Sept. 10, 1940. M. A. STOVER 2,214,089

CLARINET PAD CONTROL

Filed Feb. 25, 1939

Fig. 1

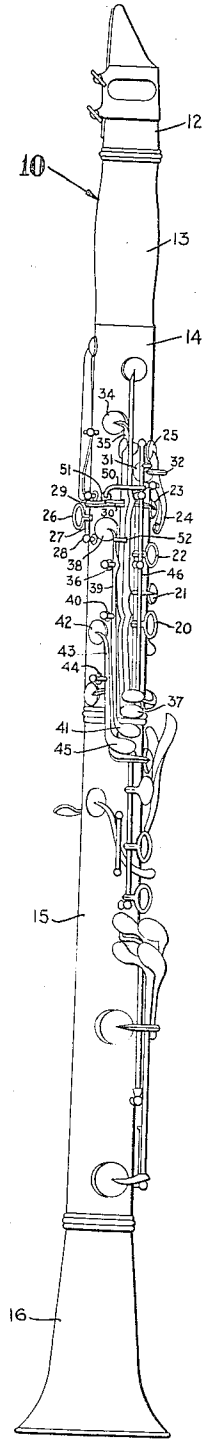


Fig. 3

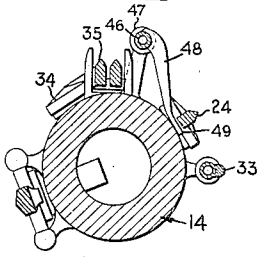


Fig. 4

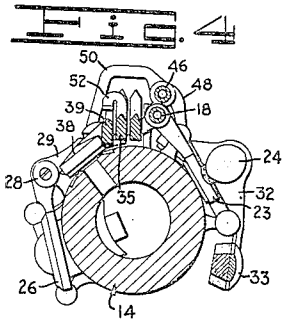


Fig. 5

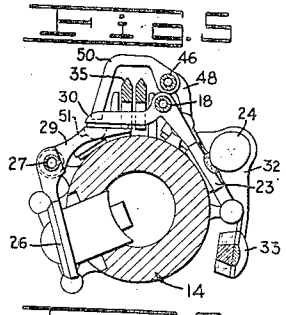


Fig. 6

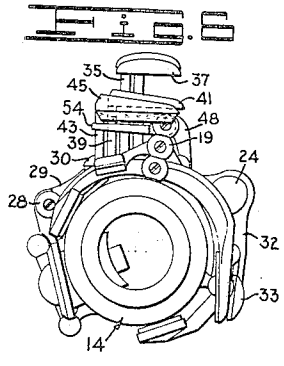


Fig. 7

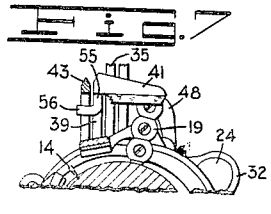
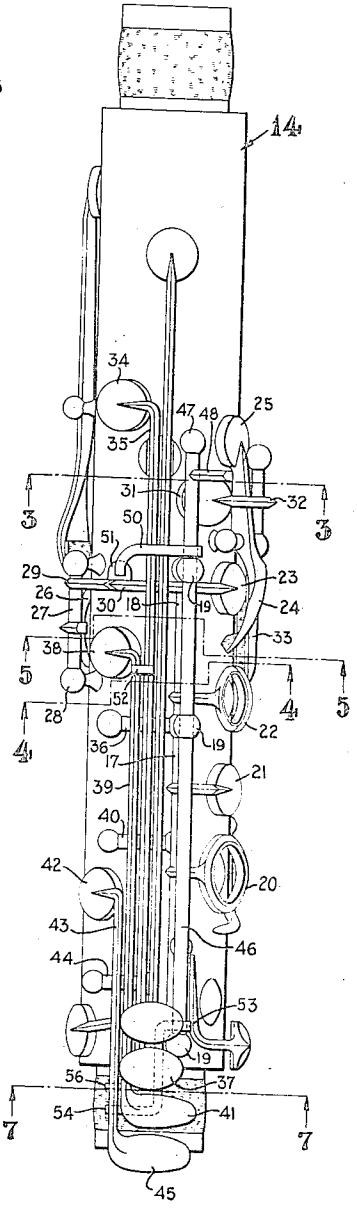


Fig. 2



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CLARINET PAD CONTROL

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2 Claims. (Cl. 84—382)

This invention relates to musical instruments.

