

O. GLATT.
PIANISSIMO DEVICE.
APPLICATION FILED MAR. 7, 1904.

2 SHEETS—SHEET 1.

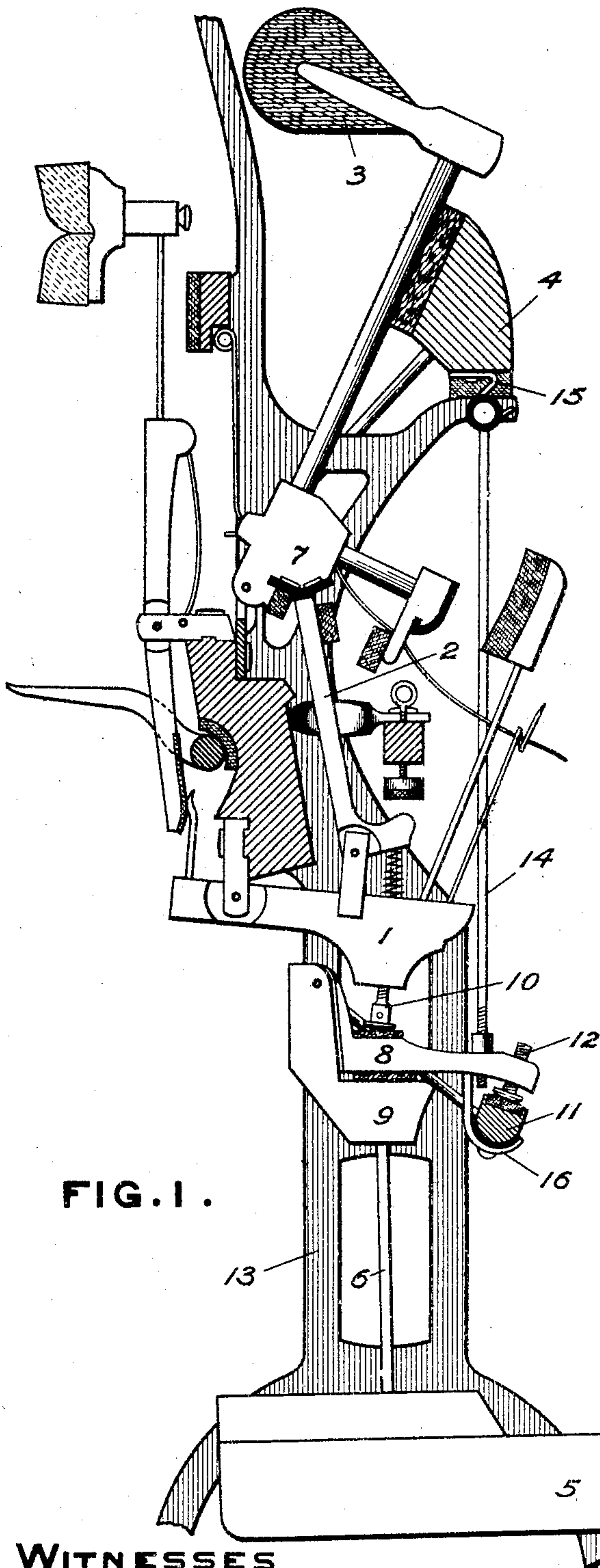


FIG. 1.

