

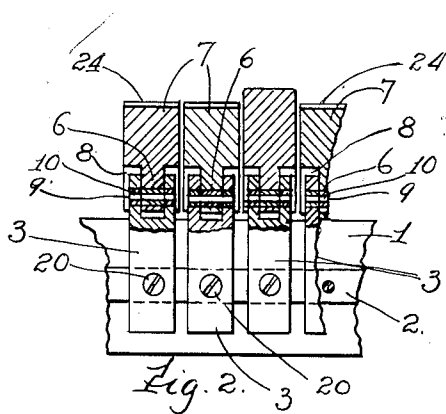
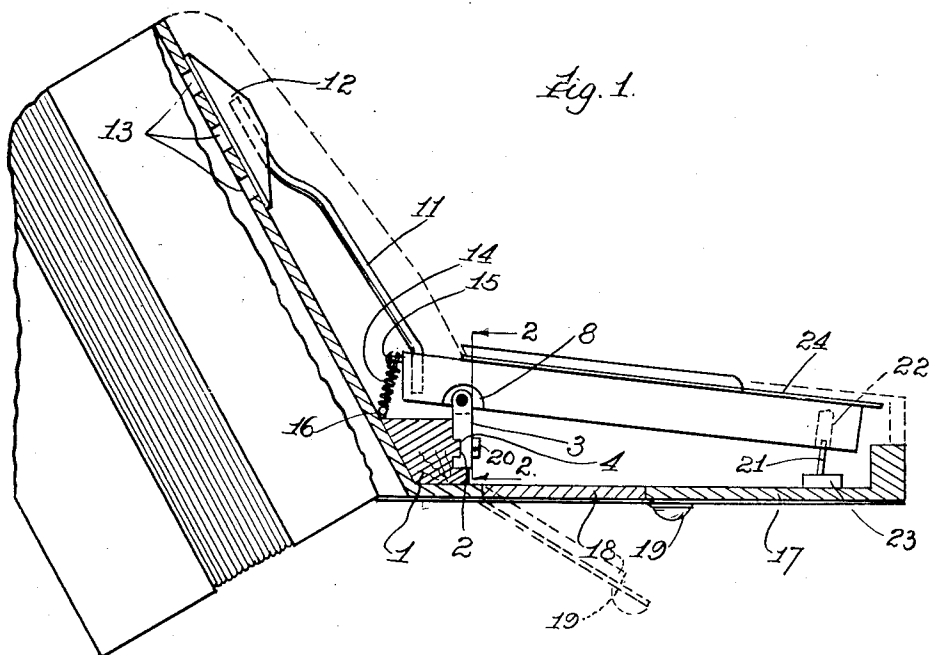
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R. NELSON

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KEY STRUCTURE FOR PIANO ACCORDIONS

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Witness.

N. C. McPhail.

Inventor
REUBEN NELSON.

by *Burton of Burton*
his Attorneys.

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KEY STRUCTURE FOR PIANO ACCORDIONS

Reuben Nelson, De Kalb, Ill., assignor to Wur-
litzer Grand Piano Company, De Kalb, Ill., a
corporation of Illinois

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4 Claims. (Cl. 84—376)

This invention relates to piano accordions, and its object is to provide an improved mounting for the manual keys of such instrument which shall ensure easy pivotal action of the keys at all times while permitting of accurate, and, at the same time, economical manufacture and assembly of the parts. It 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 fragmentary end elevation of a piano accordion partly in section to disclose the particular key structure which is the subject of this invention.

Figure 2 is a transverse section taken as indicated at line 2—2 on Figure 1.

Heretofore it has been general practice in the manufacture of piano accordions to mount the keys upon a unitary rail of close-grained wood, such as walnut, having a number of slots cut or sawed in its edge to serve as guideways for the individual keys. A single long wire extending transversely of the slots and through the keys has usually been employed as the pivotal mounting. This construction requires that the slots be very accurately cut in order to hold the keys in proper alignment, and prevent them from interfering laterally with each other. But even when the parts are initially well made the keys are likely to stick as the result of any slight swelling or warping of the wooden member in which they are mounted. My improved construction provides a mounting rail, 1, which extends transversely of the keys throughout the length of the key manual, and is formed with a rib, 2, projecting from one face. To this face I secure a plurality of upstanding brackets, 3, each having a groove, 4, accurately formed to snugly fit upon the rib, 2, of the rail, 1. The upstanding end of each bracket is bifurcated, and its two arms, 5, are spaced apart to receive between them a thinned or reduced portion, 6, of the key member, 7. This thinned portion is conveniently formed by counter-boring or routing-out a notch, 8, in each side of the key member, so that the arms, 5, 5, of the bracket member, 3, are accommodated in these notches, 8, 8. The total width of the member, 3, does not exceed that of the key itself; thus, a series of brackets, 3, may be mounted side by side on the rail, 2, at proper intervals to provide suitable working clearance between the adjacent keys, 7.

