

No. 624,034.

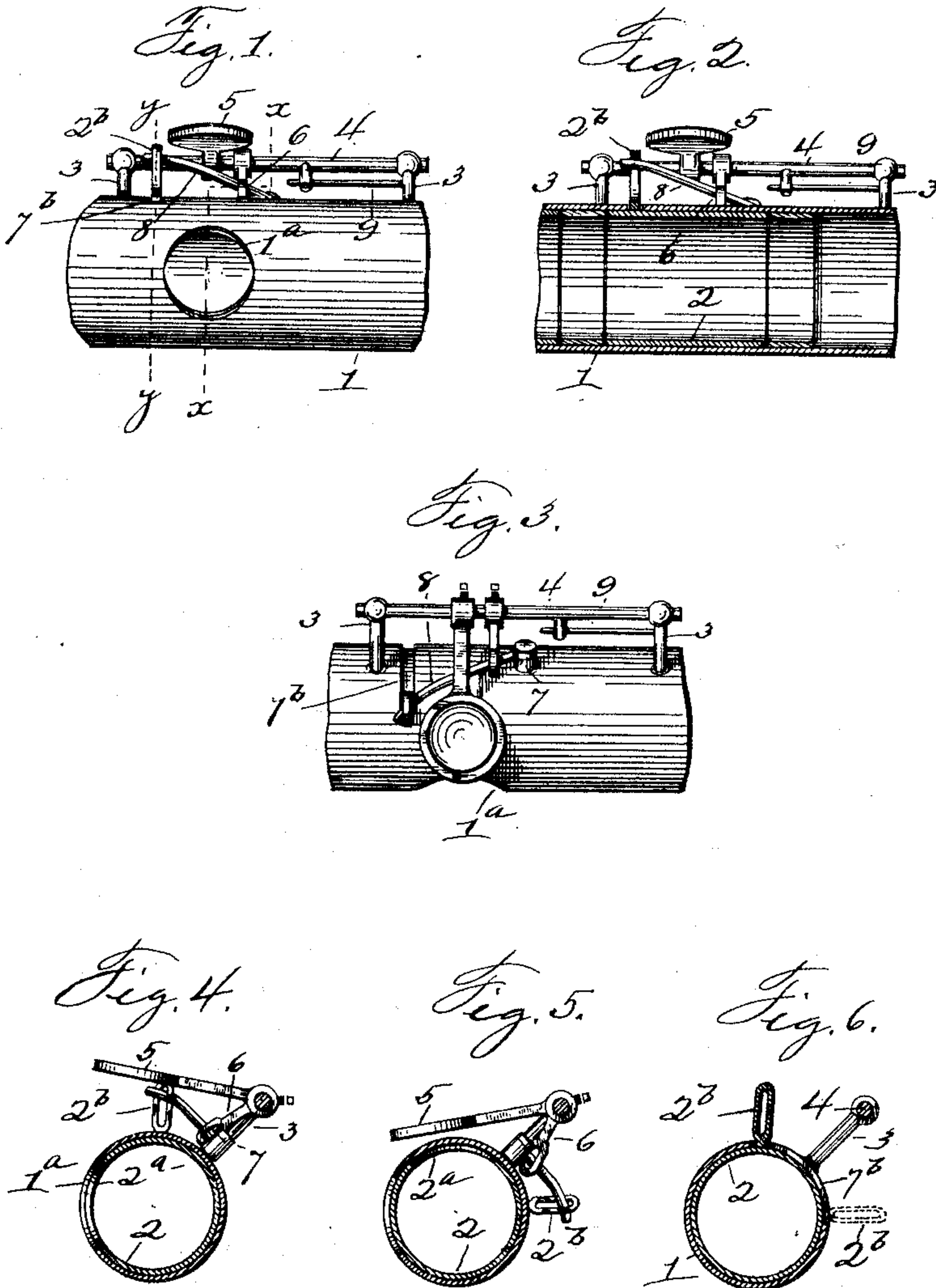
Patented May 2, 1899.

