

July 14, 1925.

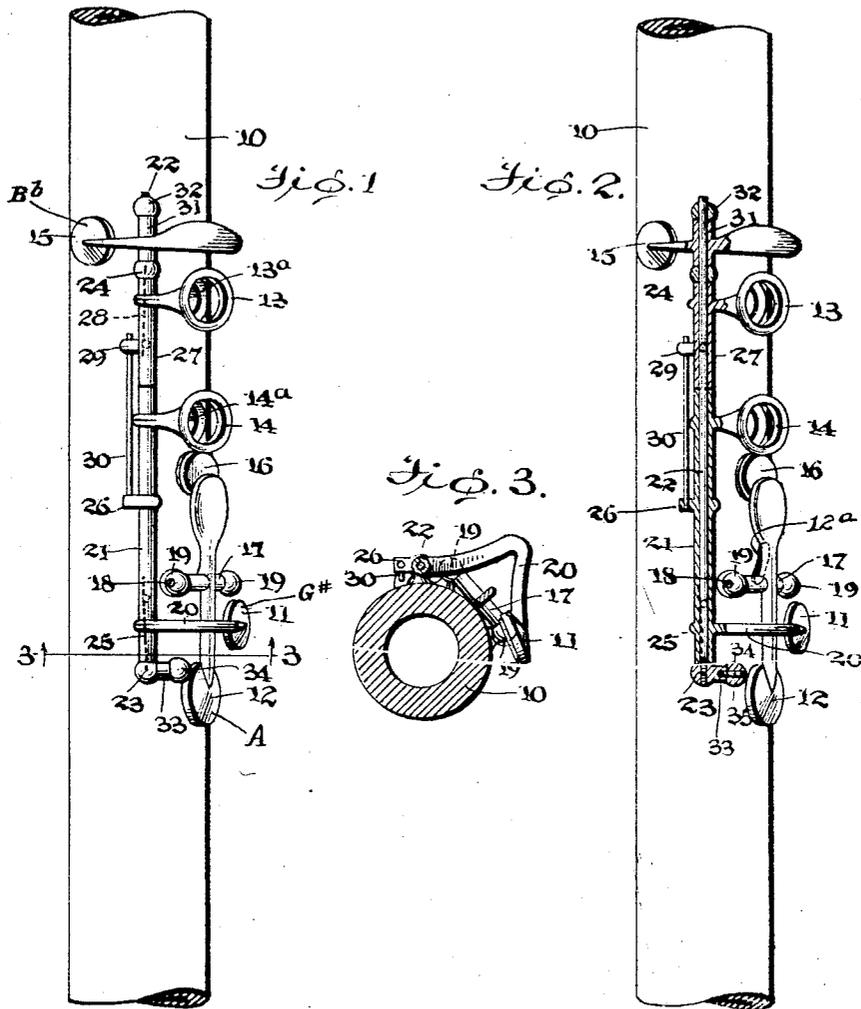
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1,546,153

CLARINET

Filed Aug. 31, 1922

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

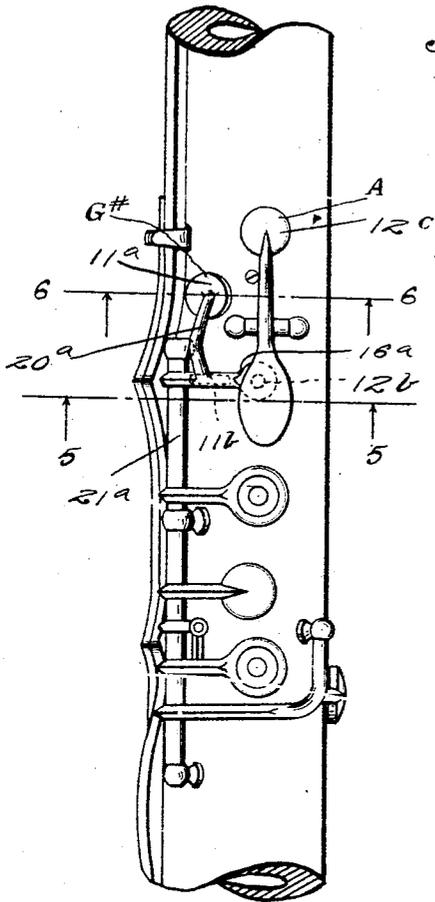


Fig. 4.

