Dec. 19, 1939. E. O. LIABOE 2,183,916

PIANO KEYBOARD LEVELER

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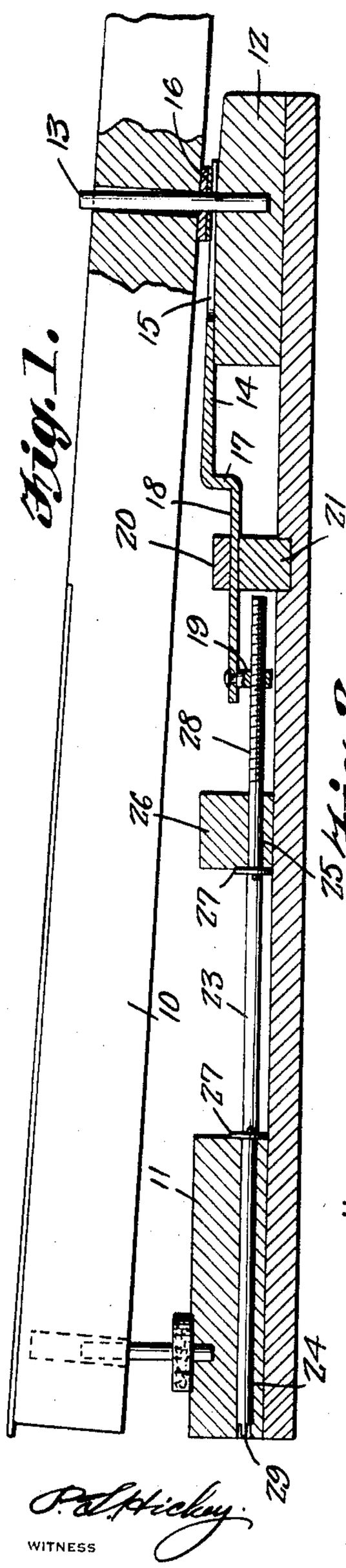


Fig. 1.

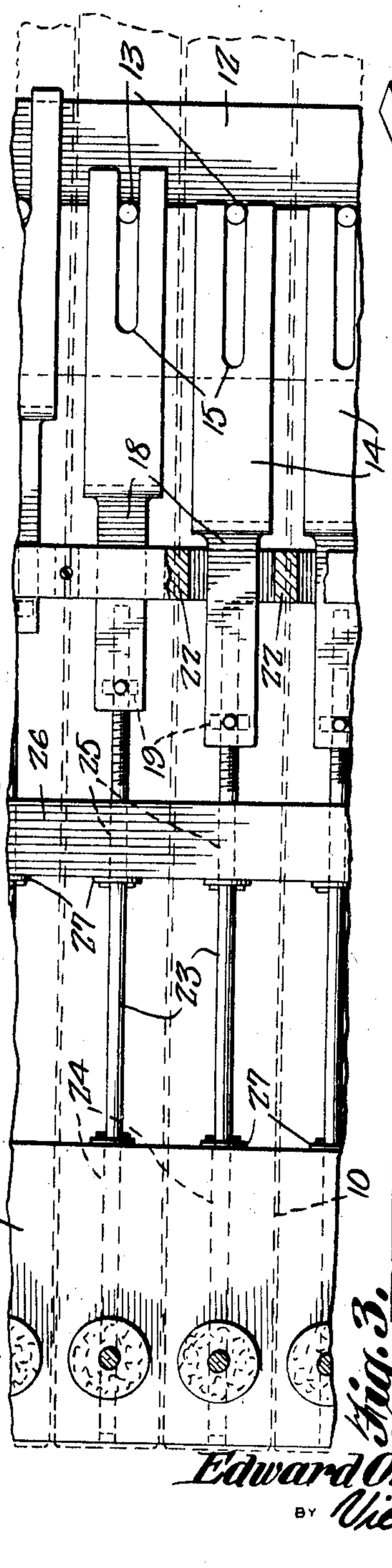


Fig. 2.

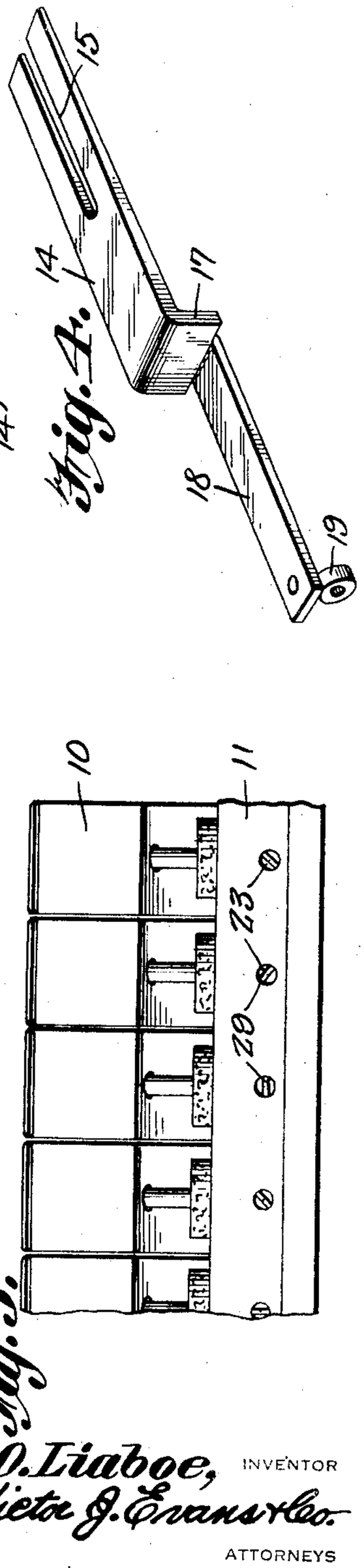


Fig. 4.

