W. C. VOGEL.

PIANO ACTION.

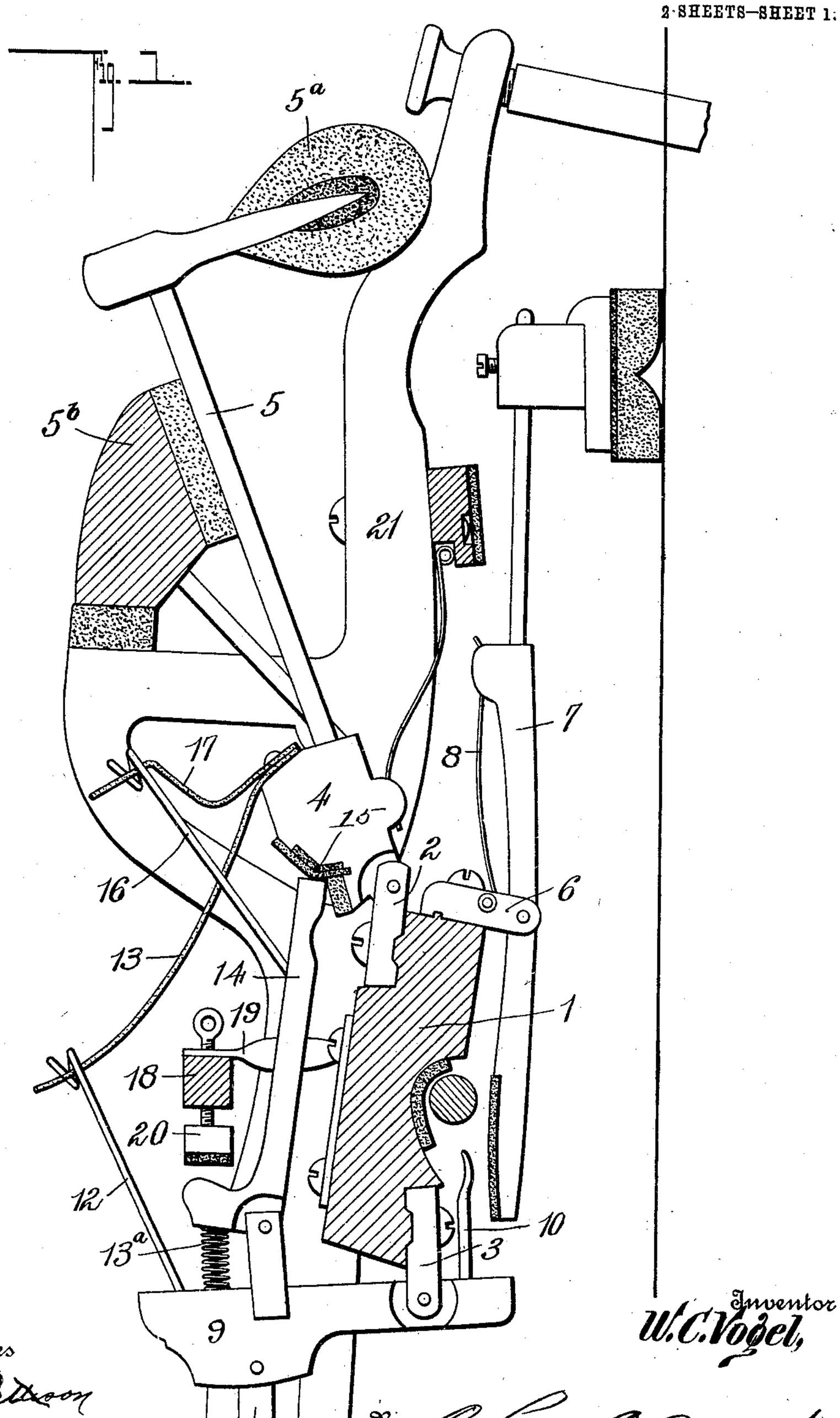
APPLICATION FILED FEB. 3, 1910.

993,478.

Patented May 30, 1911.

2 SHEETS—SHEET 1.

Fig. 1.



