

W. G. BETZ.  
 PIANISSIMO DEVICE.  
 APPLICATION FILED NOV. 6, 1907.

Patented May 18, 1909.

922,247.

Fig - 1 -

Fig - 2 -

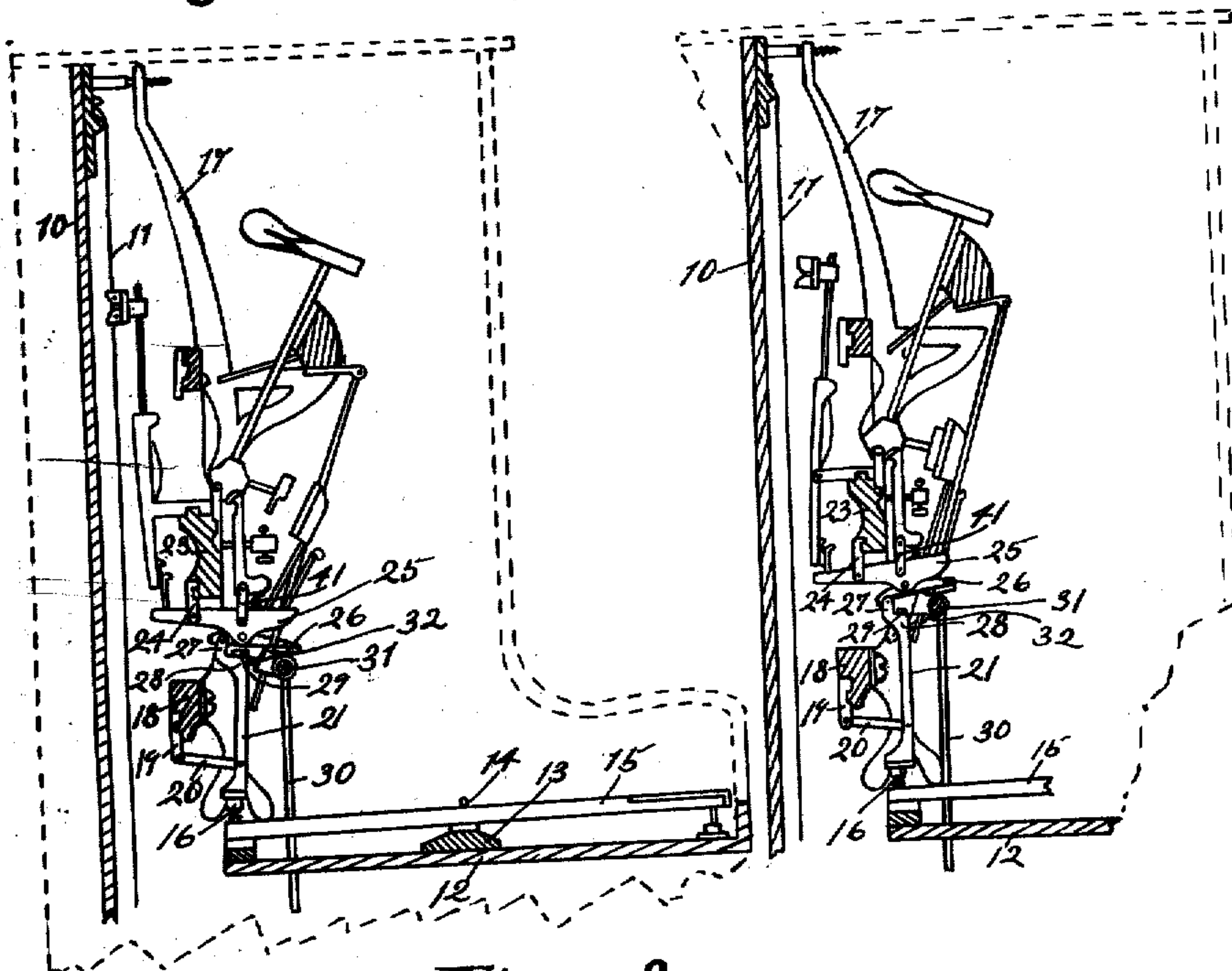
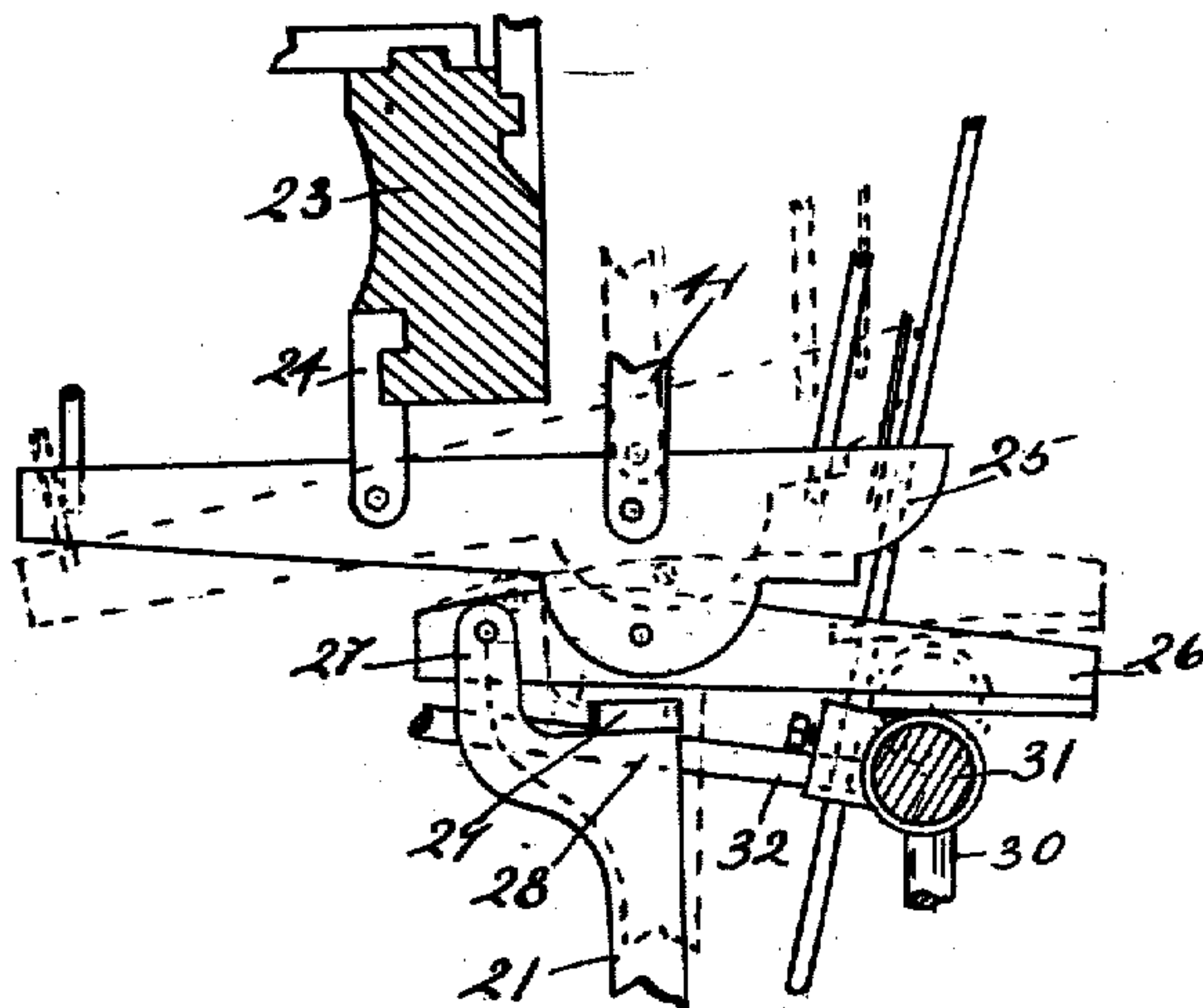


