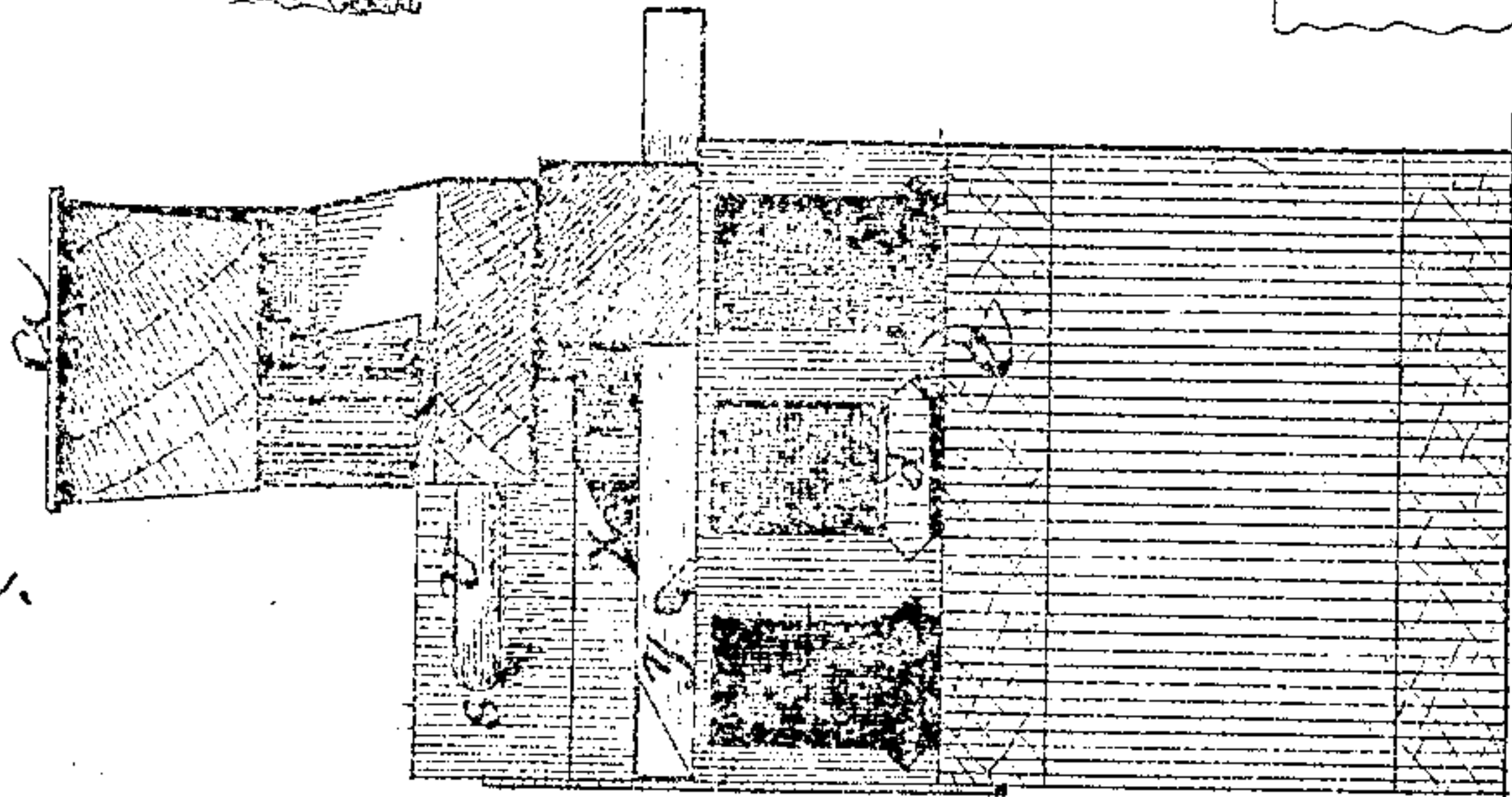
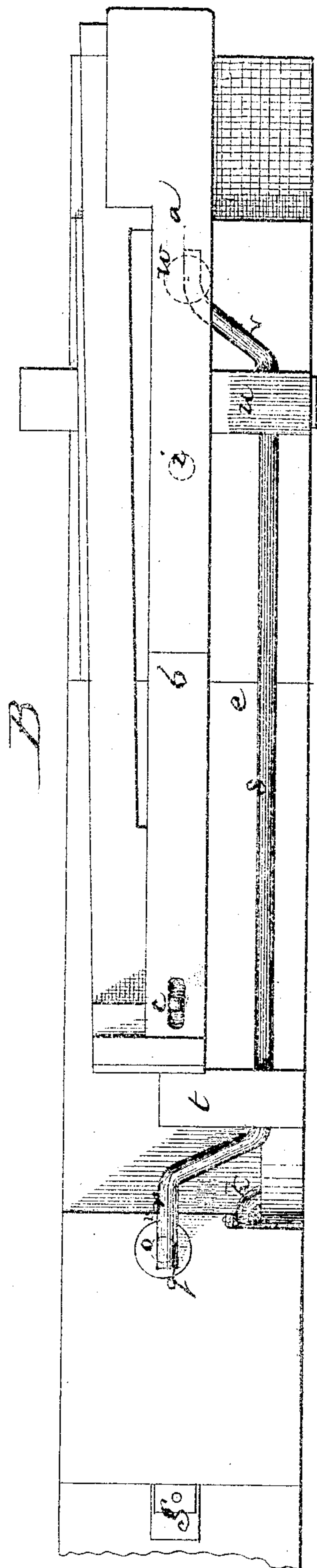


### Improvement in Key Board Musical Instruments:

Patented Dec. 12, 1871.



