Aug. 18, 1942. S. I. BERGER 2,293,101

TOY PIANO

Filed June 9, 1941

Fig. 1

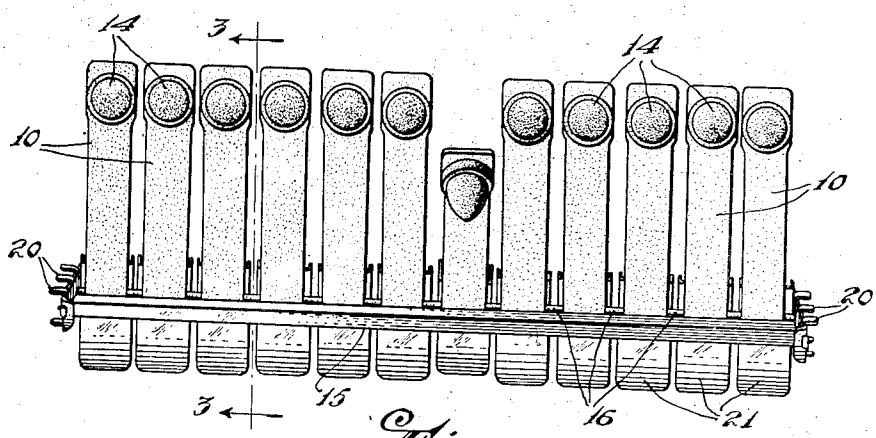


Fig. 2

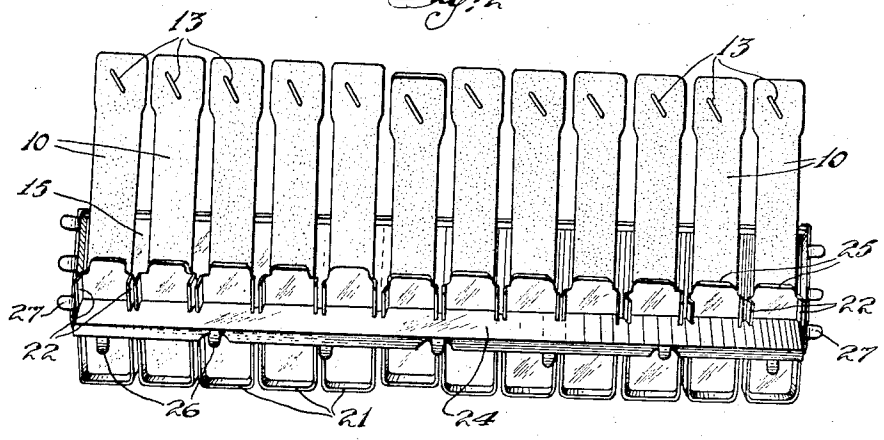


Fig. 3

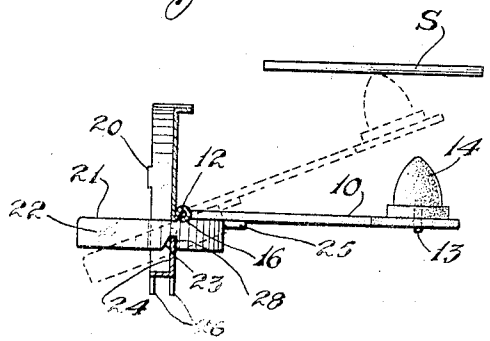
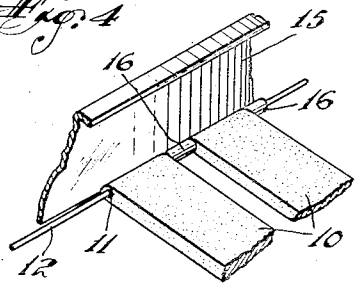


Fig. 4



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2,293,101

TOY PIANO

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Application June 9, 1941, Serial No. 397,191

3 Claims. (Cl. 84—404)

This invention relates to improvements in toy pianos and more particularly to the provision of novel means for mounting and actuating the sound bar striking units therein.

An object of my invention is to provide a novel means for mounting the hammer members in a manner which will permit them to have free movement and which will permit the same to be actuated with the exertion of a minimum of effort on the depression of the piano keys.

A further object of my invention is to provide a toy piano wherein the key-hammer action is synchronized to normally present the external appearance of a full size piano key board, the individual keys being immediately responsive to the touch of the finger of the player in simulation of the action which takes place in the playing of the conventional, full-size piano.

A further object of my invention is to provide a novel means for assembling the hammers of a toy piano on a shaft as a unit, adapted to be assembled on a transverse plate of the toy piano and for assembling the piano keys on a plate below the first-named plate so that the keys may be accurately juxtaposed relative to the hammers. These and other advantageous objects are accomplished by the simple and practical construction, combination and arrangement of parts hereinafter described and shown in the accompanying drawing, in which:

Fig. 1 is a top plan view of the assembled hammer and key units showing one of the hammers in raised position,

Fig. 2 is a similar bottom plan view,

Fig. 3 is a transverse sectional view taken on lines 3—3 of Fig. 1 in the direction indicated by the arrows.

