(112.)

2 Sheets--Sheet 1.

LORENZO MATT.

Improvement in Piano-forte Action.

No. 121,952. *Fig 1* Patented Dec. 19, 1871.

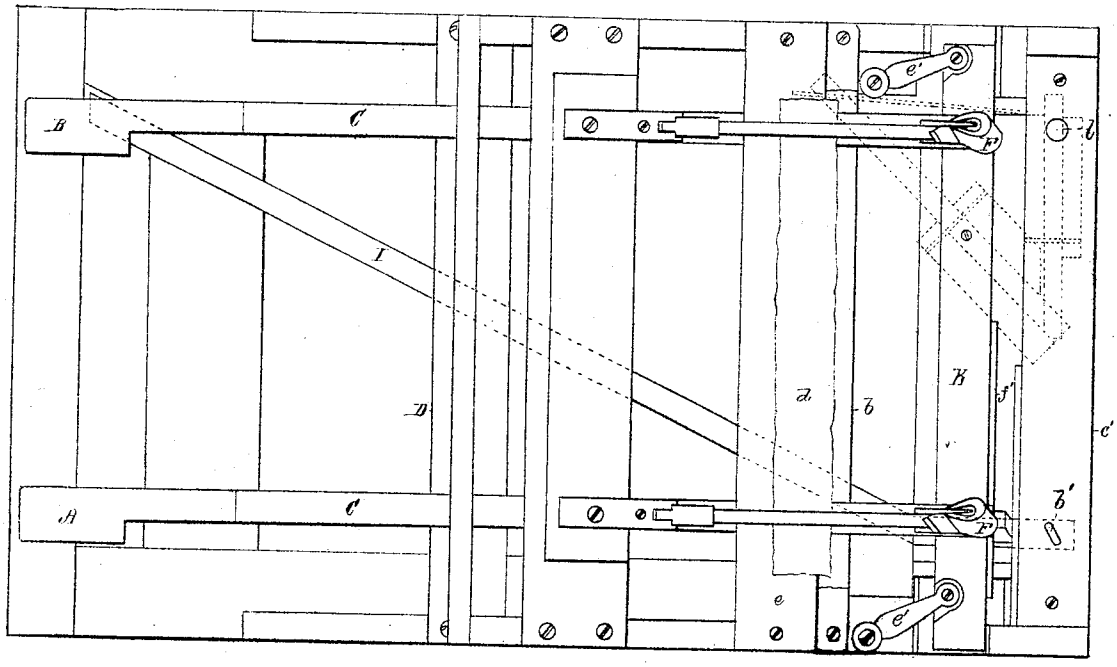
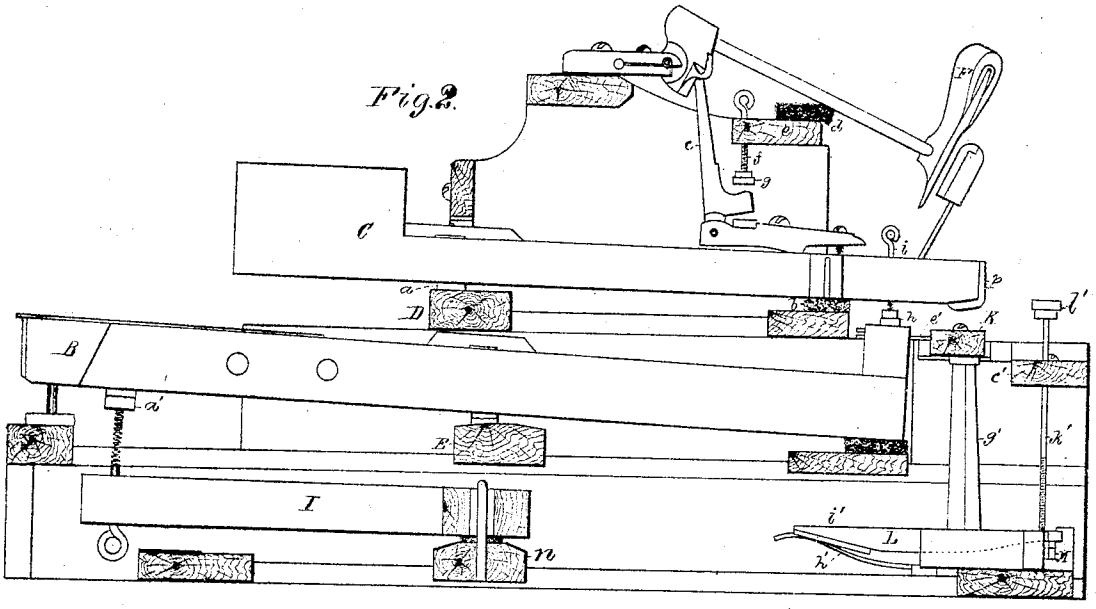


