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WOOD WIND INSTRUMENT

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1 Claim. (Cl. 84—385)

This invention relates to musical instruments of the woodwind type, and is illustrated as embodied in a saxophone.

An object of the invention is to improve the mounting of a group of keys controlling G-sharp, low B-flat, low B, and low C-sharp, to facilitate their manipulation by the player. Preferably these keys are in the form of four closely-adjacent plate-like keys approximately in the same plane and all of which are mounted on pivots which are parallel to each other and arranged crosswise of the instrument. Thus all four keys swing in arcs in the same direction when they are operated, thus adding to the facility with which the player can operate them smoothly, especially in very rapid passages. The pads for the corresponding four tone-holes are usually mounted on pivots extending lengthwise of the instrument, and means is provided for operating them when the above-described keys are depressed.

The above and other objects and features of the invention will be apparent from the following description of a saxophone shown in the accompanying drawings, in which:

Figure 1 is a perspective view of a saxophone, all of the key mechanism being omitted except that having to do with the present invention;

Figure 2 is a development in a single plane of the key mechanism embodying the present invention;

Figures 3 and 4 are transverse sections through the instrument on the lines 3—3 and 4—4 of Figure 2; and

Figure 5 is a partial longitudinal section on the line 5—5 of Figure 2.

The invention is shown in the drawings as embodied in a saxophone which is an improvement on the instrument shown in Loomis Patent No. 2,055,382, issued September 22, 1936. In order to avoid confusion in the disclosure, all of the key mechanism is omitted except that having to do with the present invention; it will be understood, of course, that the usual key mechanism for the other notes is, however, to be provided.

The instrument illustrated is formed with the usual tapering tubular body 10, having a flaring bell 12 at one end and with a mouthpiece 13 at the other end. The present invention relates to the mounting and operation of a G-sharp key 14, a low B-flat key 16, a low B key 18, a low C-sharp key 20, and the various parts associated therewith.

These four keys are preferably in the form of plates all substantially in the same plane, and are shown provided with rollers 22 to facilitate passing the player's finger from one to another. An important feature of the present invention relates to making this passage from one of these keys to another easier and smoother, by mounting the keys as described below so that they turn about pivots which are all parallel to each other crosswise of the instrument.

In the particular arrangement shown, the key 14 is arranged to operate the normally-closed G-sharp pad 24. The key 14 is secured rigidly on the upper end of a lever 26 extending lengthwise of the instrument and mounted on a pivot 28 extending crosswise of the instrument. The upper end of the lever 24 is relatively close to the body of the instrument, as shown in Figure 5, and is provided with a lug 30 faced on its lower surface with suitable non-metallic material; this lug engages the body of the instrument when key 14 is depressed, to determine the height to which pad 24 is lifted.

The lever 26, below the pivot 28, has a rigid extension 32 spaced further from the body of the instrument to clear two other pivots described below, and which engages (through a suitable pad of non-metallic material) a lug 34 on a lever 36 carrying the G-sharp tone-hole cover or pad 24. The lever 36 extends crosswise of the instrument, and is mounted on a vertical pivot 38. A spring 40 normally holds the key 14 in its raised position, and a weaker spring 42 acts on the pivot 38 to raise the pad 24 when the key 14 is depressed.

The instrument is shown provided also with a G-sharp trill key 44. Ordinarily the key 14 and the three adjacent keys described below are operated by the little finger of the player's left hand, and the trill key 44 is arranged so that it can be operated by one of the fingers of the player's right hand. The key 44 is carried by a lever 46 fixed on a long pivot sleeve 48 mounted on a pivot rod of usual form.

Part of the pivot sleeve 48 is directly above the pivot 38 of lever 36, and in Figure 2 is partly broken away to show pivot 38. The upper end of the pivot sleeve 48 has rigidly secured thereto an arm 50 overlying a projection 52 extending outwardly from the lever 26, so that manipulation of the key 44 against the resistance of a spring 49 operates the G-sharp pad 24 through the lever 26.

The key 16 is a relatively large one, and has a part just below one end of the key 14, and another part extending crosswise of the instrument below the keys 18 and 20. It is mounted on the upper end of a lever 54 mounted on a pivot 56