, Isaac, Worcester (Mass.)

Cornet in B \flat /A, 3 top-action rotary valves. Nickel-silver. 1873-1887 (1983.119).

Flemming & Schöngarth, Breslau

Cavalry trumpet in D, 2 $\frac{1}{2}$ coils, 1810-1830 (89.4.1101).

Forveille, Paris

Serpent Forveille, 3 keys, 1830s (89.4.1094).

Foote, John Howard, New York

Saxhorn, tenor, 3 rotary valves. Nickel-silver. After 1865. (89.4.3127).

Gautrot aimé, Paris

Valve horn, 3 Périnet valves, terminal crooks. 1880s (?) (89.4.2346).

Baritone, 3 Périnet valves. 1860s.

Valve bugle, Périnet valves, after 1889 (89.4.2348).

Shepherd's crook cornet in B \flat with Stölzel valves. 1860-70 (89.4.2313).

Saxhorn (?) soprano in B \flat , regular upright model. 3 straight-through Périnet valves, after 1900 (stamped "Exposition universelle de Paris / 1900") (89.4.2347).

Gautrot-Marquet, Paris

Valve trombone, bass in F, 6 ascending valves. Model after A. Sax. After 1875 (1978.283).

Glier, Carl Gottfried, Markneukirchen

Invention horn with solid leadpipe and internal crooks. 1830s (89.4.1110).

Graves & Co., Samuel, Winchester (NH)

Keyed bugle, Eb, 9 keys. Copper. 1830-1850 (89.4.2326).

Greenhill, Joseph, London

Keyed bugle in B \flat , 7 keys. 1824-1847 (89.4.1123).

Haas, Johann Wilhelm the Elder, Nürnberg

Natural trumpet (shortened). Before 1719 (workshop Haas) (89.4.2375).

Natural trumpet, silver, before 1719 (54.32.1).

Halari-Antoine, Paris

Valve horn in G with crooks for F, E, Eb, D, and C, 2 Stölzel valves. Wooden box. Ca. 1850 (1999.304).

HWK (?)

Cornetto. Wood, leather wrapping. 2nd half 17th c. (53.56.9).

Keat & Son, Henry, London

Natural trumpet, silver, 1894 (1991.15).

Kerner, Anton, Vienna

Natural trumpet, 1765. Silver (54.32.2).

Key, Thomas, London

Infantry bugle, silver gilt. 1811 (89.4.270).

Serpent, 12 keys. Wood, leather wrapping, 1820s (89.4.1643).

Possibly also the 4-key serpent 89.4.1295.

Kohler & Son, J., London

Slide trumpet in E, with terminal crooks for E \flat , D, and C. 1881-1890 (89.4.2533).

Kohler, J. A., London

Valve trumpet in F (high pitch), 2 swivel valves. Ca. 1840 (89.4.2532).

Valve trumpet in F (low pitch), 2 disc valves, 1840s, before 1851 (89.4.2531).

Kretzschmann, Charles, Strasbourg

Slide trombone, tenor in B \flat , with bell pointing backward. Ca. 1830s (89.4.2410).

Lehnert, Henry, Philadelphia

Shepherd's-crook cornet in E \flat , 3 rotary valves. Ca. 1882 (89.4.2183).

Shepherd's-crook cornet in B \flat , 3 rotary valves with lateral string action. Ca. 1890 (1997.415).

Shoulder horn, baritone in B \flat , 3 rotary valves. 1876-1885 (90.4.184).

Leibelt, Franz, Innsbruck

Valve ophicleide in B \flat , 3 rotary valves. Ca. 1855 (89.4.2460).

Leschhorn [*sic!*], Christian, Kassel

Prussian cornet in C, 3 rotary valves. 1849-1851 (89.4.2203).

Logier, Johann Bernhard, Dublin

Bugle in E \flat (high pitch) with terminal crooks. Copper. 1810-1817 (1998.352).

Liebel, Christian Wilhelm, Dresden

Halfmoon, 1790 (14.25.1620).

Liebel's Witwe, C. W., Dresden (successor to her late husband C. W. Liebel)

Halfmoon, 1813 (89.4.2492).

Mahillon, Charles, Brussels

Hunting horn, 1½ coils, ca. 1900 (89.4.2415).

