Václav František Červený: Leading European Inventor and Manufacturer

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Editor's Note: The present article originally appeared under the title "Václav František Cerveny: Erfinder und Hersteller von europäischem Rang," in 150 Jahre: Václav František Červený & Synové,[1] *published to coincide with the opening of the Sesquicentennial Jubilee Exhibition of the Červený firm at the Musikinstrumentenmuseum of the Munich Stadtmuseum in December, 1991.*

One needs a very good dictionary of music indeed to find information on the musical instrument maker Václav František Červený. Hans-Joachim Moser's two-volume dictionary, with both its supplements, ignores him, as do many single-volume works. He is likewise absent from the second volume (1952) of the renowned encyclopedia *Die Musik in Geschichte und Gegenwart,* although he does merit an entry in the 1973 supplement. At least part of the blame for this oversight must be charged to the Czechoslovak Republic, whose official historiography suppressed the accomplishments of individuals from the pre-socialist era. This is evident in the preface to the book *Ein Blick in die Welt der Musikinstrumente (A Look at the World of Musical Instruments)*, published by the Czechoslovak Music Industry (1979):

> This book describes today's modern, socialistic industrial manufacture of musical instruments, represented for the last twenty years by the state monopoly *VEB Tschechoslowakische Musikinstrumente* ("People's Enterprise for Czechoslovak Musical Instruments"), with its headquarters in Hradec Králové. Its world famous firms—Petrof, Amati, Cremona, Rieger-Kloss, Delicia, Jolana, and Tofa—combine the experience of earlier generations with the latest scientific knowledge. Their musical instruments are made with love, and appeal to the hearts of the people by means of their expression.[2]

This passage completely ignores the Červený firm, but in the chapter on wind instruments, Milan Kostohryz states, "At the end of the 19th and beginning of the 20th century, the Červeny firm in Hradec Králové supplied the finest brass instruments of the former Austro-Hungarian Empire."[3]

Until recently, German organological literature has largely overlooked 19th-century instrument makers, with the exception of Adolphe Sax. Herbert Heyde, in the introduction to his book *Das Ventilblasinstrument: Seine Entwicklung im deutschsprachigen Raum von den Anfängen bis zur Gegenwart (Valve-Wind Instru-*

ments: Their Development in German-speaking Areas from their Origins to the Present Day), offered the following point of view on the dispute pertaining to certain inventions in the field of brass instruments:

> Today, since the historical panorama can be surveyed, the accusations made by Wilhelm Wieprecht, Adolphe Sax, Václav František Červený and Giuseppe Pelitti, that all other makers were mere imitators, appear weak and almost unfounded.... After the middle of the 19th century the number of new inventions diminished rapidly. The emphasis shifted to skillfulness, refinement, variety and modification. The accomplishments of instrument makers such as Leopold Uhlmann or V. F. Červený lay primarily in the area of improved construction, using the full range of possibilities available at the time. We should not underestimate the importance of this later creative phase as compared to the more intensive one prior to the middle of the 19th century.[4]

It is ironic that today the inventor of the saxophone is a familiar name to the general public, while his colleague Červený is almost forgotten. The Červený firm enjoyed a long and prosperous existence, but Adolphe Sax was forced to declare bankruptcy on three occasions. Sax insisted on linking his name to many of his inventions, such as the saxhorn, saxotromba and saxophone, although only the latter survived. Červený did not succumb to this temptation as his colleagues so often did. Perhaps this is why the instruments he created remain unassociated with him, even though the list of his inventions is quite extensive. The so-called *Kaiser* instruments with their wide bores, which can be found among the middle and lower brass instruments, can be traced back to Červený, as can the *contrabasso ad ancia*, which is still built and played in Italy to this day. Červený actually called this instrument *Tritonicon* or *Kontrafagott aus Metall* (metal contrabassoon). Whether one can consider Červený's *Cornon* as the forerunner of the *Wagner tuba* cannot be determined until an instrument corresponding to the patent of 1844 is identified. One of the objectives of the Jubilee Exhibition in Munich, Prague and Hradec Králové was to arouse interest in such research, which already exists for Sax' instruments.

Václav Frantisek Červený was born the second son of a farmer on Sept. 27, 1819, in Dubec bei Bechovice, which today is a suburb of Prague. In 1833 he was apprenticed to the brass-instrument maker Jan Adam Bauer, who came from Graslitz. After four years he acheived the status of journeyman, working with Franz Schölnast in Pressburg and Anton Klepsch in Vienna, among others. Subsequently he returned to the master Halas in Brünn, who supported him in his wish to become an independent tradesman in Königgrätz.[5] As a garrison town with various military bands, this city promised favorable working conditions. In 1842 he founded his own firm at no. 26 Grossen Ring, and after his marriage he moved to no. 119 in the old part of the town. Here the manufacture of Červený instruments continued until 1973. From the very start, V. F.

Červený produced a new instrument or an improvement on an existing construction annually, obtaining patents for many of these innovations. In addition to being a skilled workman, he was an outstanding performer on almost all wind instruments. Thus in later years he was a frequent jury member at trade and world exhibitions, where he was greatly admired, and amazed professional players with his performing ability. He also received considerable recognition from the famous Viennese critic, Eduard Hanslick. Here we may note a similarity between Červený and Adolphe Sax (1814-1894), who was also revered as an outstanding soloist in his instruments. Sax opened his first workshop on July 6, 1843 in Paris, although he had already announced his saxophone at the Industrial Exhibition in Brussels in 1841. Sax and Červený were to meet often at exhibitions.

In 1844 Červený received a patent for a newly invented brass instrument called the *Cornon*, built in upright form and intended to replace the weaker-toned French horns in military bands. This instrument was a prototype for the *Wagner tuba*, popularized by Richard Wagner. The composer mentioned that he had heard such an instrument before 1860 under different names in Viennese military bands. Červený displayed his newest instrument as early as 1845 at the Industrial Exhibition in Vienna. The rough draft of the patent document shows a long and slender instrument with a left-hand Vienna valve mechanism. The *Serpentbombardon*, which is mentioned by various authors, apparently was already developed by Červený in 1840. No specimen of this instrument has yet been found.

