C. G. CONN.

VALVE FOR CORNETS.

APPLICATION FILED AUG. 2, 1907.

923,812.

Patented June 8, 1909.

Fig. 1.

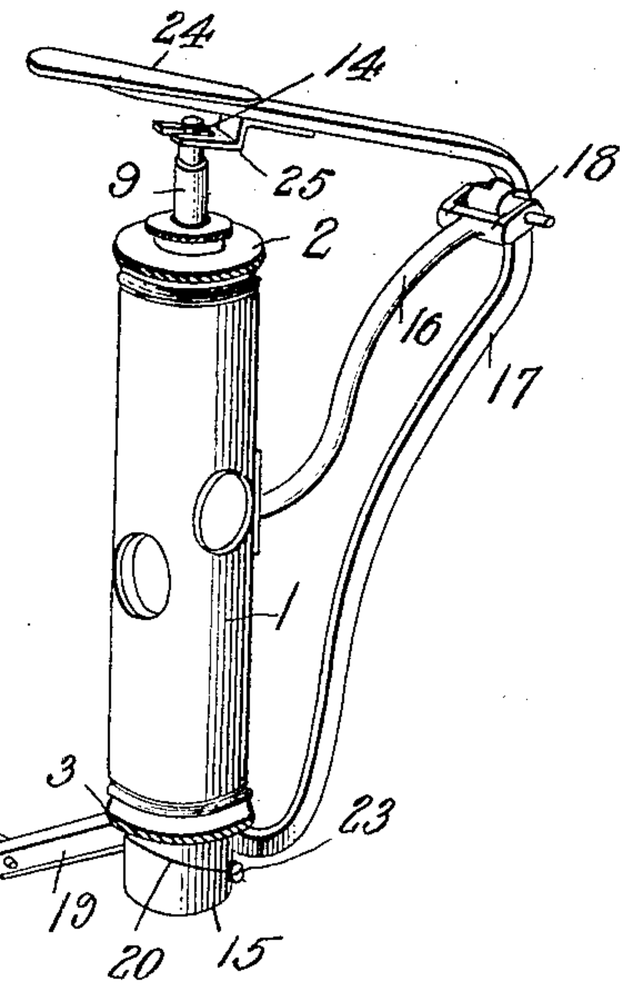


Fig. 2.

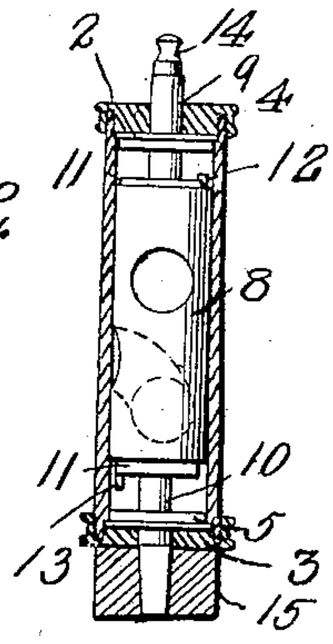


Fig. 3.

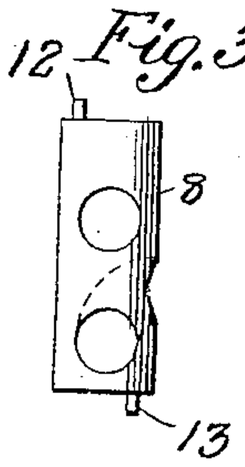


Fig 4.

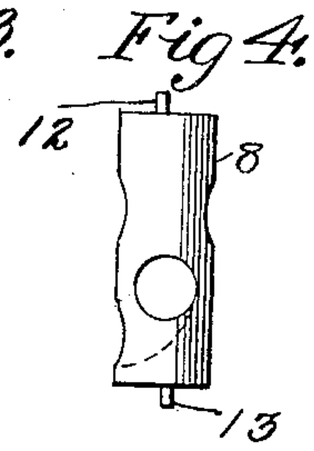


Fig. 8.

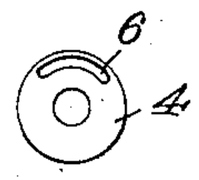


Fig. 7.

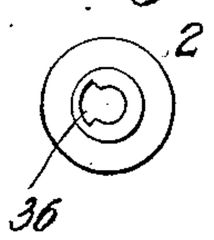


Fig. 5.

