

No. 803,752.

PATENTED NOV. 7, 1905.

O. GLATT.  
PIANO ACTION.

APPLICATION FILED MAR. 18, 1904.

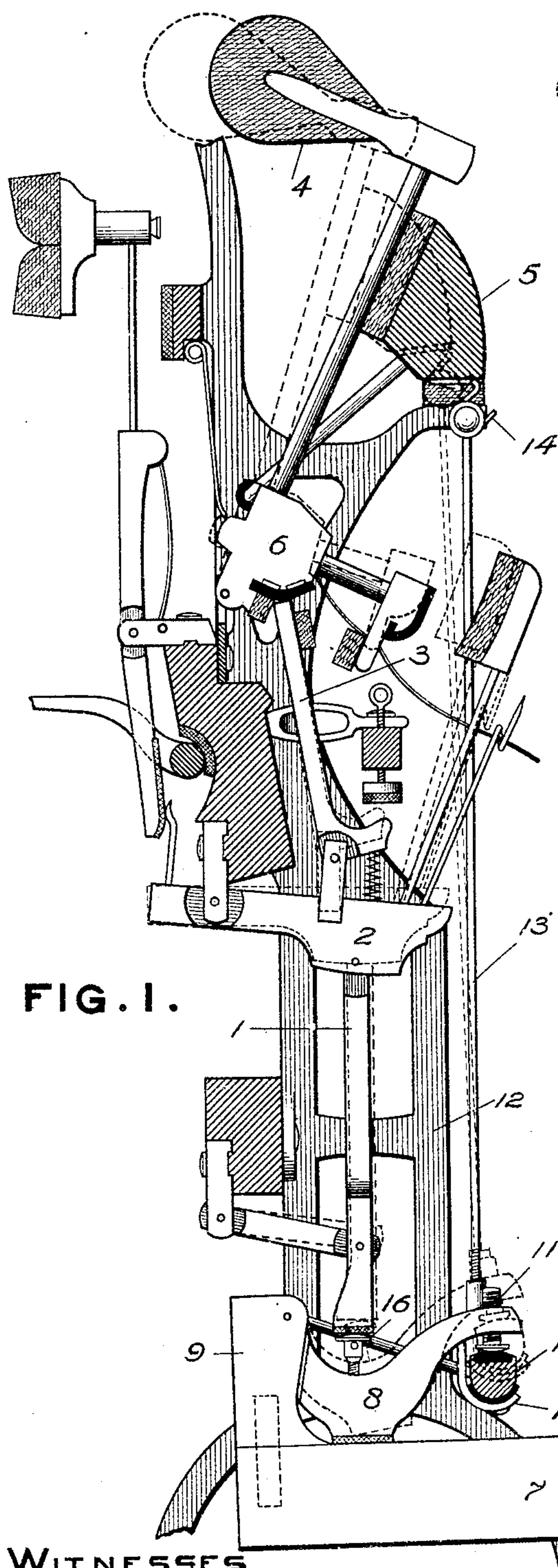


FIG. 1.

