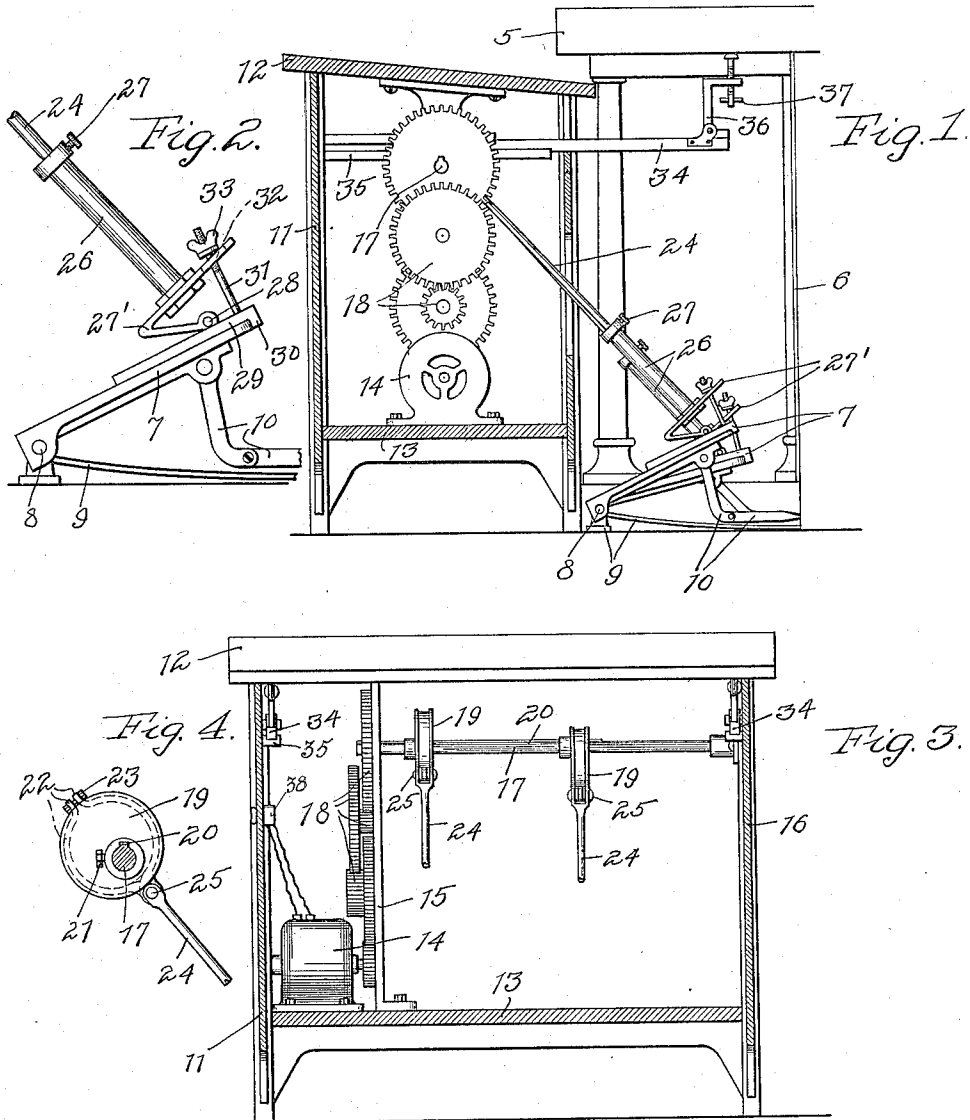


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 MEANS FOR OPERATING PLAYER PIANOS.
 APPLICATION FILED MAY 15, 1915.

1,167,752.

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MEANS FOR OPERATING PLAYER-PIANOS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, STILLWELL R. HARCOURT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Means for Operating Player-Pianos, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to means for operating player pianos and has to do particularly with means for securing this operation automatically, for instance, by means of electric power.

It is the object of my invention to provide operating means which may be applied to any existing player piano which is provided with the usual foot-pedals, and thus I contemplate a portable structure which may readily be attached to the player pedals, and as readily detached therefrom, so that the piano may be played in the ordinary manner, or, if desired, played manually with the foot-pedals out of use.

It is furthermore a feature of my invention that I provide what may thus be termed a power-plant in a cabinet which conveniently may be used as piano-bench.

My invention is illustrated in the accompanying drawings, in which,

Figure 1 is a side elevational view thereof, the casing being shown in section to reveal the interior construction. Fig. 2 is a side elevational view of the details of attachment to the foot-pedal; Fig. 3 is a front elevational view, the casing being shown in section; and, Fig. 4 is a detail view showing the eccentric which is employed.

