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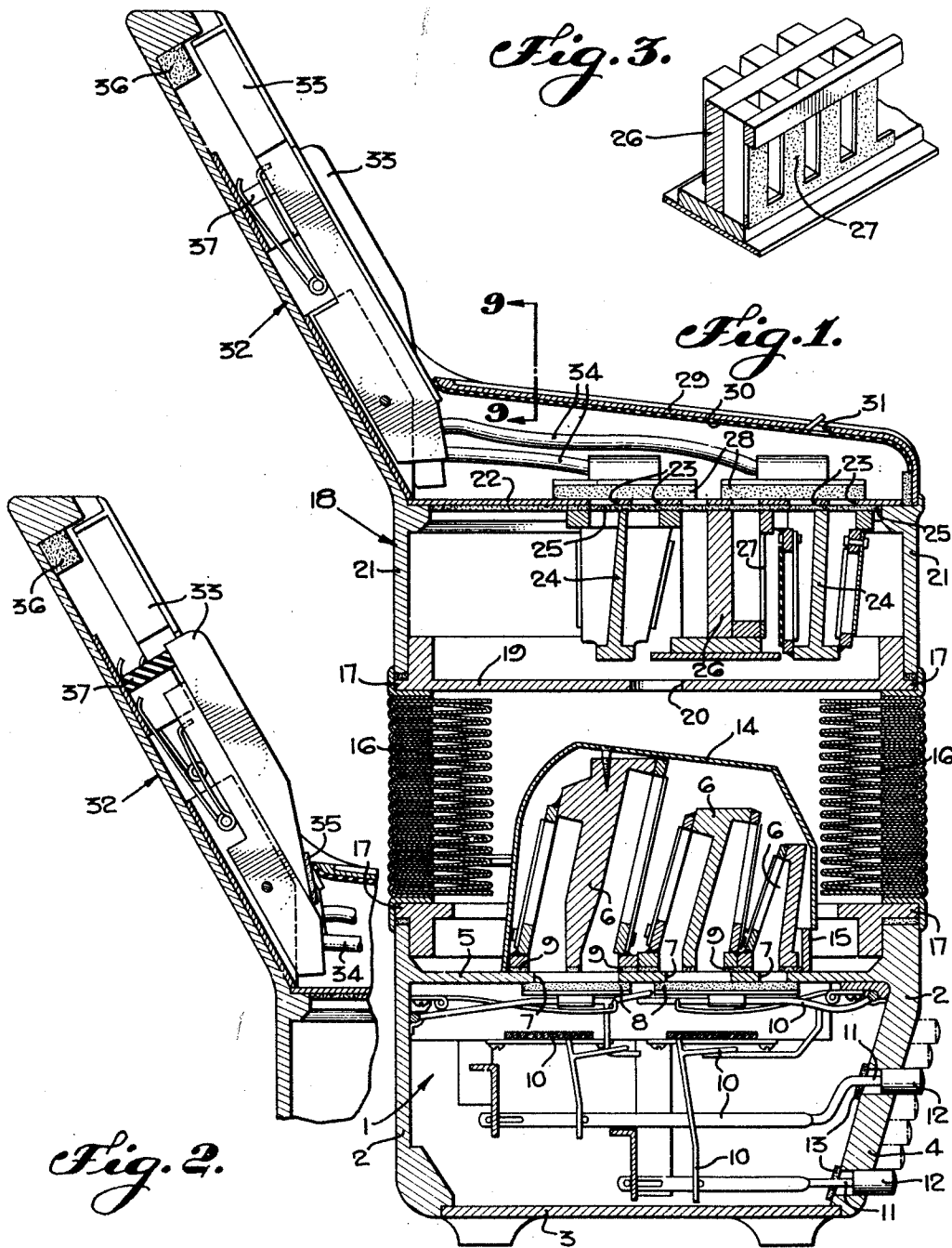
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2,639,640

MUTING DEVICE FOR ACCORDIONS

Filed April 17, 1950

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

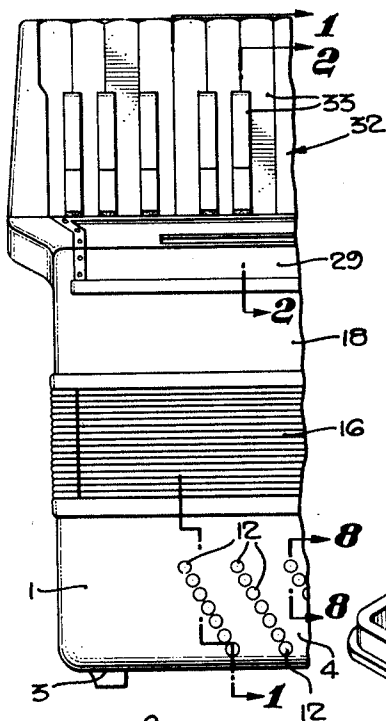


Fig. 4.

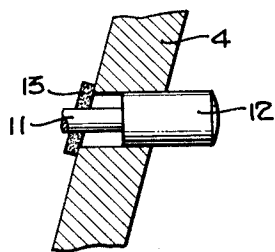


Fig. 8.

