

UNITED STATES PATENT OFFICE.

GEORGE BOTHNER, OF NEW YORK, N. Y.

IMPROVEMENT IN PIANO-FORTE ACTIONS.

Specification forming part of Letters Patent No. **203,407**, dated May 7, 1878; application filed February 2, 1878.

To all whom it may concern:

Be it known that I, GEORGE BOTHNER, of the city, county, and State of New York, have invented a new and useful Improvement in Piano-Forte Actions, which invention is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 is a transverse vertical section of a piano-action. Fig. 2 is a top view of the part containing my invention.

Similar letters indicate corresponding parts.

This invention consists in securing between the cross-rail of a piano-action and the block in which is formed the fulcrum of the hammer-lever of a strip of oil-cloth or similar flexible material by a round-wire pin lying partly in a groove formed in the rail and partly in a similar and coincident groove in the block, forcing the flexible material into one of said grooves, and thus securely clamping and preventing it from being displaced, and also assisting in retaining the block in position, all of which will be hereinafter more particularly described.

In the drawing, the letter A designates a key of a piano. The inner end of the key acts on the lever F. When the key is pressed down by the player the lever F acts on the jack *a*, and by this means forces the hammer B against the strings D. At the same time the wire *b* on the other end of the lever F presses the damper C away from the strings D. The lever F has its fulcrum in a small bar or block, *e*, secured to the cross-rail H by a screw, *k*. The hammer-lever *d* and damper-lever *f* have their fulcrum in a block, *e*, which is attached to the cross-rail H by a screw, *l*. Between the

cross-rail H and the blocks *e* and *e* are inserted pieces of oil-cloth *g g*, or other equivalent material.

The action illustrated in the drawing is that of an upright piano; but I do not confine myself to this, as my improvement can also be employed in the actions of square and grand pianos.

With the block *e* is further combined a metal wire, *h*, which rests in a semicircular groove in the cross-rail, and fits a corresponding groove in the block, so that when the said block is screwed down it is securely retained in position and prevented from turning round; and said wire also serves to prevent the oil-cloth or similar flexible material from becoming displaced.

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

The combination, with the cross-rail H of a piano-action, and the block *e* resting thereupon and supporting the pivot of the hammer-lever *d*, and a strip of oil-cloth, *g*, or other flexible material arranged between said rail and block, of the metal wire *h*, lying between said block and rail, and embraced by coincident grooves therein, so as to force said strip of oil-cloth or other material into one of said grooves, substantially as described, and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 28th day of January, 1878.

GEORGE BOTHNER. [L. S.]

Witnesses:

W. HAUFF,
E. F. KASTENHUBER.