We are thankful for the discovery of an undated, yet early leaflet in the Červený Archive (Figure 1) showing sketches of early workshop productions, which previously have puzzled experts. The leaflet lists, beginning with the lowest-sounding models, twenty-four instruments in four rows.

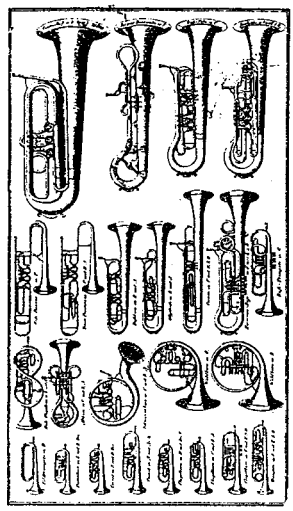


Figure 1
Leaflet (ca. 1846) from Červený Archive, Hradec Králové

Top row, left to right:

Contra-Baß in F — double-F tuba with three rotary valves

Serpent-Bombardon in F — keyed wind instrument in F with a cupped mouthpiece and, as far as can be discerned, eleven keys in the form of a modified ophicleide.

Baß-Tuba in F — tuba in F with six rotary valves, three for the left and three for the right hand.

Bombardon in F mit E, S, D — tuba-like instrument with *Tonwechselventil* (transposing valve, patented in 1846), and four rotary valves, allowing transposition to E, E^b, D.

Second row, from left:

Baß-Posaune in F — bass trombone in F with three rotary valves.

Tenorposaune in C mit B, A — tenor trombone in C with three rotary valves and a transposing valve to B^b and A.

Baßhorn in B mit A — bass horn with three rotary valves and a transposing valve [to A].

Glycleide in B mit A — baritone instrument with three rotary valves and a transposing valve [to A]. Apparently it is played with a horn mouthpiece.

Cornon in F mit E, S, D — French-horn-like instrument with three rotary valves and a transposing valve, for transposition to E, E^b and D. The instrument (no. in-30) from the museum in Hradec Králové, shown for the first time in the Jubilee Exhibition (see photo), could perhaps be one of these specimens.

Harmonie-Baß in F mit E, S, D — [a type of metal contrabassoon] with Vienna valves and transposing valve [to E, E^b and D].

Baß-Trompete in C — bass trumpet in C with three Vienna valves.

Third row, from left:

Baß-Flügelhorn in B mit A — bass flügelhorn in B^b with three rotary valves [and transposing valve to A], built in the shape of a figure "8".

Althorn in C mit B, A — alto horn with Vienna valves [and transposing valve to B^b and A], built in upright form.

Schwanenhorn[6] *in C mit B, A* — in C with three rotary valves, a transposing valve [to B^b and A], and a bell which inclines downward to the right.

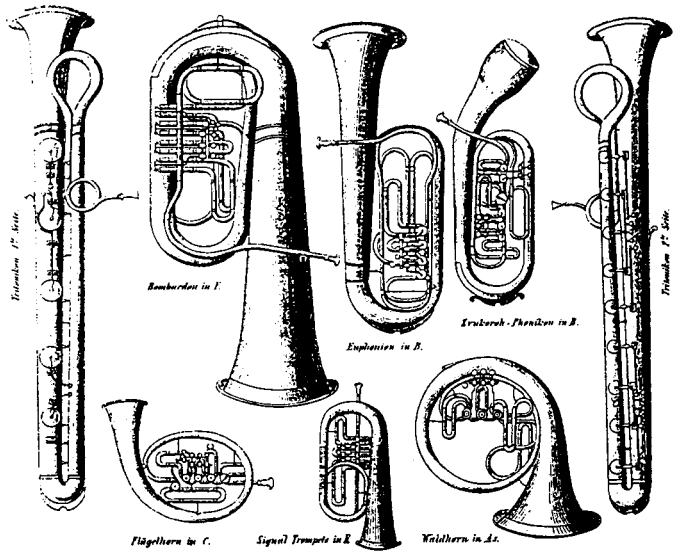
Waldhorn in B — French horn in B^b with three rotary valves built in a style corresponding to that of the horn catalogued as no. 415 E in the Národní muzeum, Prague.

Fourth row, from left:

Feldtrompete in D — field trumpet in D.
Pistonhorn in S mit D, Des — [so-called] piston horn with rotary valves and a transposing valve [to D and D^b].
Cornet in S mit D, Des — cornet in E^b with rotary valves and transposing valve [to D and D^b].
Cornet in A mit As, G — cornet in A with rotary valves and transposing valve [to A^b and G].
Flügelhorn in D mit Des, C — flügelhorn with rotary valves and transposing valve [to D^b and C].
Flügelhorn in C mit B, A — flügelhorn in C with rotary valves and transposing valve [to B^b and A].
Flügelhorn in F mit E, S, C — flügelhorn in F with Vienna valves and transposing valve [to E, E^b and C].
Trompete in F mit E, S, D, — trumpet in F with rotary valves and a transposing valve [to E, E^b and D].

