



# UNITED STATES PATENT OFFICE.

AUGUST F. S. OSTERBERG, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO  
OSTERBERG & HUTCHINS, OF SAME PLACE.

## PIANO-ACTION.

SPECIFICATION forming part of Letters Patent No. 453,603, dated June 2, 1891.

Application filed November 15, 1890. Serial No. 371,592. (No model.)

*To all whom it may concern:*

Be it known that I, AUGUST F. S. OSTERBERG, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Piano-Forte Actions, of which the following, taken in connection with the accompanying drawings, is a specification.

The object of my invention is to so construct and arrange the parts which constitute the "action" of a piano-forte that the whole may form an organization much simpler, cheaper, more durable, and more easily adjusted than any now in use.

The nature of this invention may be best understood by reference to the drawings and specification.

My improvements are illustrated in the accompanying drawings, in which—

Figure 1 represents in elevation a single action and its connected parts. Fig. 2 is a view, partly in section, showing the device for the adjusting movement of the key-lever.

In the drawings, A represents one of the keys made and pivoted in the usual manner. The sticker C is mounted on an adjustable foot-piece B', being connected thereto by a short standard B<sup>2</sup>. The foot-piece B' (see Fig. 2) is held in place partly by a dowel-pin B<sup>3</sup>, which fits loosely into the key A, as shown, but its exact position is fixed by means of a screw-standard B. This screw-standard B is made preferably square or octagonal in cross-section, so that it may be turned by means of an ordinary wrench or spanner. The lower part of the standard B consists of a screw-extension B<sup>4</sup>, which enters the key A and serves as an adjusting device for raising and lowering the foot-piece B'. The upper part of the standard B consists of a dowel B<sup>5</sup>, which enters the foot-piece B', as shown, and serves, in connection with the dowel-pin B<sup>3</sup>, to hold it in place. The sticker C is connected to the foot-piece B' by the standard B<sup>2</sup>, and serves to lift the fly-lever D in the usual manner.

The fly L is pivoted to the jack at L<sup>3</sup>, and has an extension L<sup>2</sup>, adapted to come in contact with the fly-stop M, and thus have its upper end thrown out from under the hub H of the hammer H' H<sup>2</sup>. It will be observed

that the fly-lever D and the hammer are both attached to the same flange-piece F, which is made fast to the rail E. By this arrangement I am enabled to dispense with one of the rails, it being usual to have a separate rail for the hammer-flange. Thus by my arrangement I save the making of one rail.

By my construction and arrangement of the foot device B', I am enabled to do away with the use of a sticker-rail altogether, which is a saving of importance.

The two springs that are used for holding the hammer back and the fly L in place are both made fast to the flange F, as shown. The hammer-spring S S' is formed into a coil and has a hook at its upper end by which it is connected to the hub of the hammer by a line S<sup>2</sup>, as shown. The fly-spring L' has a coil the same as the spring S S' has, and, in addition, a second coil L<sup>3</sup>. It also has a hook by means of which and a line at L<sup>4</sup> it is put in working connection with the fly L. As the other parts of the action are common and well known, I will not describe them.

What I claim, and desire to secure by Letters Patent, is—

1. In a piano-forte action, the combination of the key foot-piece B', adapted to hold the sticker and provided with an adjusting-screw standard and a stay-dowel, whereby the foot-piece is held in place with the sticker C, substantially as and for the purpose set forth.

2. In a piano-forte action, the combination of the fly-lever D, flange F, hammer-spring S S', fly-spring L', and hammer, said flange F being fastened to the rail and adapted to form a support for the jack, the hammer, the hammer-spring S S', and the fly-spring L', substantially as and for the purpose set forth.

3. In a piano-forte action, the combination of the flange-piece F and springs S, S', and L' with the hammer-hub H and fly L, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 7th day of November, A. D. 1890.

AUGUST F. S. OSTERBERG.

Witnesses:

FRANK G. PARKER,  
WILLIAM EDSON.