Fig 2.



Witnesses.

S. N. Piper

L. N. Möller.

Lorenzo Matt.

by his attorney.

R. H. Eddy

(112.)

2 Sheets--Sheet 2.

LORENZO MATT.

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Fig. 4.

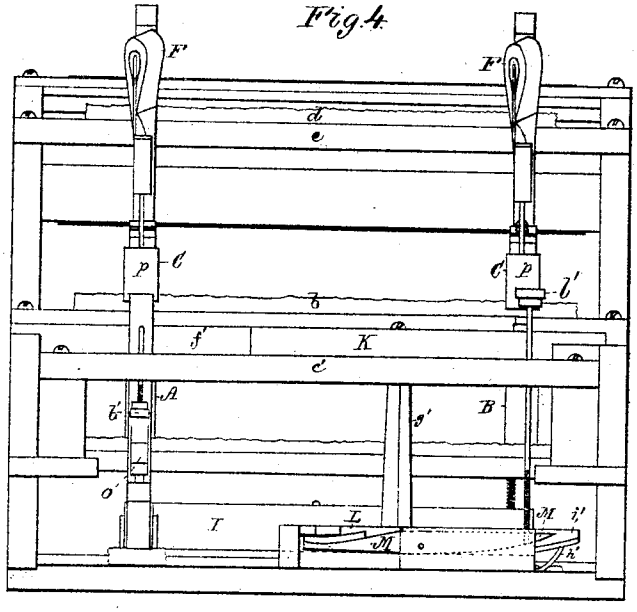
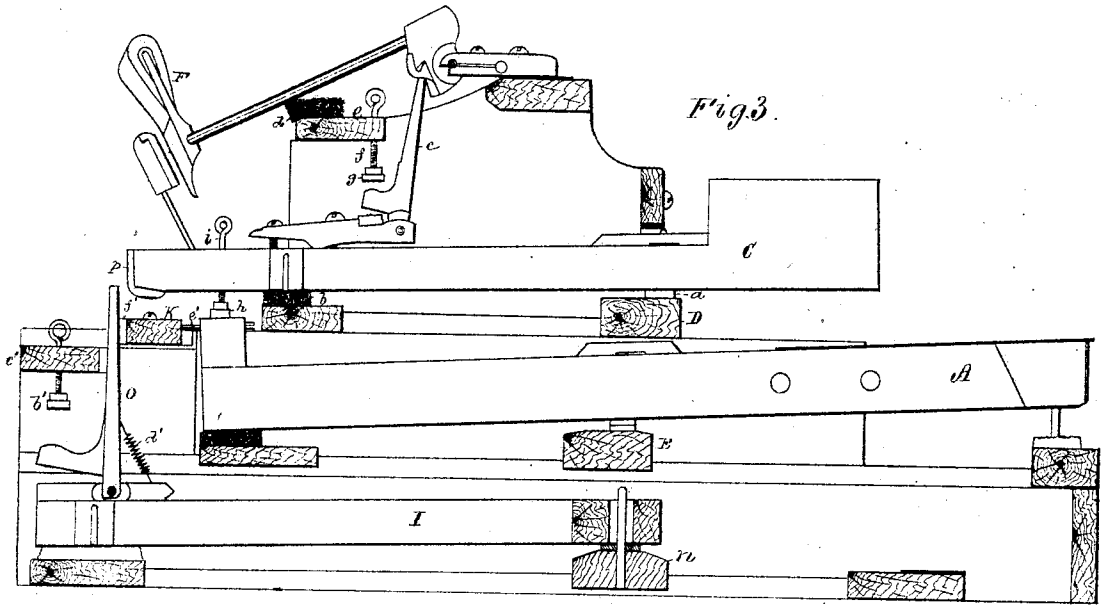


Fig. 3.



