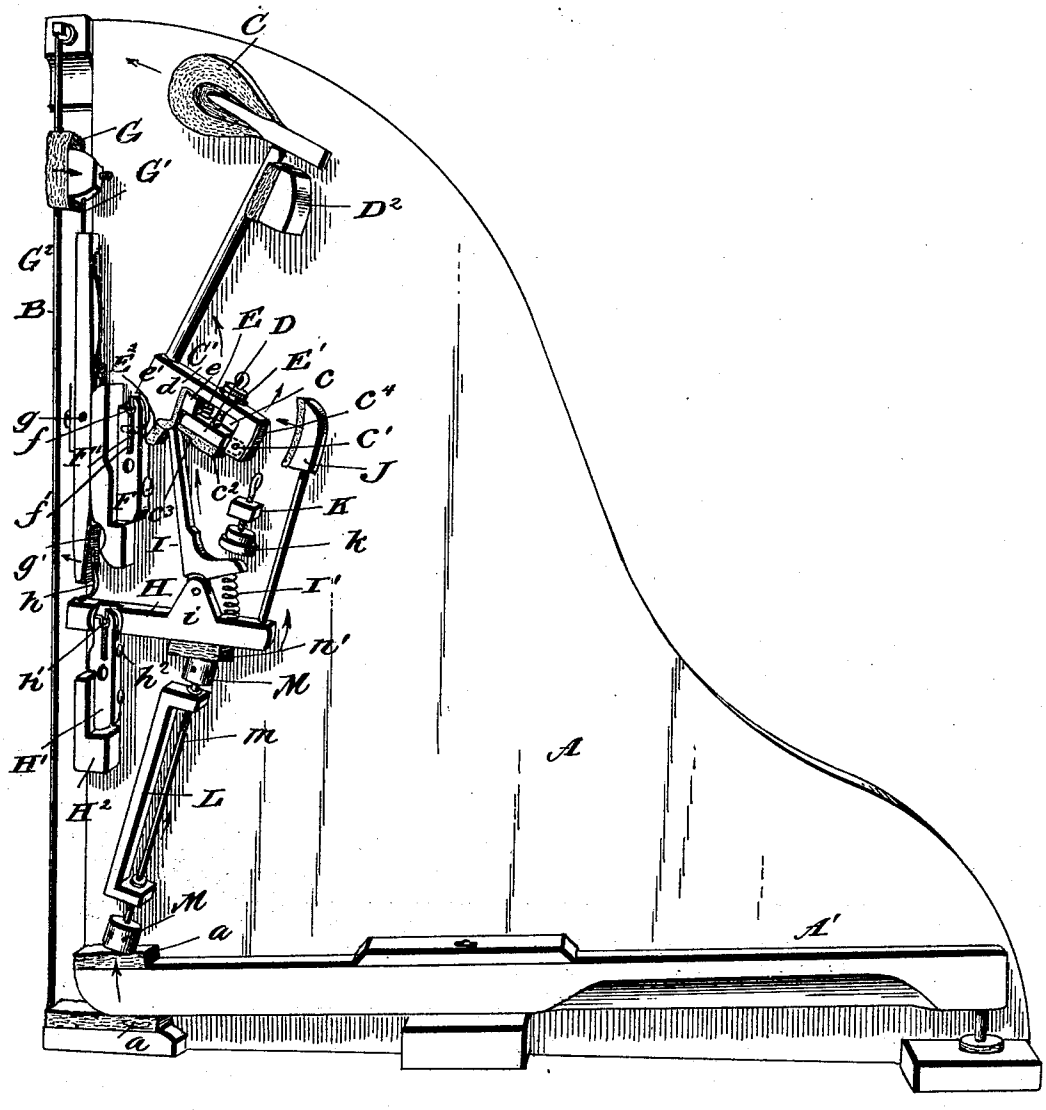
(No Model.)

J. GREENER.

PIANOFORTE ACTION.

No. 508,416. Patented Nov. 14, 1893.



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PIANOFORTE-ACTION.

SPECIFICATION forming part of Letters Patent No. 508,416, dated November 14, 1893.

Application filed December 28, 1892. Serial No. 456,518. (No model.)

To all whom it may concern:

Be it known that I, JACOB GREENER, a citizen of the United States, residing at Elmira, in the county of Chemung, State of New York, have invented certain new and useful Improvements in Pianoforte-Actions, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to certain new and useful improvements in piano forte actions for upright, grand or square pianos, and it has for its objects among others to provide an improved construction and arrangement of parts whereby better results are obtained and greater adjustment secured. I provide a repeat which is connected with the hammer butt and which serves to hold the hammer close to the strings which will enable the performer with the slightest touch to trill with wonderful rapidity. When the keys are struck the hammer will be brought to proper distance to the strings by regulating screws. The check which is provided will slide out to the repeat from the hammer butt. I obtain a direct action on the hammer butt and as the hammer recedes from the string the check slides upon the under side of the repeat which is yielding. Adjustment for nearly all of the parts is provided and parts are readily removed for repairs, cleaning or any other purpose.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawing, which, with the letters of reference marked thereon, forms a part of this specification and in which is shown a view of a piano forte action embodying my invention.