Emmons Hamlin,  
By his Atty.  
Crosby & Gould



# UNITED STATES PATENT OFFICE.

EMMONS HAMLIN, OF WINCHESTER, ASSIGNOR TO MASON & HAMLIN ORGAN COMPANY, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN KEY-BOARD MUSICAL INSTRUMENTS.

Specification forming part of Letters Patent No. 121,778, dated December 12, 1871.

*To all whom it may concern:*

Be it known that I, EMMONS HAMLIN, of Winchester, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Key-Board Musical Instruments; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

My invention relates to an improvement in that class of reed musical instruments known as melodeons, parlor-organs, &c., in which the reed-valves are operated by the keys of a key-board, as in piano-fortes. The improvement relates to a method of connecting two parallel sets of reeds or reed-valves so that both sets can be operated by one bank of keys without extending the key-levers to the second or inner set.

To accomplish this result I place upon each valve of the second set a vertical stem, which passes through a suitable guide-rail, and has upon its top a button, upon which rests one end or bent arm of a long rocker-shaft or rod, the straight part of which is supported and turns in suitable bearings, there being at the front end of said shaft or rod another bent arm, which, when the front bearing (which is movable) is raised, is brought under and against a projection from the under side of the key, the depression of the key operating the valves of the front set of reeds in the usual manner; and also by pressing down the front arm of the rocker-shaft or rod, turning said shaft or rod in its bearings, and thereby causing the rear arm to press down the valve-stem of the rear valve, thus operating both valves. It is this construction or method of operating both sets of valves that constitutes the invention. The keys are raised to normal position by springs in the usual manner, or by the stress of the springs that close the front reed-valves, and the arms of the rocker-rods are kept normally in horizontal position by the stress of the springs which close the rear reed-valves. The front bearings are in a rail which can move vertically, and by movement of a suitable slide-bar the bearings are raised into position to cause the rocker-rod to be operated by the keys, movement of the bar in the opposite direction causing the bearings to drop by gravity, and thereby re-

moving the front arms of the rods from the path of movement of the key-projections.

The drawing represents a key, reed, and reed-valve mechanism embodying my invention. A shows the mechanism in side elevation. B is a plan of it; C, an end view.

*a* denotes the key on the end of a short lever, *b*, hinged or fulcrumed at *c*. *d* denotes one of the reeds of the main or front set of reeds; *e*, the valve-board under the same; and *f*, one of the valves. *g* denotes one of the reeds of the other or rear set, and *h* the valve thereof. From the valve *f* a slide-pin, *i*, extends up through the board *e*, the key-lever *b* resting upon the top of this pin, and the pin and key being elevated by the stress of a spring, *m*, that presses the valve *f* against the valve-board *e*, so as to cover and close the valve-opening, depression of the key by the finger of the performer pressing down the pin and opening the reed-valve against the stress of the spring. Each valve, *h*, of the other set of reeds is held up by the stress of a spring, *n*, and a slide-pin or stem, *o*, extends through the board *e*, said pin or stem having a button, *q*, upon its top, upon which button rests an arm, *r*, extending from the rear end of a rocker-rod or shaft, *s*, which shaft turns in bearings in two blocks or rails, *t u*. At the front end of the rod *s* is another arm, *v*, which passes directly under a projection, *w*, extending from the bottom of the key-lever, as seen at A. The bearing-rail or block *u* is made capable of slight vertical movement, having for this purpose inclines *x* on its under side, under each of which a lifter or wedge, *y*, is slid to raise the block, the block, when raised, bringing the arm *v* up to the bottom of the projection *w*, as seen at A.

The parts being in normal position and the block or rail being thus raised, the key, whenever it is depressed by the finger, pushes down the arm *v*, turning the rod in its bearings, and thereby depressing the opposite arm *r*, movement of which pushes down the pin or stem *o* and opens the valve *h* simultaneously with the opening of the valve *f* by the depression of the key upon the stem or pin *i*, both sets of reed-valves being thereby simultaneously operated by the key. When the key is released from pressure the spring *m* throws up the key *b*, (in closing the valve,) and the spring *n*, in closing the valve *h*,

throws up the arms *t u*. When only the front set of reed-valves is to be operated, the bar *y* is slid back, and the front block or rail *u* will then drop, so that the arm *v* will not be touched as the key is depressed.

The two rails or blocks *t u* may be connected by a cross-strip or strips, *z*, forming a bearing-frame, hinged as seen at *k*.

I claim—

The two parallel sets of reed-valves *f h*, connected (so as to be simultaneously operated by

one set of keys) by means of rocker-rods or shafts *s*, each having arms *r v*, the arm *v* being depressed by the key, and the arm *r* pressing down the pin or stem *o* and opening the valve *h*, substantially as described.

Executed the 4th day of September, A. D. 1871.  
EMMONS HAMLIN.

Witnesses:

FRANCIS GOULD,  
M. W. FROTHINGHAM.

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