Witnesses.

S. N. Pipes.

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Lorenzo Matt.

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R. H. Eddy

UNITED STATES PATENT OFFICE.

LORENZO MATT, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN PIANO-FORTE ACTIONS.

Specification forming part of Letters Patent No. 121,952, dated December 19, 1871.

To all whom it may concern:

Be it known that I, LORENZO MATT, 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 and their oblique lever with my 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. Fig. 4 is a rear elevation.

My invention has 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.

The object of my present invention is to enable the octave-hammer to be operated by its key when the main key, which is to actuate the octave-hammer through the oblique bar, is being held down by a finger of a player, as in the performance of some pieces of music such becomes requisite. This cannot be effected by the invention described in the United States Patent No. 115,177, dated May 27, 1871, and granted to myself and Bernard Grueter, for pressing down the main key, the jack-carrying lever of the octave-hammer will be kept raised so as to prevent it from being operated by its own key.

In carrying out my present invention I employ in the place of the stem or standard, and on the oblique lever to actuate the jack, a lever or removable auxiliary jack or fly, and with such I employ a spring to draw the jack toward the jack-lever; and furthermore, I employ a mechanism for forcing and holding the auxiliary jack out of action relatively to the jack-lever, which it is to operate, all being constructed and arranged substantially as hereinafter explained and as represented in the accompanying drawing.

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 screwed 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. The oblique bar I, provided at its front end with an adjustable button, *a'*, for the main key to strike down upon, is pivoted at or upon a cross-bar, *n*, and carried over underneath the inner end or part of the lever C of the octave or other key, and is there provided with a fly or jack, *o*, which is formed and arranged with the said lever C, in manner as shown. Over the tail of the said jack is a tripper, *b'*, whose shank is screwed into and down through a cross-bar, *c'*. A spring, *d'*, connected to the fly or jack, and to its hinge or the oblique bar or lever I, serves to draw the fly or jack *o* up to or toward the rear end of the said jack-lever C, whose rear part is covered with leather, as shown at *p*. Extending underneath the two levers C C and connected with the piano-frame by oblique and parallel links or bars *e' e'*, arranged as shown, is a slide-bar, K, having a strip, *f'*, of leather applied to its rear or outer edge. Underneath such slide-bar is a tri-armed lever, L, whose upright arm *g'* is pivoted to the bar K. A spring, *h'*, arranged, as shown, serves to elevate the forward lower arm *i'* of the said lever. A lever, M, has one arm extended under and against the rear or outer lower arm of the tri-armed lever, and is to be actuated by a pedal or a rod, *k'*, provided at top with a button, *l'*, all being arranged as shown. On pressing down on the button *l'* the slide-bar K will be moved forward or toward the front of the instrument, so as to let the auxiliary jack or fly up toward and into action with its jack-lever C, the fly being moved and kept out of action with the lever C during and by the opposite movement of the bar K, which will be effected by the reaction of the spring which actuates the tri-armed lever aforesaid. The auxiliary jack operates with the jack-lever C in the same manner as the common fly or jack does with the tail-block of its hammer.

From the above it will be seen that with the auxiliary jack or fly *o* the action-hammer may be operated by its key when the other key is held down by the finger of a player.

I claim—

The combination of the auxiliary jack or fly *o*, its operative spring *d'*, and mechanism for effecting back movement of the said jack, with the oblique bar or lever I, the two keys A B, and the separate jack-levers C C combined or arranged with jacks and hammers, as set forth, the said mechanism for effecting back movement of the auxiliary jack, consisting of the bar K, the links *e' e'*, and the tri-armed lever L, its spring *h'*, and lever M to be actuated by a pedal or other proper device, all being substantially as explained.

LORENZO MATT.

Witnesses:
R. H. EDDY,
J. R. SNOW.

(112)