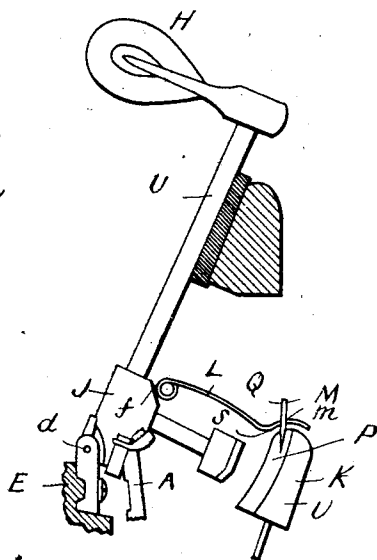
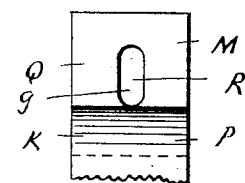
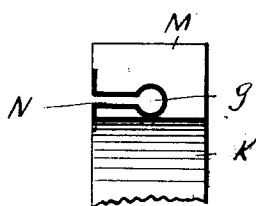
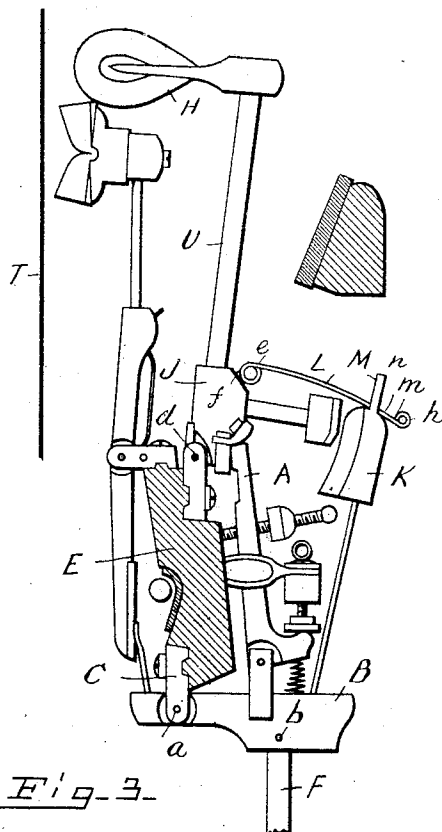
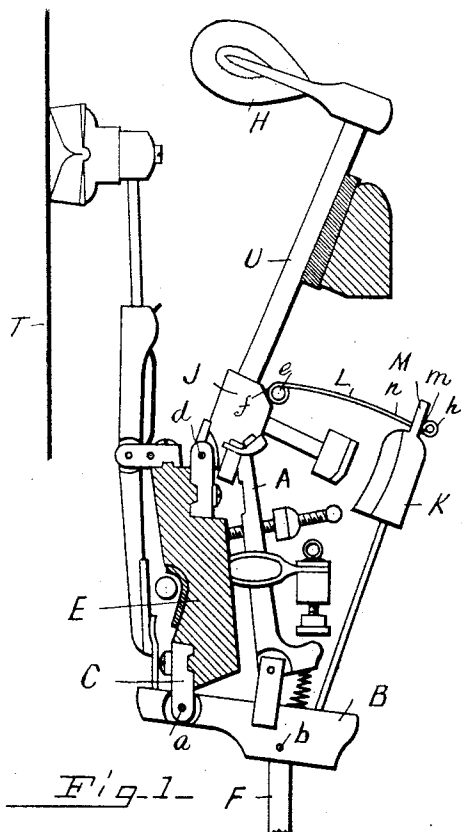


(No Model.)

H. N. MOORE.
PIANOFORTE ACTION.

No. 512,206.

Patented Jan. 2, 1894.



WITNESSES=
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UNITED STATES PATENT OFFICE.

HORATIO N. MOORE, OF SAVANNAH, GEORGIA.

PIANOFORTE-ACTION.

SPECIFICATION forming part of Letters Patent No. 512,206, dated January 2, 1894.

Application filed June 12, 1893. Serial No. 477,355. (No model.)

To all whom it may concern:

Be it known that I, HORATIO N. MOORE, of Savannah, in the county of Chatham and State of Georgia, have invented certain new and useful Improvements in Pianoforte-Actions, of which the following is a full, clear, and exact description.

This invention relates to improvements in the piano forte action for which Letters Patent of the United States were issued to me dated March 7, 1893, No. 493,192, and the invention consists in combination with the hammer butt or stem and back catch of a piano forte action, of a spring secured to a hammer stem or butt and arranged to bear and engage with the back catch all substantially as hereinafter fully described reference being had to the accompanying sheets of drawings, in which—

Figure 1 is a side view of a piano forte action without the key having this invention applied thereto, the view showing the action in its normal position or at rest. Fig. 2, is a detail back view of the back catch. Fig. 3, is a side view showing the parts of the action in different positions from that shown in Fig. 1, just after the hammer has struck the string and is being held in position for the next blow of the hammer by the spring. Fig. 4 is a detail side view of the hammer, its stem and back catch in the position of Fig. 1 showing a modification. Fig. 5 shows a detail back view of the back catch in Fig. 4, Figs. 2 and 5 being enlarged.