C. T. HOWE.

KEY MECHANISM FOR FLUTES OR CLARINETS.

(Application filed Feb. 10, 1898. Renewed Mar. 31, 1899.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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OF SAME PLACE.

## KEY MECHANISM FOR FLUTES OR CLARINETS.

SPECIFICATION forming part of Letters Patent No. 624,034, dated May 2, 1899.

Application filed February 10, 1898. Renewed March 31, 1899. Serial No. 711,321. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES T. HOWE, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Key Mechanism for Flutes, Clarinets, and Kindred Instruments; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates more particularly to devices for closing or opening the holes in flutes, piccolos, clarinets, and kindred musical instruments of the type commonly known as the "wood," "wind," or "reed" instruments.

My invention consists of an improved valve for closing (or opening, as the situation of the key may require) the hole in the barrel of the instrument, such hole communicating directly with the atmosphere.

In the annexed drawings, in which I have shown a small fraction only of a flute with my invention applied, Figure 1 is a side elevation of the hole side. Fig. 2 is a central longitudinal section. Fig. 3 is an exterior view, the barrel being turned so that the key is in the normal position thereof, as seen in plan. Fig. 4 is a cross-section on line *xx*, Fig. 1, the key being in its elevated or normal position and the vent-hole open. Fig. 5 is a similar sectional view showing the key depressed. Fig. 6 is a sectional view on the line *yy*, Fig. 1.

In the drawings I have shown the invention as made where the hole is normally open and to be closed by depressing the key, and in the several views the numeral 1 designates the barrel of the instrument, which is of the usual hollow cylindrical form, and 1<sup>a</sup> designates the usual vent-hole thereon. Within the barrel is a hollow cylindrical valve 2, open from end to end, that fits neatly in the barrel 1, but so as to be freely rotatable therein, the said valve also having a vent-hole 2<sup>a</sup>, corresponding substantially in diameter to the hole 1<sup>a</sup>. The valve is so placed that when rotated on its axis its hole may be brought to connect with the hole in the barrel of the instrument. The valve is shown to have a slot-

ted arm or projection 2<sup>b</sup>, that extends through a circumferential slot 1<sup>b</sup> in the barrel 1. Secured on the outer side of the barrel are posts 3, in which is journaled a shaft 4, having a key 5 adjustably secured therein. Secured on the shaft also is a slotted or forked finger 6. On the barrel, below the shaft, is a short stud or pin 7, on which swings an arm 8, the free end of which enters the slotted projection 2<sup>b</sup> of the valve, and the slotted finger 6 engages said arm 8, so that as the shaft 4 is rocked by the key 5 the valve is rotated on its axis; but an ordinary spring 9 is placed between the one of the posts 3 and the shaft 4, that tends to hold the key up in operative position.

The sections constituting the valves when placed in the flute or other instrument will form a continuous straight opening through the bore of the flute.

It will be observed that my invention dispenses entirely with pads, and therefore obviates all the disadvantages and expense incident to their use. It will also be observed that the opening from the barrel of the instrument to the atmosphere is free and direct, thereby insuring a full pure tone, with possibly a smaller vent-hole.

While I have illustrated my invention as used in a flute, it is equally useful in the other instruments of the class to which the flute belongs, which includes the piccolo, clarinet, oboe, saxophone, bassoon, &c., as contradistinguished from the class known as "brass" instruments.

What I claim, and desire to secure by Letters Patent, is—

In a flute or similar instrument a short tube open from end to end and having a hole in its side adapted to be brought into and out of coincidence with a through-opening in the side of the barrel of the instrument, combined with a key for operating the same and a spring for holding said key normally in operative position, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

CHARLES T. HOWE.

Witnesses:

GEORGE W. ALFRED,  
GEORGE M. FINCKEL.