Martin, Jean François, La Couture

Basson russe, 4 keys. Maple, bell and bocal of brass. 1832-ca. 1840 (89.4.324).

Massarenti, Leonardo, Minerbio

Keyed trumpet in G, 5 keys, 1838-1843 (89.4.2462).

Olds, F. E., Los Angeles

Slide trombone, tenor in B \flat . 1920s (1986.351).

Pace, Frederick, London

English bass horn, 4 keys. 1834-1849 (89.4.2028).

Pelitti, Giuseppe, Milan

Helicon, tenor in B \flat , 3 rotary valves, after model of 1863. Ca. 1870s (89.4.2193).

- Flicorno* in C, 3 Périnet valves. End 19th c. (89.4.2417).
 Pocket hunting horn in Ab. Ca. 1900 (89.4.2556).
- Penzel*, G. L. & *Müller*, New York: Tenor horn in B \flat , upright, 3 Périnet valves. After 1899 (89.4.3129).
- Pepper*, J. W., Philadelphia / Chicago
 Shepherd's crook cornet in B \flat /A and E \flat adjustment, 3 Périnet valves. Serial # 7554. 1890s (1977.246.1).
- Pettex-Muffat*, J. M., Paris
Trompe de chasse in D, 1883-1895 (1998.295.a,b).
- Piatet*, Lyon (at Rue Grenette 12 and Rue Tupin 21)
 Invention horn with 8 terminal crooks and 2 couplers, B \flat alto to B \flat basso. Original wooden box. Ca. 1845-1850 (1977.315).
- Plaesnig*, Andreas, ...gen (?)
 Natural trumpet in E \flat (pitch altered), 1790 (89.4.1097).
- Pollmann*, Henry August, New York
 Valve trombone, alto, 3 Périnet valves. 1880-1905 (89.4.2337).
- Pourcel*, Henry, Paris
 Valve trombone, 3 Périnet valves. End 19th c. (89.4.2389).
- Ramis*, José, Madrid
 Buccin trombone in B \flat , polychrome dragon's head, 1843-1851 (89.4.1301).
- Raoux* (era of Labbaye and Millereau), Paris
Trompe de Lorraine. Ca. 1885-1895 (89.4.1143).
- Raoux*, Joseph, Paris
Trompe de chasse in D, composite. 1759-1769 (89.4.2204).
- Roth*, Ferdinando, Milan
Flicorno basso in B \flat (high pitch), 8-shape, 3 Vienna valves. Ca. 1860 (89.4.2458).
 Valve horn, 3 rotary valves. Ca. 1870 (89.4.2196).
- Saurle*, Michael, Munich
 Cavalry trumpet in E \flat , 2 $\frac{1}{2}$ coils, after 1826 (89.4.1103).
 Valve trumpet in D, 2 Sattler type valves with clock spring action, 1829 (89.4.1098).
- Sax*, Adolphe, Paris
Saxtuba in E \flat , 3 Berlin valves. Serial # 13802. 1854 (89.4.1109).
Trompette de parade in F. Serial # 15454. 1855 (89.4.1628).
Nouveau saxhorn contrebasse in BB \flat , 6 valves. Serial # 32296, 1867 (89.4.2703).
Saxhorn basse in F, 6 valves. Serial # 26398, 1863 (1993.164).
 Ophicleide, soprano B \flat , 9 keys. " $\frac{1}{A_S}$ / 190". Mid-1800s (?) (89.4.2306).
- Sax*, Alphonse (attribution), Paris
Cornet-trompe in D (89.4.1105).