The general object of the invention is to provide an improved control means for musical instruments such as a clarinet.

A more specific object of the invention is to provide a novel fingering apparatus for musical instruments such as the clarinet.

Another object of the invention is to provide a musical instrument including tone controlled means and means for operating the tone control means and wherein the operating means when moved performs an additional function.

Other objects and the advantages of this invention will be apparent from the following description taken in connection with the accompanying drawing, wherein:

Fig. 1 is an elevation of a clarinet embodying the features of my invention;

Fig. 2 is an enlarged elevation of the upper section of the clarinet shown in Fig. 1;

Fig. 3 is a section taken on line 3—3, Fig. 2;

Fig. 4 is a section taken on line 4—4, Fig. 2;

Fig. 5 is a section taken on line 5—5, Fig. 2;

Fig. 6 is an end view of the upper section shown in Fig. 2; and

Fig. 7 is a fragmentary section taken on line 7—7, Fig. 2.

Referring to the drawing by reference characters I have indicated a clarinet embodying the features of my invention generally at 10. The clarinet 10 is of a standard type and includes the usual mouthpiece 12, barrel 13, upper section 14, lower section 15 and bell 16.

My invention concerns the fingering of some of the levers in the upper section 14 which is shown in Fig. 2 disengaged from the various other sections of the clarinet.

As shown the section 14 includes the usual shafts 17 and 18 rotatably supported by bearing posts 19. The shaft 17 has the usual D tone ring 20 and pad 21 thereon and the shaft 18 has the usual E tone ring 22 and pad 23 thereon.

The section 14 further includes the usual lever 24 and pad 25 for producing the A tone and the F tone ring 26 which is secured to a rocker shaft 27 supported by posts 28. The shaft 27 has the usual arm 29 thereon which extends towards the pad 23 and underlies the usual extension arm 30 from the pad 23. Thus when the ring 26 is depressed the pad 23 is depressed through the medium of the arms 29 and 30. The G♯ tone pad 31 has the usual arm 32 which overlies the key lever 24 and connects it to the key lever 33. Thus when the key lever 24 is rocked to open the pad 25 it raises the arm 32 and opens the pad 31.

The B flat pad 34 is operated by a lever 35 pivoted as at 36 and has a finger key 37 thereon. The F♯ tone pad 38 is operated by a lever 39 pivoted as at 40 and has a finger key 41 thereon. The E♭ tone pad 42 is operated by a lever 43 pivoted as at 44 and has a finger key 45 thereon.

Above the shaft 17 I provide a shaft 46 which is supported by the bearing posts 19 and a bearing post 47. Adjacent the pad 25 I provide an arm 48 on the shaft 46, the free end 49 of which is positioned below the key lever 24 (see Fig. 3).

Adjacent the arms 29 and 30 I provide an arm 50 on the shaft 46 which bridges the lever 35 and extends downwardly at one side of the arms 29 and 30 to within a predetermined distance above the arm 29 (see Fig. 5). Below the end of the arm 50 I provide a boss 51 on the arm 29.

Adjacent the pad 38 I provide an arm 52 on the lever 35 which extends over the lever 39 and is spaced a predetermined distance thereabove as clearly shown in Fig. 4. The distance the arm 52 is positioned above the lever 39 is such that the key 41 may be depressed sufficiently to open the pad 38 but upon further movement the lever 39 will engage the arm 52 and raise the lever 35 to open the pad 34 to produce the note B♭.