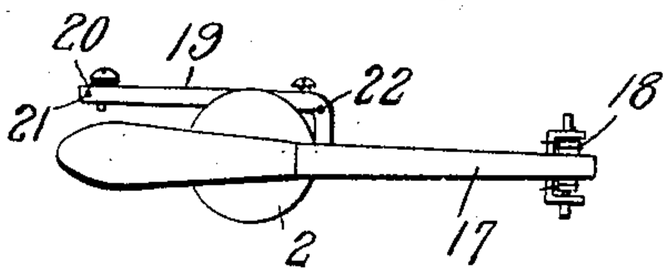


Fig. 9.

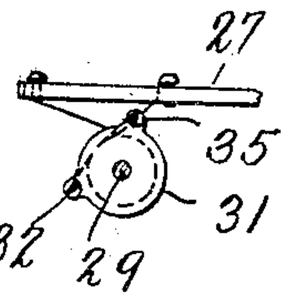
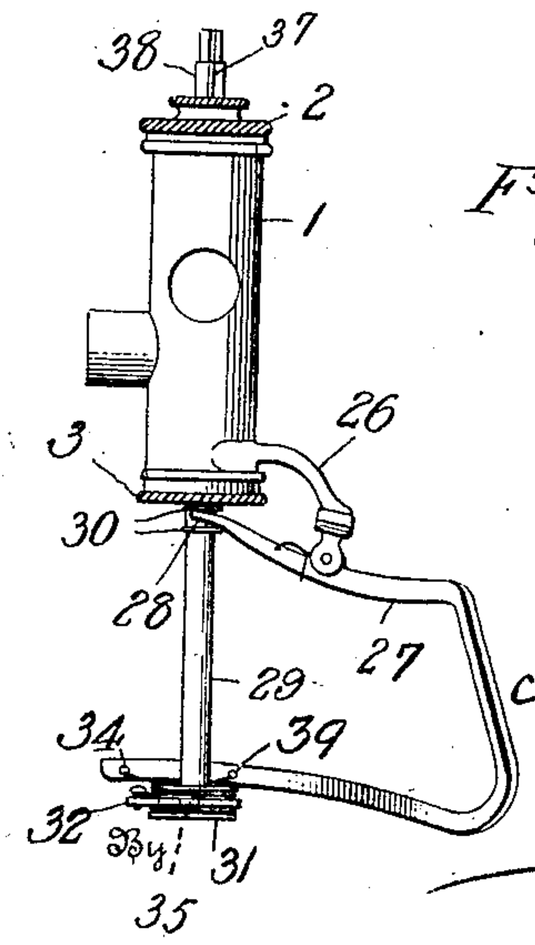


Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

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VALVE FOR CORNETS.

No. 923,812. Specification of Letters Patent. Patented June 8, 1909.

Application filed August 2, 1907. Serial No. 386,807.

To all whom it may concern:

Be it known that I, CHARLES G. CONN, a citizen of the United States, residing at Elkhart, in the county of Elkhart and State of Indiana, have invented certain new and useful Improvements in Valves for Cornets, of which the following is a specification.

As is well known, the valves heretofore in use in wind musical instruments are of two types, namely, the reciprocating piston type and the rotary type.

It is the object of my invention to produce a valve which will combine the rotary and the piston type of valves and at the same time preserve the advantages of both types, and my invention consists of means whereby upon depressing the valve in the ordinary manner of playing the piston is caused to rotate and the ports through which the sound waves are conducted from the open wind passage to the valve slides are more quickly joined, and the length of the action is thereby shortened. Through the use of this combined rotary and piston action, I am enabled to dispense with one of the ports through the piston.

In the drawing, Figure 1 is a perspective view of a valve embodying my invention. Figs. 2, 3 and 4 are views of different faces of the periphery of the piston. Fig. 5 is a detailed top plan view of the valve. Fig. 6 is an end elevation of a detached valve embodying a slight modification. Fig. 7 is a top plan view of the same. Fig. 8 is a plan view of either one of the washers 4 or 5 detached from the valve-stem. Fig. 9 is a bottom fragmentary view of the valve shown in Fig. 6.

While I have selected a cornet valve for illustrating my invention, it will be understood that my invention is equally as well adapted for all other musical wind instruments.

1 represents the valve casing or barrel which may be of any approved type and provided with the usual caps 2 and 3. At each end of the valve, I provide washers 4 and 5, each provided with an elongated slot 6 adapted to slidably engage the pins or studs 12 and 13 to be referred to hereinafter. These washers are provided with annular flanges to limit their depression in the barrel or valve casing.

