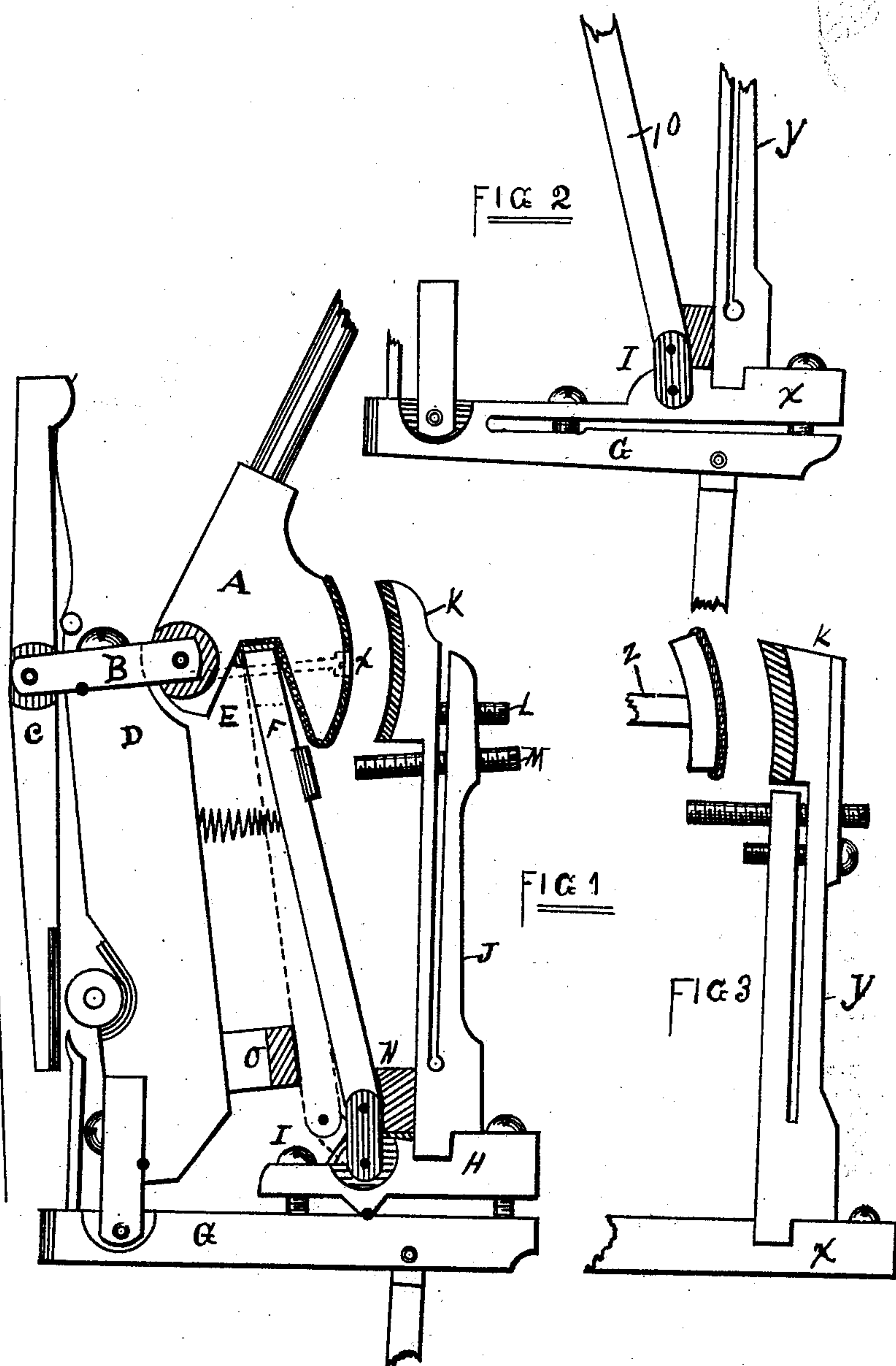


(No Model.)

J. R. PERRY.  
PIANO ACTION.

No. 553,567.

Patented Jan. 28, 1896.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

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## PIANO-ACTION.

SPECIFICATION forming part of Letters Patent No. 553,567, dated January 28, 1896.

Application filed March 25, 1895. Serial No. 543,071. (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, in the county of Luzerne and State of Pennsylvania, have invented new and useful Improvements in Piano-Actions, of which the following is a specification.

My invention relates to what are classed "upright" pianos, but with slight modifications may be adapted to square or grand pianos.

It consists in providing a hammer-butt of improved construction, having a curved edge for the purpose of forming a back-check, also having a recess to hold the jack in place, and a pin or screw passing through the said hammer-butt and the said jack for that purpose, which makes it easy to disconnect the same in order to remove the hammer; also in a novel post so constructed as to act both to unlock the jack at the proper time and also to act in back-checking the hammer after each stroke, thus acting in a double capacity, the said post being connected with a rocker-arm which attaches to the actuating-lever, or may form a part of the same, for the purpose of regulating the nearness of the said post to the jack and hammer-butt by means of regulating-screws. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side view of a piano-action full size, showing the working parts referred to above. Fig. 2 is also a side view showing a view where the rocker-arm may be made a part of the actuating-lever. Fig. 3 shows post  $y$ , back-check  $k$ , and a part of hammer-butt  $z$  extended, with damper on outside of post  $y$ .

The figures show the regulating device and all necessary parts to be similar.

In Fig. 1, A is the hammer-butt attached to a flange B having a damper C, and all secured to the action-rail D in the usual manner.

