June 24, 1941. C. LINDEBERG 2,247,200

SHIFT MECHANISM FOR ACCORDIONS

Filed May 2, 1940

FIG. 1

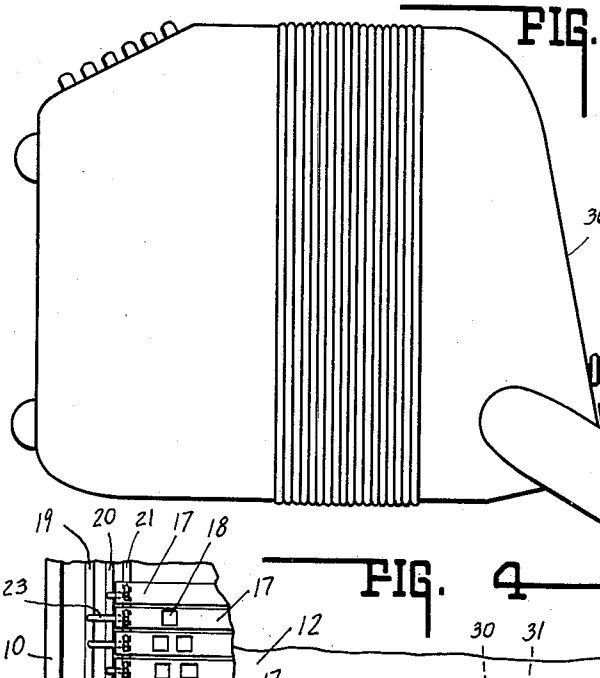


FIG. 2

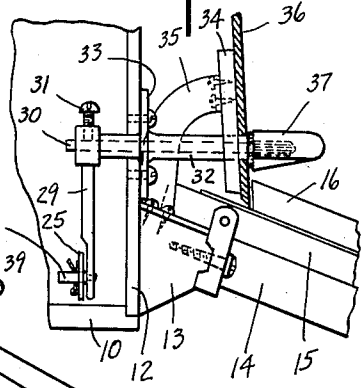


FIG. 4

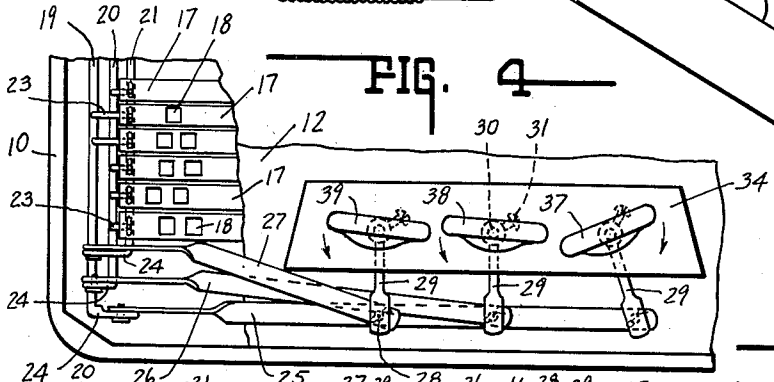
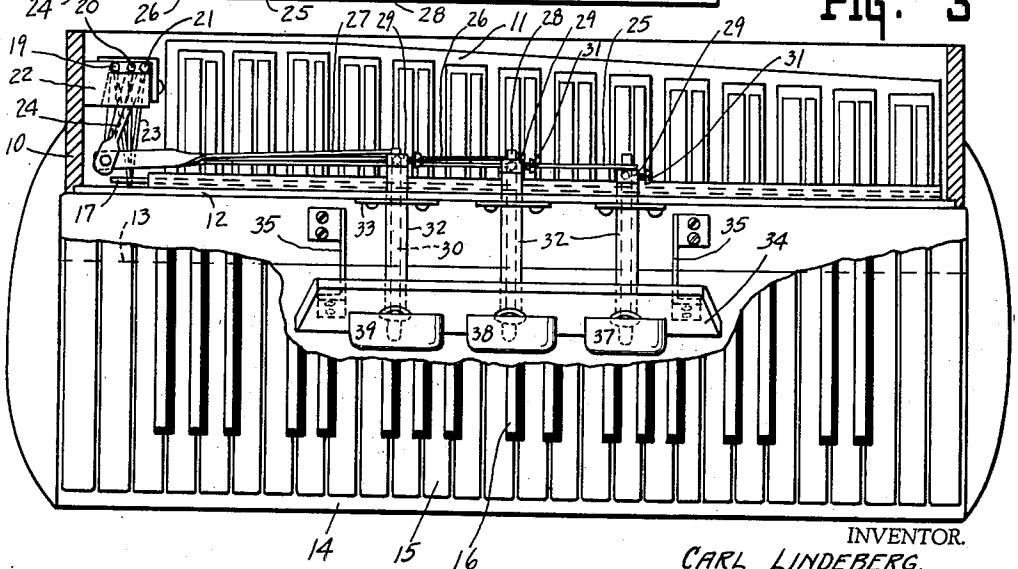


