

No. 758,654.

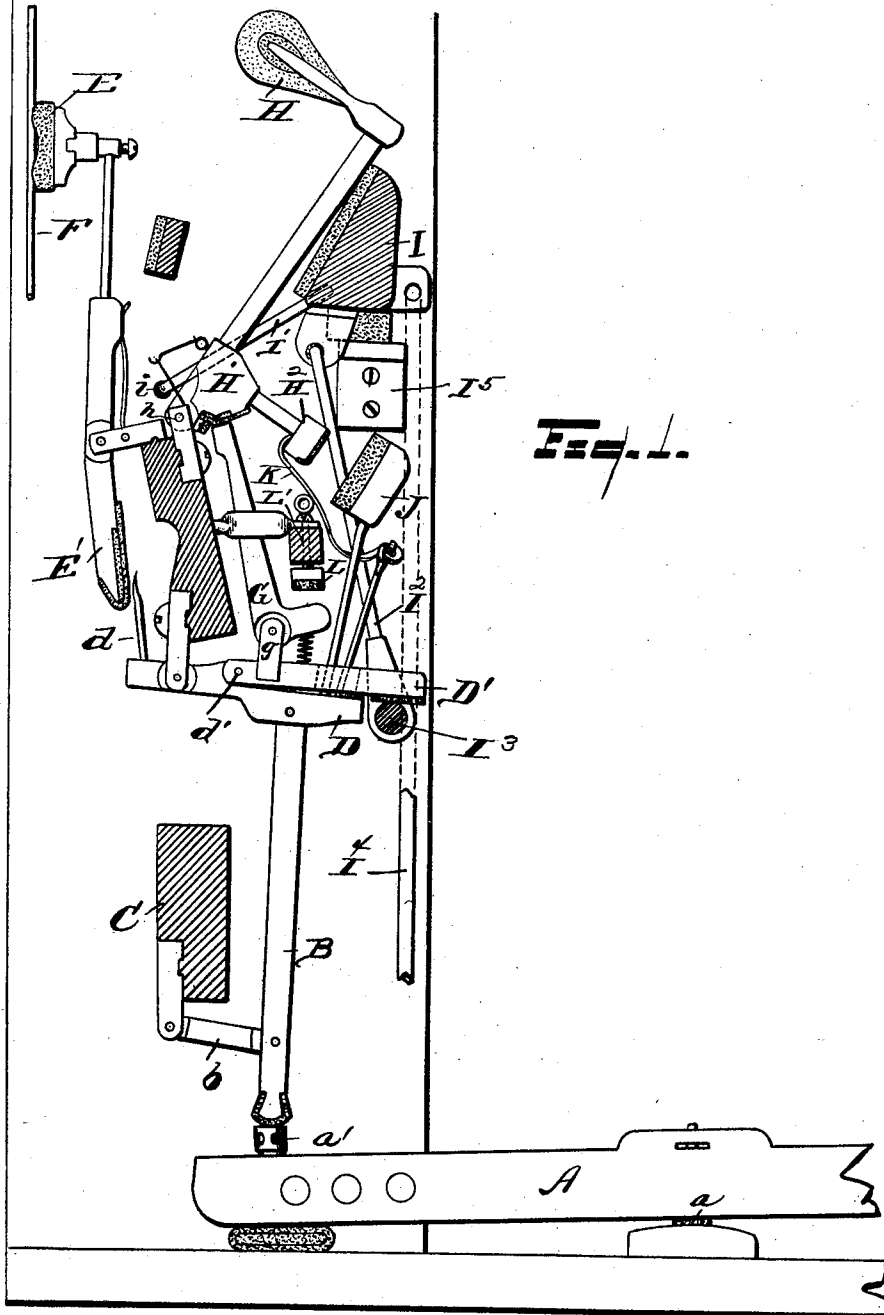
PATENTED MAY 3, 1904.

R. M. HUTCHINSON.
PIANO ACTION.

APPLICATION FILED MAY 11, 1903.

NO MODEL.