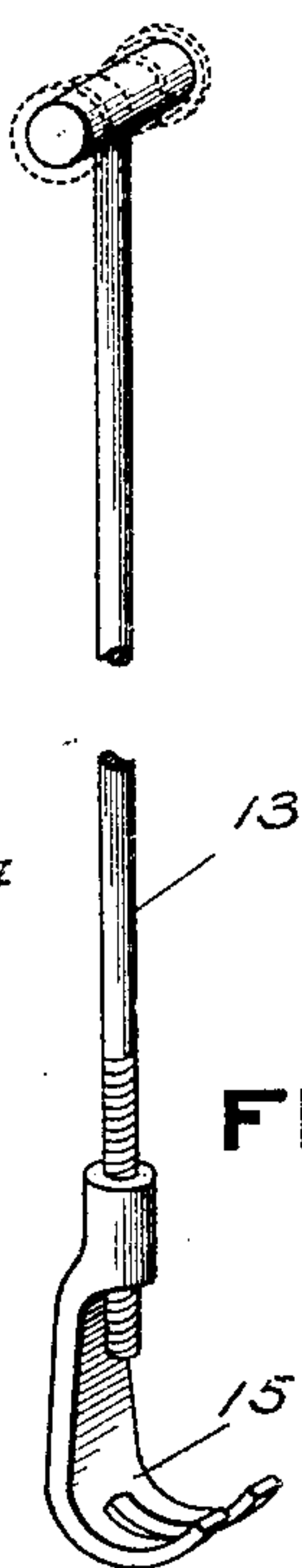


FIG. 3.

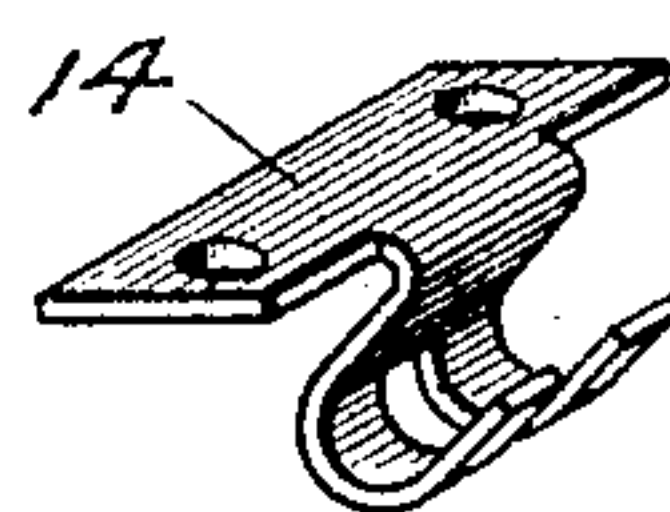


FIG. 4.

