

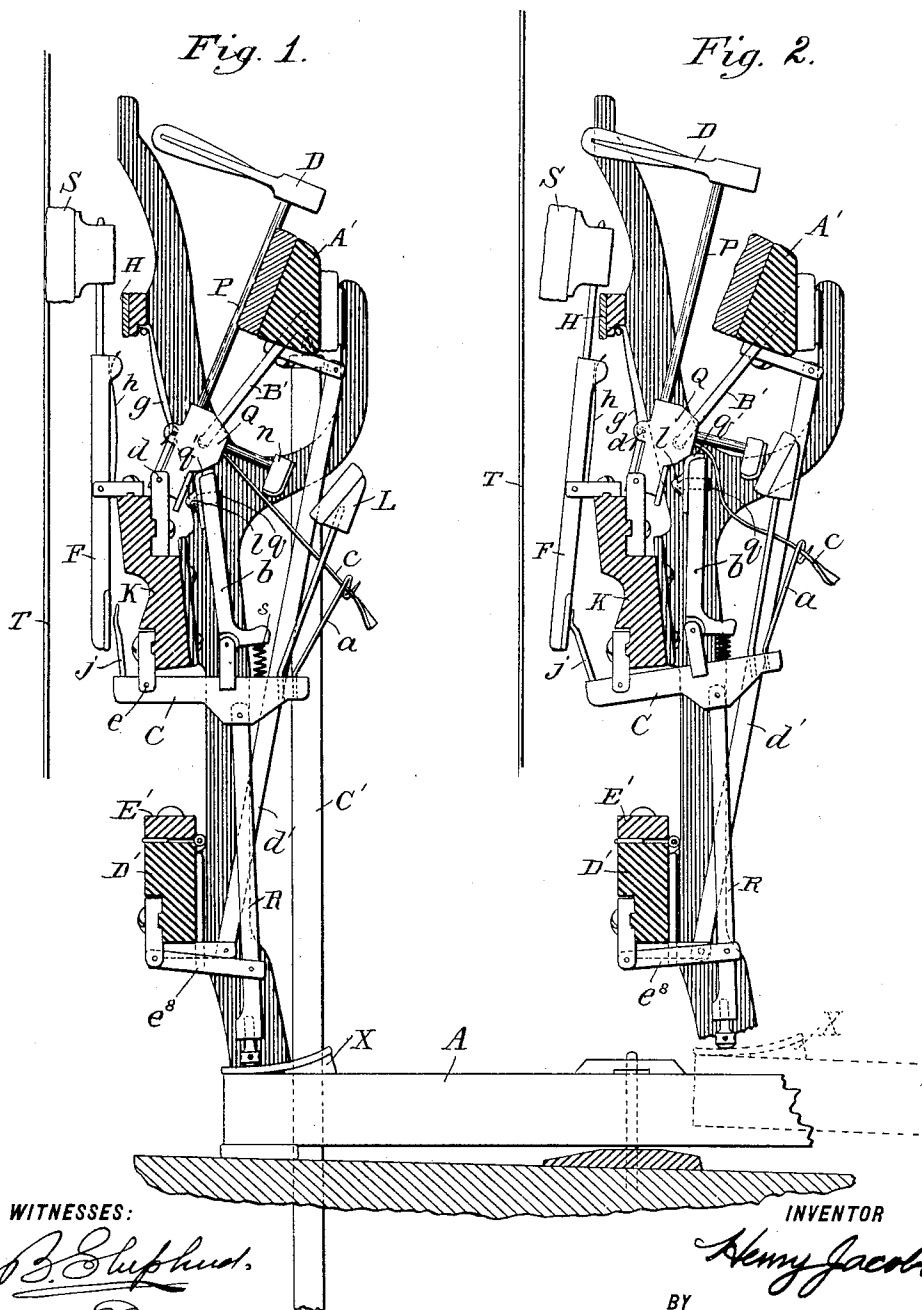
(No Model.)

2 Sheets—Sheet 1.

H. JACOBI.
PIANO ACTION.

No. 533,469

Patented Feb. 5, 1895.



WITNESSES:

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UNITED STATES PATENT OFFICE.

HENRY JACOBI, OF NEW YORK, N. Y., ASSIGNOR TO J. & C. FISCHER, OF
SAME PLACE.

PIANO-ACTION.

SPECIFICATION forming part of Letters Patent No. 533,469, dated February 5, 1895.

Application filed August 14, 1894. Serial No. 520,241. (No model.)

To all whom it may concern:

Be it known that I, HENRY JACOBI, a resident of the city, county, and State of New York, have invented an Improved Piano-Action, of which the following is a specification.

My invention relates to upright piano actions and consists in the novel combinations of parts hereinafter described and claimed.

In the drawings forming part hereof, Figure 1 is a side elevation of a piano action embodying my invention; the parts being shown in their normal position. Fig. 2 is a similar view of the same showing the position the parts assume when the key is depressed. Fig. 3 is a similar view showing the position the parts assume when the key is at rest and the soft pedal is depressed; and Fig. 4 is a sectional detail view of the jack-head.

