

L. MATT & B. GRUETER.
Improvement in Piano-Actions.

No. 115,077.

Patented May 23, 1871.

Fig 1

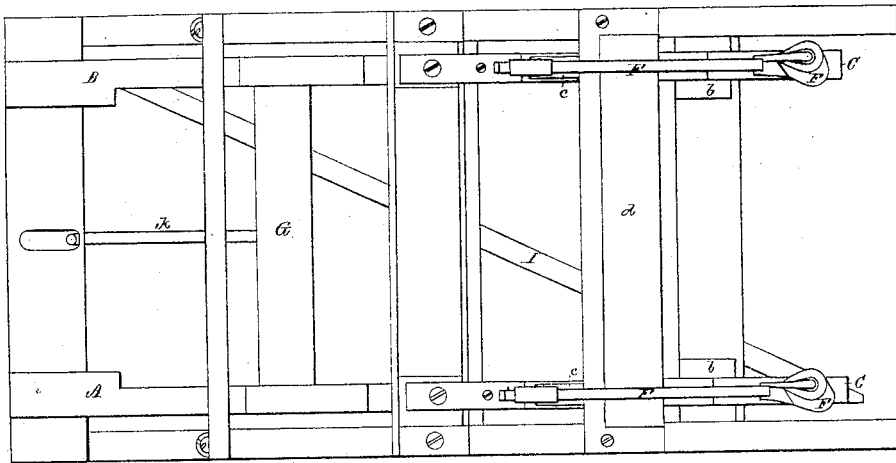


Fig. 2.

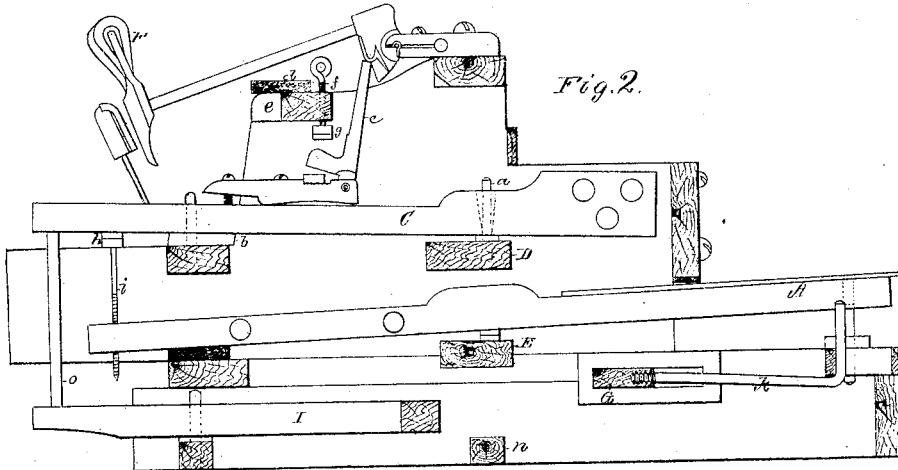
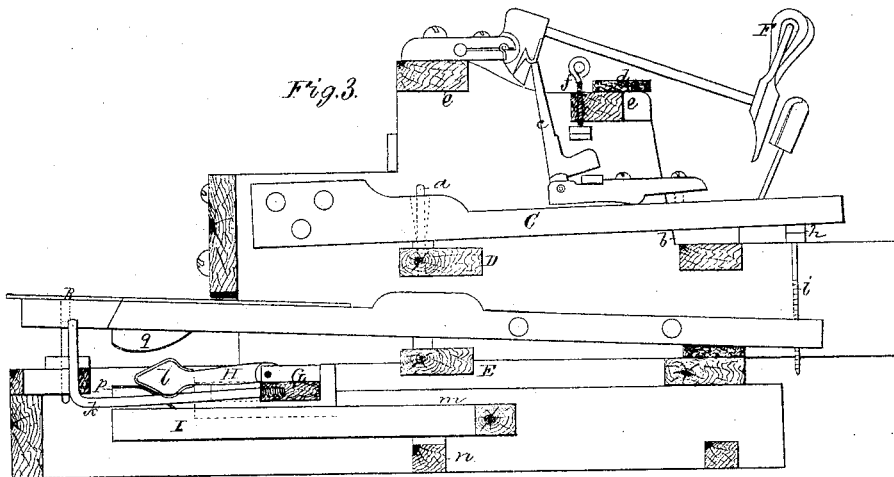


Fig. 3.