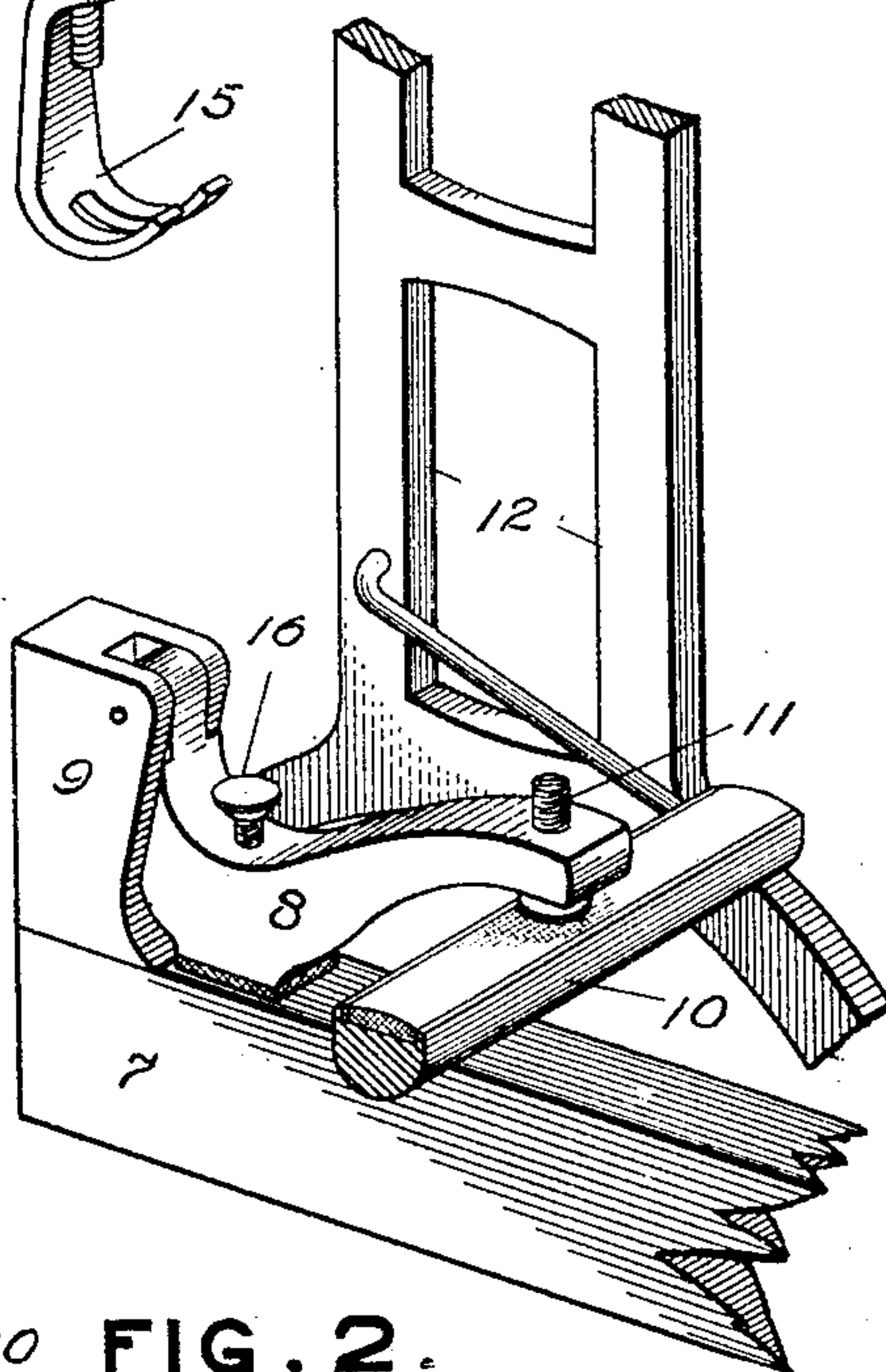


FIG. 2.

WITNESSES

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# UNITED STATES PATENT OFFICE.

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## PIANO-ACTION.

No. 803,752.

Specification of Letters Patent.

Patented Nov. 7, 1905.

Application filed March 18, 1904. Serial No. 198,704.

*To all whom it may concern:*

Be it known that I, OTTO GLATT, of the city of Toronto, in the county of York and Province of Ontario, Canada, have invented certain new and useful Improvements in Piano-Actions; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

The present invention relates particularly to that class of upright-piano action commonly known as "long or abstract actions," and pertains to certain improvements for eliminating lost motion, as hereinafter particularly described, and pointed out in the claims.

The object of the invention is to incorporate in an action of the aforesaid type means to compensate for and take up automatically the lost motion due to the displacement of the hammer-butts through the action of the soft pedal in elevating the hammers; to maintain an even and uniform touch during the application of the soft pedal in bringing the action to the pianissimo position and permitting the pianissimo effect to be attained without recourse to an additional pedal, a position not permissible owing to the excessive lost motion in the present standard type of action. I attain the foregoing by the construction and arrangement of parts shown in the accompanying drawings, in which similar figures of reference refer to like parts throughout.

Figure 1 is a vertical sectional view of an upright-piano action embodying the aforesaid improvements, and to more clearly illustrate the operation of the parts which have more immediately to do with eliminating lost motion is shown in dotted lines the relative positions of the respective parts in attaining the pianissimo position. Fig. 2 is a perspective view in detail of the more essential portion of the improved compensating device and showing clearly the manner of pivoting the lifting-rail. Fig. 3 is a perspective view in detail of the connecting-rod for communicating motion to the lifting-rail and showing clearly the means of adjustment therein, and Fig. 4 is a similar view of the hammer-rail cleat or hook.

