April 7, 1936. O. SCHMIDT 2,036,545

ACCORDION

Filed April 5, 1935

Fig. 1.

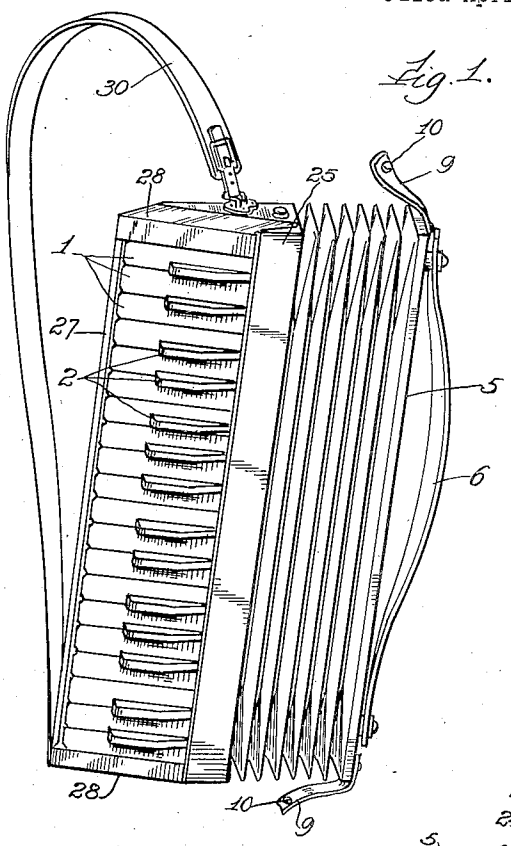


Fig. 2.

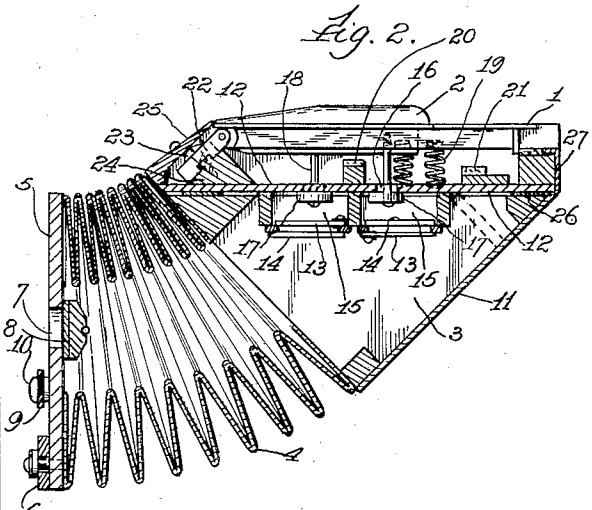
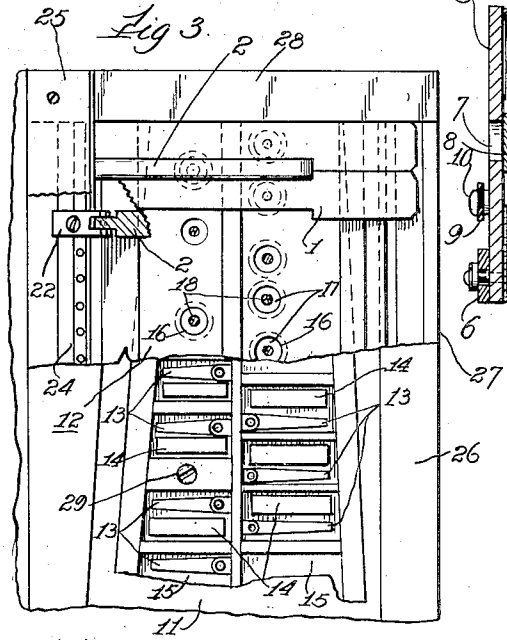


Fig 3.



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ACCORDION

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6 Claims. (Cl. 84—376)

This invention relates to a musical instrument of the accordion type, and its purpose is to provide such an instrument in a form which can be economically manufactured. Another object of the invention is to provide an instrument of this character which shall be relatively light in weight and easy to operate, and particularly to provide such an instrument with a piano type keyboard to facilitate learning to play it. Other objects will appear as the description proceeds. The invention consists in certain features and elements of construction in combination, as herein shown and described and as indicated by the claims.

