No. 608,177. Patented Aug. 2, 1898.

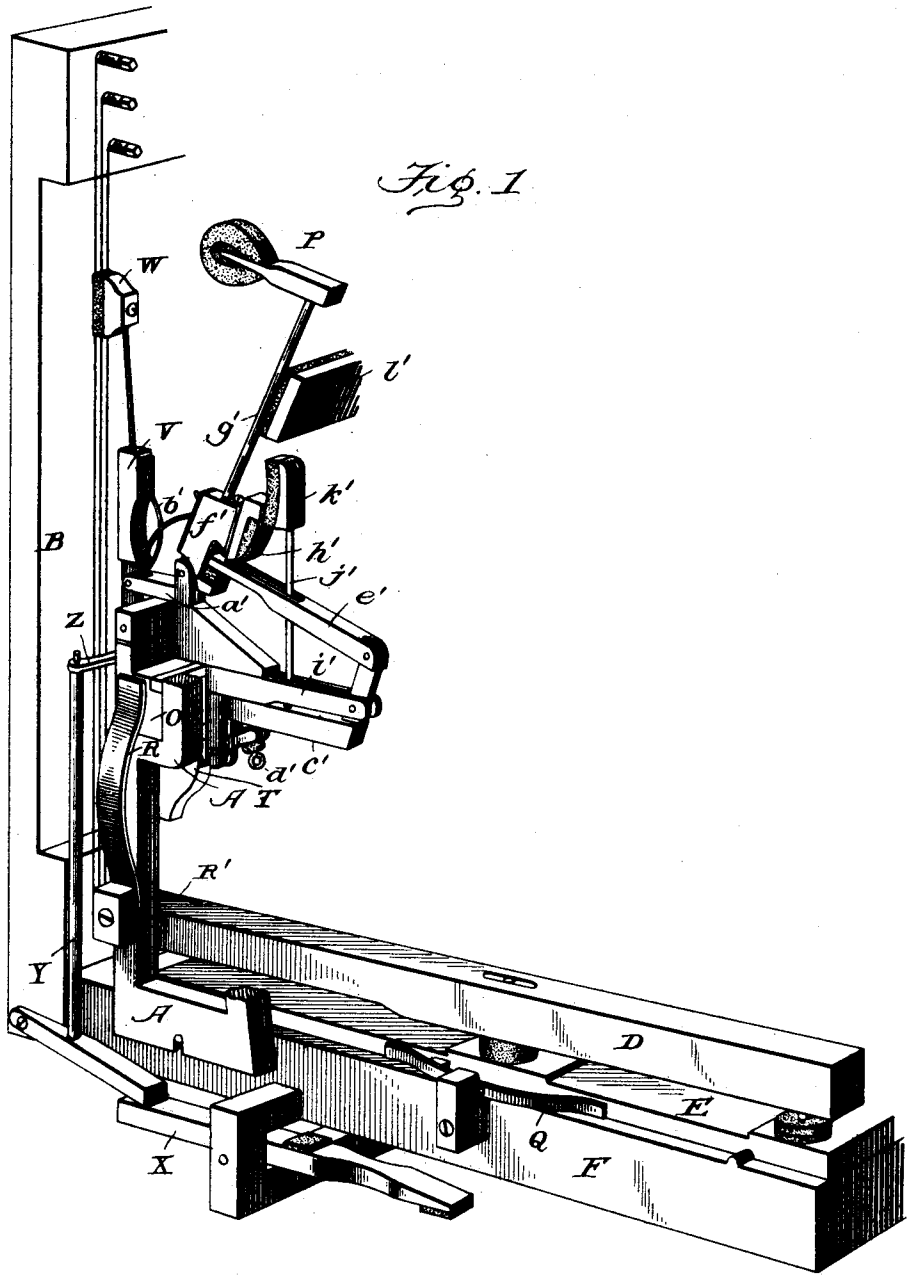
R. E. COBB.

PIANO ACTION.