- Sax*, Charles-Joseph, Brussels
Cor omnitonique, 1833 (?) (89.4.2418).
 Ophicleide, alto Eb, 9 keys. Serial # 7636, allegedly 1841 (89.4.2411).
 Ophicleide, 9 keys, same serial number and same alleged date (89.4.2719).
- Schamal*, Karl, Vienna
 Valve trombone, tenor in B \flat (high pitch), 3 rotary valves. 1879-ca. 1892
 (89.4.2222).
- Scherzer*, Johannes, Augsburg
 Piccolo trumpet in B \flat /F, 4 rotary valves. 1977 (1986.350).
- Schmidt*, Jacob, Nürnberg
Waldhorn / Jagdhorn in A \flat . Before 1720 (14.25.1623; 89.4.1117).
- Schmidt*, Wilhelm, Mainz
Serpent militair. Wood with black varnish. Ca. 1810 (89.4.1630).
- Seefeldt*, Wilhelm F., Philadelphia
 Bugle in G with slide for F, 2 $\frac{1}{2}$ coils. End 19th c. (89.4.2278).
- Seltmann*, Ernst Theodor, Philadelphia
 Bell-over-shoulder, bass in Eb, 3 rotary valves. ca. 1880 (89.4.2301).
- Serpek*, Frank, Wien
 Valve trombone, tenor, 3 rotary valves. Ca. 1860 (89.4.2387).
- Serpek*, Joseph, Wien
 Instruments for parade or *mascherade*; fantasy tubing added to a baritone bell.
 Corresponds to D8 in Franciolini's catalog *Negoziante Strumenti Musicali Antichi*, 1894 (see endnote 13). 1870s (?) (89.4.2546).
- Slater*, Moses, New York
 Baritone in B \flat , 3 Berlin valves. 1875-1888 (89.4.2179).
- Spada*, Gaetano, Bologna
 Valve trombone, tenor, tuba form, 3 rotary valves, ca. 1885-90 (89.4.2461).
- Stowasser's Söhne*, W., Graslitz
 Valve trombone, bass/contrabass in F/BB \flat .
- Stratton*, John F., New York
 Bell-over-shoulder, soprano in Eb, 3 rotary valves. Nickel silver. 1880s
 (89.4.2295).
- Tabard*, Jean Baptiste, Lyon
 Invention horn with terminal crooks for the keys B \flat alto through B \flat basso.
 1820/30 (89.4.1111); in *New Langwill Index* (1993) erroneously listed as
 keyed trumpet.
- Thibouville-Lamy*, Jérôme, Paris
 Double slide trombone, contrabass in BB \flat . 1893 (?) (89.2071).
- Tiffany*, New York
 Ladies' fox-hunting horns. Ca. 1900 (1991.349.70 and 71).
- Toni*, Antonio de, Verona
 Helicon, contrabass in BB \flat , 3 rotary valves. 1875-80s (89.4.2195).

Uhlmann, Leopold, Vienna

Valve ophicleide, contrabass in D, 3 Vienna valves. Ca. 1840 (89.4.2457).

Trumpet in C, 3 rotary valves. 1870/80 (1978.553).

Verhoeven, Jeremias Franciscus, Lierre

Slide trombone, tenor, circularly bent upper joint. 1827-1858 (89.4.2409).

Vries, Melchior G. de, Lierre

Tenor horn in C, 3 Stölzel valves. 1840s (89.4.2412).

Weymann & Sons, Henry A., Philadelphia

Cornet in B \flat with 3 Berlin valves. Ca. 1870-1885 (89.4.2176).

Zoebisch, Carl August, New York:

Tuba, end 19th c. (89.4.2188).

Slide trombone, tenor in B \flat . End 19th c. (89.4.2072).

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NOTES

¹ RIDIM = *Répertoire International d'Iconographie Musicale* is affiliated with RCMI = Research Center for Musical Iconography at The City University of New York.

² On the history of the collection, see: Emanuel Winternitz, *The Crosby Brown Collection of Musical Instruments: Its Origin and Development*, in: *Metropolitan Museum Journal* 3 (1970): 337-56. For a later source incorporating additional research, see Laurence Libin, *Our Tuneful Heritage. American Musical Instruments from The Metropolitan Museum of Art* (Provo, UT: Brigham Young University, Museum of Art, 1994).

³ The western instruments are contained in: [Anonymous], *Catalogue of the Crosby Brown Collection of Musical Instruments of All Nations* (The Metropolitan Museum of Art, Hand-Book, no. 13; vol. I: Europe, Galleries 25 and 26; New York: The Metropolitan Museum of Art 1902; 2nd ed., 1904; vol. IV: Historical Groups, Gallery 39, New York: The Metropolitan Museum of Art, 1905).

