April 18, 1933. R. RIESCHICK 1,904,768

ALL METAL KEY FOR PIANO-ACCORDIONS

Filed March 11, 1932

Fig. 1.

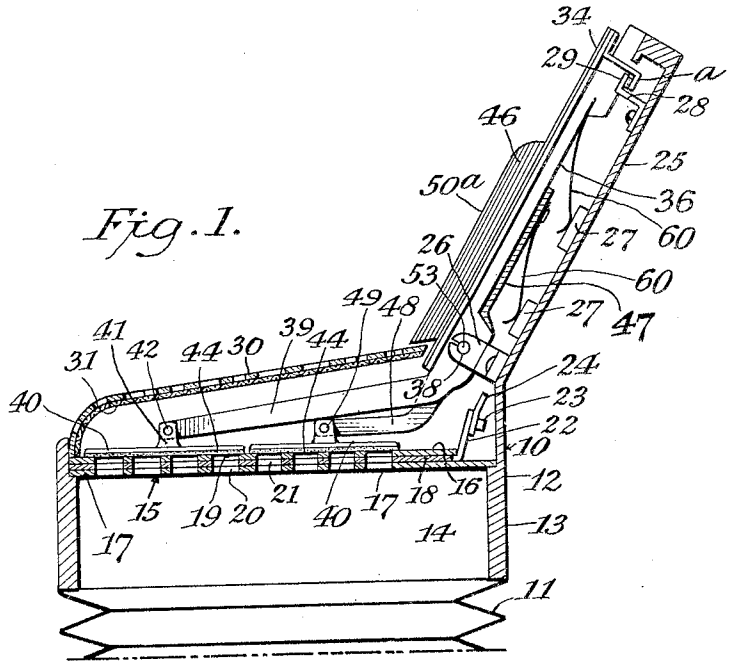


Fig. 2.

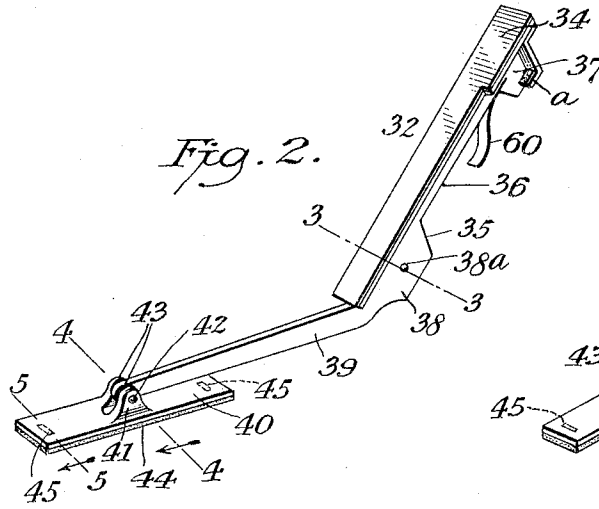


Fig. 6.

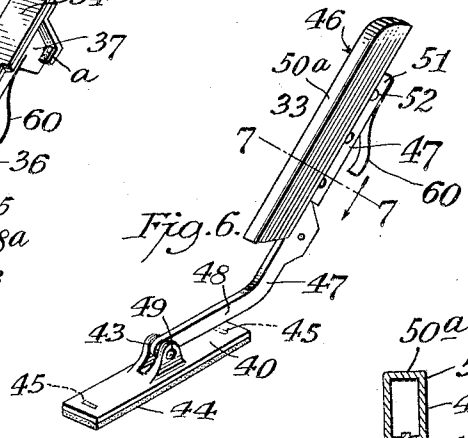


Fig. 7.

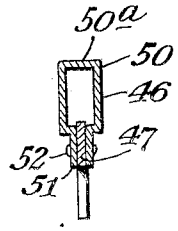


Fig. 3.

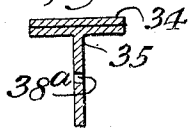


Fig. 4.

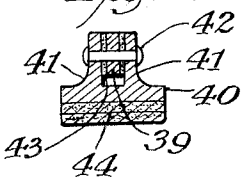


Fig. 5.



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UNITED STATES PATENT OFFICE

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ALL METAL KEY FOR PIANO-ACCORDIONS

Application filed March 11, 1932. Serial No. 598,147.

This invention relates to improvements in better quality musical instruments of the all-metal piano-accordion type and possesses certain features of improved construction in the white and black keys of the piano accordion key board, wherein more sturdy construction is available and in which changeable climatic conditions have no effect and further, to produce true tones in the operation thereof.