It is unclear whether the leaflet dates from around 1846 or perhaps already existed prior to the Viennese Exhibition of 1846. However, it is certain that the advertisement of December 6, 1853 (Figure 2), was printed for the "Allgemeine deutsche Industrie-Ausstellung zu München im Jahr 1854." This page can be found in the *Schafhäutl* bequest of the Bayerische Staatsbibliothek and was very kindly brought to our attention by Mr. Andreas Masel. The *Baroxyton* placed by Červený in the foreground was treated with special attention by the Board of Adjudicators in their report:

> Earlier, due to the narrow bore of all brass wind instruments with cupped mouthpieces, it was quite understandable that each instrument had to be twice as long as an organ pipe of the same sounding note. . . .
>
> After the so-called "machine" [i.e., valve] was introduced it was discovered, while working on the development of the bugle, that an instrument with wider bore could also sound the fundamental absolutely clearly, with a very good tone, something not possible on any narrow-bore instrument. This resulted in a new era for the manufacture of brass instruments. These instruments, if wide enough [in bore], could now be halved in size....
>
> The famous brass-instrument maker V. F. Červený of Königgratz in particular applied this knowledge, and built new bass instruments. The *Baroxyton* for example, with a length of 8', not only sounded a powerful 8' C, but also, by means of four cylinders, could also sound the contra F of the 16' octave with an easy response.[7]



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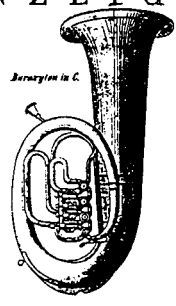


Gefertigter hat das angenehme Vergnügen, den löbl. Musikbanden und Kennern, besonders aber den löbl. Cavallerie- und Jäger-Musiken anzuzeigen, dass es ihm durch mehrjährigen Fleiss und Mühe gelungen ist, ein neues Basse-Instrument, Baroxyton genannt, zu erfinden, auf welches er von Sr. k. k. Apost. Majestät Franz Joseph I. mittelst Hofdecretes de dato 29. October Hofzahl 7891 ein ausschliessendes Privilegium auf 3 nach einander folgende Jahre erhalten hat und dessen Vortheile er hiemit anzuführen sich erlaubt:

Genanntes Instrument, Baroxyton, ist in C, um eine Octave höher, als bisherige C-Bombardons, somit bedeutend leichter im Gewicht, nur 26 Zoll lang, hat 4 Cylinder, durch deren praktische Einrichtung und Mensur das Instrument vom Basse C aber den Linien bis zum 4mal gestrichenen Contra F mit Leichtigkeit anspricht, dieselbe Kraft, wie die grossen Basse-Instrumente ersielt und mit einem Euphonion-Mundstücke leicht um eine Octave höher geblasen werden kann, so zwar, dass dasselbe auch als Solo-Instrument zu brauchen ist.

Durch die ungemein kurze Bauart des Baroxyton ist es dem Bläser nicht nur leicht, dasselbe zu Pferde auf dem Schooss zu halten und ausser dem Blasen auf Seite oder Rücken zu schieben, sondern es wird durch die Bequemlichkeit bedeutend weniger ruinirt, der Reparatur minder ausgesetzt, und dadurch von längerer Dauer sein.

Bei der Anschaffung solcher Instrumente anstatt Bombardons und Trombons wird Eine Scala ersielt, wodurch die Bläser nach den Embouchuren für die oder jene Stimme zugetheilt, und falls einer krank oder abgehen würde, sogleich, ohne die Scala sich erst anzueignen, ersetzt werden können.

Vergleicht ein Kenner diese Vortheile mit jenen der bisherigen colossalen Basse-Instrumente von was immer für Namen, die oft 52 Zoll Länge haben, kaum zu erschleppen sind, dann mit 4 Cylindern um fl. 20 bis fl. 30 höher zu stehen kommen: so wird er die Uibersengung erlangen, dass in der Erfindung der Basse-Instrumente nichts Besseres zu wünschen war, um so mehr, als dieses Instrument auf Verlangen auch in B angefertigt werden kann.

Zum Schlusse empfiehlt der Gefertigte wiederholt seine im Jahre 1844 erfundenen und priv. Cornons anstatt der Waldhörner; — die vom Jahre 1846 erfundene und priv. Tonwechselmaschine anstatt der Aufsatzbögen, welche sowohl bei den löbl. k. k. österreichischen, k. bairischen, k. spanischen Regiments-Musiken, als in Rhein-Provinzen und Nordamerika allgemeine Anerkennung gefunden; — den im Jahre 1848 erfundenen Zvukovod (Schallhorn) dessen sich bereits viele löbl. k. k. österreichische Regiments-Musiken mit Auszeichnung bedienen, und seine gleichfalls jetzt erst verbesserten Waldhörner, deren weite Mensur und der dadurch erzielte starke, volle und sichere Ton den besten Erfolg liefert.

Königgrätz, am 6. December 1853.

Mit aller Hochachtung

V. F. Červený.

Figure 2
Advertisement of Dec. 6, 1853

Another new design, the *Tritonicon*,[8] is shown, seen on the 1853 leaflet from the front as well as the back (Figure 2). It has fifteen keys, arranged according to the principles of Theobald Boehm, who was the first to use this idea for acoustical reasons. The keys are widely spaced, and spread in a logical succession across the entire sounding body of the instrument. Červený may have known similar designs, forerunners of metal contrabassons, by masters in Vienna (Stehle) and Pressburg (Schölnast). When Adolphe Sax began to construct the first prototype of his saxophone, he also used this ophicleide shape. While corresponding prototypes originating from the Sax workshop have not yet been identified, we were able to show in the Munich exhibition a *Tritonicon* drawing by Červený of 1853 which resembles an instrument from the workshop of Giuseppe Pelitti. In the Board of Adjudicators' report for the 1854 Munich Exhibition, the following is written about this instrument:

> Contrabassoons are now usually made of metal; they have emerged in this new form with the Greek-sounding name *Tritonicon*. By comparison to the older contrabassoon, the *Tritonicon* is an entirely new instrument, because of the use of the Böhm system. Tone holes were made as wide as possible and placed on the right side as far as practicable. Therefore, a more artistic mechanism was needed because the keys were very large, many with a width of 2" or more.... The mechanism of the *Tritonicon* in D (no. 4233) by V. F. Červený from Königgrätz near Prague, turned out best; nevertheless, the bass register did not sound optimal, even though the entire instrument was made with great precision.[9]

The author has located only four extant examples of this ophicleide-shaped instrument. They are in the Tiroler Landmuseum Ferdinandeum (inv. no. 220); the Národní muzeum in Prague (sig. 1201 E); the Musikinstrumentenmuseum of the Munich Stadtmuseum (inv. no. 87-89); and one is privately owned by the author. All the instruments originate from the Pelitti workshop in Milan.

