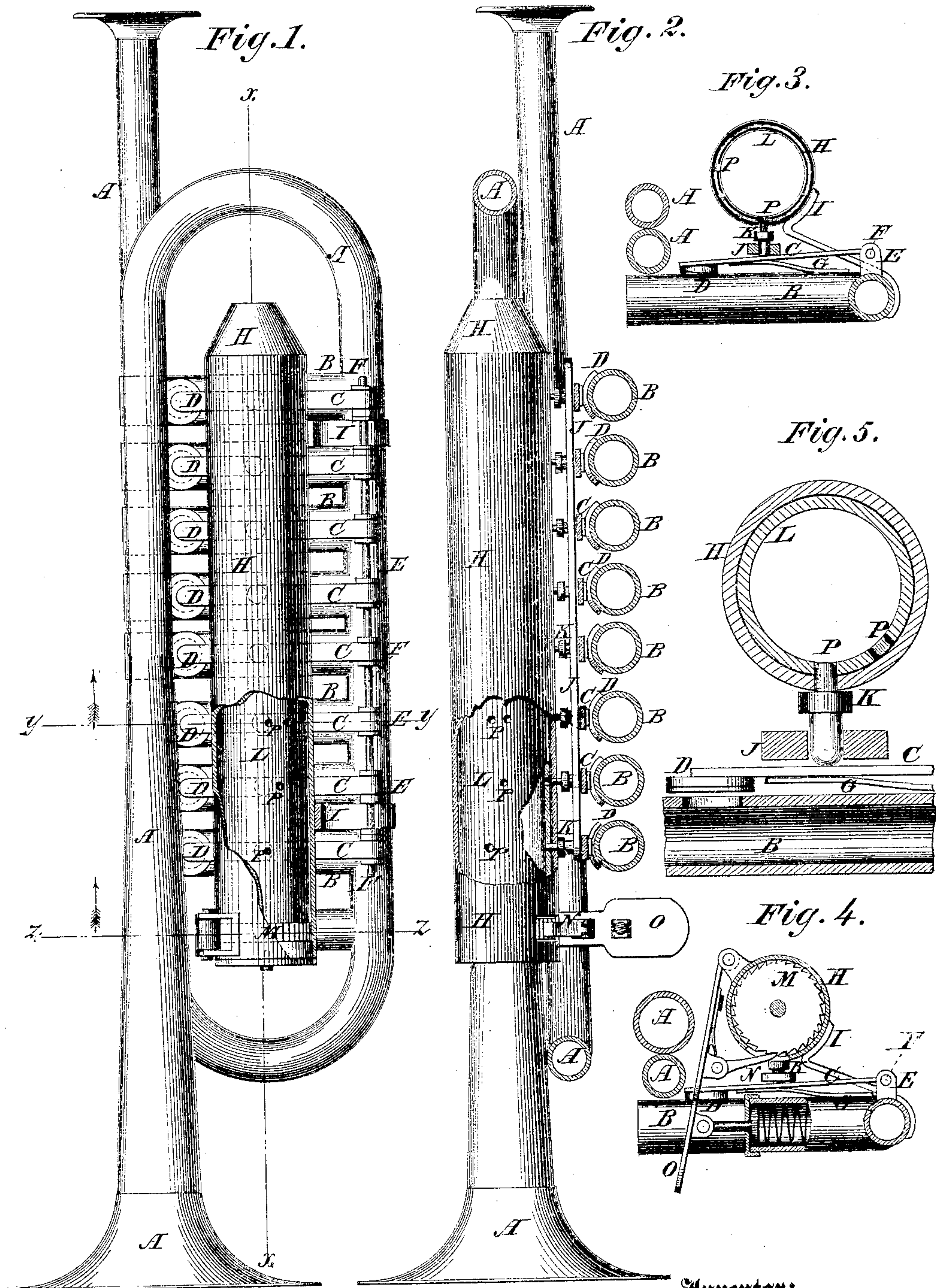


A. L. MORA.

Improvement in Musical Instruments.

No. 129,746.

Patented July 23, 1872.



Witnesses:

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# UNITED STATES PATENT OFFICE.

ANTONIO L. MORA, OF NEW YORK, N. Y.