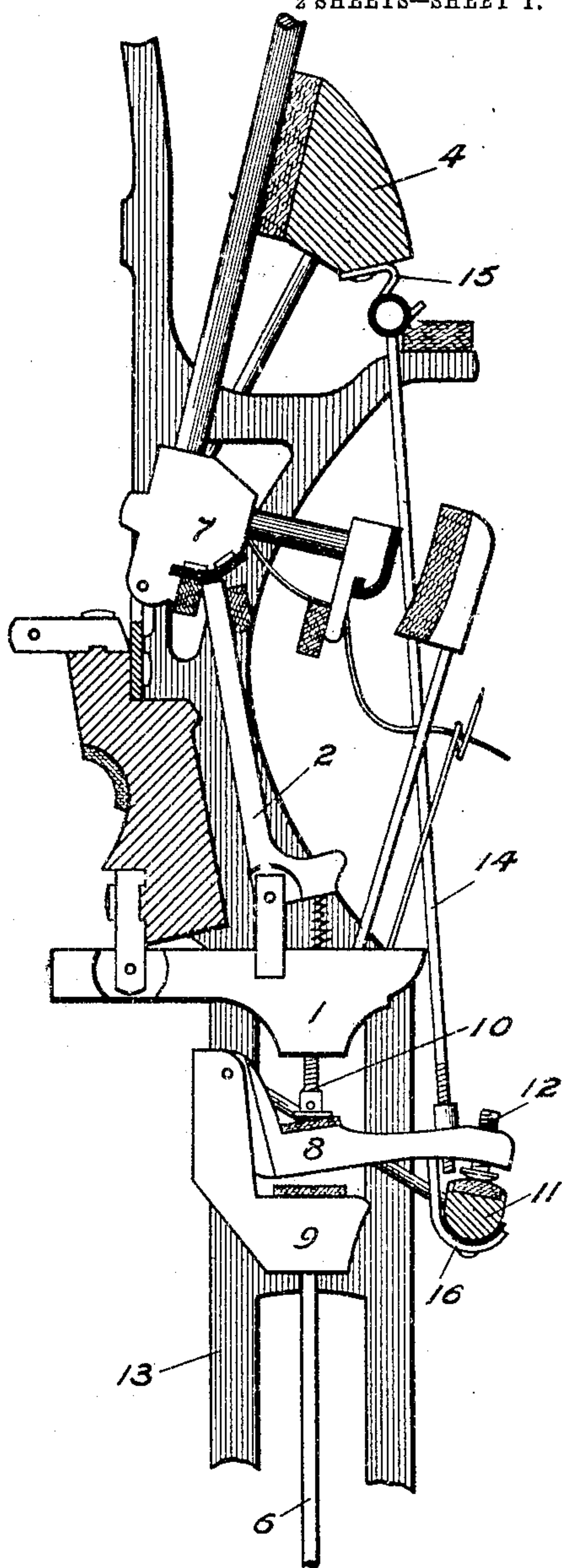


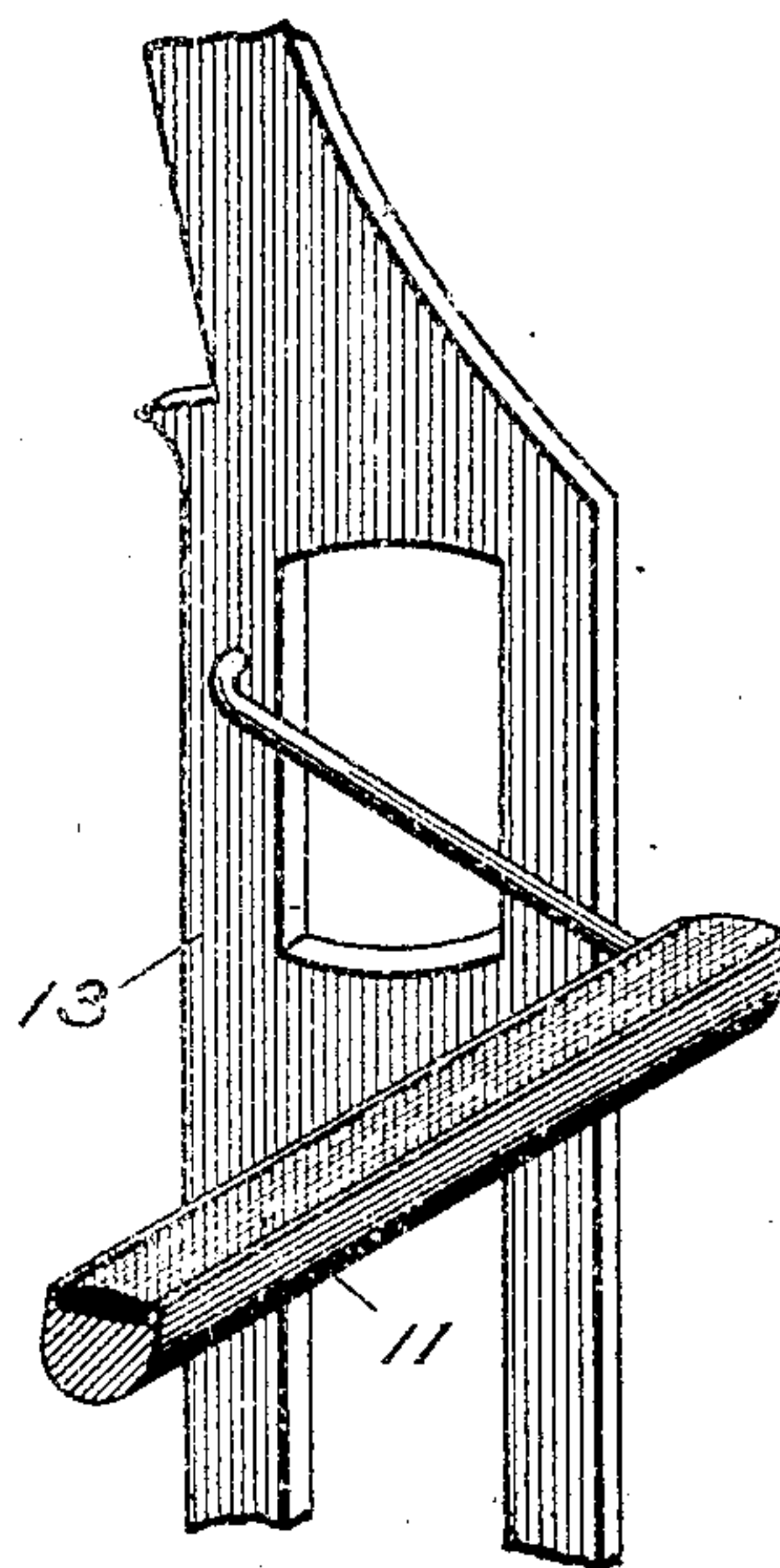