Witnesses.

S. N. Piper

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UNITED STATES PATENT OFFICE.

LORENZO MATT AND BERNARD GRUETER, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN PIANO ACTIONS.

Specification forming part of Letters Patent No. 115,077, dated May 23, 1871.

To all persons to whom these presents may come:

Be it known that we, LORENZO MATT and BERNARD GRUETER, of Boston, of the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Piano-Fortes; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 denotes a top view of two keys and hammers with our invention applied thereto. Fig. 2 is a longitudinal section taken between the keys, and exhibiting the mechanism on the right of the plane of section. Fig. 3 is a similar section, showing the mechanism to the left of the said plane.

Our invention is an improvement with reference to those by which, when a key is struck to give sound to its string, another string or octave will be sounded at the same time by mechanism connected with the key and that of the octave.

In the drawing, A and B denote two piano-action keys, each having directly over it a lever, C, whose fulcrum, *a*, is sustained by a bar, D, arranged over and parallel with the bar E for supporting the fulcrums of the two keys. The rear or longer arm of each of the levers C rests on a stationary cushion, *b*, and carries a jack, *c*, for operating one of the two hammers F F pertaining to the two keys. The hammers, when down, rest on a cushion, *d*, supported by a bar, *e*. The shank *f* of an adjustable button, *g*, is secured down through the bar *e* over the tail of each jack, and serves to trip the jack during upward movement of the lever C. A similar button, *h*, carried by a vertical screw, *i*, inserted in the key, serves to effect the elevation of the lever C when the key is struck. There is placed underneath the front arms of the two keys a slide, G, supported at its ends so as to be capable of being moved horizontally forward and backward by power applied to a rod, *k*, extended from such slider, or by a pedal suitably applied to the slider, to enable a player to effect the movements of the slider at the proper times. There is pivoted to the slide G a tongue, H, having

a lozenge or wedge shaped head, *l*, the said tongue being disposed underneath one of the keys, formed as represented. Extending underneath the tongue is an oblique lever, I, pivoted at *m* upon a cross-bar, *n*, and curved over underneath the inner end of the lever C of the other key, and being provided with a stem or standard, *o*, to reach up to the said lever C, all being as shown in the drawing. At its front end the oblique lever I is provided with an inclined head or cam, *p*, which is arranged underneath a corresponding but inverted head or cam, *q*, making part of or applied to the key, as shown. The surfaces of the tongue and the two cams *p q*, which are to operate together, should or may be leathered or cushioned to prevent noise.

By drawing the slider backward the head of the tongue will be brought on the top of the cam *p* and against the bottom of the cam *q*. Under this state of things, if the key directly over the tongue be struck, both of the hammers will be simultaneously thrown up; but when the slider is moved forward so as to draw the head of the tongue off the top of the cam *p*, the key, on being struck, will actuate its arm-hammer without effecting any movement of that of the octave-key.

From the above it will be seen that when one key is struck no movement of the other follows, the lever over it being set in action in case it may be desirable to actuate the two hammers by the blow on one key.

We claim as our invention—

The combination and arrangement of the slide G and the tongue H with the oblique lever I, its stand-rod O, the two keys A B, and the separate levers C C, combined or arranged with jacks and hammers, as set forth, the oblique lever and the key over its front end being provided with the cams *p q*, or equivalent devices, to operate with the wedge-head of the tongue, all as specified.

LORENZO MATT.

BERNARD GRUETER.

Witnesses:

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