In the drawing:

Figure 1 is a perspective view of the instrument as seen when held in the position of use.

Figure 2 is a transverse or horizontal section through the bellows and keyboard.

Figure 3 is a partial plan view of the keyboard with parts broken away to show the wind-chest wall which extends directly below the keys and a portion of the reed chest thereunder.

As shown in the drawing, the instrument embodying this invention comprises a piano type keyboard with the usual white keys, 1, and black keys, 2, surmounting a wind-chest, 3, which is in open communication with a bellows, 4. The movable wall, 5, of the bellows is fitted with a hand strap, 6, and with a release port, 7, normally closed by a spring-pressed valve, 8, which may be opened by inserting the finger through the port, 7, when it is desired to expel the air quickly from the bellows, 4, for collapsing it to closed position. Fastening straps, 9, with snap buttons, 10, are provided for holding the bellows closed when the instrument is carried about.

The wind-chest, 3, which is of triangular cross-section, is formed with an outer rigid wall, 11, extending from the flexible wall of the bellows, 4, and joined with a second rigid wall, 12, which contains the ports corresponding to the individual keys, 1 and 2. Within the wind-chest, 3, there is secured against the wall, 12, a partitioned reed-chest upon which the reeds, 13, are mounted. For each note there are two similarly tuned reeds, each provided with an automatic flapper valve, 14, so that one reed will be actuated by air-flow in one direction and the other will be sounded when the air flows in the opposite direction. Each pair of reeds has a separate reed chamber, 15, formed in the partitioned structure, and each reed chamber is arranged to be vented through an individual port, 16, controlled by a valve, 17, which is disposed within the reed chest and opens by movement inwardly away from the port. Each valve, 17, may consist of a disk of flexible material, such as rubber or felt, and is attached to a corresponding key of the keyboard by means of a stem which may be simply a screw whose head is disposed against the under side of the valve, that is, the surface opposite that which covers the port, 16,—and whose threaded end is entered in the body of the key from the under side.

Each key is upheld yieldingly by a spring, 19, which also holds the valve seated, and the threaded engagement of the valve stems, 18, thus permits the keys to be drawn into proper alignment with each other by adjustment of these threaded stems, 18. A felted buffer bar, 20, is positioned to limit the depression of the black keys, 2, and a similar bar, 21, is provided for the white keys. The keys are preferably fulcrumed in individual bifurcated brackets or pivot blocks, 22, which are secured by individual screws, 23, to a rail, 24, attached to the upper surface of the partition, 12, adjacent its connection with the bellows, 4. A finish strip, 25, forms a cover for the brackets, 22, but the removal of this strip gives immediate access to them so that any one of the keys may be conveniently dismounted without disturbing the remainder. Complete release of the key involves removal of the screw, 18, constituting the stem of the valve, 17, which the key actuates. However, the chambered reed-chest structure is removably secured to the under side of the wall, 12, by means of three or four screws, one of which is seen at 29 on Figure 3, and upon removal of these screws the partitioned structure with the reeds is readily separated from the ported wall, 12, giving ready access to the heads of the valve stems, 18. Access to the interior of the wind chest for reaching the screws, 29, and the valve stems, 18, is afforded by separating the wall, 12, and the keyboard assembly from the remainder of the wind-chest. Said wall, 12, is secured to the triangular corner rails, seen in Figure 2, by means of screws, not shown, and the joint is rendered air-tight by means of a rubber gasket, 26, extending adjacent the margin of the wall, 12, along all four sides.

The keyboard structure includes the usual front rail, 27, surmounted by a felt dust strip which engages the depending flanges of the white keys, as seen in Figure 2; and at the ends of the wall, 12, there are provided the usual end cheeks, 28, enclosing the keys. These cheeks may extend substantially flush with the triangular end walls, 3, of the wind-chest, to which a suitable shoulder

strap, **30**, is attached for supporting the instrument from the right shoulder of the player. The triangular cross-section of the wind-chest thus disposes the keyboard at a convenient angle for manipulation by the fingers of the right hand, while the rigid wall, **5**, of the bellows is moved with the left hand for pumping air to operate the reeds.

