Dec. 29, 1936. R. GALANTI 2,065,574

ACCORDION

Filed Nov. 15, 1935 2 Sheets-Sheet 1

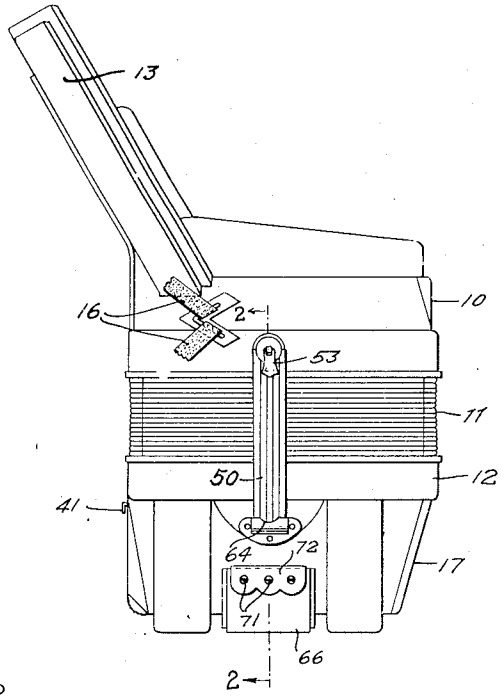
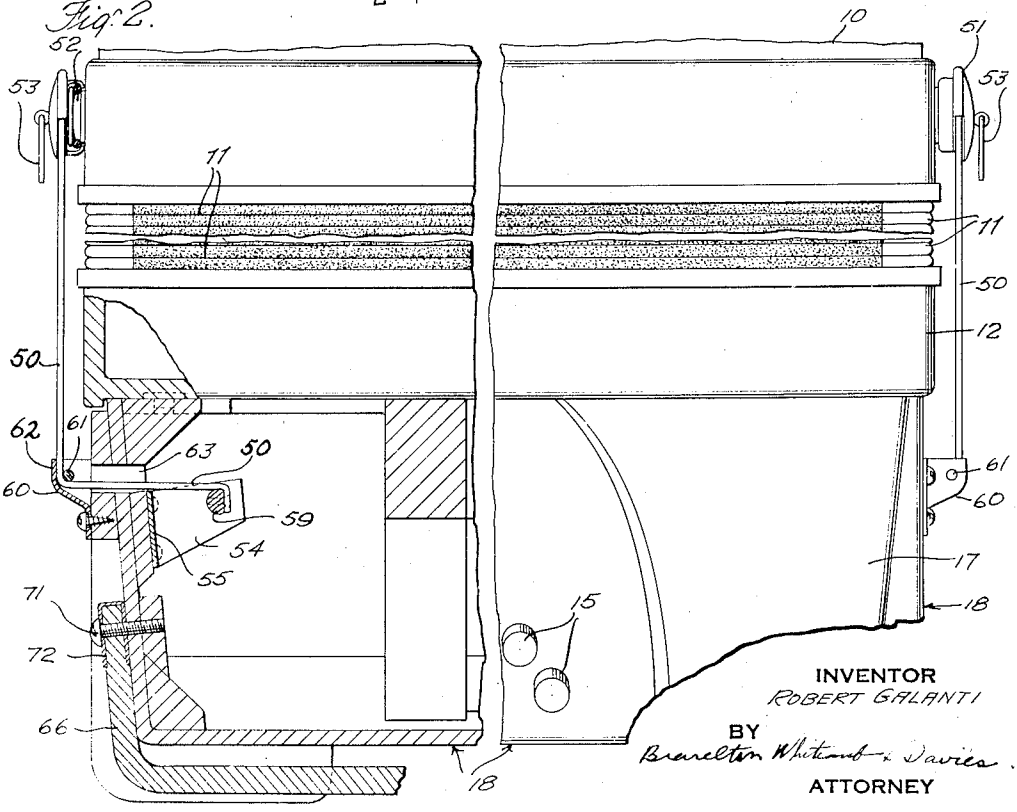


Fig. 1.

Fig. 2.