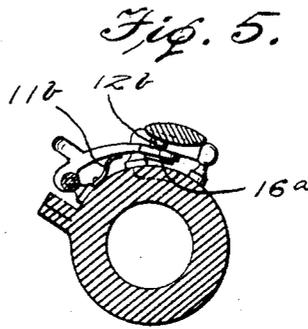


Fig. 5.

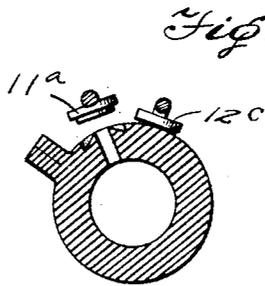


Fig. 6.

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UNITED STATES PATENT OFFICE.

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CLARINET.

Application filed August 31, 1922. Serial No. 585,386.

To all whom it may concern:

Be it known that I, WILL O. UPTON, a citizen of the United States, residing at Placerville, in the county of Eldorado and State of California, have invented certain new and useful Improvements in a Clarinet; 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.

The object of the invention is to provide a clarinet particularly of the type having ring keys in the upper joint or section with an open G sharp pad whereby in trilling particularly with the A pad it is unnecessary as in the ordinary practice to hold the G sharp key open with the same finger which operates the A pad, and otherwise to simplify the operation of the instrument; and with this object in view the invention consists in a construction and arrangement to which all clarinets of the type indicated are subject either in the original manufacture or by alteration, of which a preferred embodiment is illustrated in the accompanying drawing, wherein:

Figure 1 is a side view of a portion of a clarinet having a construction and mounting of the G sharp and other related pads constructed in accordance with the invention,

Figure 2 is a view similar to Figure 1 showing the parts particularly relating to the mounting of the pads in section or partly broken away,

Figure 3 is a transverse sectional view of the same on the plane indicated by the line 3-3 of Figure 1,

Figure 4 is a side view of a portion of a clarinet of the Boehm type fitted with pad mechanism embodying the invention and constituting a modification of that shown in Figures 1 and 2 which represents an Albert clarinet,

Figures 5 and 6 are detail transverse sectional views on the planes indicated respectively by the lines 5-5 and 6-6 of Figure 4.

Mounted upon the tube 10 of the clarinet (the drawing representing a portion of the upper joint thereof) are the G sharp pad 11, the A pad 12, the first and second ring keys 13 and 14 and the B flat pad 15, all of which are arranged in the same general relation as in the typical or conventional

forms of clarinets of the type indicated, the said ring keys being associated respectively with the finger openings 13^a and 14^a and the second ring 14 as usual carrying the supplemental key 16.

The A pad is mounted upon a rocker spindle 17 consisting as in the ordinary construction of a sleeve through which extends a rod 18 connecting the posts 19, the A pad normally being held closed by spring 12^a and being in terminal overlapping relation with the auxiliary key 16 which is held raised by the normally elevated ring key 14.

In the ordinary construction the G sharp key is normally closed and in trilling the A pad it is necessary to hold the G sharp pad open while the A pad is vibrated, and the holding of the G sharp pad according to the conventional construction of clarinets must be accomplished by the same finger which is used to vibrate the A pad. In the illustrated construction the stem 20 of the G sharp pad is carried by a sleeve 21 through which extends a pivot rod 22 in the form of a screw which connects the posts 23 and 24, said sleeve having an actuating spring 25 tending to yieldingly hold the G sharp pad open.

The same sleeve 21 carries the second ring key 14 and a lateral lug 26 serves to limit the opening movement of the G sharp pad and therefore the elevation of the ring key. The first ring key 13 is carried by a sleeve member 27 which is separate from the sleeve 21 and is actuated by a spring 28 to normally hold the ring elevated as in the ordinary practice, a stop lug 29 being carried thereby. The sleeve 27 which carries the first ring key 13 is also provided with an arm which engages the lug 26 and serves as a means of rocking the sleeve 21 carrying the G sharp pad to effect the closing of the G sharp pad when the first ring key is depressed. The B flat pad 15 is carried by a separate sleeve rocker 31 and is yieldingly held closed as in the ordinary practice, said sleeve however being carried by the same pivot rod which supports the sleeves 21 and 27 and which extends through the post 24 to the terminal post 32.