Heretofore in upright piano actions means extraneous to the jack and hammer-butt have been adopted for relieving the hammer. These are more or less defective for various reasons. Now by my invention I accomplish the relieving directly, by the interaction, of the hammer-butt and the jack, and at the same time provide for all wear of the contracting parts by making the relieving device adjustable as will be hereinafter set forth and thus compensate for lost motion that would otherwise be incident to such wear; also in upright piano actions as heretofore constructed, it will be found that when the soft pedal is put in action the pilot or riser is thereby raised and the inner end of the key following, the entire key board will drop, thereby allowing of but about one-half the full sweep or play of each of the separate keys.

By my invention I so construct the parts that the key and riser are maintained constantly in contact, and the key in the normal position, is maintained at its full height irrespective of the position of the soft pedal.

Furthermore, by my invention the jack and hammer-butt are constantly in engagement, so that the key has at all times the same sweep, and the action is always certain and the same.

In the drawings K is the action rail of the piano, and to this rail is pivoted by suitable pivots *d*, *e*, the hammer-butt Q and the whip C. From the whip C depends a pilot or riser

R which co-operates with a key to actuate the whip. Mounted upon the whip is a jack *b* which engages with the hammer-butt, being held in engagement therewith by the spring *s*. Mounted upon the hammer-butt is the usual hammer-shank P carrying the hammer D adapted to strike the string T. The hammer-butt is also provided with the usual buffer *n* and restoring spring *g* connected to the damper check rail. Carried also by the action rail K is a damper lever F carrying a damper S and having a restoring spring *h*. The damper is actuated from the whip C by the projection *j*. Carried also by the whip is the usual cushioned hammer-check L which is adapted to co-operate with the buffer N.

The parts so far described, it should be understood, may all be constructed and operated in the usual manner.

The whip is connected to the hammer-butt by a bridle *c* and bridle wire *a*. The jack-head is provided with a cushion which consists of a strip *q'* of felt or other yielding material secured thereto at all points, except at and near where the adjusting screw *q* bears. This screw *q* passes through the jack-head and bears upon the cushion and presses out the cushion to form a projection *l* which co-operates with the butt to relieve the jack from the butt. At the same time the jack and the hammer are in constant contact and in such position with relation to each other that at all times the hammer may be operated by the jack, as will be fully hereinafter set forth.

The operation of this portion of my invention is as follows: The parts being in the position shown in Fig. 1 the key is struck and its rear end lifted, lifting also the riser or pilot R, swinging the whip on its pivot and causing the jack to be forced up and the hammer to strike the string at the same time causing the damper to be lifted to allow the string to vibrate. As the hammer is thrown forward to strike the string the butt will co-operate with the projection *l* on the jack head and will move the end of the jack into the position shown in Fig. 2, thereby relieving the hammer, without, however, allowing the end of the jack to be carried from under the hammer-butt, so that upon the slightest return of the key, the parts will be in position

to allow of repetition. When the pressure on the key is relieved the parts return to the position shown in Fig. 1.

Coming now to the second portion of my invention, namely, the soft pedal mechanism, I provide a movable rail A' suitably connected to the action frame as by rods B' socketed in the rail or other analogous connections arranged in such a manner as to allow the rail to be approached and withdrawn from the strings by means of a pedal rod C'. This rail is connected to a hinged piece D' or other analogous device carried by the rail E' on the action frame. This hinged piece D' is connected to the movable rail A' by link d' and is connected to the pilot or riser by any suitable connection such as a link connection e⁸. Carried by the key or otherwise suitably arranged is a compensating device, shown in this instance as a cam X whose surface is constructed in such a manner as to maintain a constant contact between the rear end of the key and the pilot and always keep the head of the jack in contact with the hammer-butt irrespective of the position of the rail A', (see Figs. 1 and 3,) it being of course understood that the riser swings as the rail A' is moved.

The operation of this portion of my invention is as follows: When it is desired to put the soft pedal in operation, it is depressed, thereby raising the rod C' and the rail A' limiting the range of movement of the hammer, as clearly shown in Fig. 3. The approach of the rail A' to the strings also accomplishes the swinging of the pilot or riser through the medium of the pivotal piece d'. (See Fig. 3.) The lower end of the pilot or riser riding upon the cam X, the jack is held always in contact with the working surface q' of the hammer-butt and the key is held in its initial

position whatever be the movement of the rail A'.

I would have it understood that I do not herein limit myself to the precise construction and arrangement shown, but that the construction of the devices and their arrangement and connections may be greatly varied without departing from the spirit of my invention.

What I claim, and desire to secure by Letters Patent, is—

1. The combination of a jack, of an adjusting device as q passing through the head thereof, a cushion mounted upon the head of the jack and consisting of a strip of felt or other yielding material secured to the jack-head at all points except at and near where the adjusting device q bears, thereby forming with the adjusting device an adjustable cushioned projection, substantially as described.

2. In a piano action, the combination of a key, a riser or pilot, a hammer, and mechanism intervening between the hammer and the riser or pilot for actuating the hammer, a movable rail A', a swinging piece as D', a link as d' forming a pivotal connection between the movable rail and the swinging piece D', a link e⁸ forming a pivotal connection between the swinging piece D' and the riser, whereby when the rail A' is moved the riser will move therewith, together with a cam device X on the key co-operating with the riser to compensate for such motion of the riser, whereby the key and riser will be at all times in an operative position irrespective of the position of the rail A', substantially as described.

HENRY JACOBI.

Witnesses:

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