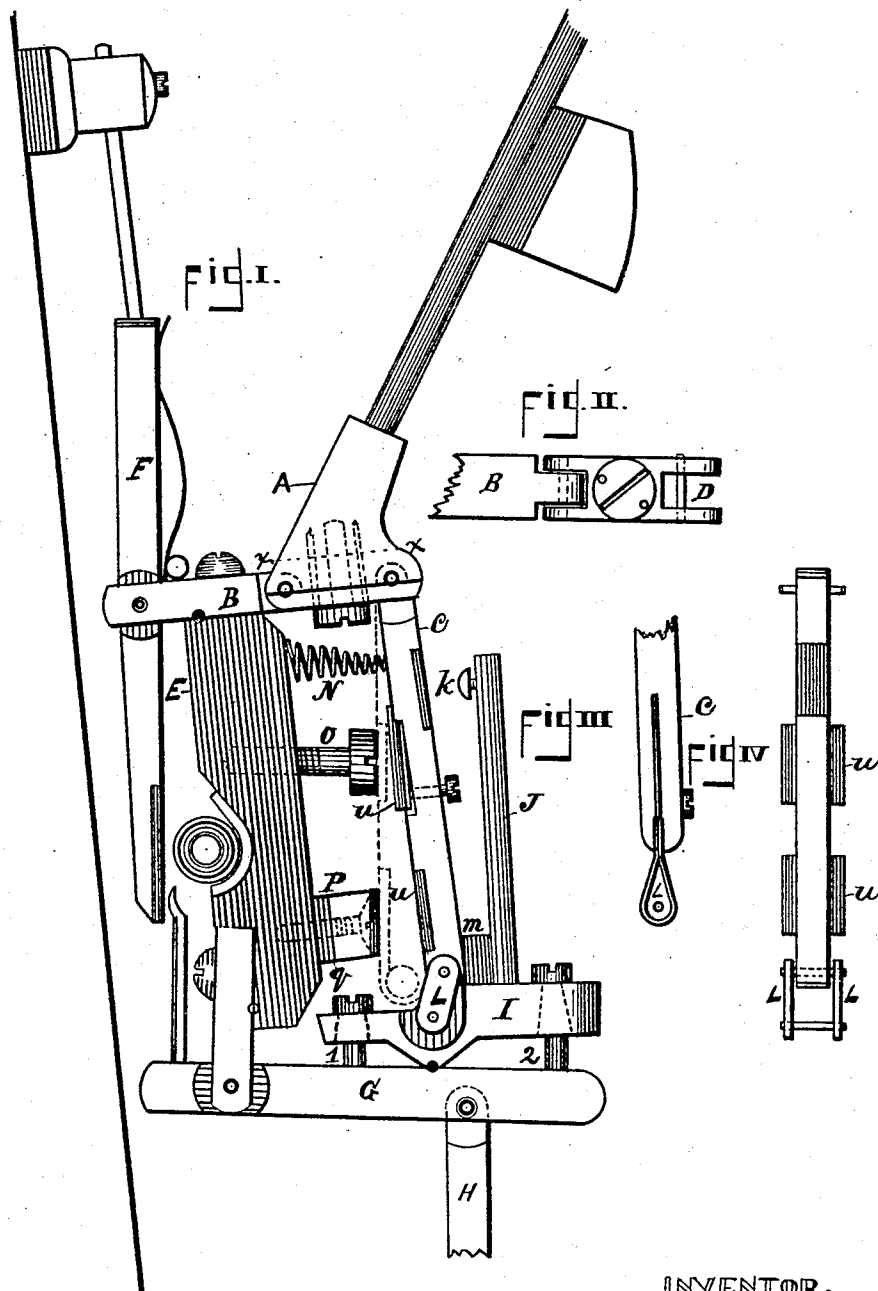


(No Model.)

J. R. PERRY. BEST AVAILABLE COPY.
PIANO ACTION.

No. 537,482.

Patented Apr. 16, 1895.



INVENTOR.

Joseph R. Perry

WITNESSES.

M. H. McNeill
John A. Davison

UNITED STATES PATENT OFFICE.

JOSEPH R. PERRY, OF WILKES-BARRÉ, PENNSYLVANIA.

PIANO-ACTION.

SPECIFICATION forming part of Letters Patent No. 537,482, dated April 16, 1895.

