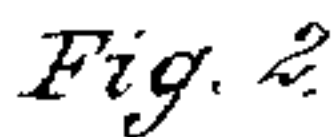
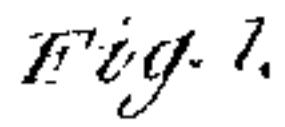


Patented Mar. 8. 1870.



J. Snow,

W. M. L. S.

United States Patent Office.

GEORGE W. NEILL, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO CHICKERING & SONS, OF SAME PLACE.

Letters Patent No. 100,550, dated March 8, 1870.

DAMPER-ACTION FOR UPRIGHT PIANO-FORTES.

The Schedule referred to in these Letters Patent and making part of the same

To all persons to whom these presents may come:

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 or Improved Damper-Action for Upright Piano-Fortes; and do hereby declare the same to be fully described in following specification, and represented in the accompanying drawings, of which—

Figure 1 is a side elevation, and

Figure 2, a longitudinal section of the said action, and a key for operating it.

In such drawings—

A denotes the key, and

B, the string, the action or mechanism for striking or sounding the string not being exhibited in the drawings as applied to the key. It may be such as is in common use, and be arranged with the key in the ordinary method well understood by piano-makers.

The damper is shown at *a* as projected from the upper end of a lever, C, which, when the damper is "closed" or against the string, stands parallel, or about so, to the string, which, as shown in the drawings, is somewhat inclined from a vertical line.

The fulcrum of the damper-lever is represented at *a'* in a furcated piece of wood, *b*, fixed on a support-bar, *c*.

At its lower part the damper-lever C is jointed or pivoted to an inclined connection-bar or piece, D, which at its lower part is similarly jointed or pivoted to a weighted arm, E.

The said arm E at its front part is pivoted to a short vertical post, F, there being a load or weight, *d*, inserted in the arm near its rear end. This arm, when in its lowest position, rests on a cushion, *e*, fixed on a lifter, G, the latter consisting of a flat board hinged at its front edge to a standard, *f*.

By elevating the lifter by a pedal suitably applied to it, the damper will be "opened" or thrown off the string.

The peculiar arrangement of the connection-piece, viz: at an inclination to the weighted arm and to the

damper-lever, enables the lifter to operate the latter to great advantage.

The weighted arm E projects into a recess or notch, *g*, formed in the front end of the key, the whole being as shown in the drawings.

On striking the key the weighted arm will be forced upward, and in turn will elevate the connection-piece, which, owing to its inclined position, will so move the damper-lever as to "open" the damper or force it off the string. When the key may drop back to place, the weighted arm will be depressed by the power of gravity, and, by means of the connection-piece D, will draw on the damper-lever so as to move it and "close" the damper or force it against the string.

The above-described damper-action has several advantages over others employed in upright pianos. It specially obviates the use of a spring to effect the return of the damper upon the string. It can be operated with great facility and certainty, and admits of the removal of the key at any time, without causing any material disturbance of the said damper-action.

I do not herein claim the damper-lever and the inclined connection-piece pivoted together at the upper end of the latter, and having such connection-piece to be operated directly by the key.

I claim as my invention the following, viz:

In the upright piano-action, provided with the inclined connection-piece D pivoted at its upper end to the damper-lever, the combination of the weighted arm E pivoted to such piece D, with the said piece D and the key A, the whole being so as to enable the connection-piece to be actuated by the arm E when in movement with or when moved by the key.

Also, the arrangement of the lifter G, the weighted arm E, the pivoted connection-piece D, and the damper-lever C.

GEO. W. NEILL.

Witnesses:

R. H. EDDY,
S. N. PIPER.