(Application filed May 29, 1897.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1



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Fig. 5

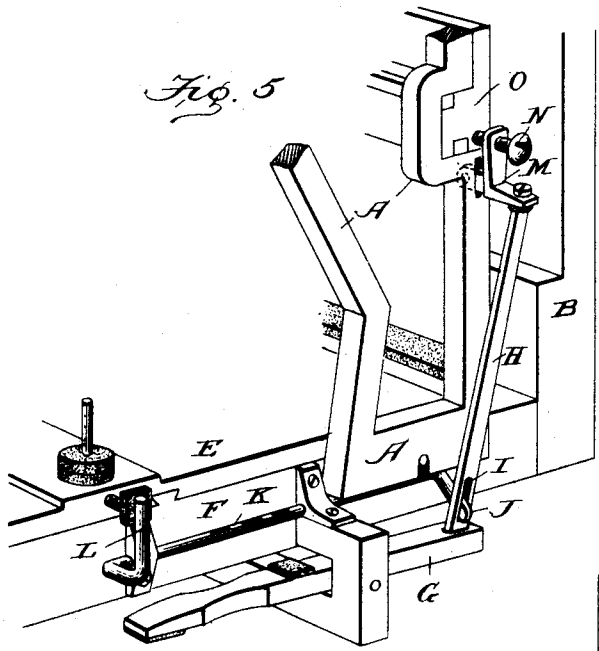


Fig. 2.

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Fig. 3.