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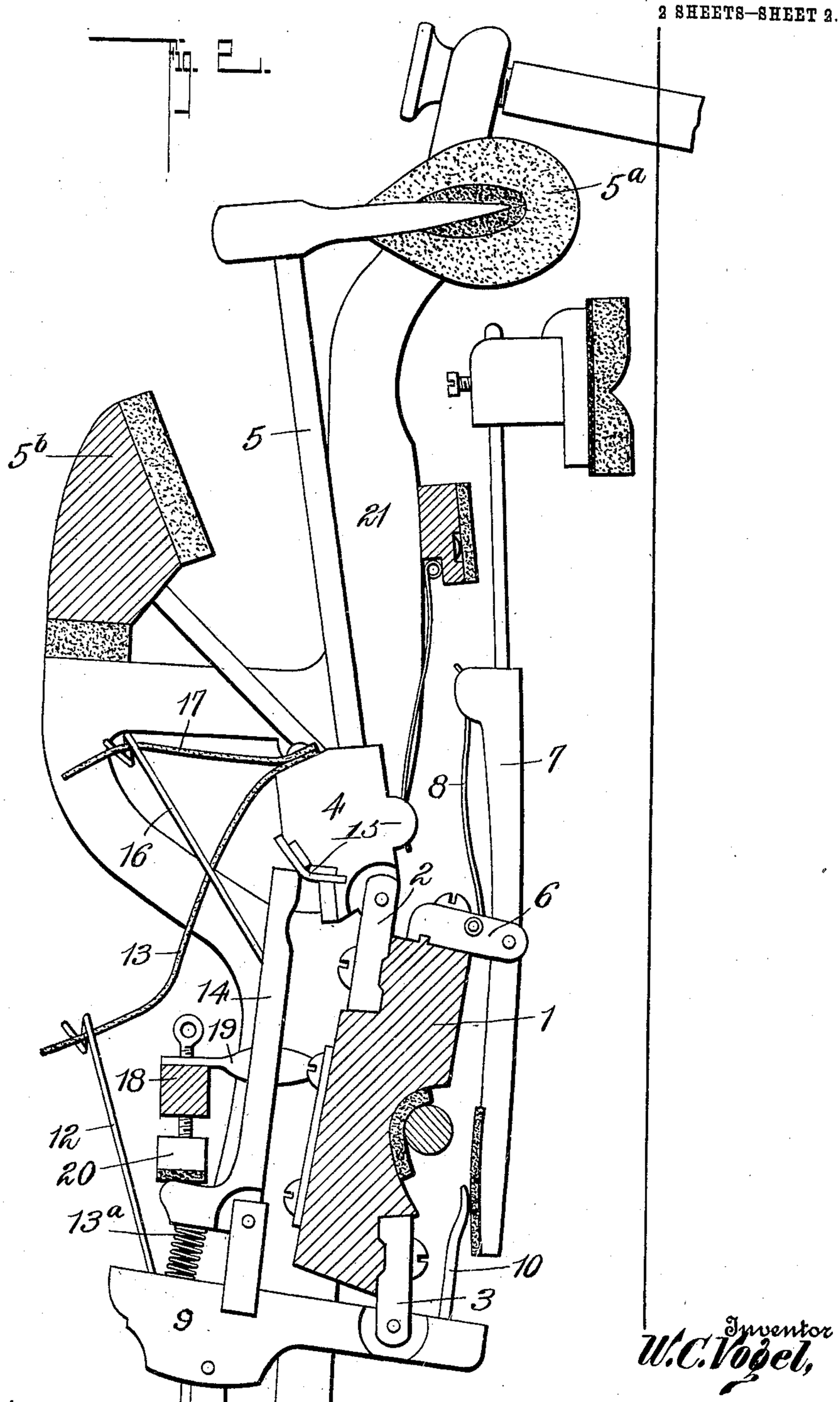
2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM C. VOGEL, OF ROCKFORD, ILLINOIS.

PIANO-ACTION.

993,478. Specification of Letters Patent. Patented May 30, 1911.

