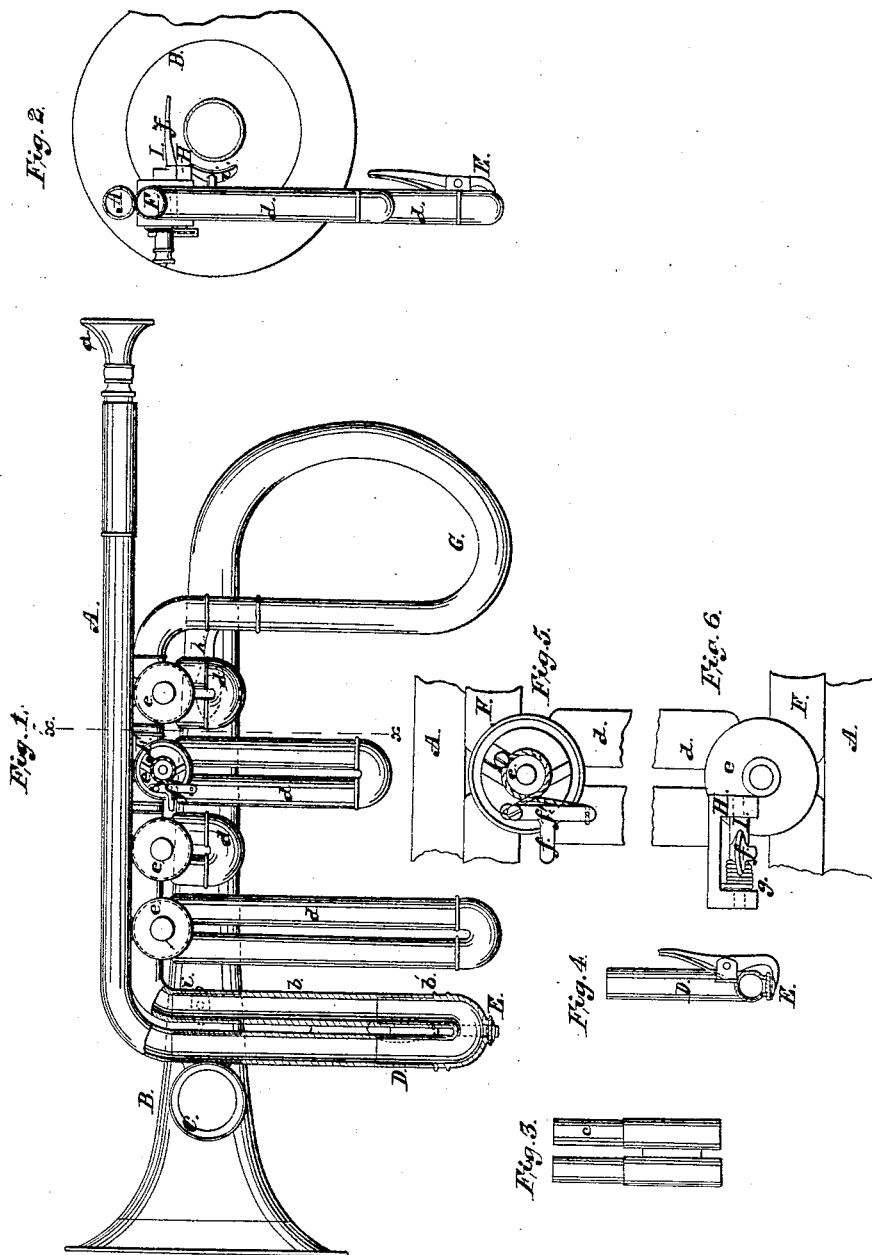


L. Schreiber,

Cornet.

N^o 49925.

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Attest:

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UNITED STATES PATENT OFFICE.

LOUIS SCHREIBER, OF NEW YORK, N. Y.

IMPROVEMENT IN CORNETS.

Specification forming part of Letters Patent No. 49,925, dated September 12, 1865.

To all whom it may concern:

Be it known that I, LOUIS SCHREIBER, in the city, county, and State of New York, have invented a new and useful Improvement in Cornets; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of a cornet made according to my invention, the tuning-pump being shown in section. Fig. 2 is a transverse sectional view taken on the line *x* of Fig. 1. Fig. 3 is a detached section of the tuning-pump. Fig. 4 is a detailed view of the water-valve at the bottom of the tuning-pump. Fig. 5 is a detailed view of one of the valves of the instrument, seen from the side presented in Fig. 1. Fig. 6 is a detailed view of the same valve, seen from the opposite side.

Similar letters of reference indicate like parts.

This invention consists in certain improvements in those musical instruments called "cornets-a-piston," and which are equally applicable to those of similar character which are played from the mouth. Among these improvements are, changing the positions of the mouth-piece tube and the tuning-pump; also, changes in the action or in the means of operating the rotating valves; also, relieving the bell from the grasp of the hand of the performer, and other changes and improvements hereinafter mentioned.

A is the mouth-piece tube of a cornet, and *a* the mouth-piece.

F is the valve-tube, placed vertically below the tube A, with which it is connected by the tuning-pump D. The crooks *d* for the different keys, four in number, in the cornet here shown are vertically below the valve-tube, the valves *e* being placed at points where they intersect the said valve-tube. Only one valve, *e*, is here shown, the places of the other valves being indicated by red outlines.

G is the curved tube which connects the valve-tube with the bell B, the two being stayed by a brace, *h*, extending from one to the other. Another brace, *i*, extends from the bell to the upper part of the tuning-pump.

C is a finger-ring, intended to receive the forefinger of the left hand. It is attached to

the upper part of the tuning-pump, and extends beyond it in a straight line.