FIG. 3



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Patented June 24, 1941 2,247,200

UNITED STATES PATENT OFFICE

2,247,200

SHIFT MECHANISM FOR ACCORDIONS

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Application May 2, 1940, Serial No. 332,934

2 Claims. (Cl. 84—376)

This invention relates to the shift buttons and mechanism for operating the slide valves in an accordion, such as those associated with the treble reed blocks, and particularly to the arrangement and mounting thereof.

The object of the invention is to so construct and position the shift buttons with respect to the piano keyboard of the accordion as to render them self indicating of the valve position and more convenient for manipulation to open or close the valves with substantially the same finger movement as employed upon the keyboard. This is accomplished by supporting the shift buttons adjacent the keyboard within convenient reach of the fingers, and pivotally mounting them centrally of and intermediate their ends for permitting of their oscillation. Thus, with the same finger movement as applied to the keyboard, the buttons may be oscillated from one position to another about their pivotal mountings, the direction of oscillation being substantially the same as the direction of movement of the piano keys. Furthermore, the relative positions of the buttons readily indicate the corresponding relative positions of the several slide valves actuated thereby.

A further feature of the invention resides in the simplification and minimizing of space and mechanical parts for transmitting movement between the actuating buttons and slide valves. This is accomplished by requiring only the oscillation of a swivel pin extending through a round hole in the valve plate, which pin may be directly connected with the valve actuating mechanism within the treble box.

The full nature of the invention will be understood from the accompanying drawing and the following description and claims:

Fig. 1 is an end view of an accordion showing the relative position of the buttons with respect to the keyboard. Fig. 2 is a section through a portion of the accordion, showing the mounting of the buttons thereon. Fig. 3 is a front view of a portion of the accordion with the gallery removed. Fig. 4 is a top view of the treble box with a portion of the valve plate broken away and showing one of the buttons in actuated position.

In the drawing there is illustrated an accordion having the usual treble box 10, valve blocks 11 and valve plate 12. Secured to the treble box through the block 13, and extending angularly therefrom, there is a key bed 14 carrying the usual natural keys 15 and sharp keys 16. The valve plate 12 is provided with the usual valve openings controlled by finger key valves manipulated by the keys 15 and 16, which valves and openings are of the usual character, but for sake of clearness are not shown in the drawing.

In addition to the usual key actuated valves, each of the reed blocks 11 is provided with a pair of slide valves 17, one for opening and closing the valve openings controlled by the natural keys, and the other for those controlled by the sharp keys. Said slide valves are of the usual character provided with spaced ports 18. Also in the usual manner, said valves are controlled by a series of transversely extending rock shafts 19, 20 and 21 mounted for oscillation within a bracket support 22.

Each of said rock shafts is provided with a pair of shift pins 23 extending therefrom into operative engagement with the ends of their respective slide valves 17. The end of each of said rock shafts terminates in a laterally extending arm portion 24, which arm portions are pivotally connected with the connecting rods 25, 26 and 27 for oscillating the rock shafts 19, 20 and 21, respectively. The opposite ends of said connecting rods are pivotally connected through their respective pins 28 with the swivel arms 29 at their free ends.