The flügelhorn in C with three rotary valves and the bell inclined to the right anticipated a style which Červený used again later (Figure 2). This can be seen on the flügelhorn with a costly German silver finish and engraving, built to order for A. H. Rott & Sohn, Prague, in this century. The famous firms Červený and Rott must have been in close contact, as many instruments built by Červený, but carrying the Rott trademark, were exported to Spain. According to reliable information, this procedure still takes place today.[10]

Another interesting novelty displayed in Munich in 1854 was the *Zvukoroh-Phonicon* in B^b (Figure 2), the name of which reveals that Červený's preference for the Czech language. According to the Board of Adjudicators' report:

> A second, not less remarkable invention of Červený's, is the *Phonicon*, also called *Zvukoroh* or *Schallhorn*, from the year 1848. It falls in the class

> of the *Euphonion* used in chamber music. The ordinary *Euphonion* has a parabolically extended bell; on the *Phonicon* the bell has the shape of a longish, pressed globe, like the bell of and English horn, so that the rim of the latter's pear-shaped, extended bell section narrows slightly.[11]

No specimen of this instrument has yet been found. One hopes that in the future, with the opening of eastern European archives, prototypes from this workshop might appear.

Josef V. Cabalka reports that in 1859 the firm had 80 employees and in that year produced 390 instruments, which were increasingly shipped to Russia as well as the United States.[12] In 1848 Červený's youngest brother emigrated to the United States for political reasons, where he took charge of sales and arranged for participation in the 1853 New York World Exhibition, where the firm received first prize. In 1887 opened a branch in Kiev, managed by Červený's son Otokar, born in 1850.

V. F. Červený must have met Adolphe Sax in 1851 at the exhibition in the Crystal Palace in London. Among the other exhibitors were the Firms Boehm (Munich), Besson, Buffet, Courtois, Gautrot (all from Paris), Glier (Markneukirchen), Heckel (Biebrich), Kohler (London), Mahillon (Brussels), Rott (Prague), Hell, Stehle, Uhlmann, Ziegler (all from Vienna) and Pelitti (Milan), just to mention the most important competitors in the field of wind instrument makers. While Sax and Boehm received the highest prizes, Červený did not attain any of the desired awards. However, in the Červený archive, certificates of recommendation from conductors and other musicians can be found. The firm was not discouraged and, after the New York exhibition mentioned above, received the Great Commemorative Medal at the Allgemeine deutsche Industrie-Ausstellung in Munich in 1854. The variety of inventions can be clearly seen in the following survey:

1842 *Serpentbombardon* in F
1843 *Cylinder-Maschine* [13]
1844 *Cornon* (patented)
1845 *Kontrabasstuba* [contra-bass tuba], over-the-left-shoulder
1846 *Tonwechselmaschine* [transposing valve][14], *glycleide, schwanenhorn*
1847 *Hochflügelhörne* [high flügelhorn] in C with a crook for transposing to B^b and A
1848 *Phonicon* or *Zvukoroh*, contrabass in tuba form
1850 improved cylinder-mechanism
1851 *Octavin* [cornet in elongated rather than curved form] in high A^b
1852 *Kaiser-Baryton* (patented)
1853 *Baroxyton*
1858 *Tritonicon* or metal contrabassoon in E^b
1859 *Obligat-Althorn* [obbligato alto horn in elliptical form][15] in F or E^b
1861 improved rotary-valve mechanism
1865 improved Turkish screw-tensioned drum
1866 *Sokolovka-Turnerhorn* [signal horn made for *Sokol*-clubs (athletic clubs)]in F

1867 *Armee-Baßposaune* [military bass trombone) in F (patented), *Jägerhorn* [hunting horn] in F (patented), *Sub-Contra-Fagott* [contrabassoon]
1868 *Armeeposaunen* [military trombones] (alto, tenor, baritone, and contra-bass)
1869 new forms of the cavalry instruments
1872 Russian infantry signal horns
1873 *Primhorn*[16] in F or E^{b}; *Walzenmaschine,* a horizontal rotary valve with *remonteur* (screws used to regulate the tension of the finger-plates)
1874 *Walzenmaschine für Musikmetalblasinstrumente* [horizontal rotary valve for brass instruments] (patented)
1876 cornets; *Glocken-Akkordion*, bells tuned in chords for church use
1877 contrabass-cornet in B^{b}; *Glockentriangel* [triangle constructed in the form of a capital letter "A"]; *Feuerruf*, signal horn for fire alarm
1878 *Walzenmaschine,* new rotary valve
1879 improvement on the *Walzenmaschine* (patented)
1881 improved *Cylindermaschine*
1882 *Kaiserbaryton*,[17] improved *Votivtimpani* (timpani for church use)
1883 *Kaiserkontrabaßtuba*
1884 *Kaisertenorhorn, Kaiserbaß* (patented)
1885 *Kaiserwaldhörner*
1892 *Aluminum-Trommeln* [aluminum drums] (patented)

Many of the instruments listed above were made exclusively for industrial and world exhibitions, while others were variations of existing forms, and some were short-lived. Nonetheless, the list shows the enormous capacity of the Červený firm for designing new instruments in the 19th century.

The firm's consistent philosophy is evident in the development of their valve designs. Using the Vienna valve as a point of departure, they developed their own rotary valve, which grew in importance from 1843 onwards. Červený's transposing valve, patented in 1846, replaced the standard crooks used at the time for transposing the instrument.

