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PISTON VALVE FOR CORNETS

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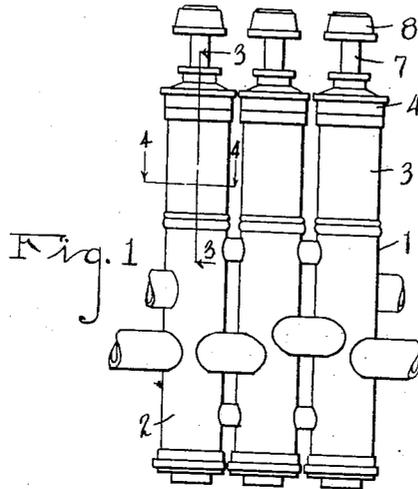


Fig. 1

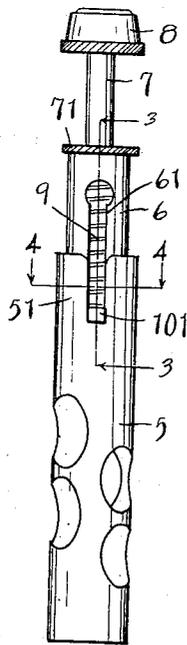


Fig. 2

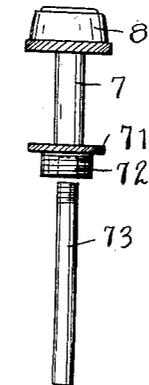


Fig. 5

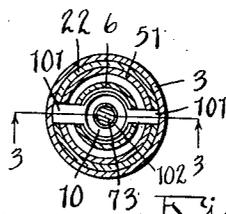


Fig. 4

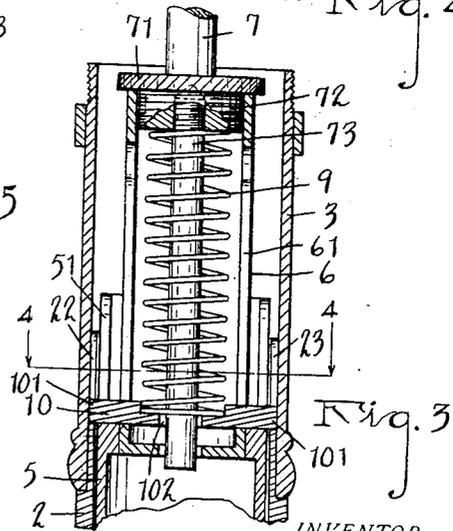


Fig. 3

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## PISTON VALVE FOR CORNETS.

Application filed April 13, 1927. Serial No. 183,361.

This invention relates to improvements in piston valves for cornets or similar wind instruments.

The object of the invention is to provide an improved piston and spring mechanism for such valves.

A further object is to provide a structure which shall be easily assembled and that will not get out of order in use and in which the key action shall be smooth and easy.

Objects relating to details of construction will appear from the detailed description to follow. The invention is defined in the claims. A structure embodying the features of my invention is illustrated in the accompanying drawing, in which:

Fig. 1 is an elevation view of a set of keys for a cornet or trumpet.

Fig. 2 is an enlarged detail elevation view of one of the valve pistons and spring mechanism removed from the valve socket.

Fig. 3 is an enlarged detail sectional view taken on line 3—3 of Figs. 1, 2 and 4, showing the detailed arrangement of piston socket and spring means, the guide cap and key button being omitted.

Fig. 4 is a detail cross-sectional view taken on line 4—4 of Figs. 1, 2 and 3, the spring being omitted.

Fig. 5 is a detail elevation view of the valve, key, stem and extension pin in disassembled relation.

The parts are referred to by their numerals of reference which are the same in all the views.

1 is the valve assembly of a cornet or trumpet. 2 is the valve casing. 3 is the baluster. 4 is the baluster cap forming the guide for the key stem. 5 is the valve piston. 6 is the spring barrel slotted at 61. 7 is the valve key stem. 8 is the key button. 9 is the return spring. 10 is the star stop member for the spring with projections 101 over which plays the vertical slot 61 in the spring barrel 6.

The piston 5 is extended at 51, 51 at each side of the slot 61 and provides an extension piston bearing surface. The valve casing 2 is provided with the usual extension bearings 22 extending up into the baluster 3. The valve stem 7 has a projecting flange or

collar 71 with a screw-threaded boss 72 on its under side forming the valve top.

The stem 7 is provided with a downwardly-extending pin 73 preferably screw-threaded thereto which serves to retain the spring 9 in line. 10 is the star stop member which has extensions 101 which extend through the vertical slot 61 and engage in recesses 23 in the valve casing extension 22. It is centrally perforated at 102 to receive the pin 73 which reciprocates therethrough.

From this description it will be seen that when the key button 8 is depressed, the valve plunger will be depressed, compressing the spring 9 against the star stop member 10. When the pressure is released the spring returns the piston to normal, the same being very effectively guided by the engagement of the projecting ends 101. Because the pin extension 73 is disposed through a central aperture in the stop plate 10, it cannot be displaced accidentally by striking the projecting ends, and the projecting ends are maintained in correct position to engage in the slots 23.

The structure can be somewhat modified without departing from my invention, as defined in the appended claims.

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

1. In a valve structure for wind instruments, the combination of a valve casing, a baluster, a piston with upwardly extended bearing surfaces at opposite sides, a spring barrel disposed between the bearing surface extensions with longitudinal slots, a spring within said barrel, a perforated star stop member within the spring barrel with extensions through the said slots to engage the casing, and a key cap with stem with a rod extension therefor disposed within the spring and extending through the said star stop member, coacting as specified.

2. In a valve structure for wind instruments, the combination of a valve casing, a baluster, a piston, a spring barrel, a spring within said barrel, a perforated star stop member within the spring barrel, and a key cap with stem with a rod extension therefor disposed within the spring and extending

through the said star stop member, coacting as specified.

3. In a valve structure for wind instruments, the combination of a valve casing, a baluster, a spring barrel, a spring within said barrel, a perforated star stop member within the spring barrel, a piston having a seat for said star stop member and having

upwardly extending bearing surface at opposite sides disposed above said star seat to cooperate with the bearing surfaces of the valve casing. 10

In witness whereof I have hereunto set my hand.

ALFRED J. JOHNSON.