3 SHEETS—SHEET 1



WITNESSES
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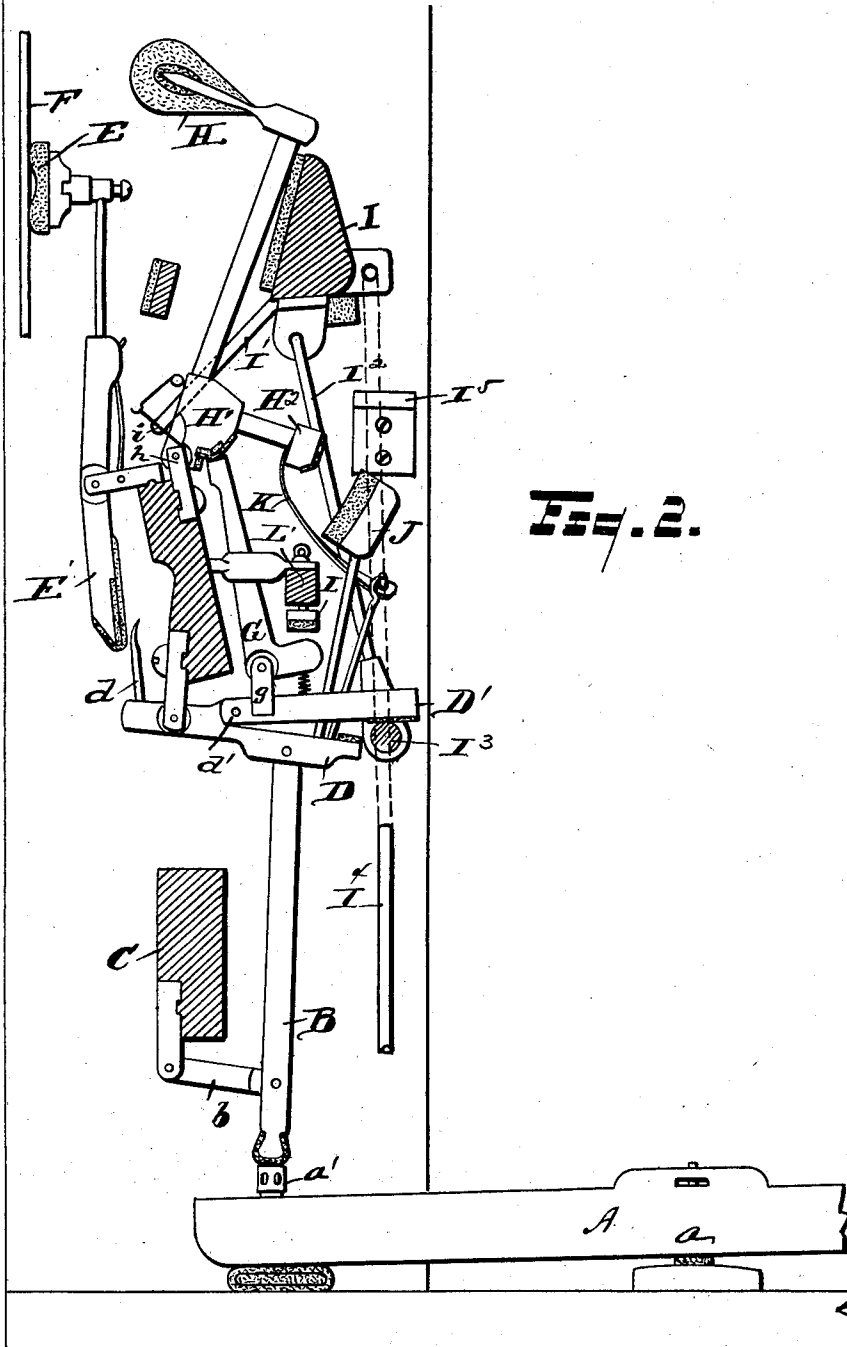
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