

UNITED STATES PATENT OFFICE.

TIMOTHY GILBERT, OF BOSTON, MASSACHUSETTS.

PIANOFORTE-ACTION.

Specification of Letters Patent No. 5,216, dated August 7, 1847.

To all whom it may concern:

Be it known that I, TIMOTHY GILBERT, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Pianoforte-Actions; and I do hereby declare that the same are fully described and represented in the following specification and accompanying drawings, letters, figures, and references thereof.

Figure 1 of said drawings denotes a side view of my improved action for piano fortes.

In said figure *a*, represents the usual key lever, *b* the jack or grasshopper, *c* the hammer, *d* the string, *e* the damper of the string, *f* a secondary hammer, or lifting lever, placed between the main hammer *c*, and the jack *b*, and made to move on a fulcrum or pin *g* applied to a fixed or stationary cross bar *h*, as seen in the drawing.

To the lower side of the lever *f*, I apply a spring *i* in such manner that it shall be confined or affixed at one end to the stationary bar *h*, and at the other end shall bear upward against the lever *f* with a force sufficient to overcome the weight of the said lever and nearly overcome, or overbalance that of the hammer *c*. A small staple, hook or bent wire *k* (a side view of which is represented in Fig. 2) is secured or otherwise affixed in the underside of the lever *f*. Another hook *l* is inserted in the back of the jack as seen in Fig. 1. This latter hook extends over the former one, in such manner, that when the rear end of the key lever is depressed or falls, the said hook *k* in falling with it, will act upon, and press down the other hook and the lever *f*, or insure the fall of the same in order to permit the hammer *c*, to drop downward after each blow upon the string.

m, is the damper lever which rests at one end on the rear end of the key lever *a*, and at the other end on a fulcrum or pin *n*, in the usual manner. Above the said key lever and damper lever, I arrange a lever *o* one end of which, I make to rest upon the front end of the damper lever, as seen in the drawings. The other end is jointed to a stationary cross bar *p* in such manner as to permit of the said lever being raised and depressed.

To the lever *o* the back catch *q* is applied as seen in the drawings.

A spring *r* is fixed at one end to the stationary bar *p*, and rests at the other on the bar *o*. The said spring should be made to press down upon the lever *o* with a force sufficient to not only cause the descent of the lever *m*, and the effectual damping of the string after being struck by the hammer, but to cause or insure the fall of the rear end of the key lever. The employment of the lever *o* to carry the back catch *q*, and to be operated in the manner described, (instead of fixing the back catch directly to or upon the key lever, as is usual) enables me at any time to readily remove the key lever, and jack, without taking away any other part of the action. A stationary cross bar *s*, is placed over the lever *o*, as seen in the drawing. It has a cushion or piece of cloth *t*, affixed to its underside against which (cushion) the lever *o* strikes when thrown up by the key lever. The object of the said cross bar is to prevent the back catch, and damper from being thrown too far upward by the key lever, when struck by the performer.

A cushion *u* is placed under the rear end of the key lever for the same to fall and rest upon. A similar cushion *v* is arranged or placed on the top of the bar *h* for the hammer *c* to fall upon.

By the mode above described of relieving the key lever of the weight of the hammer and auxiliary lever I am enabled to operate the key lever by a much greater delicacy of touch than can be attained where the weight of the hammer and auxiliary lever is thrown upon the key lever.

What I claim as my invention is—

1. The combination of the spring *i* with the lever *f* and hammer *c* in such manner as to nearly or entirely remove the weight of them or either of them from the key lever, or top of the jack thereof, whereby I am enabled to operate or depress the front end of the key lever, with scarcely and counteracting force, other than what may be sufficient to dampen the string, and by so doing make the action both very light to the touch, and powerful in execution.

2. I also claim the combination of the lever *o*, with the back catch and key lever, as set forth, for the purpose of enabling the key lever and jack, to be readily removed independently of the rest of the action.

3. I also claim the combination or arrangement of the spring *r*, with the lever *o*, damper lever *m* and key lever as exhibited in the drawings, by which the spring is
5 made to answer the double purpose of causing the return of the key lever, and damper, after each blow on the string.

In testimony whereof I have hereto set my signature this first day of February A. D. 1849.

TIMOTHY GILBERT.

Witnesses:

R. H. EDDY,
S. W. WALDRON, Jr.