

W. C. VOGEL & J. A. HUTCHENS.
PIANISSIMO DEVICE.

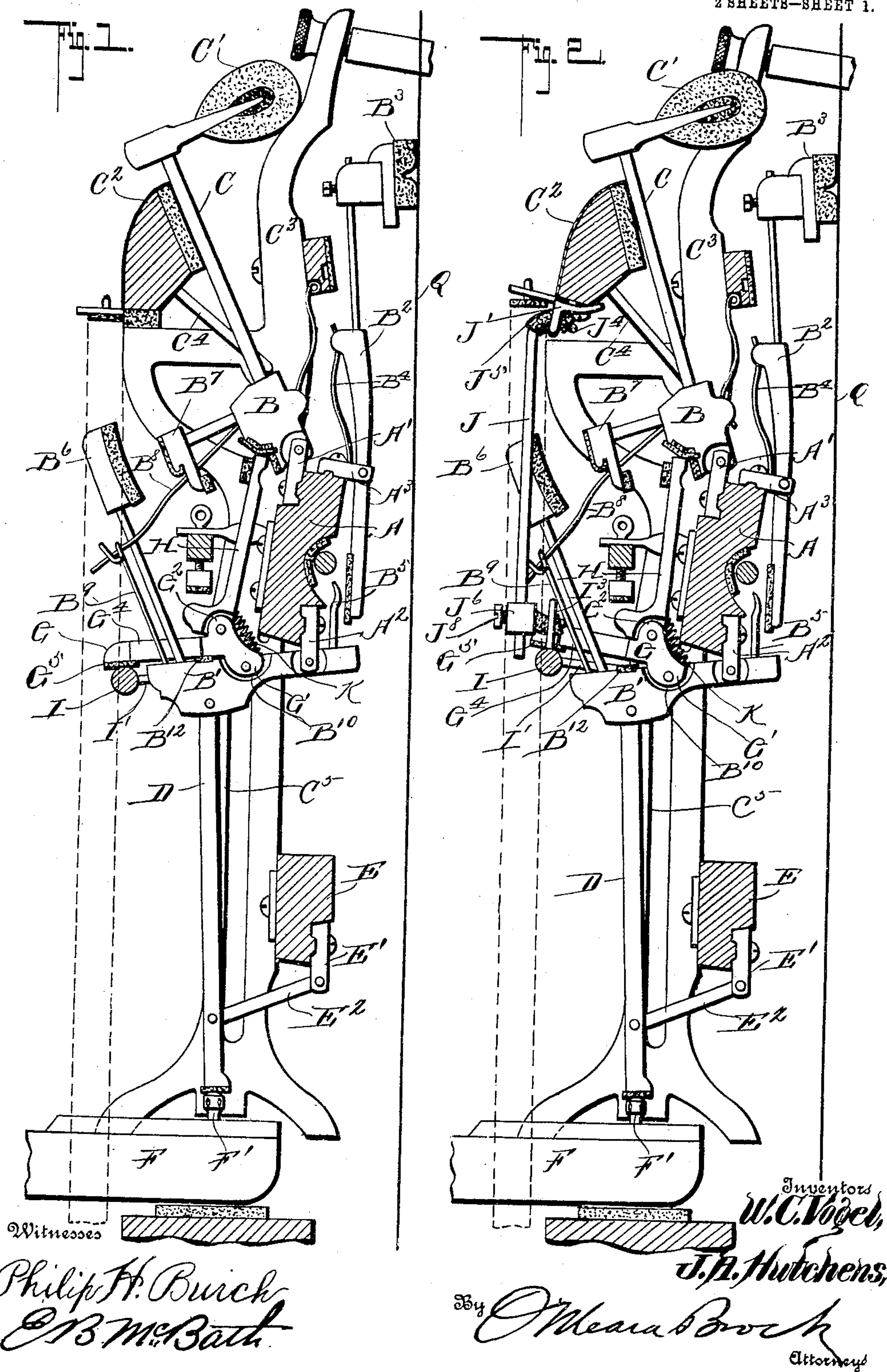
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APPLICATION FILED NOV. 8, 1908.

Patented July 12, 1910.

2 SHEETS—SHEET 1.

963,837.