Application filed February 3, 1910. Serial No. 541,921.

To all whom it may concern:

Be it known that I, WILLIAM C. VOGEL, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented a new and useful Improvement in Piano-Actions, of which the following is a specification.

This invention relates to an improvement in piano actions, and especially to that portion of the action which comprises the jack, hammer butt, a jack wire and a butt strap, movement of the jack causing the jack wire to pull back upon the strap, thus holding the upper end of the jack against the outer face of the hammer butt knuckle, causing the hammer head to remain in its proper place during depression of the key. By means of this construction I do away with the back check and catch, thus saving material and labor and constructing a simplified action.

In the accompanying drawings: Figure 1 is a vertical section through a portion of a piano action, and showing the parts in normal position. Fig. 2 is a similar vertical section showing the parts in the position occupied when the key is fully depressed.

In the drawings I have broken away the lower portion of the action in order to show the other parts upon a larger scale, the parts omitted being those already in common use and well understood. Furthermore in illustrating the invention I have shown the same combined with parts common to standard upright piano actions, and in the drawings 1 is the main piano action rail provided with upper and lower flanges 2 and 3, and to the upper flange 2 is pivoted a hammer butt 4. This carries a hammer shank 5 which supports the usual hammer head 5^a which in turn rests against a hammer rest rail 5^b. The main action rail also carries a rearwardly extending flange 6 to which is pivoted a damper lever 7 held in place by the usual restoring spring 8. A whip 9 is pivotally connected to the lower flange 3 and carries a spoon 10 and is also pivotally connected to the usual extension 11. A bridle wire 12 is carried by the whip 9 and engages a bridle 13 secured to the upper forward face of the hammer butt 4. The jack 14 is pivotally connected to the whip 9 and is held in constant engagement with the hammer butt 4 by a spring 13^a which bears upon the lower end of the jack and also upon the whip. The jack bears upon a knuckle 15 carried by the hammer butt 4. A jack wire 16 extends upwardly and outwardly from the upper portion of the jack and a butt strap 17 is secured to the upper forward face of the hammer butt 4, preferably by the same means employed for securing the bridle 13, said strap being engaged by the jack wire 16 and normally having a slack portion as shown in Fig. 1. A regulating rail 18 is supported from the main action rail by a bracket 19 provided with the usual regulating button 20. The usual vertical action bracket 21 is also employed.

Upon depression of a piano key the extension 11 is lifted in the usual manner, thus throwing the parts into the position shown in Fig. 2, and the movement of the jack, which still remains in contact with the hammer butt 4, will cause the jack wire to pull back upon the strap 17, thus holding the hammer head 5^a in the position shown in Fig. 2.

In piano actions of standard makes the key at the front end has a travel of three eighths of an inch. The hammer is thrown forward when the key is depressed from one fourth to five sixteenths of an inch. The hammer strikes a string prior to the complete depression of the key, and this causes an opening of about one thirty second of an inch to be formed between the outer face of the jack and butt-knuckle 15, which allows the outer end of the jack to slide out from underneath of the knuckle. The strap 17 is not stretched its full length when the hammer strikes the string as said strap does not assume the position as shown in Fig. 2 until the heel of the jack 14 presses against the regulating button 20, thereby forcing the upper end of the jack to slide from under the side of the butt-knuckle 15. This last movement of the jack stretches the strap 17 and takes place after the hammer has struck the string. In standard actions the jack will slide out from beneath a knuckle when the hammer has moved back and is from one to three eighths inches from the string, the exact position of the hammer with relation to the string at the time this movement of the jack takes place being regulated by the adjustment of the button 20.

What I claim as new is:

An upright piano action having a hammer butt, a whip, a jack pivotally supported on the whip and in engagement with the

hammer butt, a bridle wire carried by the whip, and a bridle secured to the hammer butt and engaged by the bridle wire, of a wire extending outwardly and upwardly from the upper portion of the jack, and a strap secured upon the hammer butt at the same point as the bridle, and engaged by said wire, said strap being slack normally, and drawn taut upon sliding of the jack from under the hammer butt, as and for the purpose set forth.

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