The piano casing is shown in part in Fig. 1. The bed is illustrated at 5 and the front lower panel at 6. The player pedals are illustrated at 7—7, being pivoted at 8 to a frame 9, which slides out from underneath the piano case in any suitable manner. With the details of the pedal mechanism I am not concerned, and I shall therefore refrain from illustrating or describing them in detail. Suffice it to say that each of the pedals is connected by means of linkages 10—10 with the pumping bellows which forms a part of the pneumatic player system.

The power-plant which I provide is built in a cabinet 11, which, as before mentioned, may conveniently be made in the form of a

piano-bench, the top 12 being inclined forward slightly, as illustrated, for obvious purposes. The floor 13 of the cabinet supports a prime mover in the way of an electric motor 14. Some other motive power may be used, but in this instance I illustrate an electric motor. A partition 15 is provided and a shaft 17 is mounted in this partition and the side wall 16. This shaft 17 is the crank-shaft and it is connected to the shaft of the motor 14 by means of suitable reduction gearing 18. It is obvious, of course, that belting or some other suitable means of mechanical connection may be provided between the motor shaft and the crank-shaft, and my invention is not limited to the use of gears.

Upon the crank-shaft 17 two eccentrics 19—19 are provided, these eccentrics being keyed upon the shaft by means of the feather 20, and being held in any adjusted position by means of the set-screw 21. These eccentrics are grooved, as illustrated, and the grooves of the eccentrics are provided for the reception of embracing followers 22, held in position by means of the bolts 23, each of these followers being provided with a connecting-rod 24, pivoted thereto at 25. The eccentrics are disposed at a distance apart which will put them in position for lateral alinement with the pedals, it now being understood that each of the eccentrics is mechanically connected with one of the pedals. The connection between each of the eccentrics and the corresponding pedal will now be described.

The connecting-rod 24 takes into a socket-tube 26 at the lower end thereof, being held in any adjusted position by means of the set-screw 27. The socket-tube is firmly mounted upon a V-shaped spring member 27', pivoted at 28 to a contact-plate 29, which in turn is provided with the toe 30. This contact-plate with its toe is placed upon the upper end of the pedal 7, as illustrated clearly in Fig. 2, and this constitutes the connection between the eccentric and the pedal. A stem 31 extends from the contact-plate 29 upwardly and through a suitable slot 32 in the spring member 27', and above the spring member is provided with a winged nut 33 screwed thereon. This V-shaped spring member forms an effective shock absorber and takes up the variations in the throw of the eccentrics relative to the throw of the pedals.

It will be obvious that the connector rods are thus conveniently attached to the pedals and readily detached therefrom. As illustrated, the cabinet is placed in proper proximity to the pedals and then the mechanical connections between the pedals and the power-plant within the cabinet are made. In order that the cabinet may be held firmly against movement due to the action of the power-plant upon the pedals, I provide each side of the cabinet with a slide 34, mounted in a guide-way 35. At the end of the slide 34 a U-shaped brace 36 is provided and a clamping screw 37 extends through this brace and is adapted for engagement with the under side of the piano bed, as illustrated in Fig. 1.

When the cabinet has been disposed in proximity to the pedals, the slides are withdrawn and the clamping screws engaged on the under side of the bed. The firm foundation of the cabinet upon the floor and this additional security holds the entire cabinet and its power-plant in place so that the pedals may be firmly and effectively operated upon.

The conductors are led to the motor in any suitable manner, and a switch 38, whereby the circuit of the motor may be controlled, is provided. If desired, this switch 38 may be replaced by a rheostat, so that the speed of the motor 14 may be controlled.

It will be obvious to those skilled in the art that other shock-absorbing mechanism than the one that I have described may be employed, and in fact in some instances it will be entirely unnecessary to employ any shock-absorbing mechanism.

I desire that the metes and bounds of my invention shall be determined by the scope

of the following claims, which I have drawn to include the proper equivalents and so as not to be limited to unessential details which may readily be replaced or eliminated in certain instances without in any way departing from the spirit and scope of my invention.

I claim:

1. In combination, a pneumatically operated player piano, pumping pedals for said pneumatically operated player piano, an operating shaft, means for rotating said shaft, and means for operatively connecting said pedals and said shaft, said last named means having a resilient element therein through which the movement of said shaft is transmitted to depress the pedals.

2. In combination, a pneumatically operated player piano, pumping pedals for said pneumatically operated player piano, a portable power plant adapted for operative connection to said pumping pedals, said power plant comprising an operating shaft, means for rotating said shaft, and means for operatively connecting said pedals and said shaft, said last named means having a resilient element therein through which the movement of said shaft is transmitted to depress the pedals, and means for clamping said power plant firmly in position in front of said pumping pedals.

3. A cabinet, a shaft in said cabinet, means for operating said shaft, a crank on said shaft, a connecting rod extending from said crank and an L-shaped member for connecting said rod to the top of a player pedal.

In witness whereof, I hereunto subscribe my name this 12th day of May, A. D. 1915.

STILLWELL R. HARCOURT.

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