

G. W. NEILL.
Pianoforte Action.

No. 204,752.

Patented June 11, 1878.

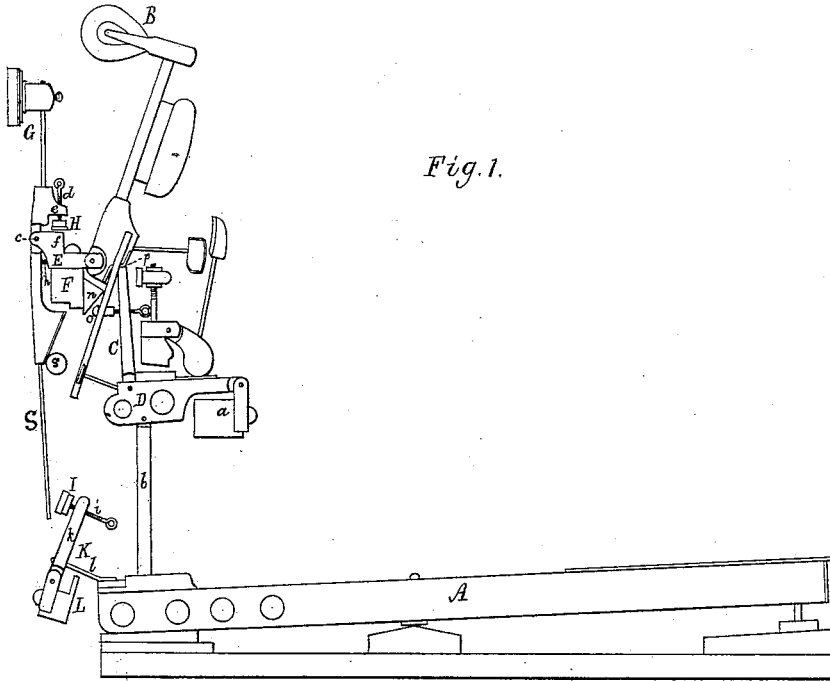


Fig. 1.

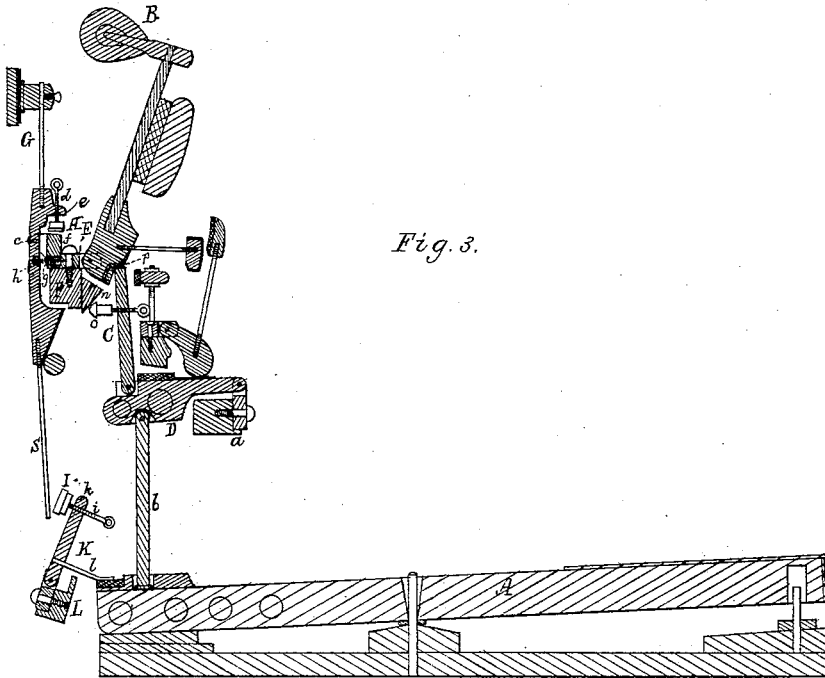
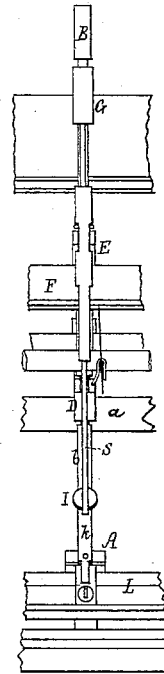


Fig. 3.

Fig. 2.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN PIANO-FORTE ACTIONS.