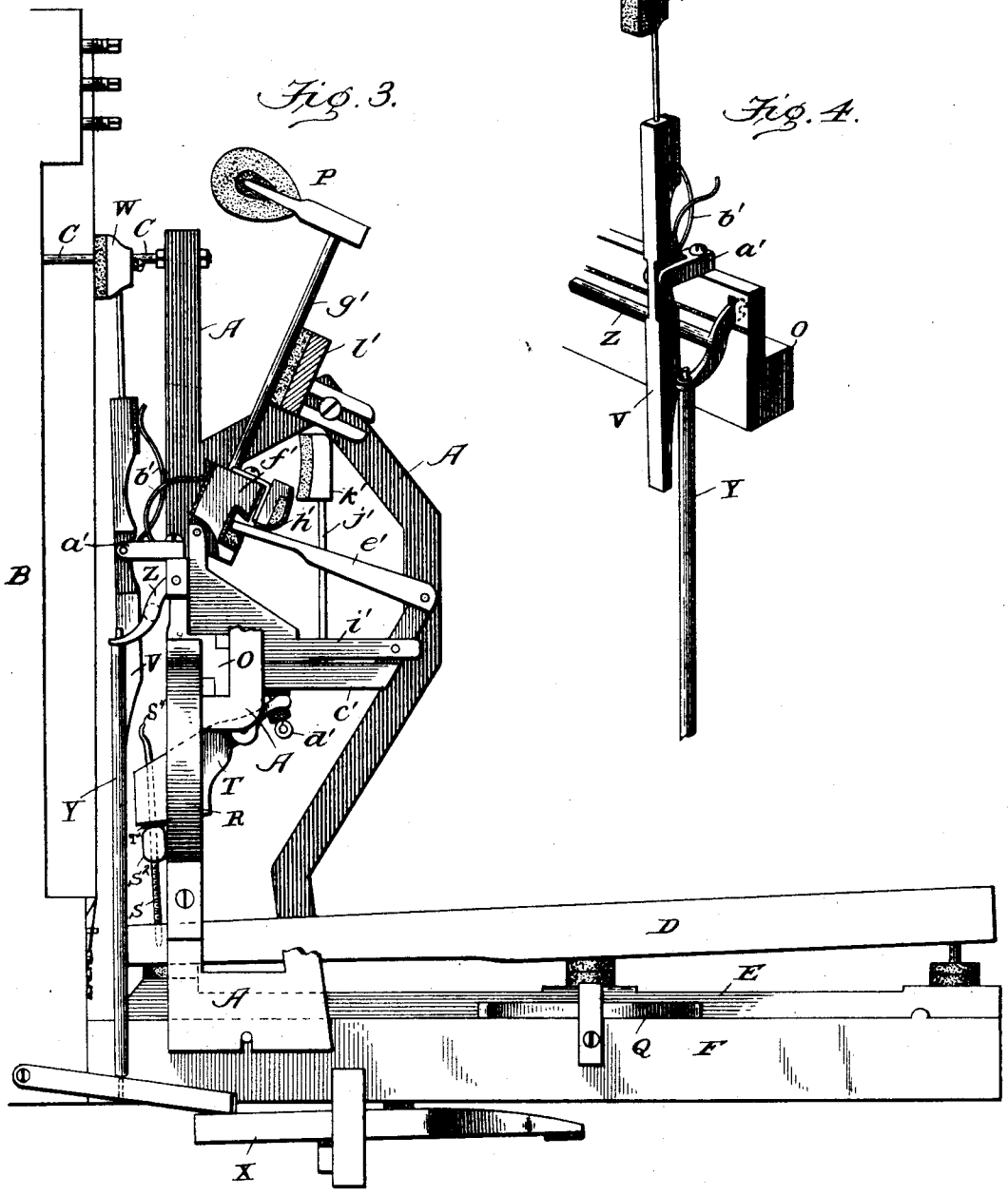


Fig. 4.

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UNITED STATES PATENT OFFICE.

RURIC E. COBB, OF HEPHZIBAH, GEORGIA, ASSIGNOR OF ONE-HALF TO C. H. S. JACKSON, OF SAME PLACE.

PIANO-ACTION.

SPECIFICATION forming part of Letters Patent No. 608,177, dated August 2, 1898.

Application filed May 29, 1897. Serial No. 638,825. (No model.)

To all whom it may concern:

Be it known that I, RURIC E. COBB, a citizen of the United States, residing at Hephzibah, in the county of Richmond and State of Georgia, have invented certain new and useful Improvements in Piano-Actions, of which the following is a specification.

My invention relates to improvements in piano-actions; and it consists in the pedal-rod connected to the soft pedal, the actuating-dog, and a set-screw to regulate the movement parts, so that the keyboard and action will move simultaneously and the same distance, and in the arrangement and combination of parts, which will be more fully described hereinafter, whereby the parts which constitute the action are greatly reduced in number and cost and the efficacy of the action is greatly increased.

The objects of my invention are to connect a mechanism with the soft pedal whereby the keyboard and every part of the action are shifted laterally, so that the striking surface of the hammers is reduced and the volume of tone correspondingly lessened; to operate the damper direct from the key as well as by the loud pedal, and to connect to the actuating-levers set-screws, whereby the friction between the various parts is materially reduced.

In the accompanying drawings, Figure 1 is a perspective view of an action which embodies my invention. Figs. 2 and 3 are side elevations taken from opposite sides. Fig. 4 is a detail view of the hard-pedal mechanism. Fig. 5 is an enlarged detail view of the actuating mechanism.

A represents the usual metal framing found in upright pianos, and which is braced to the rear framing B at its upper end by screw-rods C. To the rear framing are secured the wrest-plank and the spring-plate, the wires being secured to the wrest-pins and the hitch-pins in the usual manner.

The keys D are mounted upon a shifting board E, which is placed upon the key-bed F, and suitable guiding-flanges of any desired shape are formed or secured upon the top of the key-bed, and these flanges catch in the correspondingly-shaped grooves in the shifting plank E, so as to cause the shifting plank to be perfectly true and even in its movements. This plank E extends under the whole keyboard, and when the board is shifted laterally every key is correspondingly moved to one side to a greater or less distance simultaneously, as desired by the operator, and controlled by the movement of the soft-pedal lever G. To the inner end of the soft pedal G is connected the slot-rod H, and passing through the slot I in the lower end of the rod H is the outwardly-turned end J of the partially-rotating rod K, that is secured in suitable bearings to the side of the key-bed F, and which rod K has an upwardly-turned end L, which bears against a regulating screw or projection that extends horizontally from the end of the shifting board E. When the lever G is operated through the soft pedal, the upward movement of the rod H causes the rod K to partly turn in its bearings and by pressing against the projection extending from the end of the shifting board E causes the entire keyboard to be moved laterally a greater or less distance as the operator desires to diminish the volume of tone.

