C. E. PICKARD & E. L. CONDON.

DEMOUNTABLE LEVELING HINGE FOR PIANO KEYS.

APPLICATION FILED APR. 25, 1916.

1,246,998. Patented Nov. 20, 1917.

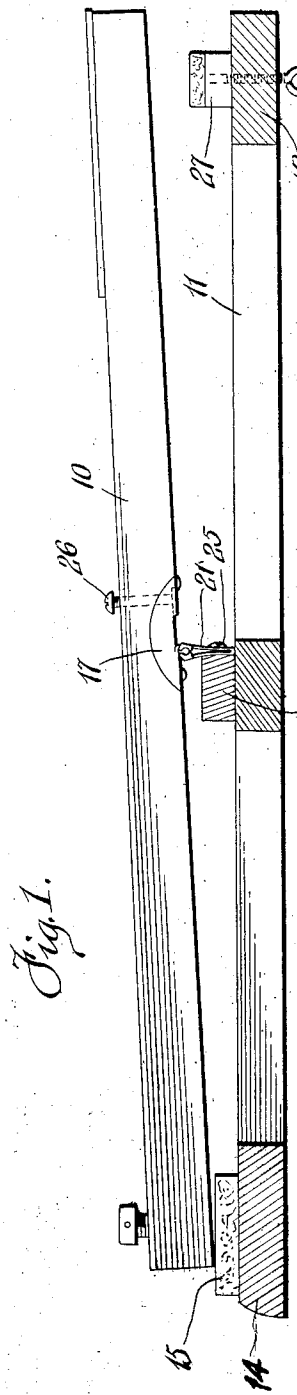


Fig. 1.

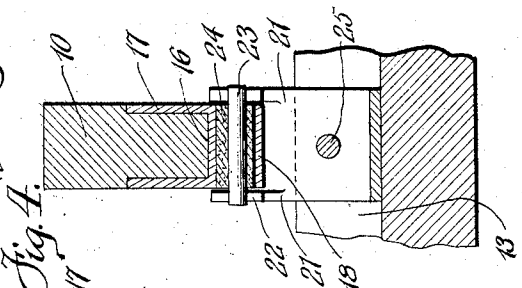


Fig. 4.

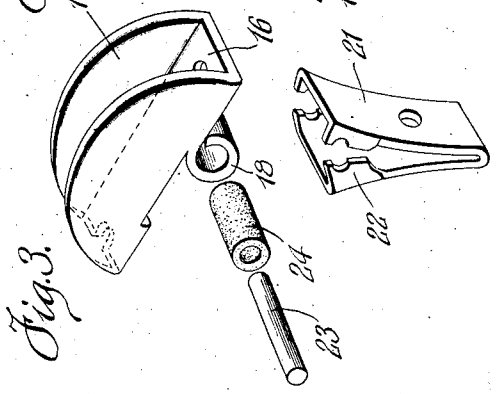


Fig. 3.

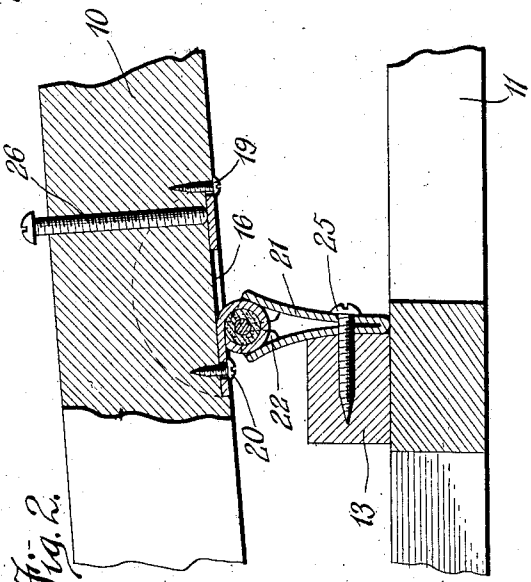


Fig. 2.

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DEMOUNTABLE LEVELING-HINGE FOR PIANO-KEYS.

1,246,998. Specification of Letters Patent. Patented Nov. 20, 1917.

Application filed April 25, 1916. Serial No. 93,563.

To all whom it may concern:

Be it known that we, CLARKSON E. PICKARD and EDWARD L. CONDON, citizens of the United States, residing at Marshalltown, in the county of Marshall and State of Iowa, have invented certain new and useful Improvements in Demountable Leveling-Hinges for Piano-Keys, of which the following is a specification.

This invention relates to a demountable leveling hinge for piano keys and comprehends certain improvements in the invention disclosed in our co-pending application filed April 25, 1916, Serial No. 93,562.

The invention has as its primary object to provide a hinge of this character wherein the key may be easily leveled and wherein the body of the hinge may be easily detached from the flange thereof so that the key may be readily demounted.

The invention has as a further object to provide a device of this character wherein the hinge flange will resiliently grip the pivot pin of the hinge and wherein the means provided for connecting the flange with the center rail of the key will also act to urge the flange into engagement with the said pivot pin.

And a still further object is to provide a hinge of this character wherein the body of the hinge may be freed for demounting the key by simply loosening the fastening means for the hinge flange without the necessity of removing the said means or of removing the flange.

Other and incidental objects will appear as the description proceeds and in the drawings wherein I have illustrated the preferred embodiment of the invention and wherein similar reference characters designate corresponding parts throughout the several views,

Figure 1 is a side elevation showing a conventional form of piano key equipped with our improved pin, the key being illustrated in connection with the usual key bed which is shown in section,

Fig. 2 is a sectional view on a slightly enlarged scale more particularly showing the construction and mounting of the hinge,

Fig. 3 is a detail perspective view showing the parts of the hinge detached and particularly showing the formation of the flange employed, and

Fig. 4 is a transverse sectional view on a slightly enlarged scale showing the manner in which the elements of the hinge are adapted to coact with each other when assembled in operative position.