Fig. 3.

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WITNESS

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## PIANO KEYBOARD LEVELER

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2 Claims. (Cl. 84—432)

This invention relates to a piano keyboard leveler and has for an object to provide novel wedges and means for adjusting the same so that the keys can be accurately leveled, and spaced with great ease.

Ordinarily it takes several hours for an operator to level a grand piano keyboard by the usual method of first removing the hammer action then apply key weights to hold the keys down, and finally leveling the keys by applying paper punchings under the center of the key. With this disadvantage in mind the present invention provides built-in wedges and screw pins for moving the same underneath the keys at the inner ends to the end that an operator may level a keyboard in a few minutes during manufacture of the piano or while tuning a used piano.

A further object is to provide a keyboard leveler which will be formed of a few strong simple and durable parts which will be inexpensive to manufacture and which will not easily get out of order.

With the above and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter fully described and claimed, it being understood that various modifications may be resorted to within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawing forming part of this specification,

Figure 1 is a cross sectional view of a piano action showing a key and leveling means, wedge, and operating screw constructed in accordance with the invention.

Figure 2 is a plan view of a piano action with the keys removed and showing the leveling wedges and adjusting screw pins of several adjacent keys.

Figure 3 is a front elevation of the parts shown in Figure 2 and showing the exposed ends of the screw pins.

Figure 4 is a detail perspective view of one of the wedges.

Referring now to the drawing in which like characters of reference designate similar parts in the various views, 10 designates a key, 11 the front rail, 12 the center rail, 13 the fulcrum pin, these parts being conventional in a piano action.

The invention contemplates a wedge 14 for each key, the wedge being slotted as shown at 15 at its thin end to receive the fulcrum pin 13 underneath the conventional center rail punching 16. The wedge is adapted to rest upon the center rail 12 and beyond the center rail the thick end of the wedge is provided with a downwardly directed terminal 17 to which is secured a thin bar 18 of less width than the width of the wedge. A swivel eye 19 is secured to the free end of the bar.

The bar 18 is disposed between upper and lower wedge rails 20 and 21 which are suitably supported in the piano action parallel with the center rail 12 and adjacent to the latter. Stop lugs 22 are arranged on the lower wedge rail to permit the wedge being shifted laterally on the swivel eye 19 so that the wedge may be properly aligned with the key to compensate for inaccuracies in the keyboard.

For regulating the extent to which the wedge may be projected underneath the key each wedge is provided with a regulating screw pin 23 which is turnably mounted in openings 24 and 25 in the front rail 11 and in a guide rail 26 respectively, as best shown in Figures 1 and 2. Collars 27 are secured to the guide screw and bear against opposite faces of the center rail 11 and guide rail 26 to prevent endwise movement of the screw pin.

The inner end of the screw pin is threaded as shown at 28 and is threadedly engaged with the swivel eye 19. Consequently when the screw pin is rotated axially the wedge will be moved forward or backward according to the direction of the screw pin. The opposite end of the screw pin is exposed at the front of the center rail 11 and is provided with a screw driver kerf 29 by means of which the screw pin may be operated to adjust the position of the wedge.

From the above description it is thought that the construction and operation of the invention will be fully understood without further explanation.

What is claimed is:

1. A piano keyboard leveler including the combination with a piano key, center rail, and pin connecting the key to the rail, of a wedge provided with a longitudinal slot receiving said pin, said wedge being inserted between the rail and the key, an angular member on the free thicker end of the wedge, a depending eye swivelled on said member provided with screw threads, upper and lower wedge rails between which said angular member is disposed, a front rail, and a screw rotatably carried by the front rail, top wedge rail and center rail and having screw threads engaging the screw threads of the swivel eye, said screw permitting the wedge to be adjusted from the front of the piano, said eye permitting of the wedge being properly aligned with the key to compensate for inequalities in the keyboard.

2. A piano keyboard leveler including the com-

bination with a piano key, center rail, and pin connecting the key to the rail, of a wedge provided with a longitudinal slot receiving said pin, said wedge being inserted between the rail and the key, an angular member on the free thicker end of the wedge, a swivel eye on said member provided with screw threads, upper and lower wedge rails between which said angular member is disposed, a front rail, and a screw rotatably carried by the front rail, top wedge rail and center rail and having screw threads engaging the screw threads of the swivel eye, said screw permitting the wedge to be adjusted from the front of the piano, said eye permitting of the wedge being properly aligned with the key to compensate for inequalities in the keyboard.

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