Specification forming part of Letters Patent No. 204,752, dated June 11, 1878; application filed April 22, 1878.

To all whom it may concern:

Be it known that I, GEORGE W. NEILL, of Boston, of the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Actions for Upright Piano-Fortes; and do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a side view, Fig. 2 a rear view, and Fig. 3 a vertical section, of an action containing my invention, which relates to mechanism or devices for operating the damper.

It consists, first, in the damper and its fore and back stops, spring, and adjustable button, arranged with the damper-fulcrum, as set forth; second, in the damper and its fore and back stops, spring, and adjustable button and rod or lower arm, arranged as set forth, in combination with an angular lever provided with an adjustable button, and arranged with and to be operated by the key, as described.

In the drawings, A denotes the key; B, the hammer; C, the jack or fly, and D the bed or supporting-arm of such fly. This bed is pivoted to a stationary rest or bar, *a*, the fly being fixed to the bed at its front. The bed rests on the top of a push-rod, *b*, which at its lower end is stepped on the key. The fulcrum-supporter of the hammer and damper is shown at E as fastened down upon a rail, F, and projecting in opposite directions beyond such. The damper G, pivoted to the said supporter, as shown at *c*, has an adjustable button, H, arranged directly over the supporter, the screw-stem *d* of such button being arranged vertically, or thereabout, and screwed through a projection, *e*, from the damper. The supporter has a back stop or abutment, *f*, arranged as shown, for the button to bring up against. Furthermore, there is within the supporter E a cylindrical or other properly-shaped chamber, *g*, which is open at its rear end. Within this chamber there is placed a small helical spring, *h*, one end of which is fastened to the supporter and the other to the damper. This spring is to force the damper up to the string. In rear of the tail of the damper is the fore-stop *s*, for the tail of the damper to bring up against in order to prevent the damper from being advanced too far. There extends down

from the tail of the damper a metallic rod, S, which is screwed or firmly fixed in such tail. At its lower part such rod comes in front of an adjustable button, I, whose stem *i* is screwed through the upper arm *k* of an angular lever, K, arranged in front of the key and pivoted to a bar, L, all being as represented. The lower or shorter arm *l* of the lever K rests on the top of the key. On depressing the key the said arm *l* will be moved upward, so as to cause the button I to act against the rod S in a manner to move it, and thereby cause the damper to be moved off the string.

By having to the damper and key the angular lever, the adjustable button, the spring, and the fore and back stops, and the rod arranged with them, as described, instead of having the damper operated by a lever pivoted to the jack-bed D, important advantages are gained. The stem of the adjustable button I can easily be reached for adjusting the button. The damper is operated with less power and with good effect by the key. Furthermore, by arranging the spring of the damper in a chamber in the fulcrum-supporter, as set forth, such spring becomes covered and protected so as not to be liable to accidental displacement or injury. A short helical spring can be used instead of a long curved wire spring, as usually employed, extending from the fulcrum-supporter to the damper-head.

By having the adjustable check or button of the damper arranged and applied as explained, its stem can easily be reached for being turned, there being no necessity for removing any part of the action to effect such.

The rail F, for sustaining the hammer and damper fulcrum supporter, has projecting from it a stationary inclined cam or plane, *n*, against which the adjustable button *o* of the jack or fly *c* is borne or forced during the upward motion of the fly. This plane or cam, by its action on the button, causes the fly to be moved back out of the notch *p* of the tail-block of the hammer.

In some piano-forte actions invented prior to my invention it has been customary to use a damper unprovided with fore and back stops, and having arranged with it and the key an angular lever carrying an adjustable button and being for moving the damper back from

the string. It has also been customary to provide a damper with a spring to force it toward the string; also, to provide the hammer-sustaining rail with a cam or inclined plane for the adjustable button of the fly or jack to work against, as hereinbefore described. Consequently such devices or arrangements, separately considered, are not to be considered as of my invention, although some of them enter into and constitute parts thereof.

I claim—

1. The damper G, its fore and back stops *f s*, spring *h*, adjustable button H, and fulcrum *e*,

combined and arranged substantially as set forth.

2. The damper G, its fore and back stops *f s*, spring *h*, fulcrum *e*, adjustable button H, and rod S, arranged as described, in combination with the angular lever K, provided with the adjustable button I, and arranged with and to be operated by the key A, as specified.

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Witnesses:

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