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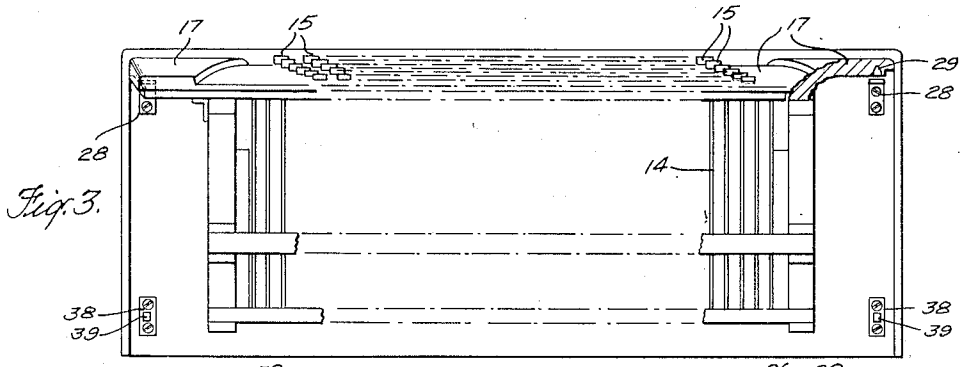


Fig. 3.

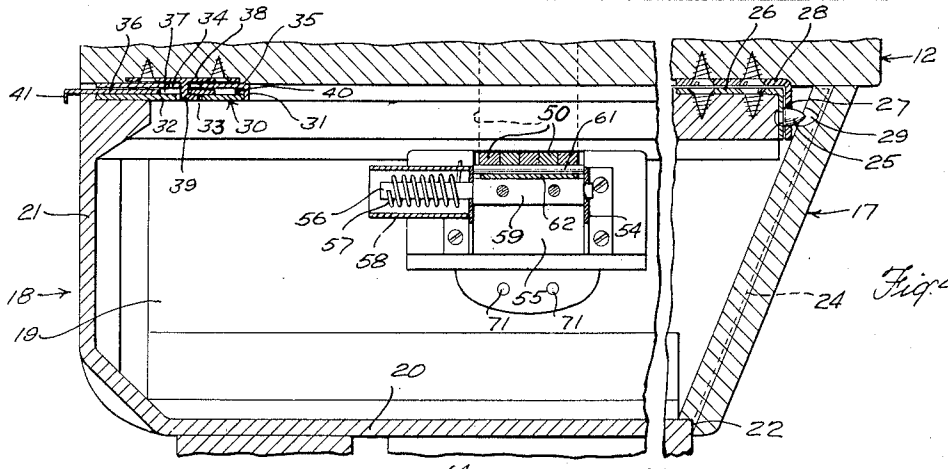


Fig. 4.

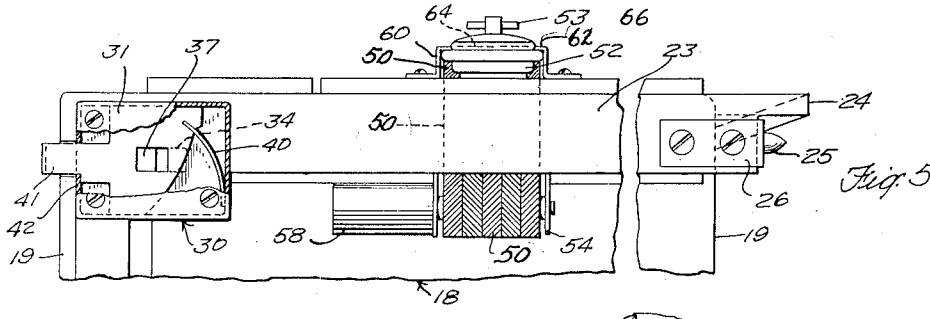


Fig. 5.