Fig. 4 is a fragmentary perspective view of a pair of hammer members showing details of their assembly on the shaft and on the supporting plate,

As shown in the drawing, the hammer action in a toy piano pursuant to my invention, consists of a plurality of hammer arms 10 which may be made of any suitable material each of which is provided at one end with a transverse aperture 11 through which the shaft 12 freely passes, the hammer arms being arranged on the shaft in space relation and having fixed to their opposite ends, by any suitable means, such as by pins 13 passing therethrough, the hammer heads 14, which, as shown in Fig. 3, are preferably of conical cross section for the purpose of enabling them to sharply strike the vibrating sound bars or elements S which are positioned in the piano in the path of the elevated hammer arm, as indicated in dotted lines Fig. 3.

A plate 15 having at its lower end, depending tabs 16, is provided, said plate being adapted to be vertically disposed in the toy piano at the front thereof in simulation of a full size piano. The tabs 16 of the plate 15 are equidistantly spaced apart, the spaces between the tabs 16 corresponding to the width of the hammer arms so that the latter may be interposed there-between in assembling the unit, with the shaft 12 positioned under the tabs 16. For this purpose, the tabs 16 are initially arced or curled downwardly to tightly receive the shaft 12, said tabs being adapted to be clinched over the shaft 12, so as to provide a closed bearing therefor as shown in Figs. 3 and 4. Thus the plate 15 and its hammer arms 10 constitute a complete hammer unit which may be positioned in the toy piano by any suitable means such as by providing lugs 20 depending from the longitudinal ends of the plate 15. The hammers are mounted in the toy piano in their proper juxtaposition relative to the sound bars or elements S which correspond to the notes of the musical scale and may be of a construction and mounting found convenient or expedient, whereby on the rotation of the hammers upwardly as in Fig. 3, the hammer heads 14 will be caused to strike and vibrate the sound bars or element S. A keyboard consisting of a plurality of keys 21 corresponding in number with the hammer arms 10, is positioned in the toy piano in the manner presently set forth. Each key 21 is preferably struck up from a metal blank to provide the external appearance of a piano key, the side walls 22 of the key being provided with recesses 23 adapted to receive a vertical plate 24 on which the keys are thus pivotally mounted, each key being provided with a protruding ledge 25 for a purpose presently explained. The plate 24 is provided at its lower edge with depending lugs 26 and is provided at its transverse or longitudinal edges with lugs 27 by means of which the plate 24 may be mounted in the toy piano. As will become apparent from an inspection of Fig. 3, the plates 15 and 24 are adjacently mounted in the toy piano in alignment. Thus the keys 22 will normally be disposed on the plate 24 in registry with the hammer arms 10, the latter being freely mounted on the shaft 12 and tending, by gravity, to move downwardly and to therefore, normally rest on and be disposed on the keys 22 and holding the latter in the horizontal position shown in Fig. 3 on engagement of the vertical edge 28 of the re-

cess 23 with the plate 24. When a key 22 is depressed to the dotted line indicated in Fig. 3 it will cause the hammer arm to be elevated and to strike the sounding bar or element S, the key and hammer arm returning to their normal position upon the lifting of the player's finger, the fulcrum of the hammer arm being at the shaft 12 while the weight (the head 14), being at the other end.

Having thus described by invention what I claim as new and desire to secure by Letters Patent is:

1. In a toy piano, a plate provided with depending tabs, a shaft secured to said tabs, and a plurality of hammer arms positioned intermediate the tabs, said arms being provided with transverse apertures at one end and with hammer heads at the other end, the shaft passing through the transverse apertures to rotatably position the arms on said plate in spaced relation, the head ends thereof normally weighting and rotating the arms downwardly, a plurality of keys pivotally positioned in the piano beneath the arms, said keys having ledge portions aligned with said arms, whereby, on the tilting of the keys, the ledge portions thereof will engage the hammer arms and elevate the same for the purpose of striking any sound elements positioned in the path of the elevated hammer arms.

2. In a toy piano, a plate provided with depending tabs, a shaft secured to said tabs, and a plurality of hammer arms positioned intermediate the tabs, said arms being provided with transverse apertures at one end and with hammer heads at the other end, the shaft passing through the transverse apertures to rotatably position the arms on said plate in spaced relation, the head ends thereof normally weighting and rotating the arms downwardly, a second plate portion, a plurality of keys provided with recesses having a vertical edge to enable the keys to be positioned on said second plate portion and to limit the tilting of the keys beyond the horizontal on engagement of the vertical edge with the plate portion, said keys having ledge portions adapted to engage the hammer arms and elevate the same for the purpose of striking any sound elements positioned in the path of the elevated arms, when the keys are tilted.

3. In a toy piano, a plate provided with a plurality of equidistantly spaced depending tabs, a plurality of hammer arms provided with transverse apertures at one end, a shaft freely passing through said apertures, said hammer arms being rotatably and displaceably positioned on the shaft, the tabs being spaced apart the width of the hammer arms, the latter being so spaced apart on the shaft as to fit the spaces between adjacent tabs, the shaft being secured to the tabs with the hammer arms intermediate the tabs and rotatable on the shaft.

SAMUEL I. BERGER.