"This transposing valve (*Tonwechselventil*) could be fitted to all brass instruments, thereby changing its fundamental, according to the structure of the instrument or on request of the buyer, singly or up to eight times, yes, even endlessly and even in the bass; therefore, there can exist single and up to eight-fold, and even manifold transposing mechanisms."[18]

The transposing valve actually demands an appropriate lengthening of all valve slides, so that the instrument stays in tune in the new keys, as is the case today with the double horns of the compensating type, which can transpose from F to B^{b}. This principle can be seen on a double tuba (*Doppeltuba*), formerly in the Wilhelm Monke collection, Cologne, shown in the Jubilee Exhibition, and now owned by the Musical Instrument Collection of the Munich Stadtmuseum (inv. no. 92-2).

The cylinder mechanism (*Zylindermaschine* or *Cylindermaschine*), built as of

1881, is such an outstanding valve model that it helps to identify unsigned instruments or those with trademarks of dealers. With this valve, the rotor is inserted into the valve casing from the upper side. Because of its slightly conical form, the rotor slides downwards by force of gravity and thus holds tight longer. The simplicity of the Červený-type rotary valve lies in its self-stopping crank. The *Walzenmaschine* also has rotary valves, but in playing position the rotors lie horizontally and the finger plates function directly on the crank arms, thus resulting in a compromise between the Perinet and the rotary valve. In leaflet no. 10 (1928), Červený's patented valves are described as follows: "Construction takes place in a separate section of the firm. For this purpose, our newest precision-mechanisms and best workers are used. The mechanisms are entirely hand-wrought using wire, thus ensuring their durability. They are built in conical form with the opening on the top and with rubber stoppers." Cylinder mechanisms were built at that time with or without *remontuer* (i.e., screws used to regulate the tension of the finger plates). The advantages of the *Walzenmechanik* is described in this leaflet as follows: "Although it is a cylinder mechanism, it lies horizontally, thus, according to the laws of physics, it is more easily moveable. The valve casings are constructed so that water can pass through the valves. It is an ideal mechanism, absolutely perfect, smooth to handle, of a slender design and yet simple to operate" (see Figure 3).

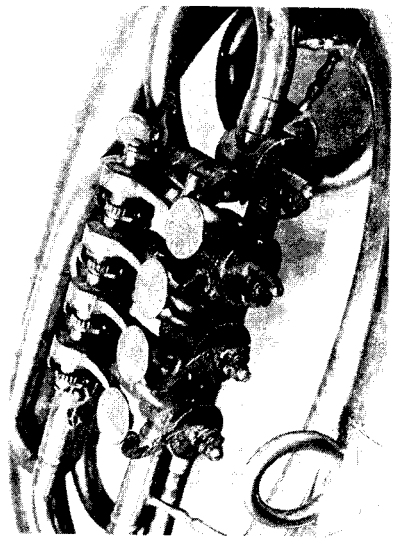


Figure 3
Walzenmaschine (horizontal rotary valve mechanism) with *remonteur* (screws to regulate tension of finger-plates), from a Červený *Kaiserbariton*

There is evidence that mechanisms of all kinds were built on request. This explains the existence of cylinder valves of other forms, including Perinet valves, on Červený instruments. Today it seems economically impractical to manufacture such a diversity of styles of brass instruments over a relatively short period of time, considering that most of these instruments no longer exist; but through this evolutionary process, only the best models crystallized. These Bohemian instruments were highly regarded because of their beautiful sound, and their widespread fame helps to explain the coining of the term *Königgrätzer Stürze* ("Königgratz bell"), referring to bells of German silver.

At the many exhibitions he attended, Červený not only displayed the instruments of his firm, but also took advantage of the opportunity to play on those of his competitors. It was tremendously important to him that the Bohemian sound quality be recognizable. In a publication he characterized this quality as a certain "sweetness, richness and mellowness of sound."[19] With the *Kaiser* models he established a standard that was considered exemplary a hundred years ago by brass- instrument makers of other countries.

The 1867 Paris World Exhibition marked a highlight in V. F. Červený's career. Though he received only the silver medal, and his competitor Adolphe Sax the gold, the outcome was considered unjust, not only by Červený himself: "The all too obvious preference for Sax secured for him the gold medal at the Paris World Exhibition in 1867. But the leading experts of the [Paris] Conservatory could not disregard the superiority of construction, the ease and security of intonation, and particularly the unmistakably big and beautiful sound of the instruments of the Červený firm, even though they were awarded only the silver medal." So writes Wilhelm Altenburg in an article published in 1891 in *Zeitschrift für Instrumentenbau.*[20]

The Červený firm continued to expand, even though Červený himself was embittered by the unfavorable outcome of the Battle of Königgrätz, 1866, which he as a Czech patriot endured, and which brought great hardship to his family. But according to the official report of the 1873 Vienna World Exhibition, Červený supplied no fewer than sixty-six military bands between 1870 and 1873, even as Adolpe Sax was forced to declare bankruptcy for a second time.

Červený's sons Jaroslav (1851-1928) and Stanislav (1854-1911) became partners in the family business in 1876, signing their instruments "V. F. Červený & Söhne, Königgrätz in Böhmen," as seen on many instruments in collections (see Figure 4). A comparable inscription in Czech, "V. F. Cervený a synové Hradec Králové", appeared prior to World War I. Among the many catalogues of the firm which appeared in the various languages of the principal countries to which their instruments were exported, that for the 1889 Paris World Exhibition, entitled *Notice sur les progres réalisés dans la Fabrication des Instruments de Cuivre par la Maison V. F. Červený & Fils, Fournisseurs de la Cour à Königgrätz (Bohéme et à Kief, Russie)*, is of considerable importance because of the accurate drawings of the instruments. The title *K. und K. Hoflieferanten* ("Purveyor to the Royal Household of the Austrio-Hungarian empire") was awarded to the firm in 1884.