8 is the piston valve, from each end of which extend stems 9 and 10. A piece of cork or other suitable packing 11 is placed on each end of the valve pistons against which the washers 4 and 5 pack. In order to limit the rotary movement of the valve piston, pins or studs, 12 and 13 are provided, projecting from the ends of the piston valve into the elongated slots 6 in the washers 4 and 5. As will be seen, there are but two ports or openings in the valve piston. The stem 9 is provided with a groove 14 near its upper end and the stem 10 is provided with a drum 15, which is secured to said stem by a screw or other suitable means.

16 is an arm extending from one side of the valve barrel or casing, the upper end of which is forked.

17 is a lever pivoted in the forked-end of the arm 16, and 18 is a spring secured between the arm 16 and lever 17, whereby said lever is actuated.

19 is an arm secured to the lower end of the lever 17 to which a cord or other suitable medium 20 is secured at its ends at the points 21 and 22. The cord is secured midway its length to the drum 15 by means of a screw 23. The drum 15 is secured to the stem 10 of the valve piston rigidly against revolution thereon, so that when the drum is revolved it carries with it the valve piston.

24 is a finger piece secured to the lever 17 at its top and provided with a forked arm 25, which is adapted to be positioned in the groove 14 at the top of the valve stem 9.

The piston valve 8 is provided with two ports, one for the open tone, the other for the valve tone.

In Figs. 6 and 7, I have shown a modified construction, wherein 26 is an arm depending from the valve casing to which is pivoted the lever 27, one end of which is forked as at 28 and adapted to embrace the valve stem 29 between the collars 30 on said stem. To the lower end of the stem 29 is rigidly secured a double groove wheel 31 provided with two arms 32 and 35 (the latter being shown in dotted lines in Fig. 6). A suitable cord is connected at one end to the arm 35, and at its other end to the extreme lower end of the lever 27 at a point 39. The intermediate portion of the cord is carried in one of the grooves of the wheel 31. Another cord is secured at one end to the arm 32 and at its other end to the point 34 of the lower end of the lever 27 with its intermediate portion in the other groove of the wheel 31. The top cap of the valve barrel or cylinder in Figs. 6 and 7 is provided with a recess 36 in which

the splined valve stem 38 works in such manner as to limit the rotation of the valve piston when depressed by the finger key.

As will be seen from the drawing, I am enabled to eliminate, by my invention, one of the ports in the usual cornet valve and obtain all the results heretofore obtained by means of but two ports in the valve piston. By my invention, I am enabled also to use one port twice, once for the open tones and again for the valve tones, inasmuch as my valve combines the rotary and piston action. By depressing the valve in the ordinary manner of playing, the pump or piston valve is caused to rotate, and the ports through which the sound waves are conducted from the open wind passage to the valve slides are quickly joined.

Having thus described my invention what I claim as new therein and desire to secure by Letters Patent is:

1. In a cornet, the combination with the valve casing; of a piston rotatable and reciprocable therein; a stem rigidly connected with said piston; a lever pivoted to the casing and provided at its upper end with a finger-piece engaging said valve-stem in such manner as to be adapted to impart a longitudinal reciprocation to said piston; a cord-drum rigidly secured to said valve-stem; and a cord connecting the lower end of said lever to said cord-drum whereby the valve piston is rotated.

2. In a cornet, the combination with the valve casing; of a piston; a valve stem for mounting the piston within the casing in such manner as to adapt the piston to be rotated and reciprocated; a lever pivotally connected with said casing; means for connecting one end of the lever with the valve-stem in such manner as to adapt it to impart a longitudinal reciprocation to said piston; and means connecting the other end of the lever with the valve-stem in such manner as to adapt it to impart a rotation to said piston.

3. In a cornet, the combination with the valve casing and a piston rotatable and reciprocable therein; of a valve stem rigidly secured to the piston and projecting without the valve-casing at either end; an arm rigidly fastened to the valve casing a bent lever pivotally carried by said arm in such manner as to bring one end of the lever adjacent to the projecting upper end of said valve stem, and the lower end of said lever adjacent to the projecting lower end of the valve-stem; a finger piece carried by the upper end of the bent lever and engaging the upper end of the valve-stem to impart a longitudinal reciprocation thereto; a cord-drum rigidly fastened to the lower end of the valve-stem; and a pair of cords attached at different points of the lower end of the bent lever and winding upon said cord-drum in opposite directions in such manner as to impart rotation in two directions to said valve-stem.

CHARLES G. CONN.

In presence of two witnesses:
W. J. GRONERT,
GERTRUDE STREGO.