A fulcrum pin, 9, extends through the arms, 5, 5, of the flange, and through the thinned por-

tion, 6, of the key, providing pivotal bearing for the latter. Preferably, these fulcrum pins, 9, are fitted into cloth bushings, 10, which are damp-proofed with mineral oil to keep the bearings lubricated, which will prevent any rusting or sticking of the parts throughout the life of the instrument. At its inner end each key, 7, carries a rigid metal arm, 11, projecting angularly from the key, and supporting at its free end the valve block, 12, which controls ports such as those indicated at 13, through which the reeds of the accordion are vented when the key, 7, is depressed. This is a familiar construction. The valve is held normally closed by a small coil spring, 14, attached to the inner end of the key in any convenient manner, as by a small pin or nail, 15, driven into the end of the key; the other end of the spring is anchored to the rail, 1, at 16.

The accordion frame includes an enclosing panel, 17, below the key manual, and with my improved fulcrum mounting for the keys I provide this panel with a removable section, 18, which may be secured in any convenient manner, as by snap fasteners, 19, and which upon removal allows access to the screws, 20, by which the brackets, 3, are secured to the rail, 1. A single screw is sufficient for definitely fastening each bracket, because of the interlocking fit between the groove, 4, of the bracket, and the rib, 2, of the rail.

To assist in maintaining the keys, 7, in proper alignment, each of them is provided with a guide pin, 21, upstanding from the panel, 17, and extending into a hole, 22, in the end of the key remote from its fulcrum. The pin, 21, fits with clearance in the hole, 22, but with sufficient accuracy to prevent the key from shifting laterally into contact with the next key. A cloth washer, 23, on the pin, 21, serves as a sound-deadening buffer stop for the key when it is depressed.

With the construction as described it is possible to manufacture a piano accordion economically and with extreme accuracy. The rail, 1, may be drilled for the screws, 20, in a jig, so that the spacing of the keys is thus accurately determined, and the fulcrum brackets, 3, may be made by almost automatic machinery in large quantities, and with great exactness. Similarly, the keys themselves may be manufactured to close limits, so that all the parts will fit together readily, thus facilitating assembly and avoiding individual fitting at this stage. The separate fulcrum mounting thus provided

for each key simplifies the removal of the key if that should be necessary for repairs, such as renewing the ivory or other finish material applied at 24 to the exposed surfaces. And in operation the easy acting fulcrum and the definite guidance afforded by the pin, 21, will ensure satisfactory performance at all times.

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 a piano accordion in combination with a key manual, a mounting rail extending transversely under the keys, an individual fulcrum support for each key comprising an upstanding bracket with an individual fulcrum pin by which the key is pivotally attached to the bracket, individual fastening means for the brackets securing them to the rail at intervals for proper spacing of the keys, said means being accessible from below the keys and individually releasable to permit removal and replacement of any key without disturbing the others, and casing structure extending under the keys enclosing the fastening means, but including a wall section movable to afford such access to the fastening means.

2. In a piano accordion in combination with a key manual, a mounting rail extending transversely under the keys, an individual fulcrum support for each key comprising an upstanding bracket with an individual fulcrum pin by which the key is pivotally attached to the bracket, said brackets being applied to a face of the rail extending in a plane approximately perpendicular to the general plane of the keys with the brackets extending toward the keys in such perpendicular plane and with individual fastening means for each of the brackets securing them to the rail at intervals for proper spacing of the keys, said face of the rail to which the brackets

are applied having a rib extending lengthwise of the rail, and each bracket having a transverse groove fitting snugly over the rib, the fastening means for each bracket comprising a single screw extending through it into the rail, and the rib serving to hold the bracket against rotation about such screw, and casing structure extending under the keys enclosing said fastening means but including a removable part to afford access thereto to permit removal and replacement of any key without disturbing the others.

3. In a piano accordion in combination with a key manual, a mounting rail extending transversely under the keys, an individual fulcrum support for each key comprising an upstanding bracket with an individual fulcrum pin by which the key is pivotally attached to the bracket, said brackets being applied to a face of the rail extending in a plane approximately perpendicular to the general plane of the keys with individual fastening means for the brackets securing them to the rail at intervals for proper spacing of the keys, together with a panel associated with said mounting rail and extending under the keys, including a removable section in the vicinity of said rail affording access to the fastening means to permit removal and replacement of any key without disturbing the other keys.

4. In a piano accordion in combination with a key manual, a mounting rail extending transversely under the keys, each key having a portion of reduced cross-section adjacent said rail, an individual fulcrum support for each key comprising an upstanding bifurcated bracket embracing said reduced portion of the key with an individual fulcrum pin by which the key is pivoted in the bracket, said brackets being applied to a face of the rail extending in a plane approximately perpendicular to the general plane of the keys, and individual fastening means for the brackets securing them to the rail at intervals for proper spacing of the keys, said means being accessible from below the keys and individually releasable to permit removal and replacement of any key without disturbing the others.

REUBEN NELSON.