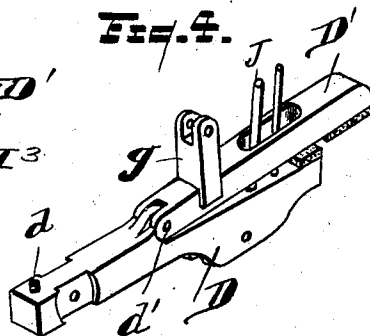
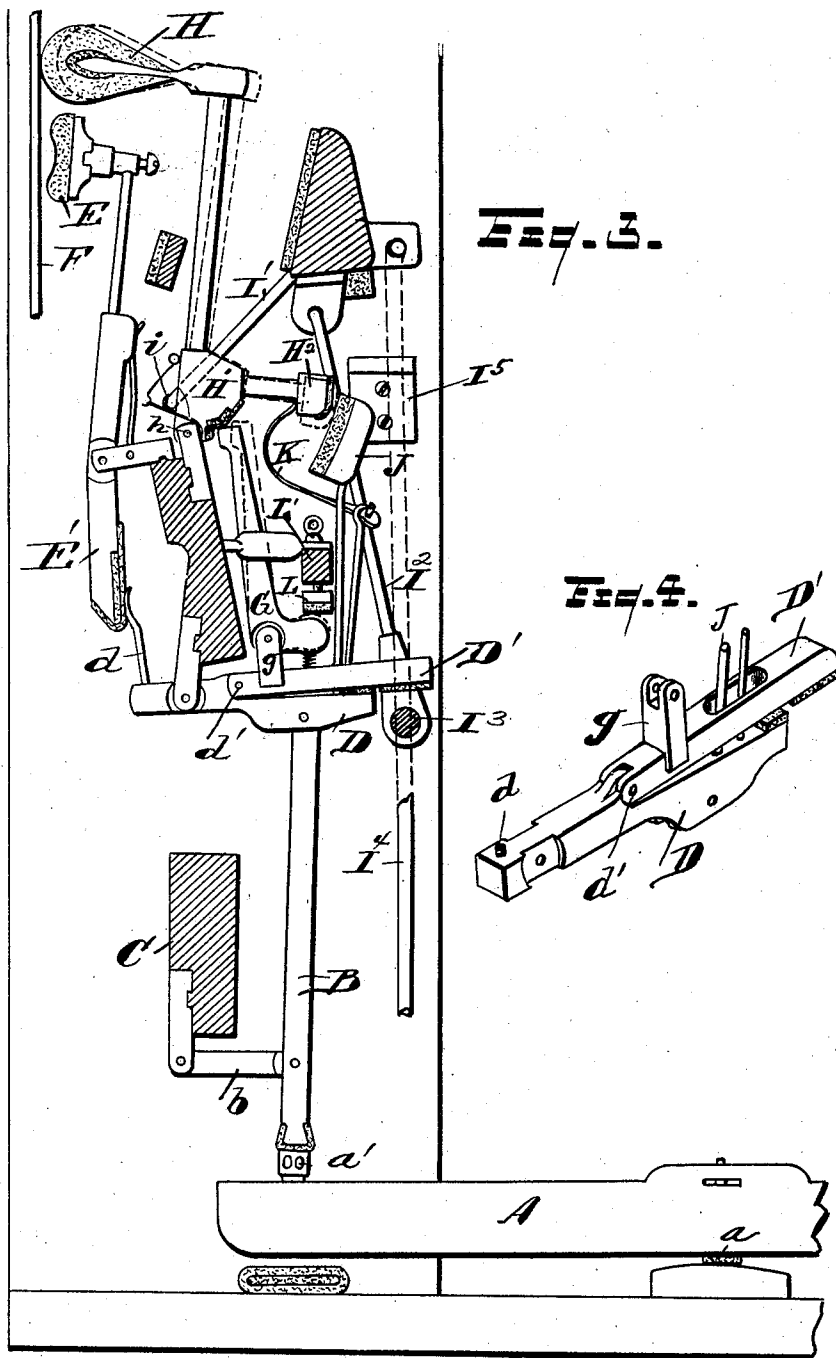
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UNITED STATES PATENT OFFICE.