The stem 20 of the G sharp pad is arched as indicated in Figure 2 to remove it from the path of the stem of the A pad so as to permit of the free vibratory movement of the latter and the closing of the G sharp pad when either of the ring keys is de-

pressed, without locking or interfering with the motion of the A pad and in other respects the operation of the parts of the instrument corresponds with that of the conventional forms of clarinets. A short bracing sleeve 33 may as indicated be interposed between the post 23 and a supplemental post 34 connected by a screw rod 35, said post 34 being the one which in the ordinary construction of clarinets is connected with the post 19 of the A key to carry the G sharp pad. Thus the essential change in the construction of the instrument in order to maintain a normally opened G sharp pad consists in an extension of the rocker sleeve which ordinarily carries the ring keys 13 and 14 to form a support for the G sharp pad so that the latter is also normally held raised or in its open position and therefore is properly located to permit of the trilling of the A pad without manipulation of the G sharp pad.

In the matter of fingering, the only change necessitated by the modification herein disclosed resides in the fact that G natural is taken by closing the first ring key 13 and F sharp is taken by closing the first ring key and the usual thumb hole on the reverse or opposite side of the clarinet tube, whereas with the closed G sharp pad G is taken with all of the fingers off of the instrument while the F sharp is taken by closing the thumb hole alone. When the octave key is added C sharp and D of the upper register are produced like F sharp and G respectively and in this way the fingering is substantially simplified in reference to the upper notes. It is however in the trilling of A and G sharp that the most important advantage of the invention is secured in that under the ordinary practice it is necessary to open the G sharp pad with the second joint of the index finger of the left hand and trill the A pad with the first joint of the same finger at the same time whereas with the present herein-described construction it is necessary only to operate the A pad by means of the first finger.

In applying the invention to a clarinet of a Boehm type, as indicated in Figures 4, 5 and 6, which is reverse in arrangement as compared with the Albert type of clarinet shown in Figures 2 and 3, the key of A pad 12^c is provided with a depending lug 12^b to bear upon the pad arm 16^a carried by the rocker 21^a and having an arm 20^a which carries the G sharp pad 11^a, nor-

mally held open as in the form illustrated in Figures 1 and 2 by a spring 11^b or its equivalent, so that when the A pad operating arm is depressed to open the A pad valve, the G sharp pad is closed and when the A pad is released and permitted to close under its actuation spring, the G sharp pad is opened by its actuation spring 11^b. The operation of the A pad is sufficient to cause a trilling action as in the form illustrated in Figures 1 and 2, and the operation of the instrument therefore is simplified in carrying out the indicated object of the invention.

Having thus described the invention, what I claim is:

1. A clarinet of the type provided with ring keys on the upper joint, having coaxially arranged rockers, of which one carries a ring key and the other the second ring key and the G sharp pad, means for yieldingly holding the ring keys raised and the G sharp pad open, and means for communicating closing movement from the first named to the second named rocker.

2. A clarinet of the type provided with ring keys on the upper joint, having coaxially arranged rockers, of which one carries a ring key and the other the second ring key and the G sharp pad, means for yieldingly holding the ring keys raised and the G sharp pad open, and means for communicating closing movement from the first named to the second named rocker, and consisting of an arm on the former engaging a lateral lug on the latter.

3. A clarinet of the type provided with ring keys on the upper joint, having coaxial rocker sleeves mounted upon a common pivot rod, one of said sleeves carrying the first ring key and the second sleeve carrying the second ring key and the G sharp pad, yielding means for maintaining the said ring and G sharp pads in the raised or open positions, a stop for limiting the opening movement of the first ring key, and a connection between the rocker sleeve of the first ring key and the second rocker sleeve whereby closing movement of the first ring key will effect closing movement of the G sharp pad.

In testimony whereof I affix my signature in presence of two witnesses.

WILL O. UPTON

Witnesses:

JOHN HORN,
GEO. TAGTMEIR.