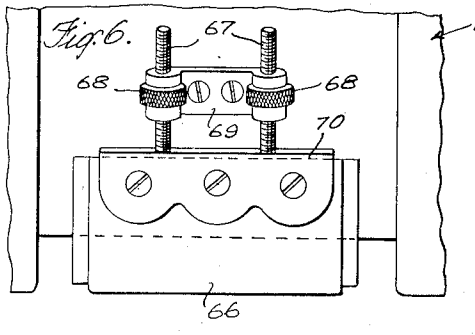


Fig. 6.

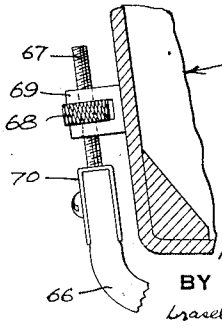


Fig. 7.

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ACCORDION

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5 Claims. (Cl. 84—376)

This invention relates to musical instruments. More particularly, the invention relates to accordions and involves improvements in the construction of such instruments.

Outstanding requirements of musical instruments include good tone, a high order of workmanship and simplified mechanism including ready accessibility for repair.

One of the important objects of the present invention, therefore, is to provide an improved accordion having a high degree of resonance resulting in improved tone.

Another object is to provide mechanism having readily accessible parts.

A third object of the invention is the provision of improved bellows locking fasteners which eliminate the possibility of accidental closure and catching on the clothing while the instrument is in use.

Still another object is to overcome strains and distortions due to temperature changes and humidity, without sacrificing requirements of tone.

An object, also, is to facilitate assembly of the resonant board of the instrument by the use of fasteners applicable to various sizes of parts.

Various other objects of the invention relating to details of construction and manufacture will appear on consideration of the following description and of the accompanying drawings, wherein I have set forth a form of the invention which may be preferred and in which:

Fig. 1 is a side view in elevation of the accordion;

Fig. 2 is a front elevation partly in section;

Fig. 3 is a plan view of the accordion bass mechanism with the base cover removed;

Fig. 4 is a section through the bass casing showing the bellows fastening means;

Fig. 5 is a detail partly in section showing the lock mechanism; and

Figs. 6 and 7 are further details showing the mode of adjustment of the base strap.

As shown in the drawings, the invention is applied to a piano type accordion including the treble casing 10, the bellows 11, the bass casing 12 and piano casing 13. Included within these various elements is the keyboard and bass lever and reed mechanism by means of which, in conjunction with the bellows, sound is produced in the instrument, said mechanism being generally designated by the numeral 14 (Fig. 3). As is well understood in this art, actuation of the piano keyboard and the bass keys 15 (Fig. 2) in conjunction with the reciprocal movement of the bass casing 12 in actuation of the bellows, causes vibration of the reeds, producing the tone of the instrument. During the operation of the instrument the instrument is held in position by means of the shoulder straps 16.

It is well known in musical instrument construction that the resonance of the casing of the instrument has an important bearing on the tone derived. In pianos and violins, for example, the woodwork of the casing is of vital importance in securing high quality tone. In accordion manufacture heretofore it has been usual to utilize both the bass and treble casing as component and integrated parts of the internal mechanism support, the mechanism being attached directly to the casings, thus detrimentally limiting the free vibrating area thereof. In order to overcome this condition and to increase the resonance of the casing structure, applicant has devised means whereby the mechanism is properly supported but at the same time entirely separated from a large segment of the bass casing, this section accordingly serving as an effective sounding board for the instrument.

Referring to Fig. 4, the bass casing 12 is shown as provided with a front panel 17 on which is mounted the various bass keys 15. The panel 17 forms the front side of the bass casing, the other side, the base, and the ends being part of a detachable section or sounding board 18 having end plates 19, a base panel 20 and back panel 21, these various panels forming a complete enclosure for the bass mechanism of the instrument.

