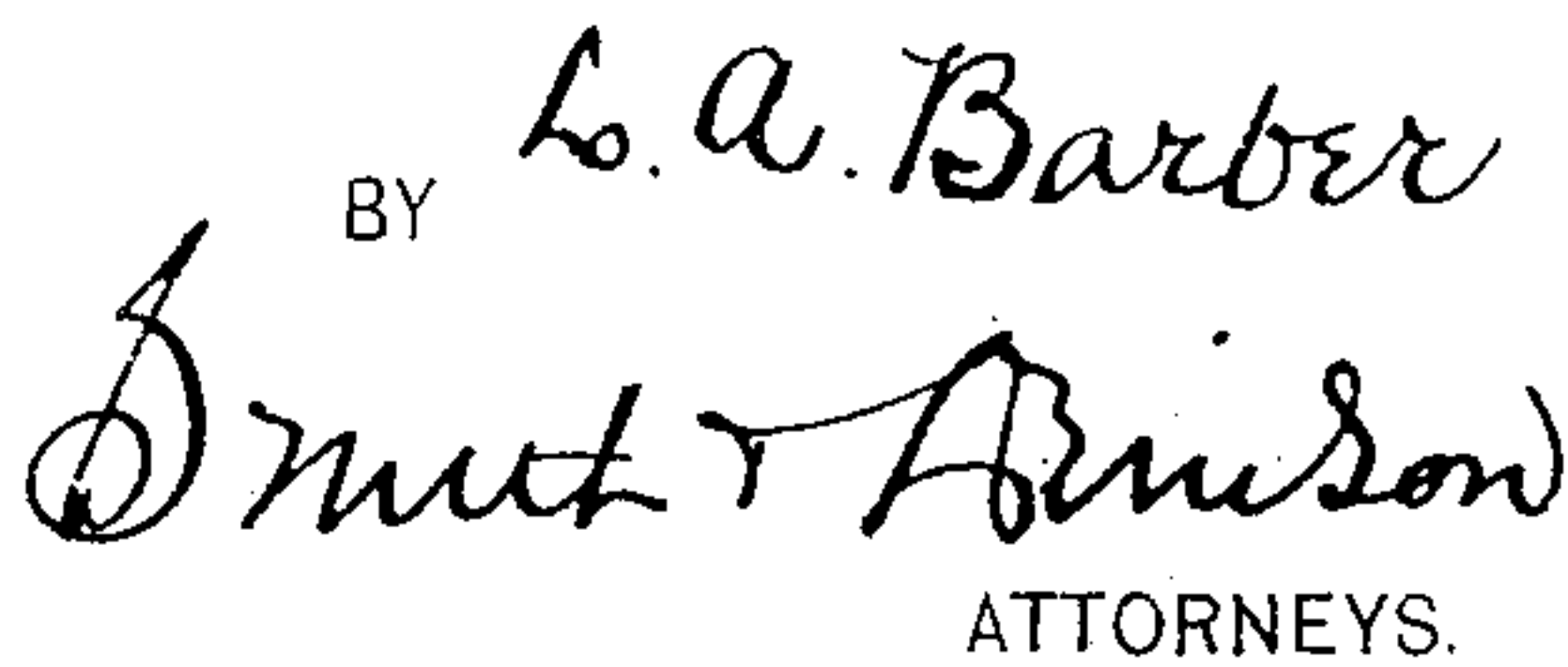


Patented May 17, 1898.





# UNITED STATES PATENT - OFFICE.

LUTHER A. BARBER, OF BUFFALO, NEW YORK.

## PIANOFORTE-ACTION.

SPECIFICATION forming part of Letters Patent No. 604,136, dated May 17, 1898.

Application filed January 26, 1897. Serial No. 620,798. (No model.)

*To all whom it may concern:*

Be it known that I, LUTHER A. BARBER, of Buffalo, in the county of Erie, in the State of New York, have invented new and useful Improvements in Pianoforte-Actions, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My object is to produce a novel action applicable to either an upright, square, or grand piano.

It comprises a novel mechanism for adjusting and taking up the lost motion in an action by means of a key-lever jack so mounted as to be raised or lowered by adjustment and to be at all times maintained in parallelism with the key-lever without rocking.

It further comprises a novel adjustable connection between the pedal-rail and the buffer-rail where the auxiliary levers are connected to and swing upon the pedal-rail, and also where the auxiliary levers are mounted and swing upon the key-lever jacks. In either case this connection is operative as a part of the soft-pedal movement, the buffer-rail being directly connected to the soft-pedal mechanism.