The tuning-pump, the crooks *d*, the valve-tube F, and the mouth-piece tube A are all in the same vertical plane, and the bell is placed parallel thereto and below a horizontal line passing through the axis of the rotating valve *e*.

The curved tube G is bent in a diagonal direction at its lowest part, so as to traverse the distance which separates the plane of the valve-tube from that of the bell.

The lowest section, *b'*, of the tuning-pump D is a curved pipe and has an opening made in its lowest part on the outside of its curve, to which opening a valve, E, is fitted whose finger-piece extends upward, as seen in Figs. 2 and 4 and in dotted outline in Fig. 4. The object of this valve is to permit the escape of water from the tuning-pump, whose position and shape are such that the water and moisture which are received into or collect in the instrument will be gathered at the bottom of the section *b'* of the pump, from whence they cannot pass into the valve-tube when the instrument is held in position for playing without passing upward the entire height of the tuning-pump.

The tuning-pump D is made in sections, which connect with each other by a telescopic arrangement or by being made removable. I have in this example shown them made removable, so that the section *b* can be fitted to the upper part of the pump and the section *b'* fitted to that; or the shorter section *c* may take the place of the section *b*, or the sections *b* and *c* be both withdrawn and the section *b'* be placed directly upon the upper part of the pump. By means of these sections the instrument can be tuned to several different keys with great facility and without interfering with the purity of the instrument. A difference of half a tone may also be made by sliding the several sections *b* and *c* in or out of their joints a greater or less extent.

The key *f* of the rotating valve extends in a horizontal direction between adjacent crooks *d* and beneath the valve-tube, its finger-piece lying above and across the bell, as seen in Fig. 2, the bell being dropped to the position I have given to it to permit the key to extend across it. The key of each valve of the instrument will occupy a similar position.

The fulcrum I of the key is a short rock-shaft, to which the key is rigidly connected,

and which is journaled in a bracket or frame, H, extending from the inner plate of the valve *e* to the adjacent branch of the next crook *d*, the ends of the bracket being fastened respectively to the said plate *e* and the branch of said crook. A spring, *g*, is wound upon the shaft I in such a manner as by its tension to restore the key to its horizontal position after each depression by the finger of the performer.

When the performer is about to use the cornet, he seizes the tuning-pump and the adjacent crook *d* with his left hand, passing the forefinger through the ring C, the fourth finger then being naturally in such a position as to enable it to reach the finger-piece of the valve E with ease.

One of the advantages resulting from my invention is, that the performer can hold the instrument with more steadiness than when it is made after the usual style, with the mouth-piece tube below the bell and the crooks extending in a horizontal direction from the valve-tube. Another advantage is, that I am enabled to place the tuning-pump in a vertical position and to free the instrument from water by a valve at its bottom. This valve can be operated by the fourth finger of the left hand without changing the hand or removing the instrument from the mouth, and without interrupting the progress of the music, since the valve may be opened during an interval or rest in the piece. Another advantage is that the bell is not held or touched by the left hand, and so its vibrations are not destroyed nor obstructed, as in the present styles of instruments of this class, by reason of the manner of holding them. I thus preserve in full the character and quality of the tone. Another advantage is that I am enabled to reduce the size of the changing-crooks *d* for the different keys, owing to the position and character of the tuning-pump. Another advantage is, that the instrument can be tuned, in whatever key it is capable of being played in, with ease and without interfering with the purity of its tone. Another advantage arises from the improvement in the action—that is, the position and operation of the keys *f*, one of which is shown as an example of the whole series which may be placed in an instrument.

By placing the mouth-piece tube, the valve-tube, and the crooks in the same vertical plane I am enabled to place the axis of the valve *e* in a horizontal plane, as seen in Fig. 1, and by placing the key *f* also in a horizontal plane I am enabled to rotate the axis of the valve *e* by the simple vertical movement of the key *f*, the cross-bar *f'* being attached in a vertical position at that end of the key seen in Figs. 1 and

5, and a cord secured to its ends and embracing the axis of the valve affording the means, as in other instruments, for rotating the valve *e*. Thus the action by which the valves are operated is more simple in its construction than in other instruments of this class, the key being a straight piece extending horizontally alongside of the valve and above and across the trumpet. The left hand and forearm and elbow will naturally, when holding my instrument, be near the body and in a plane nearly vertical, instead of being extended away from the body in a horizontal position, and the instrument can be held more steadily, and the thrust of the keys will be downward in a plane nearly coincident with the plane in which the left arm is placed.

It results from the construction of the instrument above shown that the hands and arms are allowed to take easy and natural positions, and the movements of the fingers are consequently more easy.

The instrument is to be held by the left hand, the forefinger passing into the ring C, the other fingers embracing the tuning-pump, the palm lying next to the pump and to the adjacent crook *d*, and the thumb embracing that crook; or the position of that crook may be changed, if desired, so as that the hand shall not embrace it, in which case the tuning-pump may be alone used; or a rod to be embraced by the thumb may extend downward from the valve-tube between the pump and the adjacent crook *d*.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In cornets and similar musical instruments, placing the mouth-piece tube vertically above the valve-tube, substantially as above described.

2. Constructing the key or keys *f* of a straight piece and placing them in a position parallel with the axis or axes of the rotary valve or valves operated by them, substantially as above described.

3. Placing the tuning pump D in a vertical position at the termination of the mouth-piece tube, substantially as described.

4. The water-valve E in the end of the tuning-pump, substantially as and for the purpose above described.

5. The combination of the finger ring C with the tuning-pump, for the purpose of providing means for holding the instrument, substantially as above described.

LOUIS SCHREIBER.

Witnesses:

M. M. LIVINGSTON,
C. L. TOPLIFF.