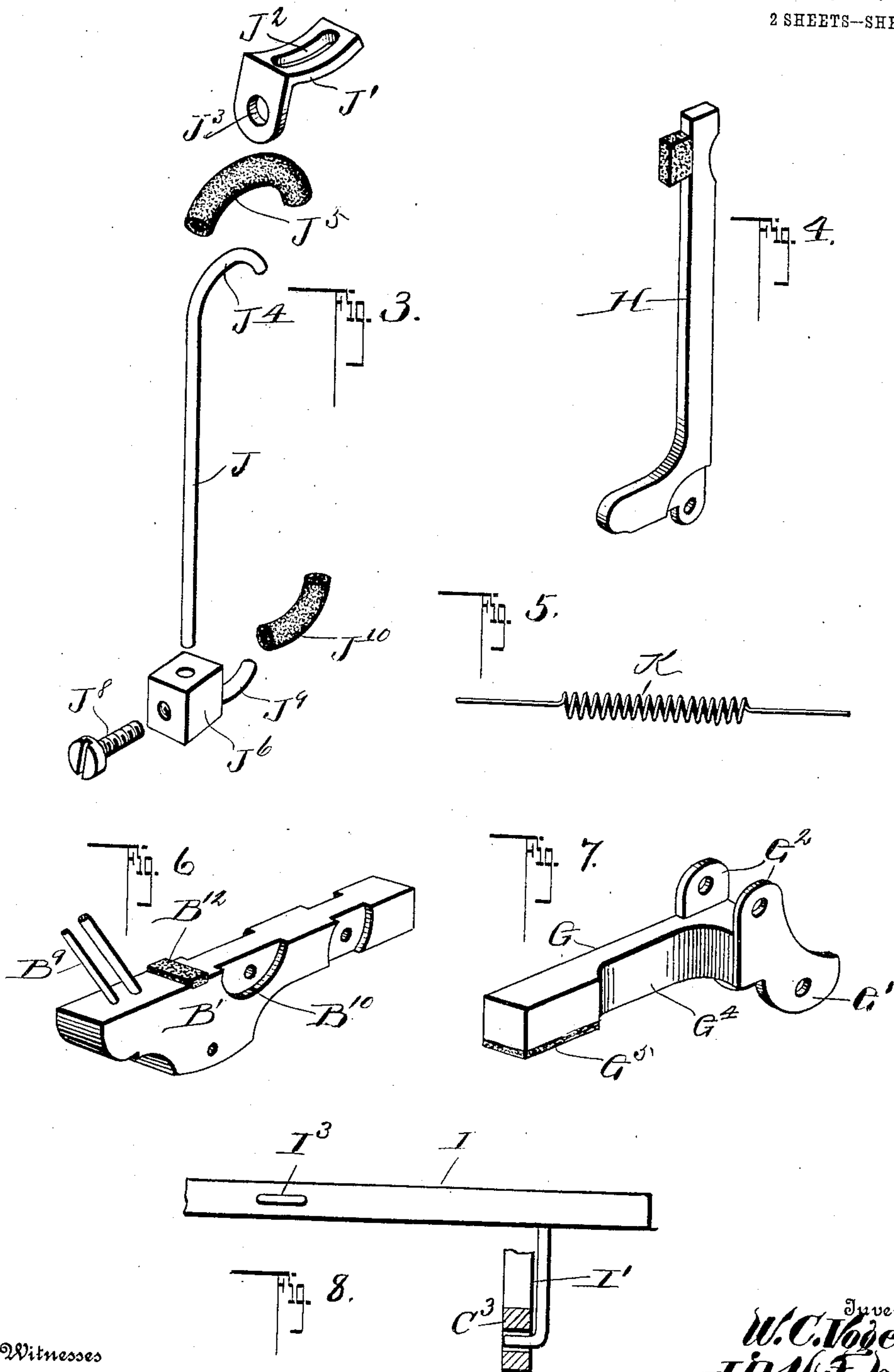
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Witnesses

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UNITED STATES PATENT OFFICE.

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PIANISSIMO DEVICE.

963,837.

Specification of Letters Patent.

Patented July 12, 1910.

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To all whom it may concern:

Be it known that we, WILLIAM C. VOGEL and JAMES A. HUTCHENS, citizens of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented a new and useful Improvement in Pianissimo Devices, of which the following is a specification.

This invention relates to an improvement in upright piano actions so constructed that when the soft pedal is depressed to raise the hammers and diminish the length of the hammer blow, the reach of the transmitting mechanism intervening between the key and the hammer is increased to prevent lost motion between any of the parts. We thereby secure at all times the full stroke of the key and a prompt response on the part of the action to the touch while the soft pedal is depressed. To accomplish this we raise the jack with a lever which is pivotally supported on the whip and by causing an upward and rearward movement of the upper portion of the lever on the whip we take up lost-motion between the upper face of the jack and butt cushion, it being understood that the whip remains in its normal position while lost motion is being taken up.

Our invention consists in the novel features of construction and combination of parts hereinafter set forth, pointed out in the claims and shown in the accompanying drawing in which—

Figure 1 is a vertical section through the piano action embodying our improvement and showing the parts in their normal positions, with certain parts omitted. Fig. 2 is a similar vertical section with additional parts, and showing the position of the movable parts while the key is at rest and the soft pedal is depressed. Figs. 3, 4, 5, 6, 7 and 8 are detail perspective views of the various parts making up our improvement and detached from the piano action.

The action comprises a number of parts common to all upright piano actions.

