No. 868,740. PATENTED OCT. 22, 1907.

J. WEBER.

ELECTRICAL PIANO PLAYING ATTACHMENT.

APPLICATION FILED SEPT. 14, 1905.

2 SHEETS—SHEET 1.

Fig. 2.

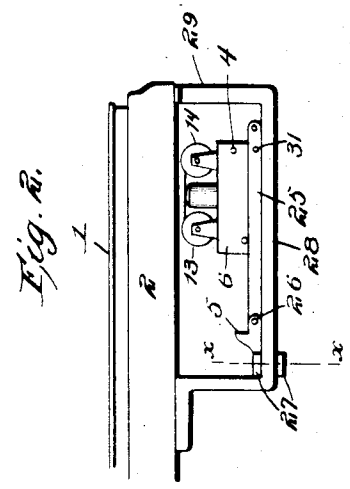


Fig. 4.

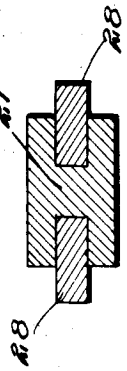


Fig. 1.

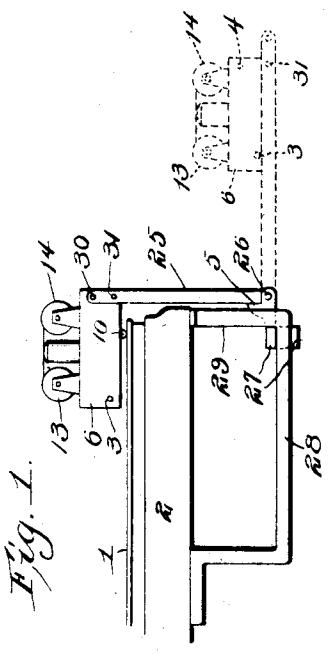
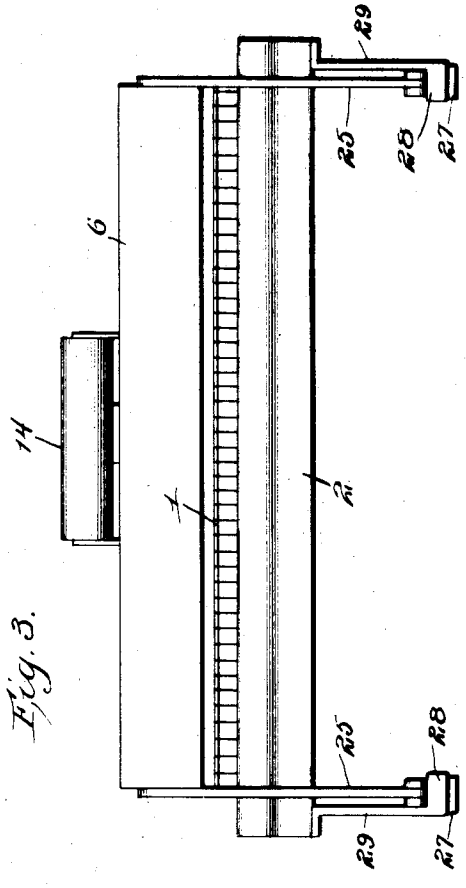


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 6.

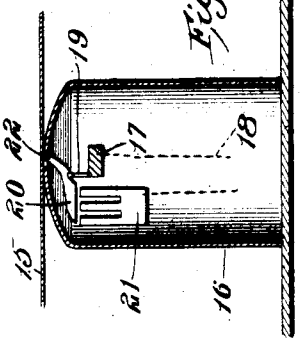
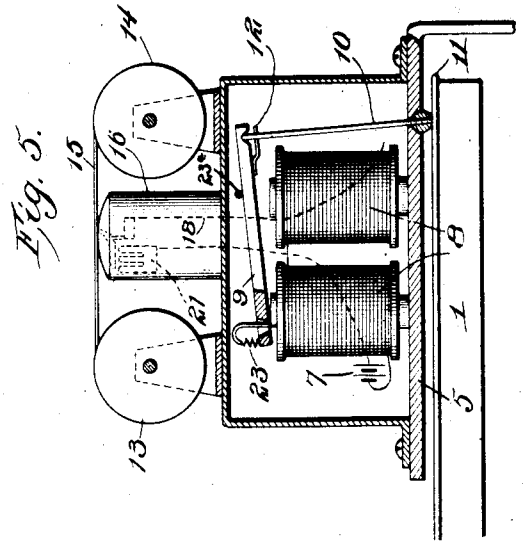


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOSEPH WEBER, OF BROOKLYN, NEW YORK.