⁴ Brass instruments are addressed in: Laurence Libin, *American Musical Instruments in The Metropolitan Museum of Art* (New York: Norton, 1985); Libin, *Our Tuneful Heritage* (see n. 2); Malou Haine and Ignace de Keyser, *Catalogue des instruments Sax au Musée instrumental de Bruxelles*, in *The Brussels Museum of Musical Instruments. Bulletin*, ed. by René de Maeyer. Vols. IX/X, 1979/1980; Emanuel Winternitz and Lilly Stunzi, *Musical Instruments of the Western World* (New York: McGraw-Hill, 1967); Edward Tarr, "Ein Katalog erhaltener Zinken," in: *Basler Jahrbuch für Historische Musikpraxis* 5 (1981); 11 ff; and Beryl Kenyon de Pascual, "Small is Beautiful: The Trompe de Lorraine" in: *Historic Brass Society Journal* 5 (1993): 280-87.

⁵ Tarr, "Ein Katalog erhaltener Zinken." (see note 4)

⁶ For an overview of the French basses see Bruno Kampmann, "Evolution en France des basses à embouchure au début du XIXe siècle" in: *Larigot. Bulletin de l'Association des Collectionneurs d'Instruments à Vent*, no. 11 (1992): 10-15.

⁷ Information provided by Stadtarchiv, Mainz. I appreciate the assistance of Oberarchivrat Dr. Dobras in Mainz, 1997.

⁸ Herbert Heyde, "Makers' Marks on Wind Instruments," in William Waterhouse, ed., *The New Langwill Index. A Dictionary of Musical Wind-Instrument Makers and Inventors* (London: Tony Bingham, 1993), pp. xix-xx.

⁹ *The New Langwill Index* gives this address for the years between 1863 and 1881. But Frank Tomes in London, who has done research on Kohler's disc-valve trumpets, communicated to me that this address was cited as early as Robson's *London Directory* of 1833.

¹⁰ They are listed in Haine and de Keyser, *Catalogue des instruments Sax au Musée instrumental de Bruxelles* (see note 4).

¹¹ *Ibid.*, pp. 228-29.

¹² See Kenyon de Pascual, "Small is Beautiful: The Trompe de Lorraine" (see note 4). An X-ray and description of the museum's *trompe de Lorraine* is on p. 284.

¹³ See new edition by Edwin M. Ripin, *The Instrument Catalogs of Leopoldo Franciolin*, in the series series: Music Indexes and Bibliographies, ed. by George R. Hill, no. 9 (Hackensack, NJ: Joseph Boonin, 1994).

¹⁴ *Ibid.*, p. ix.

¹⁵ For a representation of the 1719 pageant, see Herbert Heyde, "Der Musikinstrumentenbau in Sachsen vom 16. bis 19. Jahrhundert" in *Preise Dein Glück gesegnetes Sachsen, Tage alter Musik in Herne* (Herne: Stadt Herne, der Oberstadtdirektor, 1987), p. 85).

Figure 1:
Falconer's horn. England(?),
ca. 1700. Ivory.
New York, The Metropolitan
Museum of Art, no. 89.4.1645