## IMPROVEMENT IN MUSICAL INSTRUMENTS.

Specification forming part of Letters Patent No. 129,746, dated July 23, 1872.

Specification describing a new and useful Improvement in Musical Instruments, invented by ANTONIO L. MORA, of the city, county, and State of New York.

This invention relates to a new and useful improvement in musical wind instruments; and consists in the novel construction and operation of the barrel and the key mechanism of the instrument, the construction being as hereinafter more fully described.

In the accompanying drawing, Figure 1 represents a side view of a cornet to which my improvement is attached, (shown partly in section.) Fig. 2 is a longitudinal section of Fig. 1 taken on the line *x x*. Fig. 3 is a cross-section of Fig. 1 taken on the line *y y*. Fig. 4 is an enlarged view of the same. Fig. 5 is a cross-section of Fig. 1 taken on the line *z z*.

Similar letters of reference indicate corresponding parts.

A represents the instrument, which is made to sound eight notes, and is provided with a corresponding number of note-tubes, B, and keys C. D represents the valves at the ends of the keys, the construction of the keys and valves being similar to those of the ordinary cornet. The keys C are hinged to the instrument by means of the small stands E and the long wires F, as seen in Fig. 1. G represents springs attached to the note-tubes B, which bear on the under sides of the keys with a constant pressure, and with a force sufficient to raise the valves when the keys are not confined. H is a stationary tubular casing, attached to the instrument, by straps or stays I, transversely to and just above the keys. J is a bar directly over the keys, parallel with and attached to the under side of the casing. K is a loose stop-pin, resting upon each key and passing through the bar J and case H. L is the barrel within the tubular casing H, corresponding in diameter with the bore of the tube H, but which is allowed to revolve freely therein. The barrel is revolved by means of a ratchet-wheel, M, and pawl N, actuated by the finger of the performer on the spring-key O. (See Fig. 4.) Every tooth of the ratchet-wheel represents a note and one or more holes, P, in the barrel L. Every time the key O is pressed down the barrel is turned one tooth, and that

motion brings a hole in the barrel to correspond with some one of the stop-pins K, the end of which enters the hole, which allows the valve attached to the key upon which the pin rests to rise and sound the note, the instrument being all the time filled with air from the mouth of the performer. The barrel therefore revolves with an intermitting motion, so that a note may be prolonged to any desired extent without continuing the pressure, and until the key O is touched again. When the pressure ceases the stop-pin drops by its own gravity and the valve closes. The upper end of the pin is conical, and as it drops from the hole the surface of the barrel bears upon it and keeps the valve closed until the pin enters another hole, when the valve rises again, and so on throughout all the valves of the scale.

The distinguishing feature of my invention is the holes in the barrel instead of pins, and the mechanism by means of which the holes are made available. By means of these holes and by the mode of operating the barrel I am enabled to prolong any note of a tune as long as may be desired without wasting space on the barrel. The perforated barrel is much less liable to get out of order than when it acts by means of pins therein, as is usual in musical boxes and similar instruments heretofore constructed; besides, the cost is very much less.

The barrel may be perforated for any given number of tunes—ten, more or less—and receive a longitudinal movement by means of a spiral spring at the end, the same as the barrels of musical boxes. To allow of this longitudinal movement the ratchet-wheel or the pawl may be made broad so that the barrel may be revolved by the same mechanism after being moved longitudinally to change the tune.

I do not confine myself to the precise form and arrangement of the parts shown. The mechanism for turning the barrel and operating the keys may, perhaps, be varied somewhat, but without departing from my invention; nor do I confine the perforated barrel to the cornet; but I design to adapt it to various other musical instruments.

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

1. In combination with a musical instrument, the perforated barrel L, as and for the purposes described.

2. The stop-pins K, in combination with the barrel L, as and for the purposes described.

3. The keys C, valve D, stands E, and springs G, in combination with the tube B, as shown and described, for the purposes set forth.

4. The bar J and stop-pins K in combination, for the purposes described.

5. The casing H, in combination with the perforated barrel L, as and for the purpose described.

6. The ratchet M and pawl N, or mode of revolving the barrel L, substantially as shown and described.

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