As shown in Figs. 1, 2 and 4, the sounding board 18 is closely fitted to the front panel 17 and to the bass casing 12, of which it forms a part, so as to completely enclose the internal mechanism. In Fig. 4 the panel 17 is shown provided with a right angled inner notch 22 at its lower edge, and in this notch the front edge of the base panel 20 engages. In addition, the end panels 19 of the sounding board are each provided with a support strip 23 extending at right angles to the top edge thereof, as shown in Fig. 3, and provided with an extension 24 for contacting with the front panel 17. At the forward end, also, set back from the end of the extension 24, is a projecting lug 25 of approximately elliptical formation, the same being held in position by means of the right angled strip 26. This lug 25 is adapted to be inserted in a hole 27 formed in a similar right angled strip 28 fastened to the adjacent portion of the bass

casing 12. The elliptical formation of the lug permits a snug fit for various variable sizes of the aperture 27 for a purpose as will hereinafter be described. An indentation 29 is also made in the panel 17 adjacent the aperture 27 so that the lug 25 will have adequate clearance.

Another support for the sounding board 18 consists in the so-called locking means 30 shown in Figs. 4 and 5. As indicated, the locking means consists of a hollow casing 31 formed of two flat plates and narrow edges, the lower plate 32 having an aperture 33 in alignment with an enlarged aperture 34 in the upper plate 35. A slidable plate 36 moves between the upper and lower plates, this plate 36 having also an aperture 37 adapted to be moved in and out of registry with the corresponding plate apertures 33 and 34.

Fastened to the bass casing member 12 adjacent the lock 30 is a plate 38 from which downwardly projects a right angled hook 39 which is adapted to be inserted in the various apertures 33, 34 and 37, and the end of which is adapted to co-operatively engage the end of the slidable plate 36 when the hook 39 is fully inserted in said apertures and the plate 36 is retracted to the point where the edge of the slidable plate aperture 37 contacts with the hook 39. In this position it is yieldingly held by means of a leaf-spring 40, as shown in Fig. 5. A finger grip 41 extending beyond the panel face 21 is also provided, together with a shoulder 42 to form an outside limit for the movement of the plate.

It is pointed out that the aperture 33 in the lower plate 32 is sufficiently large to permit a limited movement of the sounding board unit in relation to the fixed hook so that, depending on the fit of the lug 25 and aperture 27, the sounding board unit automatically adjusts itself by virtue of the tension of the spring 40. This mode of adjustment of the sounding board is employed in order to eliminate the use of screws or other fastening means which would secure the edges of the sounding board and prevent free vibration of the support as a unit. Further, in order to get a resonant tone the use of wood is practically essential, and the wood of the sounding board is subjected to expansion and contraction through changes of temperature and also, particularly in summer time, to the detrimental effects of high humidity. These conditions tend to induce considerable strain upon the structure of the sounding board, and consequently when this unit is fastened fixedly at separated points deformation of the structure is the normal result. By providing a free floating edge and elastic supporting means for the sounding board these difficulties are obviated, and consequently the tone and resonance of the instrument is markedly improved.

Since the sounding board is detachable from the bass casing it is of importance that this unit be provided with auxiliary holding means effective when the primary fasteners are inoperative for any reason, and also to hold the whole unit in a compact and immovable form when out of use. These auxiliary means are provided in the flexible bellows straps 50, one at each end of the sounding board unit 18. These straps are preferably of metal fabric so as to permit reel winding. At their outer ends these straps are attached to separable button fasteners including the button element 51, the cooperating element 52, and the pivoted finger grip 53, the fastener element 52 being secured to the treble casing 16. The other end of the strap is riveted or otherwise fastened to the shaft 59 rotatably mounted between the inwardly projecting plates 54 attached to the end panels 19 of the sounding board by means of the base plates 55. The shaft 59 projects through the rear support plate to form an integral cylinder member 56 at the end of which a coil spring 57 is attached, the coil extending along the cylinder member 56 to a point adjacent the support plate 54 and terminating in an aperture formed in the housing 58 enclosing the coil spring 57. The tension of the coil spring is so applied that when the separable fasteners 51 and 52 are released the shaft 59 rotates in such direction as to wind up the strap 50 thereon, thus drawing the external button downwardly and into engagement with the support 60 for the guide rod 61, said rod preventing further movement of the button, and the wall 62 of the support 60 partially enclosing the button 51. As shown in Fig. 2, from the guide rod 61 the strap extends through an opening 63 formed in the end panel 19 of the sounding board to the rotatable reel or shaft 59. The wall 62 of the support 60 is cut out at its upper edge to form a seat 64 for more effectively holding the button 51 in fixed position on the end of the sounding board.