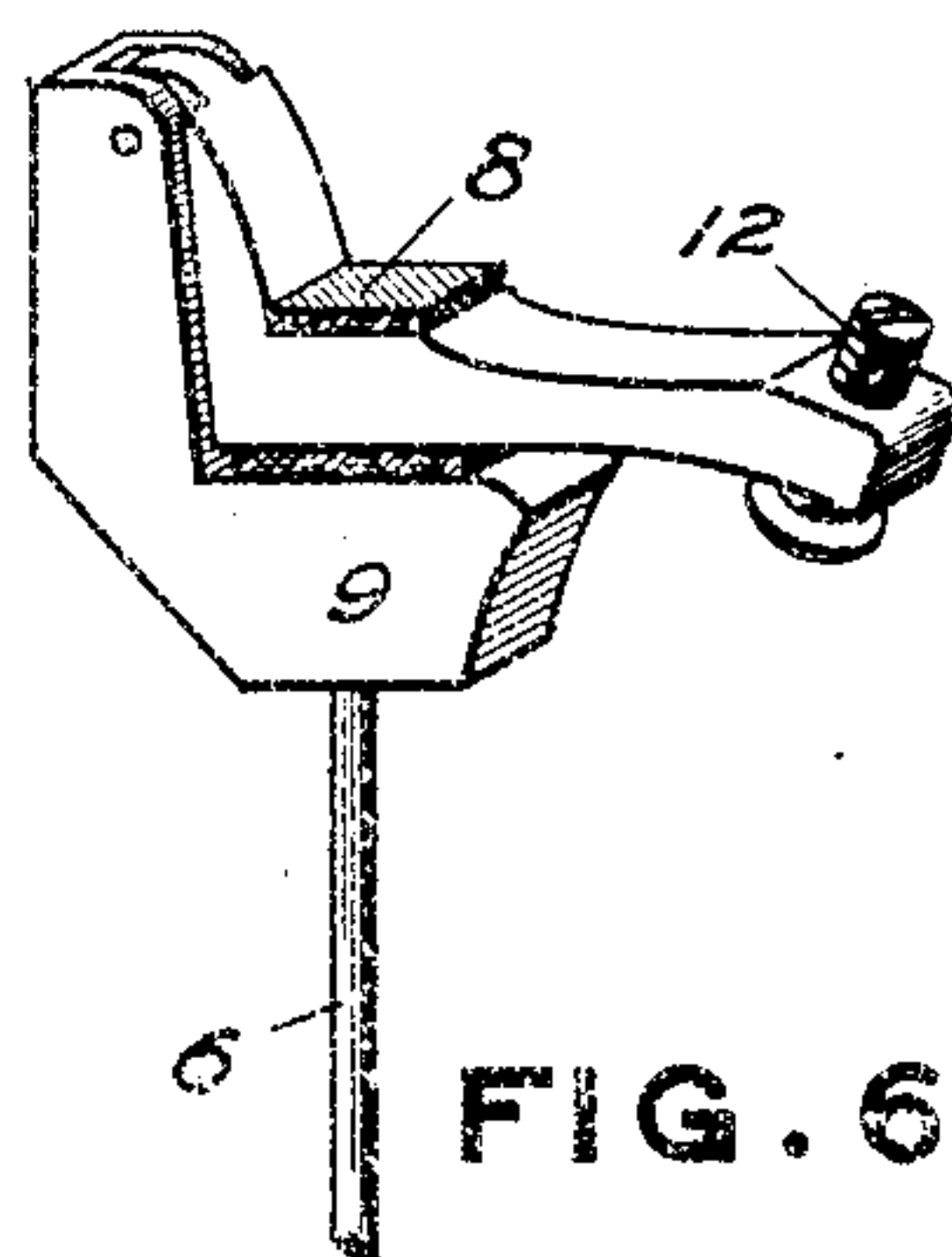
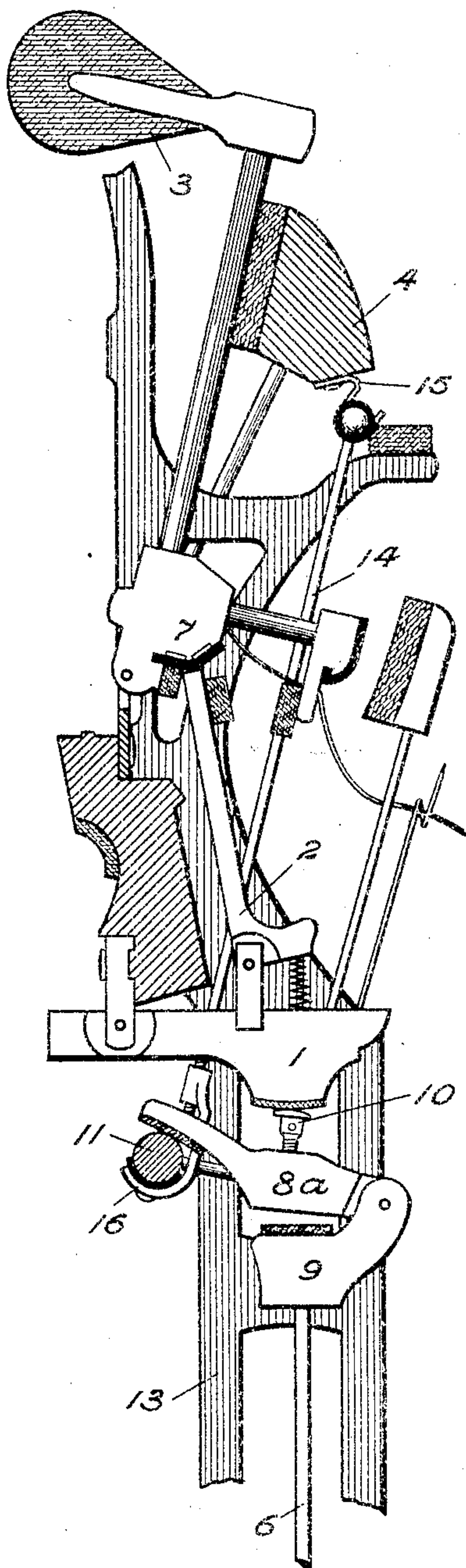