ELECTRICAL PIANO-PLAYING ATTACHMENT.

No. 868,740. Specification of Letters Patent. Patented Oct. 22, 1907.

Original application filed January 16, 1904, Serial No. 189,366. Divided and this application filed September 14, 1905. Serial No. 278,405.

To all whom it may concern:

Be it known that I, JOSEPH WEBER, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Electrical Piano-Playing Attachments; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to pianos, and more particularly to an electrical piano actuating attachment, and is a division of an application filed by me on January 16, 1904, Serial Number 189,366.

The prime object of my invention among others, is to provide a simple, attractive and efficient housing for the actuating and controlling devices comprised in a self-playing attachment for pianos, such housing being arranged to occupy a minimum amount of space when the player is placed in its operative position or disposed out of the way beneath the key-board.

Another object is to provide a housing which may be moved downward and disposed entirely out of the way and practically out of sight thus leaving no incumbrance or obstruction which would in any wise interfere with the normal use of a piano when it is desired to manually operate the keys thereof.

With the above and other objects in view the invention consists of the novel constructions and combinations of parts hereinafter more fully described and pointed out in the claims.

In the accompanying drawngs I have shown the preferred form of my invention. In said drawings

Figure 1 is a side elevation showing my invention as applied for use upon an ordinary upright piano, the full lines indicating the operative position thereof over the keys, while the dotted lines show the position occupied by the attachment after it has been swung downward; Fig. 2 is a side elevation showing the position assumed by the device when the same is stored under the key bed; Fig. 3 is a front elevation of a portion of an upright piano showing the position occupied by my attachment when in place to coöperate with the keys; Fig. 4 is an enlarged section on line X—X, Fig. 2; Fig. 5 is an enlarged transverse section through the attachment proper; and Fig. 6 is a detail view showing, on an enlarged scale, part of the construction illustrated in Fig. 1.

Referring to the figures by numerals of reference, 1 indicates the side of a key of a piano of the usual or any preferred construction, while 2 designates a portion of the framework of the instrument. To the outer edge of the framework, thus or otherwise constructed, I attach a supporting arm 29 which extends downward and is secured to one end of a bracket 28 fastened to the key bed 2 of the piano and with its lower portion disposed parallel therewith. Two of these brackets 28 are employed as shown in Fig. 4, and mounted between them is slides 27, the opposite edges of which are grooved to receive the brackets. Ears 26 extend forward from this slide, and pivoted between them is an arm 25 to the free end of which is pivoted the housing 6 of the attachment. This housing is pivotally connected to the arm in any suitable manner, as by means of a pin 31, and has an aperture 4 therein which is adapted to receive a locking pin 30 when the housing 6 is disposed at right angles to the arm 25. A stop 5 extends upward from the slide 27 and is adapted to support the arm 25 when the same is in the position shown in Fig. 1. Another stop 3 is arranged on the side of housing 6 for the purpose of supporting the housing upon the arm 25 when the same has been folded thereon, as shown by dotted lines in Fig. 1 and full lines in Fig. 2.

Disposed within the housing 6 is a plurality of individual key magnets which are controlled by means of a battery 7 and circuit therefor, each pair of operating magnets 8 being properly supported and insulated and having an individual key controlling armature 9 and coöperating rod 10 extending downward through a suitable opening in the bottom of the housing whereby the cushion end 11 will be in position to strike the key, a suitable spring 12 forming a proper connection between the armature and said rod. By tapering the opening through which rod 10 extends so that its upper end will be of less diameter than the other portions of said opening, the rod will always be maintained in correct position and when forced downward will find the key without producing friction. If preferred, the cushion-like terminal 11 may be connected to the rod by screw threads, thus forming a proper adjustment of said parts relative to the key.