A feature in the construction of the piano-keys forming the subject-matter of this application, is found in all metal key structures of a resonate metallic material, such as aluminum or brass, having nicely finished touch surfaces and pivoted valves mounted on the inner ends or shanks thereof; appropriate yielding restraining material being employed at the point of connection of the valves with their respective key shanks for permitting said valves to automatically adjust themselves to the plane of a valve panel, for controlling the opening and closing of their respective valve ports simultaneously, so that no lateral movement of the bellows generated air currents is possible, thus insuring true notes or tones in the playing of the piano-accordion.

Heretofore instruments of the above described type, were constructed of wood, and warping, distorting and impairing of the parts caused by climatic changes, produced false tones or notes, for the reason that the wooden valves heretofore used were rigidly mounted on the key shanks and were manually adjusted, if not in proper line, before the instrument could be successfully operated; and further, the lines of keys in the wooden structures were usually not uniformly spaced, one from the other, by reason of warpage, which is detrimental to the general excellent appearance of the instrument, and these warped keys were manually restored to proper spaced relation when necessary.

I will now enter into a detailed description of the construction of the relative black and white metallic keys of a piano-accordion embraced in the present and prefered embodiment of my invention in order to impart a full, clear and exact understanding of the said embodiment. I do not, however, desire to be understood as confining myself to the specific construction shown and described, inasmuch as in the practice of my invention changes of construction may be resorted to within the terms of the appended claims.

In the drawing similar reference characters are employed to designate corresponding parts in the several views, in which,

Fig. 1 is a vertical sectional elevation showing the piano or treble side of an accordion with my improved respective black and white keys mounted in operative positions with the pivotal valves resting on the valve panel, and the usual reed-blocks omitted.

Fig. 2 is a perspective view of the improved white piano accordion key.

Fig. 3 is an enlarged cross-sectional view taken on the line 3—3 of Fig. 2.

Figs. 4 and 5 are enlarged cross sectional views taken respectively on the lines 4—4 and 5—5 of Fig. 2.

Fig. 6 is a perspective view of my improved black piano accordion key operative in conjunction with the white key for making up a complete piano key-board.

Fig. 7 is an enlarged cross-sectional detail view taken on the line 7—7 of Fig. 6.

Referring now to the drawings in detail, 10 designates the piano or treble side of a piano-accordion which is connected in the usual manner by a bellows 11, to the bass side (not shown) of the said accordion.

This so-called treble side of the piano-accordion may comprise a casing 12, having a base portion 13, constituting a sound chamber 14, containing a set of reed-blocks, (not shown) the reeds being operated by air pressures and vacuums alternately generated, controlled, or created by manually operated movements of opposite treble and base portions of said accordion.

Disposed between the walls of said sound chamber is a laminated valve panel 15, preferably constructed of upper and lower fixed plates 16 and 17 and a movable damper plate 18, which is operated by manual means (not here shown) for controlling the volume of

tones emanating from the said reed-blocks, (not shown).

The plates 16, 17 and 18, constituting the laminated valve panel 15, are all formed with normally registering series of port holes respectively indicated at 19, 20 and 21; the damper plate having one or more bent up lugs 22 formed with backwardly extending pins 23, pivoted to a connection 24 for manipulating said damper plate in the operation of the accordion. The damper plate and connections above described forming part of a subsequent application for patent as a companion case hereto and co-pending herewith.

The upper or outer portion of the casing 10, is extended upwardly or outwardly at a desired angle to form a key-board portion or plate 25, to which one or more standard bearings 26, bearing blocks 27, and brackets 28, are secured, said brackets having upwardly bent flanges 29, co-acting with stop-lugs *a*, carried by each of the white keys, to limit the movements thereof.

Located over the laminated ported valve panel, is a filigreed or ornamented open scroll-work plate 30, having an open mesh lining 31 of fabric or the like, through which the musical tones are heard as generated by the bellows air passing through said reed-blocks.

The co-operative white and black piano-accordion keys 32 and 33, forming the subject-matter of the present application, are slightly different in construction and will now be described in detail. As shown in Figs. 1, 2, 3 and 4, the white piano-accordion key is preferably formed from T shaped stock aluminum, brass or other resonate metal, and is cut to form a touch surface 34; the vertical web 35 of the stock metal is cut out as at 36 to form enlarged lugs 37 and 38; said web being reduced in width back of the lug 38 which is perforated at 38*a* and bent at a suitable angle to the head of said key to form a shank 39 to the remote perforated end of which is pivoted, a valve 40, formed with perforated spaced ears 41, between which the said perforated key shank is received, and pivotally connected thereto by a cross-pin 42.