Said swivel arms 29 are secured to the swivel pins 30 by the set screws 31. Each of said swivel pins 30 extends through and is rotatably supported within a bearing sleeve 32 protruding from the interior of the treble box through the valve plate 12 and secured thereto by a bracket plate 33.

Spaced from the valve plate there is provided a bearing plate 34 which is secured to the key bed block 13 by the supporting brackets 35 over which the gallery 36 extends for housing the valve plate and the key actuated valves (not shown).

Each of the swivel pins 30 has its free end protruding through the gallery 36 beyond the bearing sleeve 32, and is provided with a knurled end for receiving the shift buttons 37, 38 and 39, whereby said shift buttons will be securely locked against relative rotation with their respective swivel pins.

From the foregoing, it will be observed that the button 37 is adapted to actuate connecting rod 25 and rock shaft 19. The button 38 actuates connecting rod 26 and rock shaft 20. Button 39 actuates connecting rod 27 and rock shaft 21.

Each of said buttons is pivotally mounted over the valve plate 12 and adjacent the keys 15 and

16. It is substantially flat to provide finger engaging wings extending laterally to each side of its pivotal mounting. In normal or valve open position, the finger wings of the buttons extend substantially in alignment with each other and substantially parallel with the plane of the keyboard. In Fig. 4 the two left-hand buttons 38 and 39 are shown in their normal position with their corresponding valves in open position. To close one or the other of said valves, said buttons have their left-hand wings engaged by the fingers to swing such button in the direction of the arrow to the position in which button 37 is shown, whereupon its respective valve will be moved to closed position. When it is desired to open such valve, the button which is in the position of button 37 has its right-hand wing engaged by the finger for swinging it in the direction indicated by the arrow in conjunction with button 37. This movement will return the button and valve to normal open position. It will be observed that the finger engagement of one or the other laterally-extending wings of the button and its movement will be in the direction of the finger action on the keys 15, 16, as best illustrated in Fig. 3.

By this arrangement, the valves may be moved to open or closed position through their respective valve actuating buttons by the same finger movement and in the same direction as the fingers operate the keys 15, 16, depending upon which of the laterally-extending wings of the button is engaged. Furthermore, it will be noted that the action of the buttons involves merely the oscillation of a swivel pin extending through a round hole in the valve plate whereby only a minimum amount of space within the treble box is used. Also, interference with the usual finger wires between the keys and their valve is eliminated.

The invention claimed is:

1. In an accordion, a piano type keyboard, having a plurality of piano keys, a treble reed box, a valve plate enclosing one side thereof, a reed block in said box, a sliding valve associated with said block slidable to open or closed position, a swivel pin extending through said valve plate and having its bearing for oscillatory movement therein, shift mechanism within said box connecting said swivel pin with said valve, and a shift button secured to said pin and lying over said keys, said button being provided with finger engaging wings on each side of said pin and normally extending substantially longitudinally of said key bed, said button being operable relative to said keys to cause said valve to be moved to closed position upon depression of one of its wings in the direction of said keys and to open position upon depression of the other of its wings in the direction of said keys.

2. In an accordion, a piano type keyboard having a plurality of piano keys, a treble reed box, a valve plate enclosing one side thereof, a plurality of reed blocks in said box, a sliding valve associated with each of said blocks slidable to open or closed position, a supporting bracket extending in substantially parallel spaced relation with said valve plate and over said key bed, a series of swivel pins extending through said valve plate and bracket and having their bearings therein, a swivel arm secured to the inner ends of each of said swivel pins within said box, operative connections between said arms and their respective valves for moving said valves to open or closed position upon said swivel pin being oscillated, and a shift button secured to each of said swivel pins beyond said bracket and overlying said keys, each of said buttons being formed with a finger engaging wing extending laterally from each side of its swivel pin and generally longitudinally of said keyboard, whereby depression with one of said wings in the direction of said keys will oscillate said pin to move its valve to closed position and depression with the opposite wing in the direction of said keys will cause said swivel pin to move its valve to open position.

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