It further comprises a novel mechanism for operating the jack-lever by the direct engagement of the key with the auxiliary jack-lever, interposing the push-rod or sticker between the two levers and connecting it to both of them, a novel mechanism for adjusting the relation of the key to the key-lever jack, a novel mounting of the pedal-rail in alinement or substantially in alinement with the keys, and mounting the auxiliary jack-levers upon this rail to engage with the key or upon the key to be engaged by the rail when the soft pedal is operated.

It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1 represents an elevation of the action, partly in section, in its normal position. Fig. 2 represents the same when shifted for soft-pedal effect. Fig. 3 is a side elevation of part of a key, a key-lever jack, its adjusting means, the auxiliary jack-lever being mounted upon the key-lever jack and engaged by the pedal-rail when using the soft pedal.

This action is here shown as that of an upright, but which can readily be applied to a square or grand piano.

The several parts or members are suitably mounted in ordinary frame or case, which is not here shown.

The key-levers *a* are fulcrumed, as usual, their rear ends normally resting upon a suitable support. A key-lever jack 3 is mounted upon said keys by means of ordinary screws 4 and 5, fitting loosely through it, and the screw 6 also fitting loosely through it, all of them being screwed into the key. The screw 6 is provided with a shoulder 7, engaging with said key-lever jack to support it in parallelism with the key. By screwing the screw 6 down the key-lever jack can be lowered by its gravity, or the screws 4 and 5 can then be screwed down to lower it or secure it as adjusted, and by loosening the screws 4 and 5 it can be raised by raising the shoulder of screw 6.

A suitable pedal-rail (marked *p'* in Fig. 3) is suitably mounted upon arms connected to the frame in the plane of the keys, or substantially so, and in Fig. 1 the auxiliary jack-lever *c* is connected to it and rests upon the key-lever jack, while in Fig. 3 it is connected to the key-lever jack, which engages with the pedal-rail in the soft-pedal position, when said rail becomes its fulcrum. This auxiliary is connected by the sticker or push rod *b* to the jack-lever *d*, which is suitably mounted upon the rail *S* and is suitably connected to the jack *e*, which actuates the hammer-stem *h* and hammer *k* to strike the string *x*. A suitable damper *m* is carried by a suitably-mounted stem *m'*.

A suitable buffer *n* is carried upon a suitable support *n'*, suitably connected to the frame of the piano and provided with suitable arms 7, substantially as shown, and the rod *r* suitably connects said arms to the pedal-rail or arms carrying the pedal-rail in Figs. 1 and 3.

An ordinary soft-pedal rod *y* connects the soft pedal (not shown) with the buffer-rail.

The operation of the soft pedal swings the buffer and pedal-rail into position for soft pedal playing. In this manner, in either case, the several parts so connected to the soft



pedal are maintained in unison, and in the same mutual relation as in the normal or ordinary positions, and all lost motion is avoided.

The term "pedal-rail" for convenience has  
5 been continued from my former patent, No. 527,399, dated October 16, 1894, although in this construction the pedal-rail is acted upon indirectly by the connection from the pedal.

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

1. The combination with the key, and an auxiliary jack-lever arranged above the same, of a block or key-lever jack arranged be-  
15 tween the key and said auxiliary jack-lever, a supporting-screw having a collar or shoulder supporting said block centrally and adjusting-screws arranged on opposite sides of the central supporting-screw to clamp said  
20 block upon said shoulder.

2. The combination with the key, and an auxiliary jack-lever arranged above the same, of a key-lever jack mounted between the key and said auxiliary jack-lever, a shouldered  
25 and adjustable support for said key-lever jack, and screws on each side of said support to secure said jack upon the shoulder of said support after it has been adjusted.

3. The combination with a buffer-rail, of a

key, a pedal-rail, an auxiliary lever actuated 30 by said key, a jack-lever, a sticker connecting it to said auxiliary lever, a jack, and a hammer.

4. The combination with the key, a pedal-rail, in substantially the same plane, an aux- 35 iliary jack-lever actuated by said key, a jack-lever, a sticker connecting it to said auxiliary, a jack, and a hammer, of a buffer-rail, and a rod connecting it to said pedal-rail.

5. The combination with the key, a pedal- 40 rail in substantially the same plane, an auxiliary jack-lever actuated by said key, a jack-lever, a sticker connecting it to said auxiliary, a jack, and a hammer, of a buffer-rail.

6. The combination with the key, a key- 45 lever jack mounted thereon, a pedal-rail, an auxiliary jack-lever actuated by said key-lever jack, a jack-lever, a sticker connecting it to said auxiliary, a jack, and a hammer, of a buffer-rail, and a rod connecting it to said 50 pedal-rail.

In witness whereof I have hereunto set my hand this 21st day of December, 1896.

LUTHER A. BARBER.

In presence of—

C. W. SMITH,

HOWARD P. DENISON.