The upper end of the rod H is loosely connected to the actuating-dog M, which is pivoted upon the metal framing A, and through the upper end of this dog is passed a regulating set-screw N, which bears against the end of the hammer-rail O, and which rail O is made laterally adjustable for the purpose of shifting simultaneously with the keys the entire action. In an ordinary piano-action some of the keys are strung with three strings each, the remainder with two strings, and in the bass the keys consist of one heavy wrapped string. In shifting the rail O and all of the parts of the action connected therewith the hammers P are moved just far enough to strike only two, one, or a portion of the strings of a key, according as the operator may wish to reduce the volume of tone.

It will be noticed that the entire keyboard and action are so connected that they are moved simultaneously by the lever G, connected with the soft pedal, the partially-rotating shaft *k*, the rod H, and dog M, and that the movement of these parts is effected without any special exertion upon the part of the operator. As soon as the pedal is released the board E is returned to its position by the spring Q, applied to its opposite end, and the

hammer-rail O is simultaneously returned by means of the spring R, which bears against the opposite end of the rail from the dog M.

Screwed into the inner end of each key is a rod S, which is screw-threaded about three-fourths of its length and which has its upper end S^4 made spoon-shaped, so as to serve as a damper-spoon. Upon this spoon-threaded rod is placed the wooden nut S^2, which has rounded ends, so as to decrease the friction between it and the block T as much as possible, and on its upper end is placed a felt cushion T'. The lever or block T is preferably shaped as here shown, so as to add to its weight, and its rear end is bifurcated, so that the rod S can pass freely through. The nut not only supports but adjusts the portion of the wooden block. Each time a key D is operated the rod S strikes the damper-lever V and forces the damper W backwardly away from the strings. By holding down the key the rod S remains in contact with the lower end of the lever V and thus holds the damper W out of contact with the strings. This damper-lever V is also operated by the loud-pedal lever X, from which extends the rod Y, which makes connection at its upper end with the swinging cam or lever Z, pivoted to a part of the framing, and which swing-lever when operated by the pedal moves outwardly from the framing, so as to strike against the edge of the lever V, and thus moves it backwardly from the strings, allowing them to have a free vibration. This lever V is pivoted in the recessed ends of a support a', provided especially for that purpose, and the lever when free to move is instantly forced against the strings by means of the spring b', which is doubled at its center and has one end to bear against the lever V and the other against the hammer-lever. This spring is secured at its center to the support a' and has its two ends suitably bent and extending in opposite directions, as shown, so as to operate both levers, and by making this spring of one piece where two have been used heretofore a gain is made in economy of construction and time in putting the parts together.

The upper end of the lever T is loosely connected with the jack-bed lever c' by means of a regulating-screw d', which passes through the bifurcated end of the actuating-lever and is connected to the jack-bed lever c'. By means of this regulating-screw d' the amount of friction between the operating parts is greatly reduced and the parts can be adjusted with the utmost exactness.

To the upper end of the jack-bed lever c' is pivoted the actuating-jack e', which has its inner end extend into the recess formed in the hammer-butt f', which carries the striking-lever g'. Secured to this hammer-butt f' by means of an L-shaped plate is the adjustable hammer-check h'. Secured to the jack-bed lever c' and extending up through the support i', in which the jack-bed lever is pivoted, is the rod j', which has the check k' secured to its upper end, and which check k' acts in connection with the adjustable one, h', as shown. The actuating-jack e' is also slotted to allow the rod j' to pass through.

After the hammer P is actuated and strikes the strings the lever g drops back against the hammer-rail l', which extends from one end of the movement to the other, having its ends suitably secured to the framing, and thus the parts heretofore provided for the lower end of the hammer-butt to rest upon are done away with.

An action constructed according to my invention, as here shown and described, contains about thirteen hundred pieces less than a piano constructed in the usual manner.

Having thus described my invention, I claim—

A pedal-lever, and a mechanism connected therewith, combined with a laterally-movable keyboard, the means for returning it to position when left free to move; and a laterally-movable piano-action, and independent means for returning it to position, the keyboard and action being moved simultaneously, and the same distance, by the mechanism connected with the pedal-lever, substantially as shown and described.

RURIC E. COBB.

Witnesses:
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