Fig - 3 -



WITNESSES:

*M. M. Gentile.*  
*O. M. Greener*

INVENTOR:

**William G. Betz**

BY

*V. H. Lockwood*  
 ATTORNEY.



# UNITED STATES PATENT OFFICE.

WILLIAM G. BETZ, OF NEWCASTLE, INDIANA, ASSIGNOR TO RAY PIANO COMPANY, OF NEWCASTLE, INDIANA, A COPARTNERSHIP.

## PIANISSIMO DEVICE.

No. 922,247.

Specification of Letters Patent.

Patented May 18, 1909.

Application filed November 6, 1907. Serial No. 400,941.

*To all whom it may concern:*

Be it known that I, WILLIAM G. BETZ, of Newcastle, county of Henry, and State of Indiana, have invented a certain new and useful Pianissimo Device; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like numerals refer to like parts.

The object of this invention is to provide an improved means for taking up the lost motion when the soft pedal is actuated, or for pianissimo purposes. This causes the piano action to be easily operated, especially in pneumatic pianos, and, therefore, the work of the pneumatic action or of the performer on finger keys will be considerably less and the effect of movement of the keys on the piano action more certain, sudden and sensitive than in similar constructions heretofore known.

I do not wish to limit my invention to use in connection with pneumatic pianos, although it is probably of more value in such a piano than in the ordinary finger key piano.

The various features of my invention will be understood from the accompanying drawing and the following description and claims.

In the drawings Figure 1 is a vertical section through the upper portion of a piano, the lower portion being broken away and the parts of the piano action in an unoperated position. Fig. 2 is substantially the same showing the parts operated and parts being broken away. Fig. 3 is a detail view of the part illustrating the lost motion mechanism, the normal unoperated position being shown by full lines and the operated position being shown by dotted lines.

There is shown in the drawings a sounding board 10 at the back of the piano with strings 11 thereon. There is also a key bed 12 with a balance rail 13 having center pins 14 on which the piano keys 15 are mounted. At the inner end of the key there is a capstan 16. Action brackets 17 are mounted vertically above the key bed and near the lower end of said brackets there is a transverse flange rail 18 from which the flange 19 extends downwardly to which a connecting bar 20 is pivoted that extends forwardly and downwardly, and its front end is pivoted to the lower portion of the sticker 21. The sticker is vertically moved by the capstan on the key 15.

The action rail 23 is secured transversely

of the brackets 17, and a flange 24 extends downwardly therefrom to which a wippen 25 is pivoted between its ends. Said wippen 25 is not, as usual, directly connected with the sticker 21, but instead is pivoted upon the lost motion lever 26 between its ends, and said lever at its rear end is fulcrumed in upwardly extending arms 27 from the sticker, said arms projecting upwardly behind a shoulder 28 at the upper end of the sticker on which a cushion 29 is mounted. The fulcrum point of the wippen 25 upon the lost motion lever 26 is substantially over the vertical center of the sticker 21, and said lever 26 rests normally upon the upper end of the sticker so that the vertical movements of the sticker are transmitted directly to the wippen, but when the soft pedal is used, the vertical motion of the sticker is transmitted to the wippen 25 through the vertical arms 27 on the sticker and the lost motion lever 26, as shown by dotted lines in Fig. 3. When the soft pedal is operated the vertical rod 30 elevates the lost motion bar 31 that is pivoted to the brackets 17 by rods 32.

A jack flange 41 extends upward from the rocker 25 in a line about midway between the fulcrum point between the wippen and lost motion lever 26 and the fulcrum point between the lost motion lever and the arms 27 at the upper end of the sticker. Thus it is seen that instead of the sticker transmitting its motion directly to the wippen, as in piano actions heretofore, in my improved construction there is a lost motion lever interposed between the sticker and wippen, and said lever is controlled and moved by the lost motion bar, which is actuated by the soft pedal.

As arranged herein, when the soft pedal is not used, the motion from the sticker through the lost motion lever and the wippen is almost as direct and immediate as in the constructions heretofore, for then the wippen is down upon the shoulder 28 of the sticker, but when the soft pedal is operated, the forward end of the lost motion lever is elevated, and then the motion of the sticker is transmitted through the arms 27 and lever 26 circuitously to the wippen.

What I claim as my invention and desire to secure by Letters Patent is:

1. An upright piano action including a sticker having at its upper end a rearwardly and upwardly extending arm so as to leave a



shoulder at the upper end of the sticker in front of said arm, a lost-motion lever pivoted at its rear end in said arm and adapted to rest normally on said shoulder, pianissimo mechanism for elevating the front end of said lost motion lever, and a wippen pivoted to said lost motion lever at a point in vertical alinement with said sticker.

2. An upright piano action including a sticker having at its upper end a rearwardly and upwardly extending arm so as to leave a shoulder at the upper end of the sticker in front of said arm, a lost motion lever pivoted at its rear end in said arm and adapted to

rest normally on said shoulder, pianissimo mechanism for elevating the front end of said lost motion lever, a wippen pivoted to said lost motion lever at a point in vertical alinement with said sticker, and a jack fulcrumed to the wippen at a point in vertical alinement with the sticker.

In witness whereof, I have hereunto affixed my signature in the presence of the witnesses herein named.

WILLIAM G. BETZ.

Witnesses:

OLIVE BREEDEN,  
N. ALLEMONG.