ROBERT M. HUTCHINSON, OF ADRIAN, MICHIGAN.

PIANO-ACTION.

SPECIFICATION forming part of Letters Patent No. 758,654, dated May 3, 1904.

Application filed May 11, 1903. Serial No. 156,542. (No model.)

To all whom it may concern:

Be it known that I, ROBERT M. HUTCHINSON, a citizen of the United States, residing at Adrian, county of Lenawee, State of Michigan, have invented a certain new and useful Improvement in Piano - Actions; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improvement in piano - actions shown in the accompanying drawings, and more particularly set forth in the following specification and claims.

In the drawings, Figure 1 is a side elevation of a piano-action in its normal position, showing parts in section. Fig. 2 is a similar view showing the position of the parts when the soft pedal is operated. Fig. 3 is a similar view showing the key depressed. Fig. 4 is a detail view of the wippen and connecting parts.

The object of my invention is to provide means to take up the lost motion between the lifting-jack and hammer-butt when the soft pedal is operated, so that the movement of the hammer is simultaneous with the movement of the key regardless of the position of hammer by the operation of the soft pedal.

Referring to the letters of reference shown in the drawings, A is the key, *a* its fulcrum, and B the abstract resting on the capstan *a'*, mounted in the end of the key.

b is an extension or abstract guide pivoted to the abstract and to the arm secured to the lower rail C.

D is the wippen, pivoted to the flange secured to the action-rail and with the abstract B in the usual way.

D' is a swinging arm of the wippen, pivoted at *d'*.

d is the damper-spoon, engaging the damper-lever E', pivoted on the arm engaged with the action-rail.

E is the damper.

F represents one of the piano-wires.

G is a lifting-jack pivoted in the standard *g*, mounted on the arm D'.

H is the hammer, and H' the hammer-butt, pivoted in the flange *h*, secured to the action-rail.

I is the hammer-rail, secured to the swinging arm I', pivoted at *i*.

I² is a link connecting the hammer-rail with the cross-bar I³, designed to engage the several arms D' of the piano-action.

I⁴ is a lifting-rod engaging with the pedal for operating the hammer-rail.

I⁵ is a shoulder supporting the hammer-rail in its initial position.

J is the back-check, and H² is the catch, secured to the hammer-butt.

K is the bridle-check.

L represents the regulating - buttons, supported by the rail L'.

The operation of my invention is as follows:

When the soft pedal is operated, the hammer-rail is raised in the usual manner, moving the hammers toward the strings, the cross-bar I³ lifting the several arms D', pivoted to the wippen, thus holding the ends of the lifting-jacks G in contact with the hammer-butts H. It will thus be seen that the moment a key is operated the jack controlling the hammer engaged by the key will immediately lift it, causing it to strike the string, there being no lost motion between the end of the lifting-jack and the hammer-butt. By thus holding the end of the lifting-jack in contact with the hammer-butt the hammer will immediately respond to the action of the key regardless of the distance between the hammer and the strings, due to the position of the hammer-rail. Thus the hammer-rail may be connected with one or more pedals, which will force the hammers into different positions with relation to the strings, the hammers responding instantly to the action of the key regardless of their relative distance from the strings. It will thus be seen that the jacks may be adjusted with relation to the hammer-butts without lifting the wippen. One object of this is to provide means whereby the connection between the wippen and the damper-levers may be closely adjusted and not have this close adjustment affected by the movement of the hammer-rail.

It will be readily understood that in con-

structions in which the entire wippen is raised the damper-spoon controlling the damper-lever being mounted on the wippen will move toward the damper-lever. Therefore in order
 5 to provide for this movement a relatively close adjustment of the spoon with the lever is out of the question.

Having thus described my invention, what I claim is—

10 1. In a piano-action the combination of the hammers, the hammer-butts, the string-dampers, the wippens provided with means for controlling the dampers and means for lifting the hammer-butts without operating the dam-
 15 per-controllers, substantially as described.

2. In a piano-action, the hammers, the hammer-butts, the wippens, arms pivoted to the wippens, lifting-jacks mounted on said arms, the hammer-rail, and means for raising the
 20 arms simultaneously with the hammer-rail, substantially as described.

3. In a piano-action, the hammers, the hammer-butts, the wippens, arms pivoted to the wippens, lifting-jacks mounted on said arms, a cross-bar engaging the several arms, and a
 25 movable hammer-rail, substantially as described.

4. In a piano-action, the hammers, the hammer-butts, the wippens, arms pivoted to the wippens, lifting-jacks mounted on said arms, 30
 a movable hammer-rail, pedals, means for raising the arms pivoted to the wippens simultaneously with the hammer-rail, the keys, and the extensions connecting the wippens with the keys, substantially as described. 35

In testimony whereof I sign this specification in the presence of two witnesses.

ROBERT M. HUTCHINSON.

Witnesses:

J. A. AMBLER,
 CHAS. W. BEHM.