By this construction it will be seen that I have provided a retractable strap which is completely removed from the external portion of the bass casing. This is of considerable importance in accordion construction since where the fastener strap is left exposed it may, during use of the instrument by a musician, accidentally catch on clothing or other parts of the instrument, causing partial failure of the instrument.

To the sounding board 18 is also attached the base strap 66, the connection on one end plate 19 being by means of the adjustable screw bolts 67 movable in the knurled nuts 68 rotatably mounted on the plate 69 fixed on the sounding board. The bolts 67 have permanent connection to the U-shaped clip 70 bolted to the end of the strap 66, as shown in Figs. 2, 6 and 7. The other end of the base strap is non-adjustably fastened to the other end plate 19 as by screws 71 and the U-shaped clip 72.

In accordance with the above description I have provided an accordion with a free floating sounding board with no permanently fixed and immovable points of attachment, and which, accordingly, is susceptible to maximum resonance. I have further provided such a device with auxiliary holding means of a non-vibratory nature which are reeled out of view and contact during the operation of the instrument. I have also provided holding means for the sounding board which will permit adjustment in accordance with temperature and humidity changes.

Attention is directed to the practical utility of the removable base board above described in making possible emergency inspection and repairs during the rendition of a program. Heretofore such repairs could not be made since they involved a shop breakdown of the instrument.

Also, note is made of the susceptibility of easy adjustment of the base board unit 18 to different instruments, since the curvilinear form of the lug 25 adapts it for cooperating apertures of variable size, such variation as occurs being compensated for by the lock spring 40.

It is considered an important feature of the invention, also, that the end fastener straps

are retracted to the casing interior when the instrument is in use, thus avoiding all possibility of flapping about and making accidental contact either with the clothing of the musician or other moving parts of the instrument.

It is noted, further, that the base panel 20 and back panel 21 of the sounding board 18 are joined so as to provide an obtuse or rounded surface, thus obviating the acute discomfort to musicians arising from long pressure of a sharp corner on the arm playing the bass keyboard.

It is, of course, apparent that modifications may be made of the structure as shown, provided such modifications are included within the scope of the claims hereto appended.

What I desire to claim is:

1. In an accordion a fastener for a casing element movable in relation to a fixed casing element comprising a reel, a strap fastened at one edge to said reel, one element of a separable fastener secured to the other end of the reel and adapted to engage cooperatively the other element of the separable fastener, and spring means tending normally to wind said fabric strap upon said reel, said second element of the separable fastener being mounted on the fixed element of the casing.

2. In an accordion a reel fastener unit between the treble and bass casings, said unit comprising a reel mounted within the bass casing having an axial extension, a coil spring mounted on said extension and secured at one end to said extension and at the other end to the casing, a flexible strap fastened at one end to said reel and extending through an aperture in said casing to a point external thereto, and a separable button fastener at the outer end of said strap, said fastener in its holding position being adapted cooperatively to engage a member of the treble casing, and in its disengaged position adapted to yieldingly engage the strap opening in the bass casing.

3. In an accordion having a movable casing, a fastener therefor comprising a flexible strap, a fastener on one end of the strap, and retracting means at the other end of the strap and within the casing for automatically withdrawing the strap within said casing when the fastener end is released.

4. In an accordion having a movable casing, a fastener therefor comprising a flexible strap, a fastener element on one end of the strap, and means at the other end of the strap for automatically retracting said fastener element towards said other strap end when the fastener element is released, said means including a reel and spring means for rotating said reel.

5. In an accordion having a treble casing, fastener elements fixedly mounted on said casing, and a bass casing, a bellows intermediate said casings, flexible retractable straps secured at opposite ends of said bass casing, said straps having end fasteners adapted to engage said fastener elements on the treble casing, and means attached to the bass casing for retracting said straps toward the bass casing.

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