In order that the construction, mounting and operation of the improved hinge may be entirely clear, we have, in the drawings, illustrated the device in connection with a conventional form of key 10 with which is associated a key frame 11 having a front rail 12, a center rail 13, and a back rail 14. Mounted upon the upper side of the back rail 14 is a felt 15 which is arranged to come beneath the rear end of the key 10.

In carrying out the invention, we employ a substantially U-shaped hinge body which forms a movable element and includes a flat bottom wall 16 from opposite sides of which project upstanding coacting flanges 17. The hinge body is preferably constructed of sheet metal or other suitable material and struck from the bottom wall 16 thereof is a downwardly extending hinge loop 18.

The hinge body thus constructed is of a size to snugly receive the key 10 with the flanges 17 confronting the opposite sides of the key and with the key resting upon the bottom wall 16 of the hinge body. Preferably, the key 10 is cut away to receive the hinge body so that, normally, the flanges 17 thereof, as well as the bottom wall 16, will be disposed within the lines of the key. Connecting the hinge body with the key are front and rear screws or other suitable fastening devices 19 and 20 respectively. The front screw 19 is engaged in a suitable notch in the bottom wall 16 of the hinge body at one extremity thereof while the rear screw 20 is freely fitted through a suitable opening formed in the said bottom wall adjacent the opposite extremity of the hinge body, these screws being threaded into the bottom of the key.

Associated with the hinge body, is a substantially U-shaped flange or fixed element having coacting yieldable arms 21 arranged to confront each other. This flange is preferably formed from a piece of suitable resilient sheet metal bent into desired shape with the arms 21 of the flange normally arranged in spaced relation, as shown in Fig. 3 of the drawings. At their upper extremities, the arms 21 are formed with inwardly directed coacting bearing flanges 22 projecting between the said arms and notched to receive a pivot pin 23. The pivot pin 23 is carried by the hinge body and is arranged within the hinge loop 18 thereof to be sur-

rounded by a felt or other suitable fibrous bushing 24 to eliminate any possible rattling between the hinge loop and the pivot pin.

The flange is, as shown in Fig. 2 of the drawings, removably connected to the center rail 13 by a screw or other suitable fastening device 25 which extends freely through the registering openings of the arms 21 of said flange to support the said arms projecting upwardly. The lugs 22, at opposite sides of the flange, are arranged a sufficient distance apart to freely receive the hinge loop 18 of the hinge body and it will now be observed that as the screw 25 is tightened to clamp the flange in position upon the center rail, the arms 21 of the said flange will be moved to a position with the upper extremities of said arms flexed to yieldably engage the lugs 22 with opposite ends of the pivot pin 23 for holding said pivot pin fixed upon the flange to pivotally support the key. To demount the key, the screw 25 is loosened when the arms 21 of the flange will resiliently move to free the pivot pin 23 so that the key may then be easily displaced without the necessity of removing the flange or entirely removing the screw 25. In this connection, it is to be observed that the screw 25 serves not only as a fastening means for the flange but also as a clamping means for urging the coacting arms of the flange to active position.

Co-acting with the hinge body is a leveling screw 26 adjustably fitted through the key 10 and engaging with the bottom wall 16 of the hinge body adjacent the forward extremity thereof. As will now be clear, the screws 19 and 20 may be loosened and the leveling screw adjusted either upwardly or downwardly to rock the key upon the hinge body at the screw 20 for leveling the key. When so leveled, the screw 20 is again tightened and the screw 19 positioned to clamp the forward end of the hinge body against the leveling screw to coact therewith for firmly holding the key at adjustment. The screw 19 thus provides a clamping element adjustable to coöperate with the leveling screw and with the hinge body for maintaining the key leveled.

In connection with the improved hinge, we have found it desirable to use a dip regulating button 27. This button is, as particularly shown in Fig. 1 of the drawings, adjustable upon the front rail 12 of the key frame for regulating the dip of the key and displaces the ordinary guide pin for the key. As is well known, such a guide pin is usually engaged in a slot in the lower side of the key so that the removal of the key is thereby rendered quite difficult. By employing the button 27, this difficulty is overcome.

Having thus described the invention, what is claimed as new is:

1. A hinge mounting for piano keys including a hinge body provided with a hinge lug, a pivot pin extending freely through said lug, and a flange formed with arms having their free outer extremities gripping the said pin and holding the pin fixed to pivotally support the hinge body.

2. A hinge mounting for piano keys including a movable element, a pivot pin connected with the said element, and a fixed element provided with coacting arms having lugs projecting therebetween in engagement with said pin for supporting the movable element upon the fixed element.

3. A hinge mounting for piano keys including a hinge body, a hinge lug carried thereby, a pivot pin received by said lug, and a flange formed with coacting arms having lugs projecting therebetween in engagement with said pivot pin for pivotally supporting the hinge body, the said hinge lug being received between the lugs of said arms.

4. The combination with a piano key mounting including a movable element, a pivot pin for the movable element, and a fixed element having arms engaging said pin and supporting the movable element in active position, of a key carried by the movable element, and means mounted upon the key and adapted to coact with said movable element for leveling the key.

5. The combination with a piano key mounting including a movable element, a pivot pin for the movable element, and a fixed element having arms engaging the said pin and supporting the movable element in active position, of a key carried by the movable element, and a screw carried by the key and adapted to coact with the said movable element for leveling the key.

In testimony whereof we affix our signatures.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."