Jan. 28, 1930. J. MECERA 1,745,265

KEY OPERATED PLAYING DEVICE FOR STRINGED MUSICAL INSTRUMENTS

Filed April 12, 1928

Fig. 1.

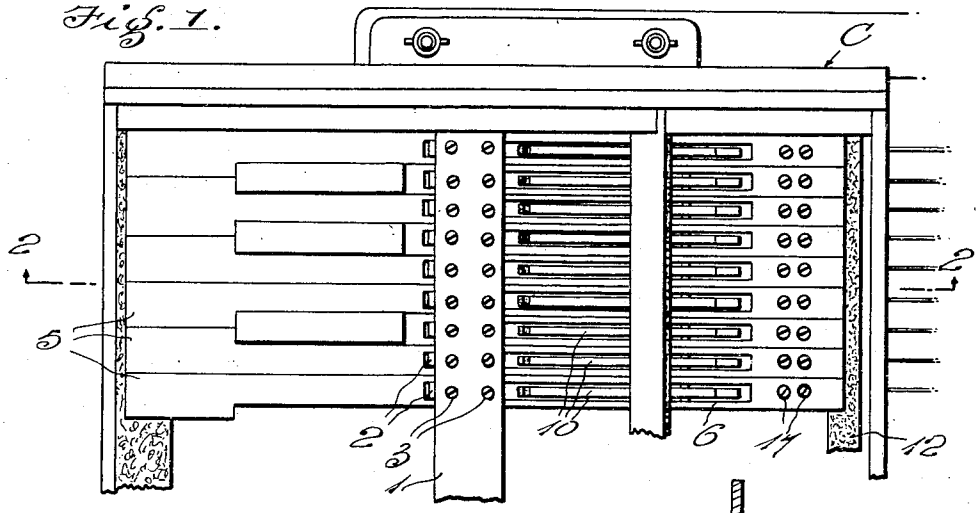


Fig. 2.

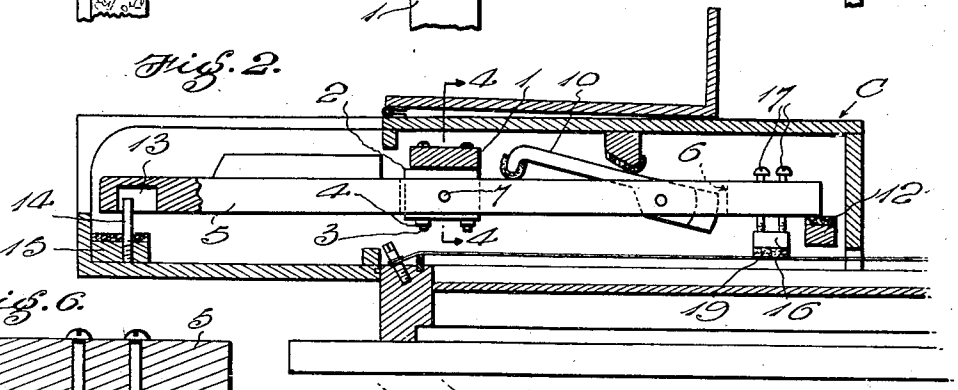


Fig. 6.

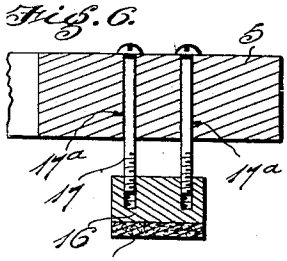


Fig. 3.

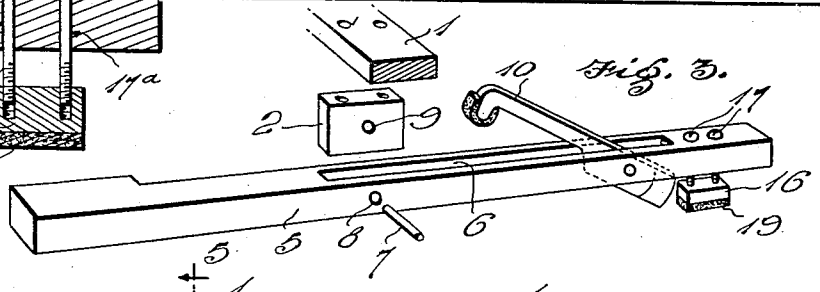


Fig. 4.

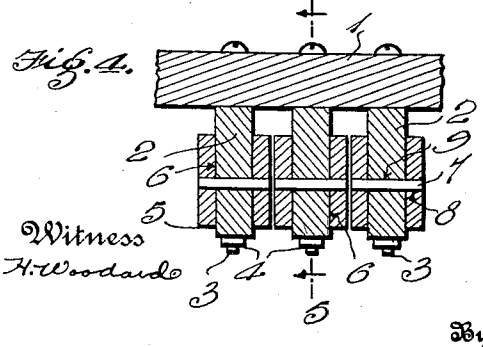
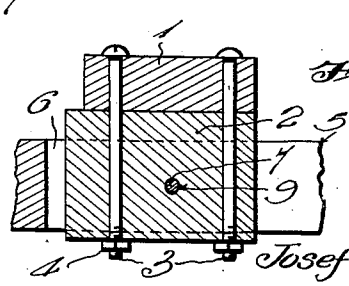


Fig. 5.