Near the end of the shaft 46 and adjacent the keys 41 and 45 I provide an arm 53 which extends to a position under the key 41 where it includes a finger portion 54 which extends outwardly beneath the lever 39 and is spaced a predetermined distance below the key 41 and the lever 39. The distance the finger 54 is positioned below the key 41 and the lever 39 is such that the keys 41 and 45 may be depressed sufficiently to open their respective pads 38 and 42 without moving the finger. But upon further depression either the key 41 or the key 45 or both will move the finger 54 downwardly which in turn through the medium of the arm 53 will rock the shaft 46 to cause the arm 48 to move upwardly and the arm 50 downwardly. When the arm 48 moves upwardly it raises the A tone pad 25. The previously described second downward movement of the lever 39 also opens the pad 25 by moving the finger 54 and arm 53 downwardly thereby rocking the shaft 46 which in turn actuates the arm 48.

When the thumb depresses the ring 26 the boss 51 contacts the arm 50 and prevents rotation of the shaft 46. Although the shaft 46 is prevented from rotating the keys 41 and 45 may be depressed until they engage the finger 54 thus allowing the normal fingering of the notes E♭ and F♯.

Adjacent the key 41 I provide a depending arm

55 on the lever 39 having an angularly bent finger portion 56 which extends transversely below the lever 43 (see Fig. 7). The distance the finger 56 is positioned below the lever 43 is such that the key 45 may be depressed sufficiently to open the pad 42 without contacting the finger 56. But upon further depression the key 45 will move the finger 56 and arm 55 downwardly which in turn rocks the lever 39 to open the pad 38.

With the ordinary method of fingering the note A is made by pressing the key 24 with the first finger of the left hand. Therefore when note A is preceded by one requiring the use of the same finger upon the ring 22 it is necessary for the finger to make a rolling or sliding movement which is difficult to do in rapid passages. With my device it is possible to make the note A by pressing the key 45 with the first finger of the right hand which makes the execution of the above described passages quite simple.

With the ordinary method of fingering the note B♭ is made by pressing the key 24 with the first finger and the register key with the thumb which is difficult. With my device it is possible to produce the note B♭ by pressing the keys 41 and 45 with the first finger of the right hand which greatly simplifies the fingering of many passages.

From the foregoing description it will be apparent that I have provided a musical instrument wherein the construction is simple and positive in action and requires no additional keys, pads or springs but only one additional moving element and therefore it is easy to adjust and not liable to get out of order.

A feature of my device resides in the fact that it has great advantage not merely in extreme and unusual instances which seldom occur in playing, but in many instances and passages such as are often encountered in ordinary playing and the player, due to the fact that nothing has been added to the instrument to get in the way of his fingers, is practically unaware of the addition and moreover the ordinary fingering is not altered and further all tones are perfect in intonation and in tone quality which is not always the case when special fingering is resorted to with the former type of instrument.

Having thus described my invention I claim:

1. In a clarinet of the Boehm type including E♭ and F♯ keys movable from a first normal position to a second position and from the second position to a third position, said keys being operable to produce the notes E♭ and F♯ when the respective keys are moved from the first normal position to the second position, said clarinet including elements operable to produce the notes A and B♭, and movably mounted members on the clarinet and disposed in the path of movement of the E♭ and F♯ keys and engageable upon movement of the E♭ and F♯ keys when moved to the third position to cause said elements to produce the notes A and B♭.

2. In a clarinet of the Boehm type including E♭ and F♯ keys movable from a first normal position to a second position and from the second position to a third position, said keys being operable to produce the notes E♭ and F♯ when the respective keys are moved from the first normal position to the second position, said clarinet including elements operable to produce the notes A and B♭, and movably mounted members on the clarinet and disposed in the path of movement of the E♭ and F♯ keys and engageable upon movement of the E♭ and F♯ keys when moved to the third position to cause said elements to produce the notes A and B♭, and a finger controlled member on the clarinet to normally prevent movement of the keys from the second to the third position.

MURRAY A. STOVER.