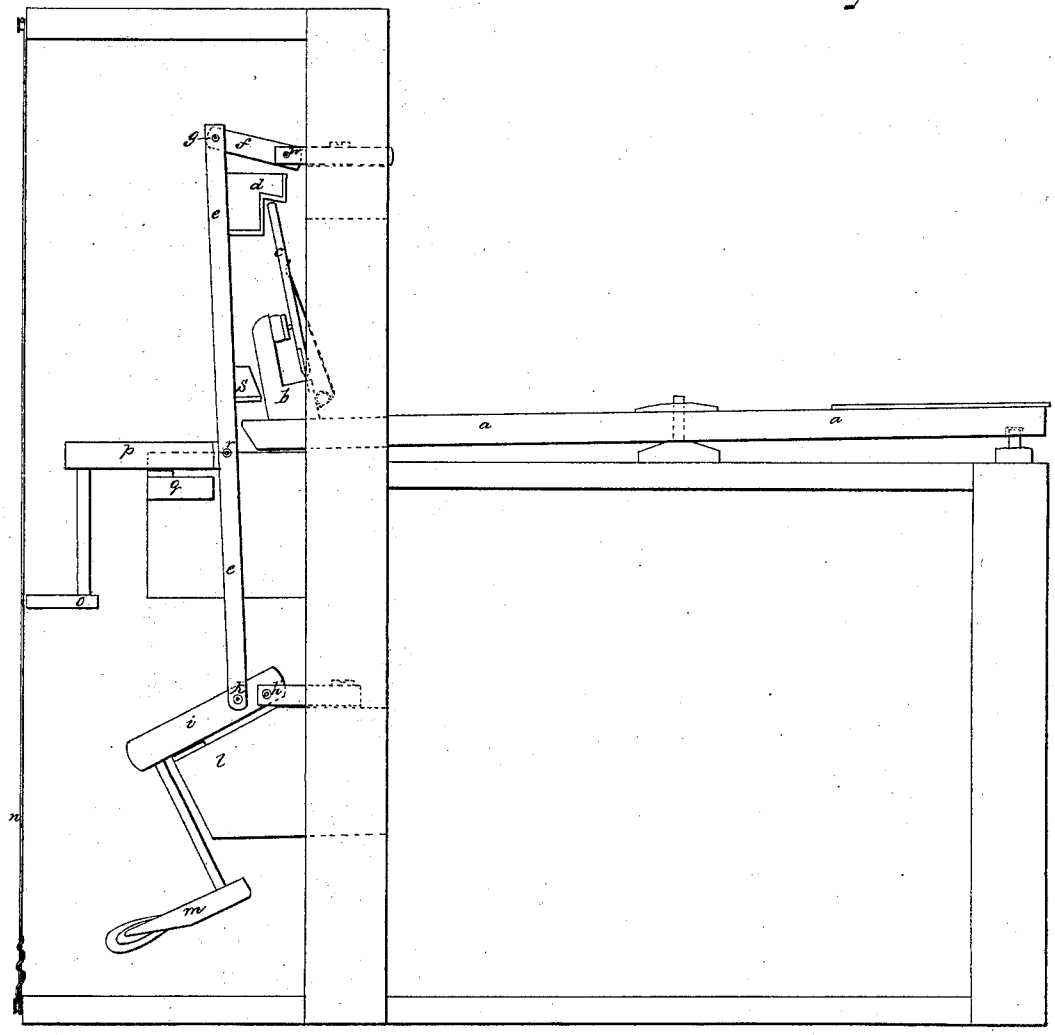
S. P. Brooks,

Piano Action,

No. 12,737. Patented Apr. 17, 1855.



Witnesses;
Chas Lincoln
Joseph Garrett

Inventor;
Stephen P. Brooks

UNITED STATES PATENT OFFICE.

STEPHEN P. BROOKS, OF BOSTON, MASSACHUSETTS.

IMPROVED PIANO-FORTE ACTION.

Specification forming part of Letters Patent No. **12,737**, dated April 17, 1855.

