

This structure I call a floating lever carrier. A lever 36 is pivoted in a floating manner by means of the rod 35 to this carrier, said floating lever having parallel arms which are connected by a transverse bar 37 and are mounted on the ends of the pivot pin 35. One of said arms is designated 38 and is connected with the arm 12 of the octave hole stopper 6 by a pivot pin 39 on said arm 12 and a block 40 fitting said pin and slidingly contained in a notch 41 in the arm 38, thus forming a closed mechanical pair, by which movement is transmitted positively in either direction between the floating lever and the arm 12. The other arm 42 of the floating lever extends to the under side of the instrument body and has a projecting finger 43. The arm 42 normally abuts against the body of the instrument and is urged toward that position, the key 31 being at the same time raised, by a spring 44 set in the post 30 and engaged with a hook 45 on the sleeve 28.

The octave hole cover 8, that nearest to the reed or blowing end of the instrument, is carried by a lever 46 pivoted on an axis 47 between posts 48 and 49 on the mouth tube. The octave hole cover 7 is carried by a lever 50 pivoted on an axis 51 between posts 52 and 53 on the mouth tube. These two levers are appropriately shaped and offset to clear one another, substantially as shown in the drawings. A floating lever 54 is connected with both said levers 46 and 50 by means of pins 55 and 56 on the respective levers, which occupy slots in the opposite ends of the floating lever and are fitted with slide blocks 57 and 58 which fit slidingly in the slots of the floating lever and serve to transmit motion and pressure positively in either direction between the floating lever and the octave key levers 46 and 50.

The floating lever is fulcrumed between its ends on a pivot rod 59 carried by two arms 60 and 61, which are secured to a sleeve 62 having bearing on a pivot rod 63 mounted in posts 64 and 65 on the mouth tube. Said arms 60 and 61 extend to positions flanking the mouth tube near its junction with the body tube, and they are joined rigidly to the ends of a curved rod or semi-ring 66 which passes around the under side of the instrument, the whole assemblage forming a pivoted rigid floating lever carrier. The floating lever is positioned properly, approximately midway between the arms 60 and 61, by a sleeve or sleeves 67 extending between the said carrier arms and secured to the floating lever. A leaf spring 68, (Fig. 4), is fastened at one end to one arm of the floating lever 54 by a screw 69, and its opposite end bears against a pin or equivalent abutment 70 on the stopper-carrying lever 50, so located that the reaction of the spring in a section between the axis 51 of lever 50 and

the coupling pin 55 urges the floating lever away from the tube 10 and the stopper-carrying arm of lever 50 toward the tube. In this embodiment, such location of the abutment is at the opposite side of the fulcrum points of both the lever 50 and the floating lever 54 from the point of connection 69, as most clearly shown in Fig. 4, where the abutment 70 appears at the left of both fulcrum pivots 51 and 59, while the connection 69 is at the right of these fulcrum pivots. It follows from this condition that the single spring 69 tends to close both stoppers 7 and 8, and normally holds them closed. In doing so, it exerts a downward pressure on the pin 70, and an upward pressure on the floating lever. This pressure being communicated to the right hand arm (with reference to these drawings) of the lever 46, closes the stopper 8, which then stops the lever 46 and makes of the pin 55 a rigid abutment for the lefthand arm of the floating lever, preventing it from rising further, and causing the pressure of the spring to be exerted upwardly on the righthand arm of the lever 50, closing the stopper 7 also. The forces exerted on the lever 50 by the spring through the abutment pin 70 and through the coupling pin 56, both act in the same manner, tending to turn said lever in the direction which closes the stopper 7. The spring also acts through the floating lever fulcrum 59 on the carrier 60, 61, tending to raise said fulcrum and move the central part of the semi-ring 66 toward the body. A curved bar or semi-ring 71 is fastened to the righthand end of lever 50, and its ends partially embrace the lower end of the mouth tube. Conveniently, the bars or semi-rings 66 and 71 are approximately in the same plane, and in a position similar to that occupied by rings used on the mouth tube part of octave key mechanisms heretofore produced. Equivalent effects are obtained by reversing or inverting the manner of mounting the spring 68 and locating the floating lever in other positions; for instance, securing the spring to the lever 50 and connecting the floating lever to or by the abutment 70; or by means of other types of floating lever invented by me and elsewhere disclosed; wherefore it is to be understood that the foregoing detailed description is not to be taken as a limitation of my claims beyond the necessary meaning of their terms as interpreted in view of the position of this invention in the art.

The member shown at 72 in Figs. 1 and 2 is a slotted post mounted on the mouth tube to protect the long arm of lever 46 from being accidentally bent or otherwise displaced.

On the body tube of the instrument is mounted a sleeve 73 pivoted on a rod supported by posts or pillars 74, 75 and others.