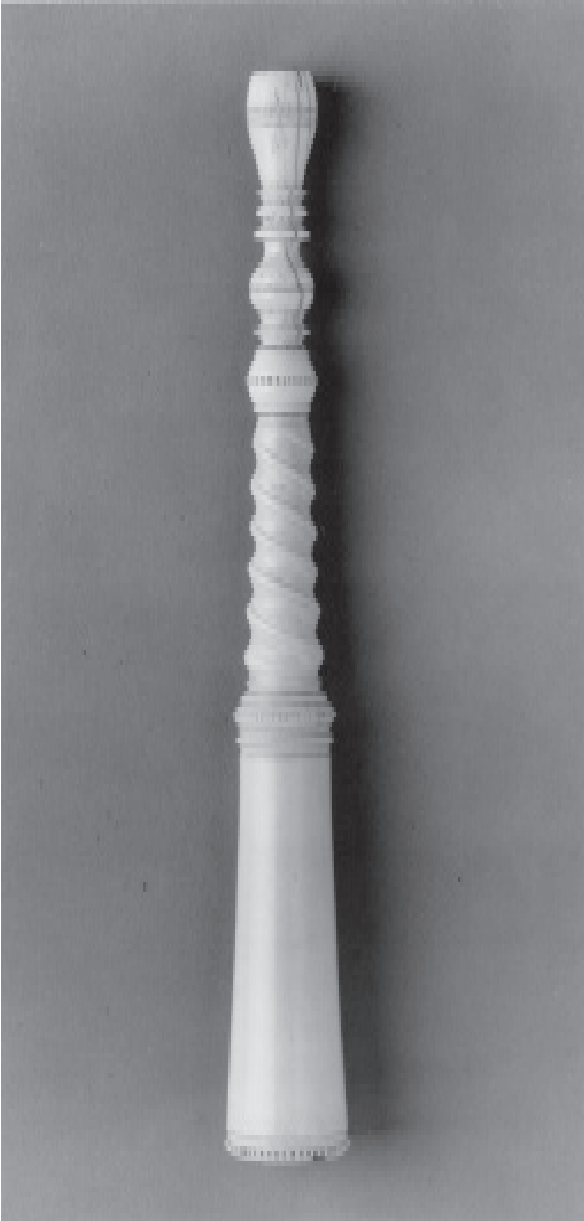




Figure 2:
Falconer's horn. Germany(?), seven-
teenth century Horn,
silver plated mounts, cord.
New York, The Metropolitan Museum
of Art, no. 89.4.1146

Figure 3:
Small oliphant. Probably France,
ca. 1700.
New York, The Metropolitan Museum
of Art, no. 89.4.1485



Figure 4:
 Cornetto. Germany, ca. 1575.
 Ivory, gilt ferrule.
 New York, The Metropolitan Museum
 of Art, no. 52.96.1



Figure 5:
 Cornetto. Germany, second half
 of the seventeenth century. Wood with
 leather cover.
 New York, The Metropolitan Museum
 of Art, no. 53.56.9





Figure 6 [left]:

Tenor cornetto in E \flat . France (?), seventeenth century Wood, brown leather cover.
New York, The Metropolitan Museum of Art, no. 89.4.2090

Figure 7 [right]:

Tenor cornetto in A \flat . France(?), seventeenth century Wood, dark leather cover.
New York, The Metropolitan Museum of Art, no. 89.4.2201



Figure 8:
Serpent militaire, Wilhelm Schmidt, Mainz, ca. 1810. Wood,
black varnish. No keys.
New York, The Metropolitan Museum of Art, no. 89.4.1630



Figure 9:
Cor de chasse (Waldhorn)
 in A \flat (modern pitch),
 Jacob Schmidt, Nuremberg,
 ca. 1710-20. Brass.
 New York, The Metropolitan
 Museum of Art, no. 89.4.1117

Figure 10:
Cor de chasse, Jacob Schmidt,
 Nuremberg, ca. 1710-20.
 Detail of Figure 9. Garland
 with master's sign (bird)
 and initials I S.
 New York, The Metro-
 politan Museum of Art, no.
 89.4.1117



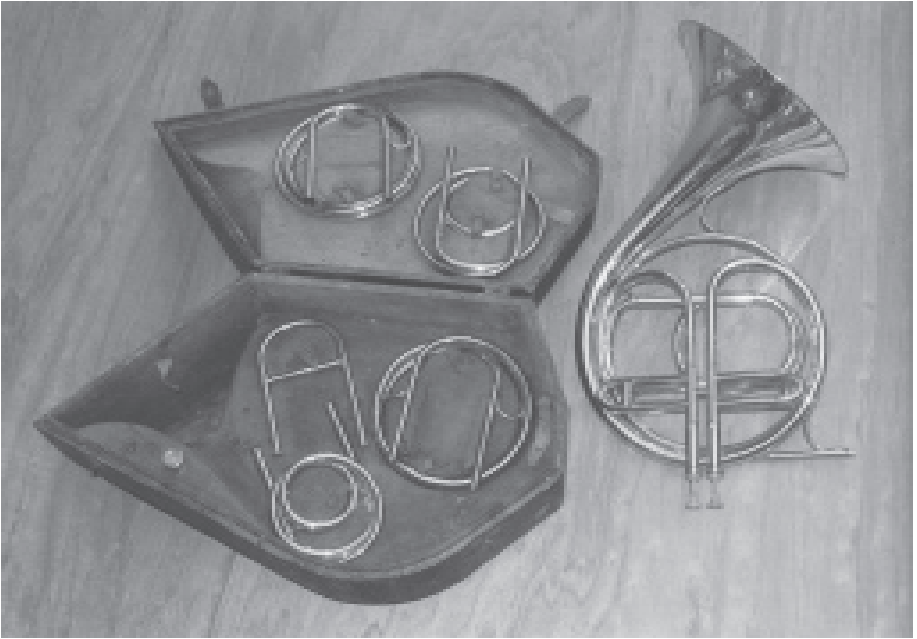


Figure 11:

Cor solo in G, Halari-Antoine, Paris, ca. 1850. Brass. Set of crooks.
New York, The Metropolitan Museum of Art, no. 1999.304

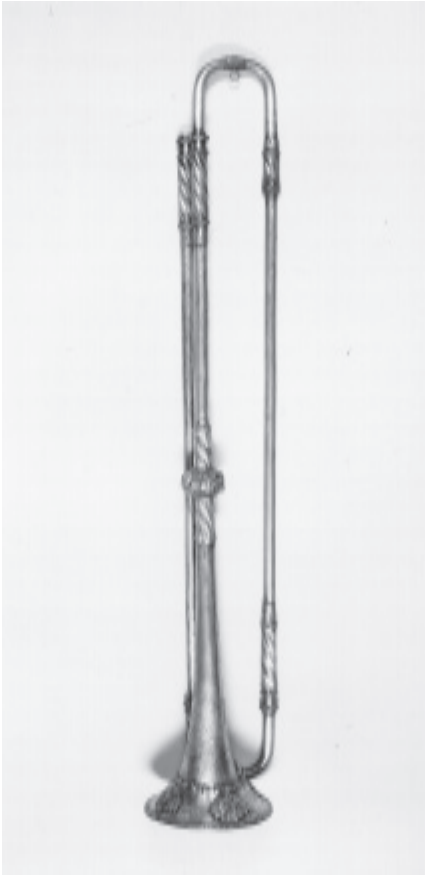


Figure 13:

Natural trumpet in C. Anton Kerner,
Vienna, 1765. Silver.
New York, The Metropolitan Museum
of Art, no. 54.32.2

Figure 12:

Natural trumpet in C. Johann Wilhelm
Haas the Elder, Nuremberg, ca 1710/19.
Silver.
New York, The Metropolitan Museum
of Art, no. 54.32.1



Figure 14:
Valve trumpet in D. Michael
Saurle, Munich 1829. Brass.
New York, The Metropolitan
Museum of Art, no. 89.4.1098