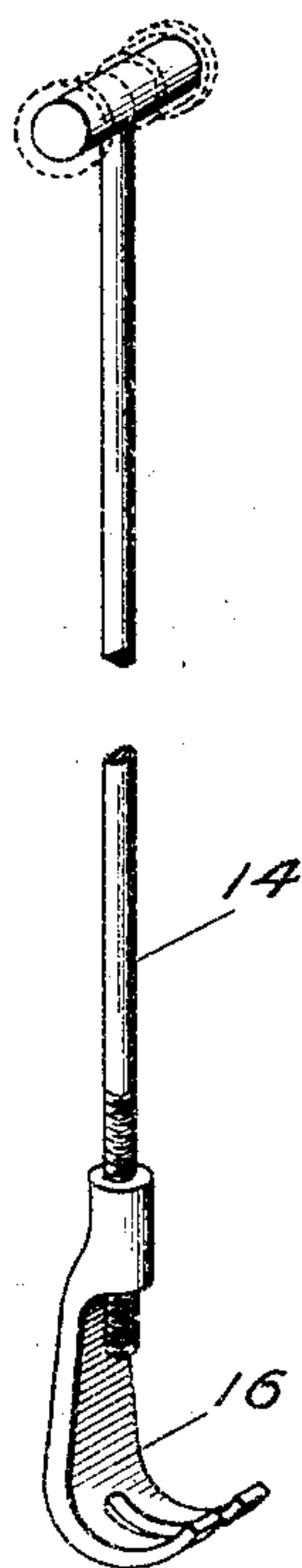
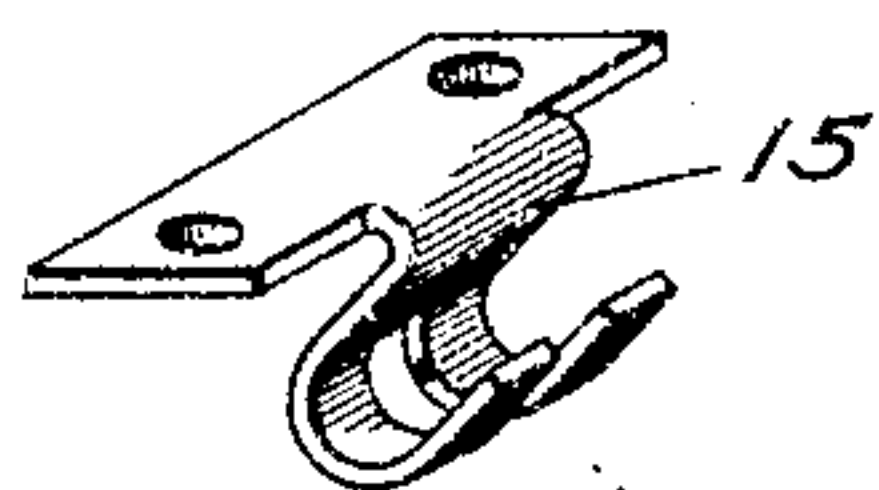
FIG. 2.