Figure 4
Červený company shield, from a *Kaiserbariton*

Of special interest are Červený's efforts, paralleling those of the French, to transform the *ophicleide*. This led not only to tubas, but also to saxophones with single reeds and to the *Sarrusaphones* and *Tritonicons* with double reeds. Thanks to the *Anzeige* of 1853 (Figure 2), there exists a drawing of an extended *Tritonicon* reminiscent of the Pelitti model, only four examples of which have so far been traced. Both models may have derived from the metal contrabassoon, also called *Harmonie-Bass*, patented in 1835 by Johann Stehle. With a height of 1.75 meters it was very unwieldy; Červený shortened the instrument to approximately half its customary length, called it *Tritonicon* (in German spelled with either *c* or *k*) and rearranged the system of closed keys.

Although the *Tritonicon* is most accurately described in two essays of the eminent musicologist Jürgen Eppelsheim,[21] it remains virtually unknown, even among experts. In 1867 Červený produced a larger instrument which he called a contrabassoon in B^b (*Sub-Kontrafagott in B*); no example of this instrument has yet been traced. The *Tritonicon* as well as the so-called *Sub-Kontrafagott* are were played with a double reed. The latter instrument is described for the first time in the official report of the 1867 Paris World Exhibition, and quoted in the *Historischen Skizze* (*Historical Sketches*) written in 1892 for the 50th anniversary of the firm as follows: "Finally, a contrabassoon in B^b by Červený fitted with fourteen keys was highly acclaimed; it is played with a reed and produces the thirty-four foot B^b of the pedal octave, and consequently sounds lower than the organ." Only a few of the normal *Tritonicons* built before 1858 have survived in public or private collections: Eppelsheim mentions three (in Beibrich, Brussels, and Burg Lauenstein). The Národní muzeum in Prague also owns one; and of two copies apparently built by Červený but showing the trademark *A. H. Rott in Prag*, one belongs to the Musical Instrument Museum of Barcelona (kindly brought to our attention by

bassoonist Thomas Kiefer) and one is on loan to the Musikinstrumentenmuseum of the Stadtmuseum in Munich (property of the author; see Figure 5).

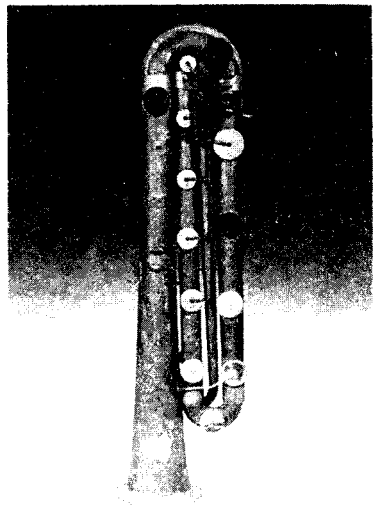


Figure 5
Tritonicon in E^b (from a private collection) with dealer's mark, "A.E. ROTT HIJO PRAGA BOHEMIA JOSE GUINOVART TARRAGONA"

The Červený Collection of the city archive of Hradec Králové possesses a handwritten sheet of music paper containing evidence that the firm had planned to build an entire family of metal bassoons. On this music sheet, the following appears:

first staff: designated *Sub-Contrafagott B* [contrabassoon in B^b] (no range is given)
second staff: designated *Contrafagott Es* [contrabassoon in E^b], with a range of $E_1{}^b$ to F#
third staff: *Bassfagott B* [bassoon in B^b], with a range of $B_1{}^b$ to d,
fourth staff: *Bassfagott Es* [bassoon in E^b], with a range of E^b to g,
fifth staff, *Baritonfagott B* [baritone bassoon in B^b], with a range of B^b to d',
sixth staff, *Tenorfagott Es* [tenor bassoon in E^b]· with a range of e^b to g',
seventh staff, *Altfagott B* [alto bassoon in B^b], with no indication of range.

In the Národní muzeum in Prague, a small *Tritonicon*, exhibited as no. 235, corresponds to the *Bassfagott B*. Jürgen Eppelsheim, in his essay mentioned above, maintains that the *contrebass a anche* (reed contrabass, 1868) manufactured by the Belgian firm Mahillon is an exact copy of the Červený *Tritonicon*. Mahillon's instruments were subsequently copied by various makers in other European countries, such as E. Albert in Brussels, Boosey and Co. in London, and Maino & Orsi and Rampone, both in Milan. The *contrabasso ad ancia* [= *contrebasse a anche*] is still used in Italian

military bands and is considered a descendant of the *Tritonicon*. Červený recognized that a key system related to that of the woodwind instruments, with partly open keys in neutral position, was easier for woodwind players to use. A prototype of such a modified instrument, related to the sarrusphones of Pierre Louis Gautrot, is in the Národní muzeum in Prague (sig. 1789 E). At the beginning of the 20th century, the idea to introduce Wagner-tuba-like instruments, with the dimensions of French horns, into military bands, arose again. Červený had advocated this as early as 1844 with his *Cornon*, and it eventually led to the construction of right-handed Wagner tubas. The Musical Instrument Collection of the Stadtmuseum in Munich recently bought an original right-handed Wagner tuba, with a working drawing from the Piering firm in Adorf, Vogtland, in Saxony (inv. no. 91-10; see Figure 6).