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UNITED STATES PATENT OFFICE

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KEY-OPERATED PLAYING DEVICE FOR STRINGED MUSICAL INSTRUMENTS

Application filed April 12, 1928. Serial No. 269,424.

This invention relates to improvements in key-operated playing devices for zithers and like stringed musical instruments.

The object of this invention is to improve the construction of the playing device forming the subject matter of my United States Patent No. 1,097,106, dated May 19, 1914.

In the structure disclosed in this patent, the keys are so mounted that in order to remove one of the same for repairing or replacement, it is necessary to remove the entire set and to practically disassemble the same. It is therefore one object of the present invention to provide an improved means for mounting the keys whereby any one of the same may be removed without disturbing any of the others.

With the foregoing in view, the invention resides in the novel subject matter hereinafter described and claimed, the description being supplemented by the accompanying drawing.

Fig. 1 is a plan view of a portion of the device and a portion of the zither with the top of the casing of the device removed.

Fig. 2 is a vertical cross sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a detail perspective view of one of the keys and its mounting means, disassembled.

Fig. 4 is a detail vertical, cross sectional view of three of the keys and their mounting means taken on the line 4—4 of Fig. 2.

Fig. 5 is a detail vertical longitudinal sectional view through a portion of one of the keys and its mounting means, taken on the line 5—5 of Fig. 4.

Fig. 6 is a detail vertical longitudinal sectional view through the inner end of one of the keys and the improved damper mechanism carried thereby.

In the drawing, the reference character C denotes the casing, the construction and the arrangement of which, on a zither is the same as disclosed in the patent herein referred to and forms no part of the present invention.

Arranged transversely through the casing substantially midway between the front and rear sides thereof is a key supporting bar 1, the ends of which are suitably secured to the end members of the casing. Projecting downwardly from the lower side of the bar 1 at properly spaced intervals are a series of key-supporting blocks 2. These blocks are removably secured to the bar by a pair of bolts 3 which pass downwardly through the bar 1 and the blocks and are provided on their lower ends with nuts 4 as shown.

Each of the keys 5 of the improved device has formed in its rear portion a longitudinal slot 6 and in the forward ends of these slots are received the blocks 2, to which the keys are pivotally connected by short pivot pins 7 which pass through alined openings 8 in each key and through a centrally disposed opening 9 in the block as clearly shown in Figs. 2, 4, and 5 of the drawing. By this construction, it will be seen that each key is pivotally supported in the casing entirely separate and independent from the other keys, so that any key may readily be removed by simply unscrewing the nuts 4 and withdrawing the bolts 3 from the blocks 2 and bar 1, after which the key may be slipped forwardly through the open front side of the casing.

Pivoted in the rear ends of the slots 6 of the keys are the string-engaging hammers 10, the construction and operation of which is the same as the hammers disclosed in the patent referred to.

When in a normal position, the rear ends of the keys engage a stop bar 12 disposed across the rear portion of the casing, and in the lower sides of the front ends of the keys are formed vertical recesses 13 in which are received the upper ends of guide pins 14, the lower ends of which are set into a strip 15 arranged across the lower front portion of the casing.

Each of the keys 5 carries near its rear end a damper mechanism designed to engage the strings of the instrument at the proper time. This damper mechanism comprises a block 16 in the upper side of which are secured two upwardly projecting screws 17 which pass loosely through vertical passages 17^a formed in the rear ends of the keys as clearly shown in Fig. 6 of the drawing. The upper ends of the screws 16 are provided with heads with which the rear end of the key is engaged

when the front end thereof is struck, and whereby the damper block 16 is lifted and disengaged from the strings. As soon however as the front end of the key is released and the rear end drops onto the stop bar 12, the loose sliding engagement of the screws 17 will permit the damper block to drop completely down onto the string. As shown in Fig. 2 the length of the screws 17 is such that the headed upper ends thereof project a slight distance above the top of the key when the latter is in engagement with the stop bar 12 and the damper block in engagement with the string. This structure will compensate for any wear on the damper block or the pad 19 with which the lower side of the block is provided. Such wear, if the damper block was rigidly secured to the key as in the patent referred to, would prevent the damper block from engaging the string. This loose connection of the damper block will also permit the same to drop onto the string if for any reason the end of the key did not drop quite onto stop bar, or the key did not assume its proper normal position after being struck and which might be caused by an obstruction on the stop bar or on the bottom of the engaging end of the key.

I claim:

In a stringed instrument operating means, an elongated key having a longitudinal slot, an elongated hammer pivotally mounted in said slot, the latter being forwardly extended beyond said hammer, a support vertically spaced from the key, a bearing block detachably secured to said support and occupying the forwardly extended portion of said slot, and a pivot pin passing through said key and block.

In testimony whereof I have hereunto affixed my signature.

JOSEF MECERA.