WITNESSES
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2 SHEETS—SHEET 2.



WITNESSES

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FIG. 3.

INVENTOR

Otto Glatt,
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UNITED STATES PATENT OFFICE.

OTTO GLATT, OF TORONTO, CANADA, ASSIGNOR OF ONE-HALF TO
WILLIAM JAMES RICHARDSON, OF TORONTO, CANADA.

PIANISSIMO DEVICE.

SPECIFICATION forming part of Letters Patent No. 788,203, dated April 25, 1905.

Application filed March 7, 1904. Serial No. 196,933.

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
5 new and useful Improvements in Pianissimo Devices; 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
10 specification.

The present invention relates particularly to improvements in upright-piano actions of the type best known as "short" or "dowel" actions, in contradistinction to the type embodying an abstract.

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 created by the displacement
20 of the hammer-butts through the action of the soft pedal in elevating the hammers for the purpose of preserving 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
25 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.

To such ends the invention consists in the construction and combination of parts herein-
30 after particularly described and claimed, reference being had to the accompanying drawings, forming part thereof, in which similar figures of reference refer to like parts throughout.

Figure 1 is a vertical sectional view of a piano-action embodying the improvements aforesaid and with the respective parts of the
40 action in their normal position. Fig. 2 is a similar view showing the relative positions of the respective parts of the action in attaining the pianissimo position. Fig. 3 is also a similar view showing a modification of the improved compensating device, in this instance
45 operating from the back of the action. Fig. 4 is a perspective view in detail of the hammer-rail cleat. Fig. 5 is a similar view of the connecting-rod, showing clearly the means of

adjustment therein. Fig. 6 is a perspective
50 view in detail of the compensating device as shown in Figs. 1 and 2, and Fig. 7 shows the manner of pivoting the lifting-rail.

The parts which have more immediately to do with the aforesaid improvements are numbered as follows: first, of the action proper,
55 the wippen 1, jack 2, hammer 3, and hammer-rail 4; second, the key and its dowel or pivot-block-supporting rod 5 and 6, respectively.