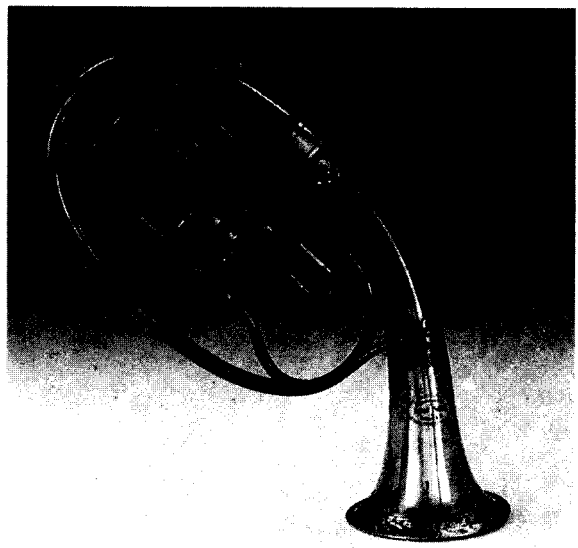


Figure 6
Wagner tuba from the firm of Robert Piering of Adorf, modeled after Červený's *Cornon* (Munich, Stadtmuseum, inv. no. 91-10)

In 1918, after the fall of the old Austro-Hungarian empire, the Czechoslovak Republic was formed. Consequently the firm renamed instruments which previously

had monarchial names: "Furthermore we would like you to notice that our *Kaiser* instruments now carry the new name *Triumf*." (Catalogue of 1928). After Jaroslav Červený's death, the firm was managed by Karel Sámal. In 1948 it was confiscated by the state and declared a state monopoly company, VEB Czech Musical Instruments. V. F. Červený certainly would have been distressed to see that the instruments based on his and his sons' designs were now sold under the name *Amati*. Had Červený himself not always been involved in the Czechoslovak cause, and had he not supported the initial labor movement with its Sokol Athletic Club activities? His inventions carried Czech names and he edited a small handbook of musical terms in Czech. The socialist regime during the forty years after World War II propagated collectiveness and did not condone any personal enterprise, as is evident in a descriptive account of the Czechoslovak musical instrument industry published in 1979: "The faces of the unknown builders will be forgotten, but somewhere, somehow, the emblem of their honest craftsmanship will sound under the hands of a musician."

After visiting the Červený factory in 1987 we could not help but describe the situation as follows: "For someone brought up in the western capitalist system with a consciousness stamped by years of advertising and brand identification, the marketing strategies of the eastern state monopolies after World War II belong to the realm of the irrational. Instead of the once highly regarded names of manufacturers and makers of instruments, one now sees meaningless and misleading labels."[22] Today, with the privatization of the realm of wind-instrument production in Czechoslovakia one tries to find the link to old traditions, of which the name Červený, even after 150 years, is an outstanding example.

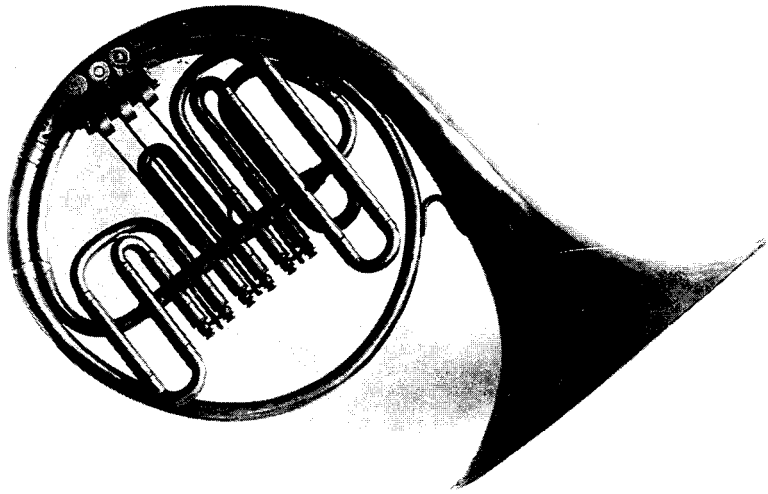


Figure 7
Waldhorn in B^{b} with Vienna valves, by V.F. Červený, in a pattern from ca. 1846 (Hradec Králóve, Stadtmuseum)

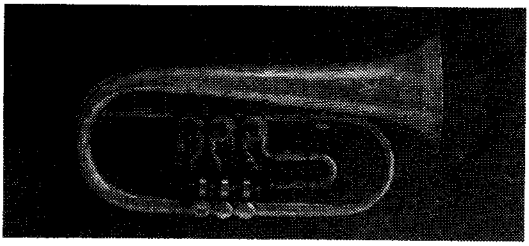
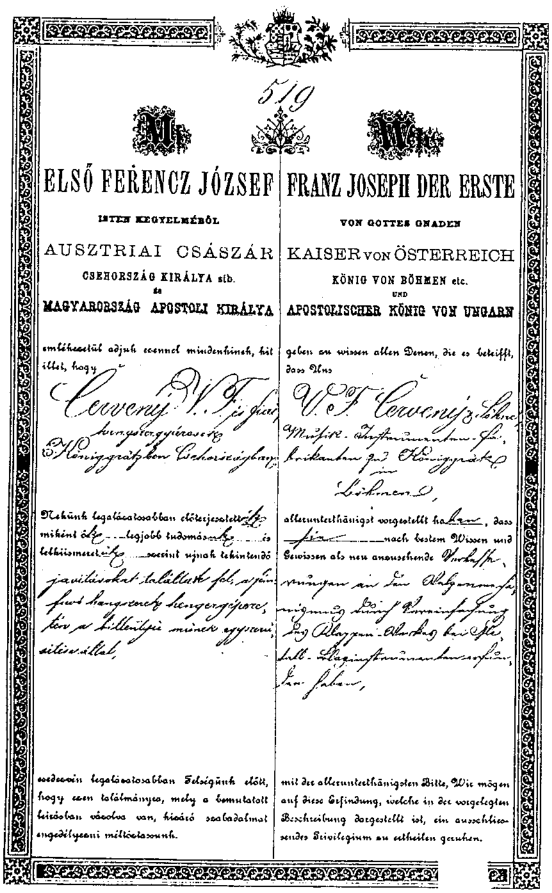


Figure 8
Flügelhorn in C, Červený and Sons
(Munich, Stadtmuseum, inv. no. 91-32)