I deem it unnecessary to enter fully into a detailed description of the key actuating devices, though it may be stated that the rollers 13 and 14 are mounted in proper bearings and designed to store or pay off, as the case may be, a continuous strip of perforated paper or other material 15, through the mediation of which the electric circuits are broken and closed incident to the operation of the keys. A housing 16 extends upward from the housing 6 and a bar 17 is located therein and extends from end to end thereof. This bar serves as a common return for the current when all of the circuits are connected to it. The said bar 17 has a knife edge 19 designed as a bearing or seat upon which is disposed or pivotally secured the circuit making and breaking lever 20, it being understood that the bar 17 may, if preferred, form an insulation and support for the knife edge 19, which latter would then serve as a common return circuit for all of the magnets. The office subserved by the pivoted member 20 is to form an intermittent connection between the terminal 21 and the

knife edge or common return 19, inasmuch as the upper end 22 of the member 20 will instantly project through any of the openings into the continuous strip when such opening is brought immediately over said terminal, thereby insuring that the opposite end of the member 20 will immediately drop into engagement with the terminal 21 and close the circuit and thereby energize the magnets of said circuit. The result is that armature 9 will force the rod 10 sharply downward and actuate the key with which it is designed to coöperate, a suitable spring 23 being placed in coöperation with the armature to hold the opposite end thereof slightly elevated when the magnets are deënergized. A continuous rod 23^a extending across the housing 6 serves as a common stop or limiting device for all the armatures. By mounting the housing upon the particular form of supporting means which has been described, the same can be readily caused to assume a position directly over the keys of the piano, as shown in Fig. 1, or can be swung downward and moved inward under the keys so that it will not be in the way of the operator desiring to manually operate them.

When it is desired to store the housing, the arm 25 is swung to a horizontal position and pin 30 is removed so as to allow the housing 6 to swing down into the position shown by dotted lines in Fig. 1. The entire device is then slid inward upon the brackets 28 and will be supported thereon under the key bed 2, as clearly shown in Fig. 2. To replace the housing above the keys so as to coöperate with them, it is merely necessary to reverse the above described operation.

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

1. The combination with a suitable means of support; of an automatic playing attachment and a hinged and slidable connection between the attachment and the means of support whereby the attachment is movable into and out of operative position by combined swinging and sliding movement.

2. The combination with a supporting means fixed to a piano beneath its key bed; of a slide mounted on the supporting means, and an automatic playing attachment hinged to the slide and movable therewith.

3. The combination with a piano; of an automatic playing attachment having supporting means permitting it to slide beneath the key-board and a hinged connection between said supporting means and the piano.

4. The combination with a piano and a slide mounted under the key bed thereof, of an automatic playing attachment hinged to the slide.

5. The combination with a supporting bracket adapted to be connected to the key bed of a piano, of a slide mounted upon the bracket, and an automatic playing attachment hinged to the slide.

6. The combination with the key-board, of a supporting bracket, a slide movable on the bracket and elongated in the direction of its movement, an automatic playing attachment and means mounted upon and movable into alinement with the slide for supporting the attachment above the key-board.

7. The combination with a supporting means adapted to be connected to a piano; of an automatic playing attachment and a horizontally slidable connection between said attachment and supporting means, said connection being formed in sections and hinged together.

8. The combination with a piano, of supporting means secured to the key bed thereof, a slide mounted upon the supporting means and below the key bed, and means connecting the attachment and slide for supporting said attachment above the keys of the piano.

9. The combination with a supporting means, of a slide mounted thereon, a standard pivoted to the slide, an automatic playing attachment adjustably connected to the standard, and means connected to the slide for supporting the standard and attachment in raised position.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH WEBER.

Witnesses:
LOUIS J. HENRY,
GEO. SCHILZ.