For convenience of illustration I have shown but one set of devices between a key lever and the hammer and have shown such as supported upon a support A which may be considered as the end board of a piano and upon which are supported the various parts, but it will of course be understood that the supports for the various parts will be of any well-known or approved construction and arranged in the usual manner except as hereinafter specified.

Referring now to the details of the drawing by letter, A′ designates the key mounted for pivotal movement in the usual way, and provided with the usual pads or cushions *a* as shown.

B is the string held in position in any suitable manner, and C is the hammer of any approved construction mounted for the necessary pivotal movement, and provided with a butt C′ which carries the repeat. This butt is cut away upon its under side to form a chamber or recess *c* in which is located the block D which has a tongue or portion extending into a recess in the end portion of the butt and which is there pivoted upon the pivot or pin *c′*. This block is provided upon its lower face with a pad or cushion c^2 of suitable material and provided with an offset or shoulder c^3. The outer face of the butt of the hammer is also provided with a cushion c^4. A spring E is located within the chamber of the butt between the upper wall thereof and the upper face of the block D and an adjusting screw E′ is also provided which bears upon the upper face of said block and serves to regulate the distance of movement of the said block. A cushion *e* is arranged within the chamber or recess to cushion the free end of said block. The lower face of the butt of the hammer is provided near its pivot with a shoulder or offset *d* which is cushioned as at *e′* and a cushion E^2 extends below the offset as shown at e^2.

The hammer arm is arranged to be engaged by or to engage the hammer rest rail D^2 as seen. The butt is pivoted upon a pivot *f* held in the bearing F which is mounted upon a support F′ of known construction, the said bearing being split as shown and an adjusting screw *f′* is provided for regulating the bearing upon the pivot to make the hammer move with greater or less ease as may be desired.

G is a dampener carried by the spring arm G′ which is held in the bar G^2 pivoted upon the support F′ as at *g* and its lower end bearing a cushion *g′* against which bears a spring

wire or rod h carried by the action lever H which is pivoted on a pin or pivot h' held in the split bearing H' on the support H^2 and which is provided with an adjusting screw h^2 for the same purpose as the screw f' above described.

I is the jack loosely pivoted in the extension i of the action lever H with its vertical arm arranged to engage the hammer butt at the shoulder thereof and beneath its short arm is arranged a spring I' which is arranged between the under face of said short arm and the action lever. The free end of this action lever carries the cushioned block or back check J which serves to prevent vibration of the hammer butt.

K is a regulating screw suitably mounted to engage the upper face of the short arm of the jack as shown to regulate the movement thereof. This screw carries a cushioned block k.

L is a frame or support in which are loosely mounted the lifters M which are adjustably mounted upon the lifter rod m so that the nicety of touch can be easily regulated and adjusted. The upper lifter engages a cushion n' upon the under side of the action lever H as shown.

In operation the depression of the key elevates its inner end which acts upon the lifters and they in turn raise the action lever which causes the jack to engage the hammer butt at the shoulder and after throwing the hammer against the string the upper end of the long arm of the jack slides out to the repeat and engages the offset or shoulder of the cushion; the short arm of the jack engages the pad k of the adjusting screw K, and the repeat holds the hammer close to the string which will enable the performer to trill with wonderful rapidity and ease. The frame or support L may be taken off to adjust and regulate the whole action, if desired, and the action as a whole has a smooth, light yet powerful touch. It is easy to finish and regulate, is not complicated, and is substantial and durable.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

I deem it important that the hammer butt should have the extension in which the yielding abutment is pivoted, formed integral with said butt instead of by an independent arm fixed thereto as has been proposed whereby the construction is rendered cheaper and more durable and efficient with less liability of the parts becoming imperfect in their operation by reason of shrinking or swelling due to the difference in temperature and by moisture.

What I claim as new is—

1. The combination with a hammer having a butt with integral recessed extension, of a yielding abutment having an extension pivotally mounted in the extension of the butt, a block in said recess, a spring located in the recess and bearing on the abutment between its pivot and said block and adjusting means in the butt and bearing on the abutment between the spring and pivot, substantially as specified.

2. The combination with a hammer having a butt with integral recessed extension, of a yielding abutment having an extension pivotally mounted in the extension of the butt, a block in said recess, a spring located in the recess and bearing on the abutment between its pivot and said block and adjusting means in the butt and bearing on the abutment between the spring and pivot said abutment being disconnected from the action lever and the back check and having a shouldered cushion upon its lower face to be engaged by the check, substantially as specified.

3. The combination with a hammer having a butt with integral recessed extension, of a yielding abutment having an extension pivotally mounted in the extension of the butt, a block in said recess, a spring located in the recess and bearing on the abutment between its pivot and said block and adjusting means in the butt and bearing on the abutment between the spring and pivot said butt being formed near its pivot with a shoulder and a cushion over said shoulder and extended in opposite directions and under said block, substantially as specified.

4. The combination with the hammer having a butt with integral recessed extension and a shoulder of a cushion over the shoulder and extended in opposite directions therefrom, a cushion in the recess bearing against said cushion, an abutment pivoted in the downward portion of the extension to work in the recess, a spring in the recess bearing upon the abutment and an adjusting screw bearing upon the abutment between said spring and its pivot, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

JACOB GREENER.

Witnesses:
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