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ELSŐ FERENCZ JÓZSEF	FRANZ JOSEPH DER ERSTE
ISTEN KEGYELMÉBŐL	VON GOTTES GNADEN
AUSZTRIAI CSÁSZÁR	KAISER VON ÖSTERREICH
CSEHORSZÁG KIRÁLYA stb.	KÖNIG VON BÖHMEN etc.
és	UND
MAGYARORSZÁG APOSTOLI KIRÁLYA	APOSTOLISCHER KÖNIG VON UNGARN
emlékezetül adjuk ezennel mindenkinek, kit illet, hogy Červený V. F. és fiai hangszergyárosok Königgrätzben Csehországban	geben zu wissen allen Denen, die es betrifft, dass Uns V. F. Červený & Söhne Musik-Instrumenten-Fabrikanten zu Königgrätz in Böhmen,
Nekünk legalázatosabban előterjesztették, miként ők legjobb tudomásuk és lelkiismeretük szerint ujnak tekintendő [illegible]	allerunterthänigst vorgestellt haben, dass sie nach bestem Wissen und Gewissen als neu anzusehende Verbesserungen [illegible]
egyszersmind legalázatosabban Felségünk előtt, hogy ezen találmányra, mely a bemutatott leirásban vázolva van, kizáró szabadalmat engedélyezni méltóztassunk.	mit der allerunterthänigsten Bitte, Wir mögen auf diese Erfindung, welche in der vorgelegten Beschreibung dargestellt ist, ein ausschliessendes Privilegium zu ertheilen geruhen.

Figure 9
Privilege granted Mar. 11, 1879, by Emperor Franz Josef I to the firm of V.F. Červený, for the manufacture of an improved *Walzenmaschine*

Figure 10
Portrait of V.F. Červený

NOTES

1. Prague: Senza, 1991, pp. 5-56. The interested reader is encouraged to consult this article in the original German version, as it contains more than seventy illustrations, only a few of which are reproduced here.

2. Josef Horcicka, preface to *Ein Blick in die Welt der Muisinstrumente*, ed. J.E. Jiránek and Tomás Hejzlar, German transl. by Margot Vetrovcova (Prague: Panton, 1979), p. 10.

3. Milan Kostohryz, "Die Blasinstrumente," in ibid., pp. 109-21. The passage in question is on p. 120.

4. Herbert Heyde, *Das Ventilblasinstrument: Seine Entwicklung im deutschsprachigen Raum von den Angängen bis zur Gegenwart* (Leipzig: VEB Deutscher Verlag für Musik), p. 12.

5. Königgrätz is the old German name for the city now known as Hradec Králové (editor's note).

6. The term literally means "swan-horn." It probably refers to the shape of the section leading directly to the bell, which resembles the neck of a swan (editor's note).

7. F.B.W. von Hermann, ed., *Bericht der Beurtheilungs-Commission bei der allgemeinen deutschen Industrie-Ausstellung zu München im Jarh 1854 bearbeitet von den Ausschuss-Referenten* (Munich: Georg Franz, 1855), pp. 169-70. The author wishes to thank Ursula Menzel of Munich for allowing him to inspect a copy of this report.

8. Also spelled *Tritonikon* (editor's note).

9. Von Hermann, ed., *Bericht*, p. 156.

10. Instruments from several Czech factories—including the former Červený factory in Hradec Králové—bearing the Rott trademark are marketed today in Spain.

11. Ibid., p. 196.

12. Josef V. Cabalka, unpublished manuscript.

13. See explanation below. Červený later named his horizontal rotary-valve mechanism *Walzenmaschine*.

14. See explanation below.

15. According to Jaroslav Červený (*Ehrenkranz für V.F. Červený, Chef der Musikinstrumentenfabrik* [Prague: 1883], p. 14), "Immediately after its appearance the instrument found widespread use as a solo instrument in the alto range because of its unbelievably soft tone and easy response. It is used in military bands and was specifically requested for the Imperial Russian Infantry Band . . ."

16. An instrument sounding an octave higher than the standard horn in F. It may be considered a forerunner of the mellophone in F.

17. The prefix *Kaiser-* may be translated as "imperial." It designates an instrument with a very large bore.

18. Excerpt from a patent application dated Mar. 18, 1846, entitled "Beschreibung der von dem gefertigten Blech-Blasinstrumenten Fabrikanten Wenzl Czerweny in Königgratz neu erfundenen: Tonwechsel-Machine." The full German text is in Günter Dullat, *V.F. Červený &Söhne 1842-1992: Eine Dokumentation* (Nauheim: the author, 1992).

19. V.F. Červený, *Denkschrift über österreichische und französische Metall-Blas-Musikinstrumente* (Königgratz: the author, 1868). This booklet was "written and published on the occasion of the Paris World Exhibition of 1867. The author wishes to thank Ernst W. Buser, Binningen,

Switzerland, for providing a copy of this publication.

20. Wilhelm Altenburg, "Die Umgestaltung des Metalblasinstrumentenbaues durch V. F. Červený in Königgrätz" ("The Transformation of Brass-instrument Making by V. F. Červený of Königgrätz"), *Zeitschrift für Instrumentenbau* (1891). Reprinted in *Holz- und Metallinstrumente: Zeitschrift für Instrumentenbau, 1881-1945*, ed. G. Dullat (Siegburg: Verlag der Instrumentenbau-Zeitschrift, 1986), pp. 214-18. The quotation is on p. 215.

21. Jürgen Eppelsheim, "Das Subkontrafagott," in *Bericht über die erste internationale Fachtagung zur Erforschung der Blasmusik, Graz, 1974, Alta Musica*, vol. i (Tutzing: Hans Schneider, 1976), ed. W. Suppan and E. Brixel. See also Eppelsheim's article in the *Subkontrafagott* in *The Galpin Society Journal* 32 (1979): 104-114.

22. See Gunther Joppig, "Auf den Spuren einer fast vergessenen Marke" ("On the trail of a nearly forgotten label"), *Das Musikinstrument* 36 (Nov. 11, 1987): 54.

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