To all whom it may concern:

Be it known that I, STEPHEN P. BROOKS, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Upright-Piano-Forte Actions; and I do hereby declare that the following description, taken in connection with the accompanying drawing, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements, by which my invention may be distinguished from others of a similar class, together with such parts as I claim and desire to have secured to me by Letters Patent.

The accompanying drawing, which is a side elevation of the action, represents my improvements.

The object of my invention is to so construct the action of an upright piano as to bring the greater bulk of the same below the line of the keys, thereby economizing the space required for the upper portion of the instrument and obviating the necessity of casing the top to screen or protect the action. This result I have effected by my improved action, in which the hammer is placed below the level of the keys and is actuated in a novel manner, the hammer-arm being attached to a vertical bar, which is lifted by the jack secured to the end of the key-lever. The hammer is also so actuated as to be kept near to the string after each blow and while the key is depressed, thereby affording great facility for repeating a note.

a a in the drawing represent the key-lever, to the end of which is attached the jack *b*. The fly *c* of the jack, when the lever *a a* is depressed, strikes against a butt *d*, secured to a vertical bar *e e*, which is attached to a short arm *f* by a pivot *g*, the arm *f* turning on a pivot *h*.

To the lower end of the vertical bar *e e* is attached the hammer-arm *i*, turning on a pivot *k*, and resting, when the key-lever is not depressed, on the block *l*. When the blow is given, it will be seen that the key-lever will, through the jack and butt *d*, lift the bar in a vertical direction, and thereby cause the hammer *m* to strike the string *n*.

o is the damper, and *p* the damper-arm resting upon the rail *q* and attached by a pivot *r* to the vertical bar *e e*. After the blow is given the damper *o* is brought against the string, as will readily be seen by the drawing, by the depression of the vertical bar *e e*, which falls by its own weight. The hammer can be held close to the string after the blow has been given, so as to be in readiness to strike the string again without moving through its whole arc, by means of a projection *s*, attached to the bar *e e*, against which projection, after the fly of the jack has been pushed off from the butt *d*, the end of the key-lever strikes, and thereby partly lifts the bar *e e*, and consequently the hammer, keeping the hammer close to the string as long as the key-lever is depressed. By this arrangement great quickness and delicacy is given to the action, as the blow can be given with the greatest rapidity.

From the above description of my improved action it will be apparent that by the use and arrangement of the vertical bar *e e*, I am enabled to place the greater bulk of the action below the level of the keys. By attaching the hammer-arm to the vertical bar *e e*, and so arranging the said bar as to give it by the action of the fly of the jack a vertical motion only, the most reliable means is afforded of bringing the hammer against the strings, as the vertical bar, which is the direct medium through which the force of the blow is imparted to the hammer, is subject to no strain, as the jack simply lifts it, thereby forming a much more rigid communication between the jack and the hammer-arm than the long arms or "strikers" commonly used in upright-piano-forte actions, and which necessarily yield and waver when they receive the blow. In this action it will be seen that the damper is actuated entirely by the motion of the vertical bar *e e*, and without the aid of any additional levers, which are necessary in ordinary actions.

The importance of constructing an action which is susceptible of being placed below the line of the keys will be readily apparent, as by so arranging it much longer strings can be used. In the piccolo and other upright piano-forte actions, as the hammer must strike near the end of the string, the strings cannot be lengthened without at the same time increasing the length of the action. In my improved piano the strings can be extended to any length above the level of the keys without altering the action in any degree, as the hammer always strikes near the lower end of the strings, and below the level of the keys.

Having thus described my improvements, I shall state my claims as follows:

What I claim as my invention, and desire to have secured to me by Letters Patent, is—

1. Transmitting the blow from the key-lever to the hammer by means of the vertical bar arranged and actuated substantially as described, whereby I am enabled to place the action below the level of the keys, as above set forth.

2. Attaching the damper-arm to the vertical bar in such a manner that the up-and-down movement of the said bar will alternately bring the damper against the string and relieve it from the same, as set forth.

3. The means used for keeping the hammer close to the string after the blow has been given, the same consisting of a butt attached to the vertical bar and actuated by the key-lever, as described.

STEPHEN P. BROOKS.

Witnesses:

EZRA LINCOLN,

JOSEPH GAVETT.