The application of the soft pedal brings the action to the pianissimo position, shortening the stroke of the hammers 3, thereby taking
60 up a new position relatively to the jacks 2, and creating the lost motion aforesaid. The elimination of this defect has resulted in the application of many devices to the upright action in use at the present time; but heretofore rolling contact (which is a desideratum)
65 of the additional operative parts has not been attained with success.

To maintain the jacks 2 in juxtaposition with the butt 7 of the hammers 3, it is essential to elevate the wippens 1 a distance relatively proportionate to the shortening of the
75 stroke of the hammer 3, and in this instance without affecting the normal position of the keys 5 or diminishing the stroke thereof.

In carrying out the present invention a corresponding number of pivoted levers 8 are disposed directly below the wippens 1 and in
80 alinement therewith. Said levers 8 are fulcrumed in the blocks 9, carried fast upon the upper extremity of the dowels or pivot-block-supporting rods 6 and adapted to operate in contact with the capstan-screws 10 of the
85 wippens 1. The disposition of the capstan-screws 10 is unimportant, whether adjusting from the upper or lower wippens, serving equally as well in regulating the action.

To elevate the wippens 1 for the purpose hereinbefore set forth, it is essential to increase temporarily the length of the member 6 simultaneously with the shortening of the
90 stroke of the hammers 3. When in their normal position, the free ends of the levers 8 rest in contact with the lifting-rail 11 and are provided (preferably) with an adjusting-screw 12,

as shown. The rail 11 extends the whole length of the action and is pivoted in the brackets 13, operating in unison with the hammer-rail 4 by means of the connecting-rod 14.

5 Suitably disposed is one or more cleats or hooks 15, fast to the under side of the hammer-rail 4 and adapted for the reception of the T-shaped head of the connecting-rod 14. The lower end of said rod is adjustably secured
10 in the foot 16, which partially encircles the under side of the rail 11, as clearly shown in the drawings. The facility with which the connecting-rod 14 can be removed and replaced and the adjustment of its length is ob-
15 vious.

In the modification shown in Fig. 3 the wippen 8^a in this instance operate from the back of the action, and although equally efficient in eliminating lost motion it is not de-
20 sirable for a high-grade action, owing to the adjustment between the wippen and the rail having to be dispensed with.

The pivoting of the lever 8 and its length—that is, the point of contact with the rail 11—
25 are important, also their position relative to the point of contact with the wippen 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 and
30 the rail is possible when in operation.

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

1. In combination with a key and a dowel or
35 pivot-block-supporting rod carried thereby, a block mounted on the said dowel, a lever pivoted on said block, a wippen supported at its free end on said lever, a pivoted jack supported by said wippen, a hammer-butt in
40 contact with said jack, a movable hammer-rail, a device extending under the free end of the lever, and means connecting said device to said hammer-rail in order that the move-

ment of the latter into pianissimo position may correspondingly move the said jack, thereby 45 automatically maintaining such contact substantially as and for the purpose set forth.

2. In combination with a key and a dowel or pivot-block-supporting rod carried thereby, a block mounted on said dowel, a lever pivoted 50 on said block, a wippen, a capstan whereby the free end of said wippen is adjustably supported on said lever, a pivoted jack supported by said wippen, a hammer-butt in contact with said jack, a movable hammer-rail, a 55 device extending under the free end of the lever, and means connecting said device to said hammer-rail, in order that the movement of the latter into pianissimo position may correspondingly move the said jack, thereby auto- 60 matically maintaining such contact substantially as and for the purpose set forth.

3. In combination with a key and a dowel or pivot-block-supporting rod carried thereby, a block mounted on the said dowel, a lever piv- 65 oted on said block, a wippen, supported at its free end on said lever, a pivoted jack supported by said wippen, a hammer-butt in contact with said jack, a movable hammer-rail, a lifting-rail extending under the free 70 end of the lever, a rod connected to said hammer-rail and provided at its lower end with a hook extending under the said lifting-rail in order that the movement of said ham- 75 mer-rail into pianissimo position may correspondingly lift the said jack thereby maintaining such contact, the said rod being constructed of screw-threaded and coupled sections permitting its adjustment as to length.

Signed at Toronto this 2d day of March, 80
1904.

OTTO GLATT.

Witnesses:

H. DIXON,
STANLEY J. PALMER.