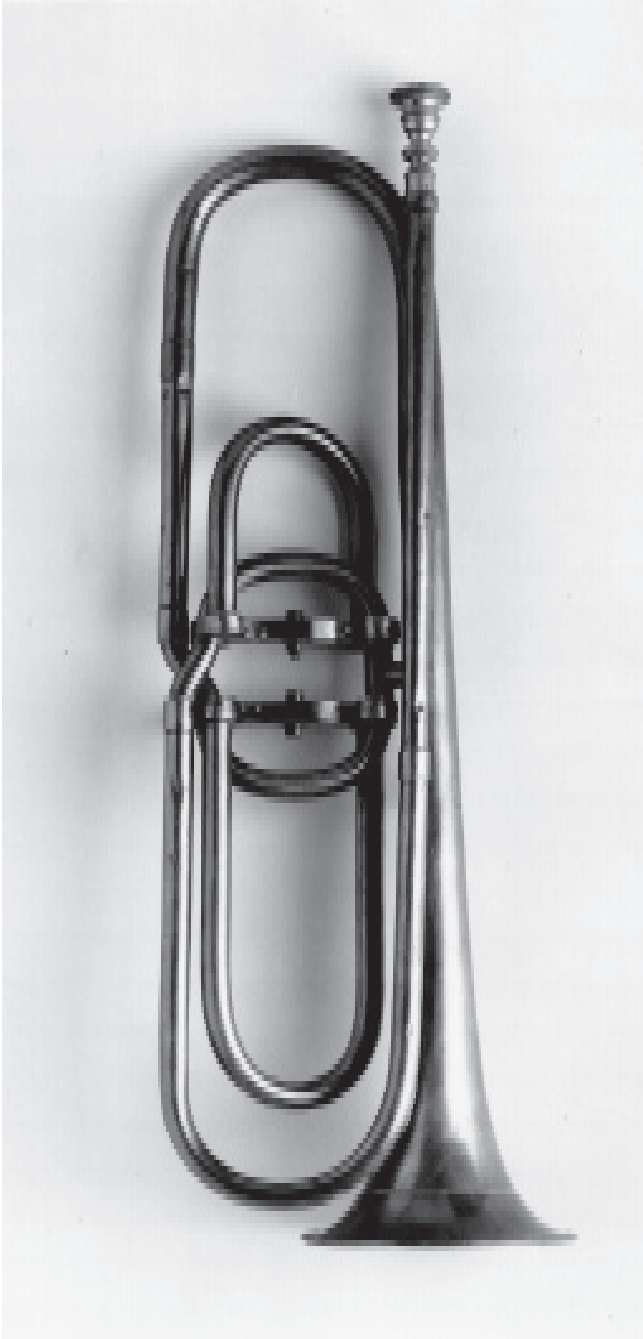


Figure 15:
Valve trumpet in F.
Johann Augustus Kohler,
London, ca. 1840.
Swivel valves. Brass.
New York,
The Metropolitan Museum
of Art, no. 89.4.2532



Figure 16:
Valve trumpet in F. Johann
Augustus Kohler, London,
ca. 1840-45. Disc valves.
Brass
Metropolitan Museum of
Art, no. 89.4.2531



Figure 17:

Flicorno basso in B \flat . Ferdinando Roth, Milan, ca. 1860. Brass.
New York, The Metropolitan Museum of Art, no. 89.4.2458

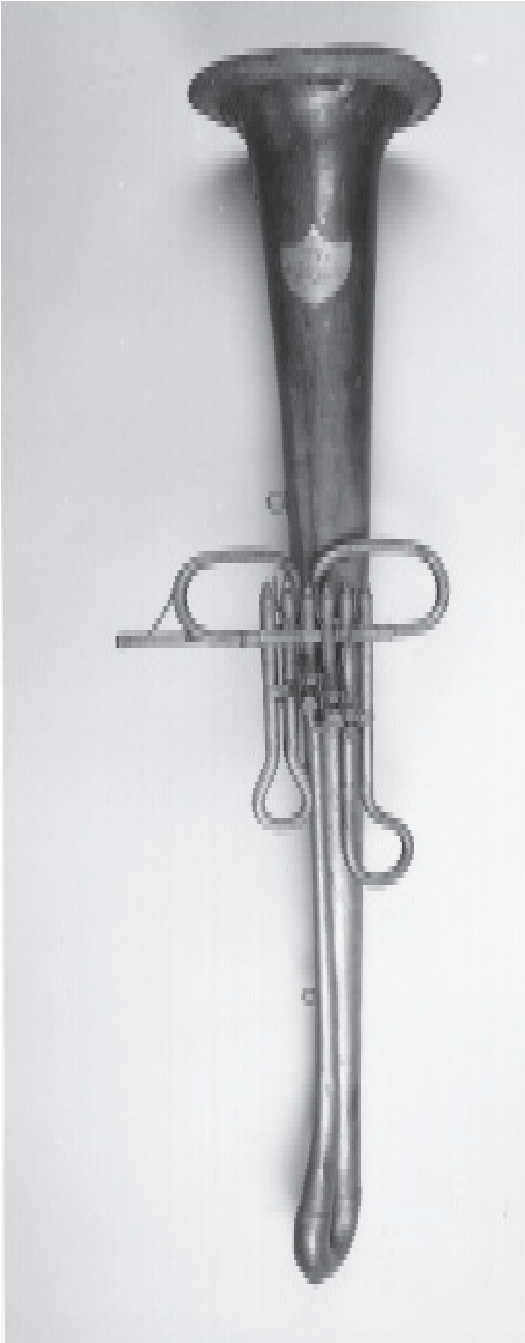


Figure 18:
Valve ophicleide, contrabass in D.
Leopold Uhlmann, Wien,
ca. 1837-40. Brass.
New York, The Metropolitan Museum of Art, no. 89.4.2457