In the drawings A represents the jack; B its lever pivoted at *a*, to a flange C, of the rail E; F the stem or rod resting on the key pivoted at *b*, to the jack lever. H is the hammer, pivoted by its butt J at *d*, to a flange of the rail E. K, is the back catch secured to the jack lever B, all of which, with a few other parts not needing enumeration, are as usual and well known in upright piano forte actions and needing no more particular description herein.

L is a spring preferably made of wire having a coil *e*, and secured by its end *f* to the upper part of the hammer butt J, its free end extending back from the hammer butt a sufficient distance to project over and be just above the back catch K, as shown in Fig. 1 which is its normal position. In Figs. 1, 2 and 3 the free end of the spring L extends through

a socket *g* in an upward extension M of the back catch and its free end is coiled upward, one or more turns as at *h*, which makes a shoulder *m* against which the back catch by its extension abuts or strikes in the operation of the action. The side of the back catch extension M is cut away making an opening N thereto from the outside through which the spring is inserted sidewise into its socket seat *g*. In Figs. 4 and 5, the extension is made of a piece Q of leather, preferably in the felt P of the back catch, as shown in Fig. 4 more particularly, the spring passing through the socket *g* in the leather piece Q which is in the form of a slot R extending vertically, and its end being bent upward and forward as shown at S in Fig. 4, to form the shoulder *m*. When the hammer strikes the string T from playing of the key, in its rebound therefrom, it is caught by the back catch as usual, if the key is held down; the free end *n* of the spring L will then bear with more or less pressure upon the upper end of the back catch and as the key is raised to strike a second blow, the tension of the spring as the hammer is released from the back catch, serves to press the hammer forward toward the string, and thus swing its butt into proper position for its jack A to freely move thereunder into position for another blow of the hammer, as shown in Fig. 2, before the key has risen to its full height, when a second blow can be given to the hammer, thus insuring in the playing of any key a free and rapid repeat of the blows of the hammer upon the string with less movement of the key than would be the case provided the spring was not applied thereto making what is known and very much desired in piano forte actions, a successful "repeating" action.

The spring as applied and arranged in the present invention takes the place of the usual "bridle" of the action, for, if the hammer is inclined to move slowly back, or not return to its normal position, after striking the string, as the back catch falls back or down, because of its attachment to the jack lever B the upper part or edge of its socket abuts or strikes the shoulder *m* or the free end of the spring L, and through its connection with the hammer stem and back catch the hammer is pulled back.

The spring can be made of any suitable material and of any suitable form and attached to its support in any suitable manner, and the shoulder on its free end made or formed in any suitable manner.

5 The extension of the back catch can be made in any suitable manner, either integral with the wood portion U of the back catch, as in Figs. 1 and 2 or by a separate piece and
10 attached to the back catch as in Figs. 4 and 5, or in any other suitable manner. If the spring has the coil shoulder, it is necessary to have an opening N to the socket g from the outside, as shown in Figs. 1, 2 and 3 but when
15 made by bending the spring as shown in Fig. 4 the opening N can be dispensed with, as it can then be easily inserted by its end. The slot R allows free movement of the spring and yet serves to act in conjunction with the
20 spring to act as a bridle.

The spring can be easily regulated as to its length by opening or closing the coil as desired, and can be attached to the hammer stem U in lieu of its butt. In some cases there
25 might be no need of a shoulder on the spring as it being long enough the back catch would pull it back or down into place.

Having thus described my invention, what I claim is—

30 1. In a piano forte action, in combination, a hammer butt or stem, a spring attached thereto, a back catch, and an eye or socket in

said back catch, with which the free end of the spring engages.

2. In a piano forte action, in combination, 35 a hammer butt or stem, a spring attached thereto, a shoulder on its free end, a back catch, and an eye or socket in said back catch, with which the free end of the spring engages.

3. In a piano forte action, in combination, 40 a hammer butt or stem, a wire spring secured thereto, a shoulder on its free end formed of a coil of the wire at such end, a back catch, and an eye or socket in said back catch with which the free end of the spring engages.

4. In a piano forte action, in combination, 45 a hammer butt, or stem, a spring secured thereto, a shoulder on its free end, a back catch, and a vertically elongated opening or slot in said back catch, with which the free
50 end of the spring engages.

5. In a piano forte action, in combination, a hammer butt or stem, a spring secured thereto, a shoulder on its free end, a back catch, and an eye or socket in said back catch 55 having an opening to the outside.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

HORATIO N. MOORE.

Witnesses:

EDWIN W. BROWN,
LEONA C. ARNO.