Application filed December 1, 1894. Serial No. 530,623. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH R. PERRY, a citizen of the United States, residing at Wilkes-Barré, county of Luzerne, and State of Pennsylvania, have invented a new and useful Improvement in Piano-Actions, of which the following is a full and clear description, which will enable any one skilled in the art to construct and use the same.

The object of my invention is to make piano actions cheaper and better, as well as to simplify their construction and make a perfectly free stroke with lightness and a perfect repetition.

It consists of an improved method of constructing the hammer butt, so as to be able to tighten the pivots, when from long use they become loose.

It also consists of a new and flexible link pivot connecting the jack and actuating mechanism.

It also consists of a rocker arm having a suitable post and regulating screws attached to the actuating lever in such manner that the unlocking device can be adjusted to a nicety by means of said rocker arm, and without interfering with the actuating lever, or changing the dip of the keys.

It also consists of a round or other shaped post and regulating screw or button, to be adjusted by means of said rocker arm and attached thereto.

It consists also of a double back check, made by the screw O, and a longitudinal strip on the bottom face edge of the action rail for holding or back checking the hammer, all of which is fully described and shown by the several figures in the accompanying drawings, in which—

Figure I is a side elevation showing all the working parts. Fig. II is a bottom view of the improved flange to be secured to and forming part of a hammer butt, also showing connection with the damper flange. Fig. III is an edge or side view of the short link as it is attached to the jack. Fig. IV is a side or edge view showing links as well as jack C, and padded seats attached to jack to assist in back checking the links, all of which are fully described in the following specification.

In Fig. I, A is the hammer butt which is

constructed as follows: The solid part below is routed out as far as the dotted lines $x-x$ and the lower edge has two saw cuts, made transversely at the points shown by the pivots which hold the flange B and the jack C. I then construct a flange D having a routing at both ends, one end to hold flange B, and the other end to hold the jack C to the hammer butt, having a central hole to admit of a screw, and one or more holes for steady pins. This flange is packed and held against the under side of the hammer butt by means of a screw and steady pins driven into the butt. The steady pins, of metal, are shown by the dotted lines, which pins pass through the flange and are driven into the hammer butt. Fig. II shows the same hammer butt from the bottom side, with the flange B, flange D holding B and jack C together.

The flange B in Fig. I is secured to the action rail E in the usual manner.

To the bottom edge of the action rail E and by means of a flange I secure the actuating lever G to which the lower pitman H is fastened by means of a pin, and extends to the keys (not shown). Upon this actuating arm G, I place a rocker arm I to which is secured a wooden or metal post and regulating screw or brass button K, of any suitable size shape. Preferably a round wooden post is here shown. This post J is glued into the rocker arm I, or if metal, may be screwed into the same. Upon the upper end of the post J I place a brass button K or regulating screw, to aid in wearing and to prevent noise, or if metal it should be made spoon shaped. At or near to each end of the arm I a screw passes into the actuating lever G, having the holes through arm I made large at the under side to allow the arm to be regulated by means of the screws, which regulating consists in placing the post J the right distance from the jack C, so as to throw the said post J against the jack C and thereby unlock it at the proper time. When so adjusted and regulated the rocker arm will remain rigid. A transverse pin is placed upon the upper side of G, and rests in a small saw cut made into both lever G and arm I. It might be shaped into a V, or the rocker arm I might have a tenon upon it, and be put into a routing of

the lever G, but the method just described is preferable and cheaper.

I name the first described method as best but I do not confine myself to it exclusively.

5 What I accomplish hereby is mainly adjustment in relation to the post J and jack C.

To the lower end of the jack C, I place, on either side, or in the middle if preferred, a short link L. These links are held by means 10 of pins passing through jack C and arm I, which arm is cut away in the drawings to show the routing and the position these links will assume in working; the dotted lines showing them when a stroke has been made, and 15 the solid lines when at rest.

Instead of the short link or links L the link and jack may be made as shown by Fig. III, which jack is slotted from the bottom end and has a transverse screw placed near the bot- 20 tom. The short link L may be made by clothing it with any good flexible materials, passing the same around the link and placing the ends thereof into the slot of the jack C. Then by gluing the same and drawing the screw 25 shown, it will pinch the cloth or other materials and hold it ready for use, thus making a flexible joint. The lower end of the link should then be pivoted to the arm I as usual. These links are also shown on Fig. IV as well 30 as the edge of jack C and other parts.