The hammer-butt has a recess E and has a curved edge drawn from its pivot, which curve is packed with leather to form a back-check. Passing through the butt A and also through the jack or long link F is a pin or screw, (shown by the dotted lines at X,) which pin may be withdrawn by means of a screwdriver in removing the hammer-butt or jack when found necessary. The actuating-lever G is secured

to the action-rail D in the usual way. Upon this I secure a rocker-arm H, to which is attached the short link I, the rocker-arm being secured to the actuating-arm by means of screws and held in place by a transverse pin. Upon this rocker-arm H, and secured rigidly thereto, I place a post J, which post is slotted to near its bottom, the part nearest the hammer-butt forming a back-check  $k$  for the same, and attached thereto, the curved edge being clothed and made to conform with the curve of the hammer-butt. It will be seen that this back-check may be thrown nearer to the hammer-butt by means of the regulating-screws which pass through the rocker-arm H or those, as seen in Fig. 2, made from the same piece.

At the upper end of post J, I place a regulating-screw L, the end of which rests against the vibrating leaf or check, and by forcing this screw it will spread the post and bring the curved check closer to the hammer-butt. This is for exact regulation. Another similar screw M, I put into the post and pass the same loosely through the check part, by means of which the jack may be unlocked at the proper time.

Against the action-rail D, I place a spiral or other spring to react against the jack F and replace it after each stroke is made by forcing it against the cushion N. The longitudinal strip O is packed and so placed as to determine the angle of the jack and short link when a stroke is made and the hammer is back-checked.

Fig. 2 shows a sectional view of Fig. 1, showing jack 10, a slotted post  $y$ , also an actuating-lever device slotted and having regulating-screws, by means of which the post and its back-check can be regulated with reference to the hammer-butt, similarly to the rocker-arm device shown in Fig. 1, and the same results obtained thereby.

Fig. 3 shows a slotted post  $y$  having a back-check formed upon the outside instead of the inside of said post, as shown in Fig. 1. This may be done if desired to make a more definite check against the hammer-butt in its rebound from the string, but would require the hammer-butt to be extended by means of a shank  $z$ , (shown in Fig. 3,) against which the back-check of post  $y$  would act.

The operation of this action is as follows,



to wit: When the piano-key (not shown) is pressed it moves the actuating-lever G, thereby forcing the screw M in the post J against the jack F and, unlocking the short link I, throwing the hammer against the piano-string, allowing the links to drop and the hammer to rebound from the string, when it is immediately caught by the check k and prevented from dancing. On letting the finger from the key the spring acting against the action-rail D and jack F throws it in place ready for another stroke, which may be repeated indefinitely.

Having thus fully described my invention and the construction and operation of the same, what I claim as new and useful, and desire to secure by Letters Patent of the United States, is—

1. In a piano forte action a slotted post as J, one leaf of which is made to conform to the outer edge of a hammer butt and having a padded back check upon its upper end and regulating screws or buttons as shown and for the purpose specified.

2. A slotted post as J, one leaf of which is made to conform to the outer edge of a hammer butt having a padded back check upon its upper end and regulating screws or buttons, in combination with and attached to an actuating device, which device is provided with regulating screws for the purpose specified.

3. A slotted post as J, one leaf of which is made to conform to the outer edge of a hammer butt, and having a padded back check and regulating screws or buttons, in combination with and attached to a rocker arm, said rocker arm having regulating screws for the purpose specified.

4. A slotted post as J, one leaf of which is made to conform to the outer edge of a hammer butt, and having a padded back check and regulating screws and being attached to a regulating device in combination with a short and long link or jack and a hammer butt in the manner shown and specified.

5. A slotted post as J, one leaf of which is made to conform to the outer edge of the hammer butt and having regulating screws and a padded back check in combination with a hammer butt having a recess formed in its under edge and a pin or screw passing there-through as shown and described.

6. A slotted post as J, one leaf of which is made to conform to a hammer butt upon its

outer edge, said post having a padded back check and regulating screws in combination with a rocker arm and regulating device, composed of an actuating lever and regulating screws in the manner and for the purposes named.

7. A hammer butt having a recess formed in its under edge, suitably packed and provided with a pin or screw passing through said butt and its recess, edgewise and through a jack or long link in the manner shown and for the purposes named.

8. A hammer butt having a recess in its under side having a pin or screw passing therethrough edgewise, and through a jack in combination with a slotted post as J, one leaf of which is made to conform to the hammer butt upon its outer edge, and having a padded back check upon said slotted post, and regulating screws or buttons as shown and described.

9. A hammer butt having a recess in its under edge suitably packed and shaped upon its outer edge to conform to a back check, said outer edge packed and having a pin or screw passing through said recess edgewise and through a jack or long link, in combination with a slotted post as J, one leaf of which is made to conform to said hammer butt, and having regulating screws or buttons and being attached to an actuating device provided with regulating screws, said hammer butt, slotted post and regulating device in combination with a short link and long link or jack in the manner shown and described.

10. An actuating device having regulating screws a rocker arm, a slotted post as J, attached thereto forming a padded back check, in combination with a short and long link or jack and a recessed hammer butt as A provided with a pin or screw passing there-through and through the said jack, in the manner and form stated.

11. An actuating lever composed of parts forming a regulating device and having a post slotted as J, attached thereto, one leaf of said post made to conform to the outer edge of a hammer butt, said post provided with regulating screws and a padded back check in the manner and form specified.

JOSEPH R. PERRY.

Witnesses:

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EMMA SPACE.