The parts are normally in the position shown in Fig. 1. In this instance those per-

taining more particularly to the application of a lost-motion eliminator are numerated as follows: The abstract 1, wippen 2, jack 3, hammer 4, and hammer-rail 5, all of the standard type and operating in the usual manner. The application of the soft pedal brings the action to the pianissimo position, shortening the stroke of the hammers 4, thereby taking up a new position relatively to the jacks 3 and creating the lost motion aforesaid. To maintain the jacks 3 in juxtaposition with the butt 6 of the hammers, it is essential to elevate the wippens 2 a distance relatively proportionate to the shortening of the stroke of the hammers 4 and in this instance without affecting the normal position of the keys 7 or diminishing the stroke thereof, which is a desideratum.

In carrying out the present invention the keys 7 are provided with pivoted levers 8, normally resting thereon with their free ends extending toward the front of the action. Made fast on the inner extremity of the keys 7, there are blocks 9, in which the levers 8 are fulcrumed.

To elevate the wippens 2 for the purpose hereinbefore set forth, it is essential to increase temporarily the length of the member 1 simultaneously with the shortening of the stroke of the hammers 4 in such a manner that the increase in length will be compensated for during the stroke of the key 7. When in their normal position, the free ends of the wippens 8 rest in contact with the lifting-rail 10 and are provided with means of adjustment, preferably in the form of a screw 11, as shown. The rail 10 extends the whole length of the action and is pivoted in the brackets 12 in the manner shown, operating in unison with the hammer-rail 5, by means of the connecting-rod 13.

Suitably disposed is one or more cleats or hooks 14, fast to the under side of the hammer-rail 5 and adapted for the reception of the T-shaped head of the connecting-rod 13. The lower end of the said rod 13 is adjustably secured in the foot 15, which partially encircles the under side of the rail 10, as clearly shown in the drawings. The facility with which the connecting-rod 13 can be removed and replaced and the adjustment of its length is obvious.

The pivoted levers 8 are provided with capstan-screws 16, upon which rest the ab-



stracts 1. The disposition of the capstan-screws is unimportant, whether adjusting from the wippen 8 or abstract 1, serving equally as well in either instance in regulating the action, while the adjusting-screws 11 are also essential to attain the finer regulation of the action.

The pivoting of the wippens 8 and their length—that is, the point of contact with the rail 10—are important, also the position of said points relative to the point of contact with the abstracts 1 to attain the end in view. By a proper adjustment of these points a continuous rolling contact with the head of the capstan-screw 16 and adjusting-screw 11 with their respective parts is possible when in operation, which is essential to increase the life of the action.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In upright-piano actions, the combination of a hammer, hammer-rail, jack, wippen, abstract, key and means for moving said rail and hammer into pianissimo position, with a lever extending from its pivot toward the front of the key, normally resting thereon and supporting the lower end of said abstract, a lifting-bar under the free end of the said lever and a rod which is connected to the said hammer-rail and supports the said lifting-rail, being provided with a part which passes externally under the said lifting-rail without requiring the perforation of the latter in order that the movement of the hammer-rail into pianissimo position may lift the said lever, abstract, wippen and jack, there-

by keeping the jack in touch with the hammer-rail at all times substantially as set forth.

2. In upright-piano actions, the combination of a hammer, hammer-rail, jack, wippen, abstract, key and means for moving said rail and hammer into pianissimo position, with a lever supporting the lower end of said abstract and normally resting on the top of said key, a lifting-rail arranged under the free end of the said lever, and means for connecting the said hammer-rail to the said lifting-rail, said means including a hook which passes under the latter rail, this rail being imperforate and not attached to said hook substantially as and for the purpose set forth.

3. In upright-piano actions, the combination of a hammer, hammer-rail, jack, wippen, abstract, key and means for moving the said rail and hammer into pianissimo position, with a lever supporting the lower end of said abstract, a lifting-rail under the free end of the said lever and a connecting-rod which is attached at its upper end to said hammer-rail, provided at its lower end with a hook extending under the lifting-rail and made adjustable in length at will, the said rod and hook being altogether external to said lifting-bar and without attachment thereto, the said bar being imperforate, substantially as set forth.

Signed at the city of Toronto this 5th day of March, 1904.

OTTO GLATT.

Witnesses:

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LEONARD FOULDS.