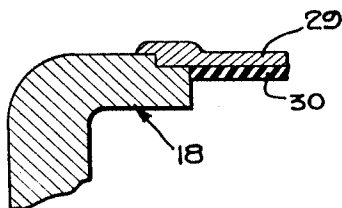


Fig. 9.

Fig. 5.

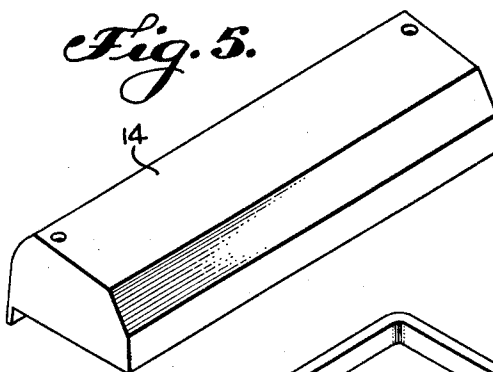
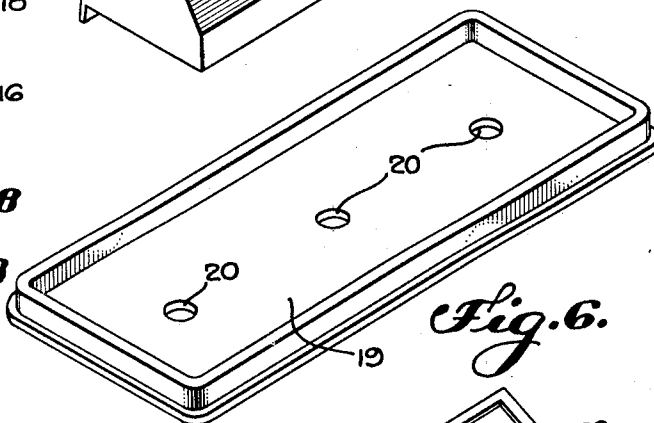


Fig. 6.

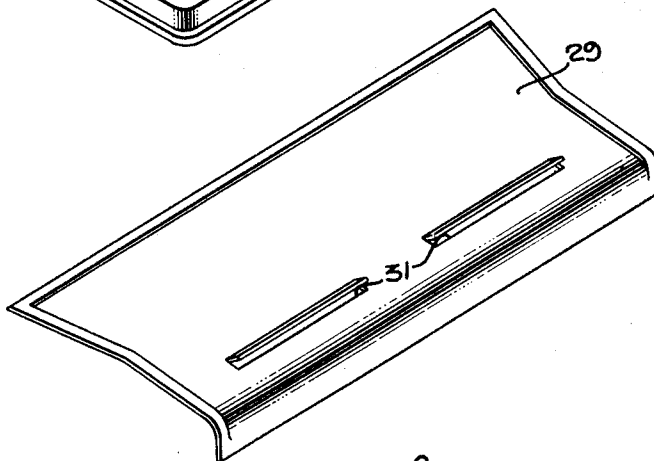


Fig. 7.

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MUTING DEVICE FOR ACCORDIONS

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3 Claims. (Cl. 84—376)

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My invention relates to accordions and more particularly to means for producing a muting effect and for improving the tone quality of an accordion. Included among the objects of my invention are:

First, to provide an accordion wherein the base section is tonally isolated to a substantial extent from the treble section, that is, the notes produced in the base section issue mainly from the base section whereas, the notes produced by the treble section issue mainly from the treble section.

Second, to provide an accordion wherein sound absorbing means are disposed between the treble reed blocks and the treble sound chamber is lined with sound absorbing material as well as being substantially sealed except for relatively small ports, whereby on the whole an improved muted effect is obtained.

Third, to provide an accordion wherein the base reed blocks are substantially enclosed, the base sound chamber is almost sealed and the base keys are equipped with sealing elements to minimize flow of air in approximate proportion to the number of keys depressed.

With the above and other objects, which may appear hereinafter, reference is directed to the accompanying drawings, in which:

Figure 1 is a longitudinal sectional view of my accordion taken through 1—1 of Figure 4,

Figure 2 is a fragmentary sectional view of the treble keyboard taken through 2—2 of Figure 4,

Figure 3 is a fragmentary perspective view of the sound absorber which is mounted between the treble reed blocks,

Figure 4 is a reduced fragmentary elevational view of my accordion,

Figure 5 is a perspective view of the shell which encloses the base reed blocks,

Figure 6 is a perspective view of the partition mounted between the bellows and treble section of the accordion,

Figure 7 is a perspective view of the plate which covers the treble section of the accordion,

Figure 8 is an enlarged sectional view through 8—8 of Figure 4 showing one of the base keys and the muting or sealing means employed therewith, and

Figure 9 is a fragmentary sectional view through 9—9 of Figure 1 showing a manner in which an end of the cover plate is secured.

My accordion includes a base section 1 in the form of a substantially rectangular box-like structure having side walls 2 and an end panel 3. In the conventional accordion, the end panel 3 would be perforate but in the construction of

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my accordion the end wall is solid or at least substantially so.