In order to yieldingly retain the valve 40 at a determined angle to normally lie flat on the valve panel 15, packing disks 43, of leather or the like, are clamped between the opposite sides of the key shank and said ears 41. These leather packings permit of slight automatic readjustments of the valves shown. The metallic valve of each key has a soft facing 44 such as one or more layers of leather and as this material cannot satisfactorily be attached to the under metallic face of the valves 40, I have devised a means for accomplishing this result; I preferably cast, into and near each end of the valve, a loop of wire 45, with its ends extending free, so that these ends may be passed through a layer of leather or the like near each end of the velvet head after which the wires are twisted tight and by this method the facings are permanently attached, and if desired a second facing of leather may be secured to the first permanently attached layer by a suitable glue.

The construction of the black key of the piano-accordion is slightly different, but the patentable equivalent of the white key. This all metal key is formed with a head 46, supported by a web 47, which is extended backwardly at a suitable vertical angle to said head, to form a shank 48, pivoted at 49 to a valve in the same manner as is the above described white key. The head 46, of these black keys must project upwardly above the white keys as in the usual piano key-board and for this reason the head 46, is formed of a looped plate 50, having a touch surface 50*a* flanged as at 51, through which flanges and the web 47, cross pins may be passed as at 52.

The keys all rock on a pin 53, which is passed through all of the bearings 26, on the keyboard 25 and each of the piano keys 32 and 33 carry flat springs 60 for restoring them after each depression.

To the heads of the black and white keys just described finishing layers of suitable material such as celluloid may be secured in any desired manner.

It will be obvious that the head and shank portions of the piano-accordion key collectively form a "bar" or "key-bar" which together with its pivotally carried valve constitute a complete key of the class described, and I may make use of the term "key-bar", or "bar", in some of the claims.

As the functions of the devices and the structural features thereof have been presented, further detail or résumé of the construction and advantages is believed unnecessary for an understanding of the invention by one skilled in the art and changes may be made within the limits of the structures claimed.

What I claim and desire to secure by Letters Patent is:—

1. An all-metal piano accordion key having an integral head and shank portion; a valve connected to said shank portion by a pivot joint and a yielding packing in said pivot joint to permit self adjustment of said valve.

2. An all-metal piano accordion key comprising a head portion and a web, said web being perforated and extended rearwardly at a desired vertical angle to said head to form a shank; and a metal valve rockable on said shank.

3. In a piano-accordion having a ported panel, in combination; keys operating in conjunction with said panel; said keys comprising wholly metallic cross-sectionally integral

head portions and backwardly turned web portions providing respective touch surfaces and shanks; and metallic valves adjustably supported on said shanks to coact with said panel.

4. In combination with a piano-accordion having a ported panel; a plurality of keys comprising wholly metallic structures having integral horizontal head and web portions, the web portions being extended to form shanks; valves having pivotal joints with their respective shanks; and yielding and retarding packings in said joints for the purpose described.

5. In combination with a piano-accordion having a panel provided with ports; a plurality of wholly metallic integral key structures of general T-shaped cross-section in the head portion thereof and having integral perforated shanks; a valve for each shank and having a pivotal joint therewith; and a retarding packing in each joint to permit the valves to make surface adjustments with said panel.

6. In combination with the ported panel of a piano-accordion; a plurality of keys, each comprising a metallic head and an integral perforated supporting web extending beneath and continuing backwardly of said head to provide a shank; and a metallic valve on said shank arranged for operative contact with said ported panel.

7. A piano-accordion key comprising a bar formed with a cross-sectionally integral T shape head and shank portion; and a valve supported by said shank portion.

8. A piano-accordion key-bar consisting of a length of T bar stock metal; and formed to provide a touch surface and an extended shank for supporting a valve.

9. A piano-accordion key comprising integral head and shank portions; a valve pivoted to said shank portion; and metallic fasteners on said valve for permanently securing a facing thereto.

10. In combination; a piano-accordion key comprising a single metallic bar formed with a T-shape head and shank extending therefrom; a valve carried on said shank; a facing on said valve; and means cast with said valve for securing the facing thereto.

Signed at Brooklyn, in the county of Kings and State of New York, this 8th day of March, A. D. 1932.

REINHOLD RIESCHICK.