In the drawings A represents the main action-rail, provided with an upwardly extending flange A', and a depending flange A². The flange A' carries a hammer-butt B to which is connected a hammer shank C having a hammer head C'. The main rail A is also provided with a rearwardly extending flange A³, to which is pivoted a damper lever B², carrying a damper B³ and provided with a restoring spring B⁴.

To the flange A² is pivoted a whip B' which carries a spoon B⁵ in engagement with the lower end of the damper lever B². A pilot D has its upper end pivoted to the whip B', and the whip B' is connected to the hammer-butt B by a bridle B⁸ and bridle wire B⁹. A cushioned hammer check B⁶ is supported by the whip B'; a buffer B⁷ supported from the hammer butt coöperates with the hammer check B⁶.

A movable hammer rest rail C² is connected to the usual vertical action bracket C³ by means of hooks C⁴, in such manner that the hammer rest rail can move toward and away from the strings Q, the movement of the said rail being effected by means of a soft pedal rod C⁵ secured to said rail in the usual manner. A lever G is provided with lower end ears G' and upper ears G². The whip B' is recessed at B¹⁰ to receive the ears G' which are pivoted to the whip, and to the lever between the upper ears G² is pivoted a jack H which constantly engages the butt B; a spring K is fastened at one end to the whip B' and at the other end to the jack H and holds the jack in engagement with the butt B. A cushion B¹² is carried by the whip B' upon which the lower side of the lever G rests when the parts are in normal position. The lever also rests on a bar I and is provided with a cushion at G⁵. The lever is cut out as shown at G⁴ to allow the hammer check wire and bridle wire to pass. The lower action rail E is provided with a depending flange E' to which is pivoted a tongue E², and the tongue E² is pivoted to the pilot D which pilot rests on a capstan screw F' secured in the key F.

The above parts are those common to upright piano actions with the exception of the lever G, the spring K and the hanger with the bar I.

The bar I extends lengthwise through the action and is pivoted to the action bracket C³ by arms or hooks I'. A rod or hanger J connects the bar I to the hammer rest rail C² so that the bar rises and falls with the rail. A bracket J' slotted at J² has an eye J³. This hanger engages the eye J³ and the rod or hanger passes through a block J⁶ to which it is fastened by a binding screw J⁸. The block J⁶ has a hook J⁹ which carries a cushion in the form of a sleeve J¹⁰ and engages an eye I³ carried by the bar I. When the hammer rest rail C² is lifted these parts will lift the bar I, and when the hammer rail

drops the bar will descend by gravity, as far as permitted by the rod or hanger J.

Should the relative position of bar I and rail C² require adjustment this can readily
 5 be effected by the block J⁶ by which the length of the hanger J may be altered. If the soft pedal is depressed for pianissimo playing the rail C² and bar I will be raised in the manner described and the rail C² will
 10 in turn swing the hammers upward and toward the strings into half stroke position thus increasing the distance between the hammer-butts and the capstan screws F'. At the same time the lifting of the bar I will
 15 swing the levers G on their pivots G' raising their forward ends, and thereby elevating the pivots of the ears G² which will move upwardly and rearwardly causing the jacks H to be lifted upwardly under the hammer-
 20 butts B. By thus increasing the reach of the action the pilot D may remain in positive contact with the capstan screw F', though the jack H is in contact with the hammer-butt B. When playing with the soft pedal
 25 depressed the bar I will hold up the front end of lever G, thus during each stroke of the key the whip B' will rise and the space will close between the whip B' and the lever G. Thus the key F has at all times the same
 30 travel.

On account of the keys of pianos being pinned at different distances and balanced with key leads at different distances making a difference of travel on the rear end of key,
 35 also a difference of touch, it is understood that the lever G may vary in shape, style, and size, to suit special whips, jacks and flanges.

It will also be understood that the centers on lever G at G' and G² may be put at any suitable place, and that many minor variations of
 40 construction and arrangements of parts may be made to accommodate the action herein described without varying the operation and result gained as above outlined. It is also
 45 obvious that the various parts may be made of any suitable material, cushioned and packed where necessary, and made of any desired size.

What we claim is:—

1. A piano action having a hammer check, 50
 a bridle wire, a whip, a jack, and a one-piece lever cut out upon one side to permit passage of the hammer check and bridle wire, and having two pairs of integral ears
 55 at its rear end, one pair of ears being pivotally attached to the whip and the other pair being pivotally attached to the jack.

2. A piano action having an action bracket, a horizontal bar pivoted to said action bracket, an eye carried by said bar, a hanger 60
 having a hook at one end, a hammer-rest-rail, a bracket secured to the hammer-rest-rail, an eye carried by the bracket and receiving the hanger-hook, a block, a hook carried by the block engaging the eye of the
 65 bar, the hanger passing through said block, and means for securing the hanger in adjusted position relative to said block.

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Witnesses:

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