One of the side walls 2 is inclined and constitutes a base keyboard 4. Opposite from the end wall 3 is a partition 5 on which are mounted several base reed blocks 6. The reed blocks are conventional, for example, the blocks are formed of wood provided with appropriate channels over which are mounted reeds. The channels contained in the reed blocks communicate with sound slots 7 provided in the partition 5. The slots 7 are controlled by valves 8 which may be conventional.

It is preferred to interpose between the reed blocks 6 and the partition 5 an absorbent pad or insulating pad 9.

The valves 8 are connected by a suitable conventional link and lever means 10 to stems 11 of base keys 12. The base keys are mounted in a bank of guide or apertures provided in the base keyboard 4. The stem of each base key is equipped with a small pad 13, which when the key is in its raised position, as shown in Figures 1 and 8, seal against the margins of the corresponding guide aperture.

The base reed blocks 6 are enclosed in a shell 14 which completely covers them except for a marginal slit 15. The reed blocks and the enclosing shell project into a bellows 16. The bellows is provided with end frames 17 one of which is secured to the base section 1 and the other of which is secured to a treble section 18.

Adjacent the bellows, the treble section is provided with a partition member 19 which is preferably solid except for a few small openings 20. In the present instant, three such openings are shown.

The treble section is substantially rectangular in form and includes side walls 21 which support a partition 22 in spaced parallel relation with the partition 19. The partition 22 is provided with sound slots 23 which communicate with the passages of treble reed blocks 24 similar to the base reed blocks, except for size and type of reeds.

It is preferred to interpose between the reed blocks and partition 22 a porous insulating or absorbent pad 25.

Two treble reed blocks are shown. Mounted between these blocks is a sound absorbing block 26. It has been found convenient and satisfactory to utilize a reed block minus its reeds to perform the functions of the sound absorbing block 26. The efficacy of the sound absorbing block is increased by felt padding 27 on all or essential portions of its surface.

The sound slots 23 are controlled by treble

valves 28 mounted on the side of the partition 22 opposite from the reed blocks. The side walls of the treble section extend upwardly to surround the treble valves and are closed by a cover shell or plate 29. The cover plate is lined internally with sound absorbing material 30. The cover plate is imperforate except for slits 31 of relatively small area.

Extending outwardly at an angle from one side of the treble section is a treble keyboard 32 having conventional keys 33 which are connected by suitable lever means 34 to the valves 28. It is desirable to minimize airflow between the keys 33 and the adjacent margin of the cover plate 29. This is accomplished by means of a seal pad or strip 35. It is preferred to dampen the movement of the keys and this is accomplished by cushions 36 and 37 disposed under the "white" and "black" keys of the keyboard.

The padding and sound absorbing elements employed in my accordion have been determined after considerable experiments and tests. It has been found that by isolating as far as practical, the treble and base sections and that by reducing the airflow through the accordion to an amount sufficient only to operate the reeds actually in operation that a very substantial and improved tonal quality is obtained.

Having fully described my invention, it is to be understood that I do not wish to be limited to the details herein set forth, but my invention is of the full scope of the appended claims.

I claim:

1. An accordion involving: a base section; a treble section; a bellows between and connecting said sections; each section including reed banks, valve means controlling the reeds of said reed banks and levers and keys for operating said valves; means substantially enclosing said base reed banks and tending to minimize transfer of sound from said base reed banks through said bellows to said treble reed bank; a partition between said treble section and said bellows, said partition having relative small ports for supply of air to said treble reed blocks and tending to minimize transfer of sound from reed treble to said base sections; a sound absorbing structure mounted between said treble reed banks.

2. An accordion involving: a base section; a treble section; a bellows between and connecting said sections; each section including reed banks, valve means controlling the reeds of said reed banks and levers and keys for operating said valves; a housing enclosing said treble reed banks, said housing being sealed except for apertures having in aggregate an area substantially less

than the aggregate area of the reed passage of said reed banks; sound absorbing material covering at least a portion of the interior of said treble section housing; a sound absorbing structure mounted between said reed blocks; and a partition separating said treble section from said bellows, said partition having apertures having an aggregate area less than the aggregate area of the reed passages in said reed blocks.

3. An accordion involving: a base section; a treble section; a bellows between and connecting said sections; each section including reed banks, valve means controlling the reeds of said reed banks and levers and keys for operating said valves; the reed blocks of said base section projecting into said bellows; and a shell enclosing said base reed blocks to minimize ingress and egress of air to and from said bellows through said reed blocks, said shell also dampening sound transfer from said base reed blocks to the bellows cavity and to said treble section; said base section including a housing for said levers and keys having guide apertures for reciprocally mounting said keys, said housing being substantially sealed except for clearance between said guide apertures and keys; valve elements closing said apertures and operable to open said apertures when said keys are depressed; a housing enclosing said treble reed banks, said housing being sealed except for apertures having in aggregate an area substantially less than the aggregate area of the reed passages of said reed banks; sound absorbing material covering at least a portion of the interior of said treble section housing; a sound absorbing structure mounted between said reed blocks; and a partition separating said treble section from said bellows said partition having apertures having an aggregate area less than the aggregate area of the reed passages in said reed blocks.

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