This structure as shown and described is not intended to have a keyboard of such range as to include both treble and base, and it will be noted that the left hand is used only for operating the bellows. However, this renders the instrument quite simple to learn, and with the piano type keyboard it is easily possible to play very effective thirds and chords, producing a reasonably rich quality of tone. Furthermore, instruments of this type may be made in different pitch ranges, so that two, three or four performers may play together to produce the full harmony. By simplifying the individual instrument I have rendered it attractive to the novice or amateur performer, and have also reduced the cost of manufacture to such an extent that it may be sold within a price range far below that of the usually more complicated piano accordion. In many cases, after mastering an instrument of this type, a person will become sufficiently interested to extend his study to the larger instrument, but, in any event, my present invention will bring the possibility of satisfactory musical accomplishment within the reach of many who could not expect to own the more expensive type of accordion.

While there is shown and described herein certain specific structure embodying the invention, it will be manifest to those skilled in the art that various modifications and re-arrangements of the parts may be made without departing from the spirit and the scope of the invention, and that the same is not limited to the particular form herein shown and described, except in so far as indicated by the appended claims.

I claim:

1. In an accordion, a piano type keyboard, a reed chest mounted directly under the keyboard and comprising a plurality of reed chambers each having a port opening toward the keyboard, a valve for each port disposed within the reed chamber, and means extending through each port and directly connecting its valve to a corresponding key of the keyboard whereby depression of the key unseats the valve.

2. In an accordion, a piano type keyboard, a wind-chest having a ported wall disposed directly under the keyboard, a valve controlling each port seating at the side of the wall opposite that toward the keyboard and connected directly to a corresponding key of the keyboard, and spring means reacting between said wall and each of the keys, the connection between each valve and its key comprising a stem screwed into the under side of the key and adjustable by virtue of such threaded connection for effecting alignment of the keys.

3. In an accordion, a piano type keyboard, a wind-chest disposed directly under the keyboard and including a wall extending in a plane substantially parallel to the keyboard and directly under the keys, a rail extending adjacent one edge of said wall at the outer side thereof, individual pivot brackets for the keys removably secured to an outwardly disposed face of said rail with a cover strip enclosing them, individual springs for the keys each reacting between the under side of its key and the upper face of said wind-chest wall, said wall having a plurality of ports, and valves for the respective ports each having a stem removably connecting the valve to a corresponding key of the keyboard.

4. In an accordion, a piano type keyboard, a wind-chest disposed directly under the keyboard and including a wall extending in a plane substantially parallel to the keyboard and directly under the keys, said wall having a plurality of ports disposed below the keys in registration therewith respectively, a reed chest secured removably to the under side of said wall with reed chambers registering with each of said ports, and a valve for each port disposed within the corresponding reed chamber and seating upwardly, together with a stem for said valve extending through the port and removably engaged with a key of the keyboard.

5. An accordion comprising a bellows having a rigid end wall, a wind chest connected to the opposite end of the bellows, said wind chest being of triangular cross-section so that its wall opposite the bellows is disposed at an acute angle to the rigid wall of the latter when the bellows is collapsed, said wall of the wind chest having a plurality of ports and a chambered reed chest associated therewith, together with a piano type keyboard super-imposed upon the outer side of said wall of the wind chest with the keys arranged in a plane substantially parallel to said wall, and valves connected to said keys respectively for controlling the ports and the reeds appertaining thereto.

6. In an accordion, a piano-type keyboard, a wind-chest disposed directly under the keyboard and including a wall extending in a plane substantially parallel to the keyboard and directly under the keys, said wall having a plurality of ports disposed below the keys in registration therewith respectively; a reed chest secured removably to the under side of said wall with reed chambers registering with each of said ports and a valve for each port disposed within the corresponding reed chamber and seating upwardly, together with a stem for each valve consisting of a headed screw with its head disposed under the valve and its shank extending through the valve and port and screwed into the under side of the key, whereby said head of the screw is accessible for adjustment or removal when the reed chest is removed.

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