Like figures and letters refer to similar parts in each view.

In Fig. I the lower end of jack C rests upon a padded seat on the rocker arm I and is held 35 against a cushion *m* glued to the post J, by means of a spiral spring N attached to the action rail E and inner edge of jack C. In the rail E, I place a regulating screw O, for the purpose of acting as a back check to hold the 40 hammer after the stroke is made, the jack C being forced against it by means of the post J and held while the piano key is pressed down. In order to allow the screw O to hold the hammer easily I form a padded seat or 45 seats, *u, u*, as shown in Fig. IV and the one on the upper part of jack C is hinged to the inside of the jack and is regulated by means of a small screw passing through the jack C.

On the lower end of the action rail E, I place 50 a longitudinal strip P, which is fastened to the bottom face of said action rail E by means of screws placed at intervals to support it, and when properly regulated as to distance from rail E the rear side is blocked out and 55 the screws tightened to hold the same firmly in place. This blocking is seen at *q*, which longitudinal strip will act as an additional back check by holding the lower end of jack C by pressure of short link L against the 60 same; that is holding the jack against the upper screw O, and also against the strip P.

The operation of the above described action is as follows, to wit: When the piano key is pressed down the pitman H is forced up, which 65 causes actuating arm G to move the rocker arm I having post J and links L and jack C

attached to hammer butt A causing the hammer to strike the string, but in doing so, when the hammer comes close to the said string, the various parts will have arrived at an align- 70 ment, and the link L and jack C will be forced over said alignment and allowed to fall against the back check screw O and the longitudinal check strip P and be firmly held in position while the finger presses the key, but when 75 the key is allowed to move, the spring N will react against the jack C and cause all the parts to assume their original places ready for another stroke. This can be repeated indefinitely in playing the piano. 80

Having thus fully and clearly described my invention, so that any one skilled in the art to which it belongs could construct and use the same, what I claim as new and useful, and for which I desire to obtain a patent of the 85 United States, is—

1. The rocker arm having a post J and regulating or adjusting screws 1 and 2, said rocker arm and post thereby attached to the actuating lever G, in the manner and for the 90 purposes specified.

2. The short link or links L attached directly to the adjustable rocker arm I said rocker arm having post J, said short link attached to jack C, and said jack C in turn at- 95 tached to the hammer butt, A, in the manner and for the purpose named.

3. A link L, having a metal pivot at one end, and covered with flexible materials, which extend at the other end of the link into the jack 100 C forming a flexible joint between said link and the jack in the manner and form specified.

4. The lower back check P, arranged to stop the jack C and flexibly pivoted link L, in combination with the upper check screw O the 105 rocker arm I having a post J, and regulating screws 1 and 2, in the manner and for the purpose named.

5. The hammer butt A routed from the under side, transverse pins passing through the same, said pins suitably packed, having a separate flange D packed and held to the butt A 110 by means of a screw from the under side, and having steady pins driven into the hammer butt, which pins pass through flange D, substantially as arranged and for the purposes 115 specified.

6. The hammer butt A routed out from its under surface to admit of the flange B and 120 jack C, having transverse saw cuts to admit of pins, and said pins suitably packed and held by means of a double flange, said flange having steady pins and a screw holding the same to the hammer butt, all in combination 125 with a rocker arm I having a post J, and regulating screws attaching the same to actuating arm G in the manner and for the purposes specified.

7. A link having a metal pivot at its lower 130 end and covered with flexible materials which extend at the upper end into a jack, forming

a flexible joint between said jack link and the short link, all in combination with a rocker arm having regulating screws and a post J, the said rocker arm secured to the actuating arm G in the manner and form specified.

5 8. The short link having a metal pivot at its lower end and covered with flexible materials extending into and secured to jack C, in combination, with a hammer butt A, routed
10 out upon its under side, having transverse pins and a flange, routed out at both ends said flange having holes for steady pins and

a screw to secure the said jack and flange B, in the manner and for the purposes named.

9. The rocker arm I having post J and regulating screws 1 and 2, resting upon a pin of metal, said pin being held by transverse grooves cut into rocker bottom and actuating arm G in the manner and for the purpose specified. 15

JOSEPH R. PERRY.

Witnesses:

JOHN N. DAVISON,
JOHN C. JEFFRIES.