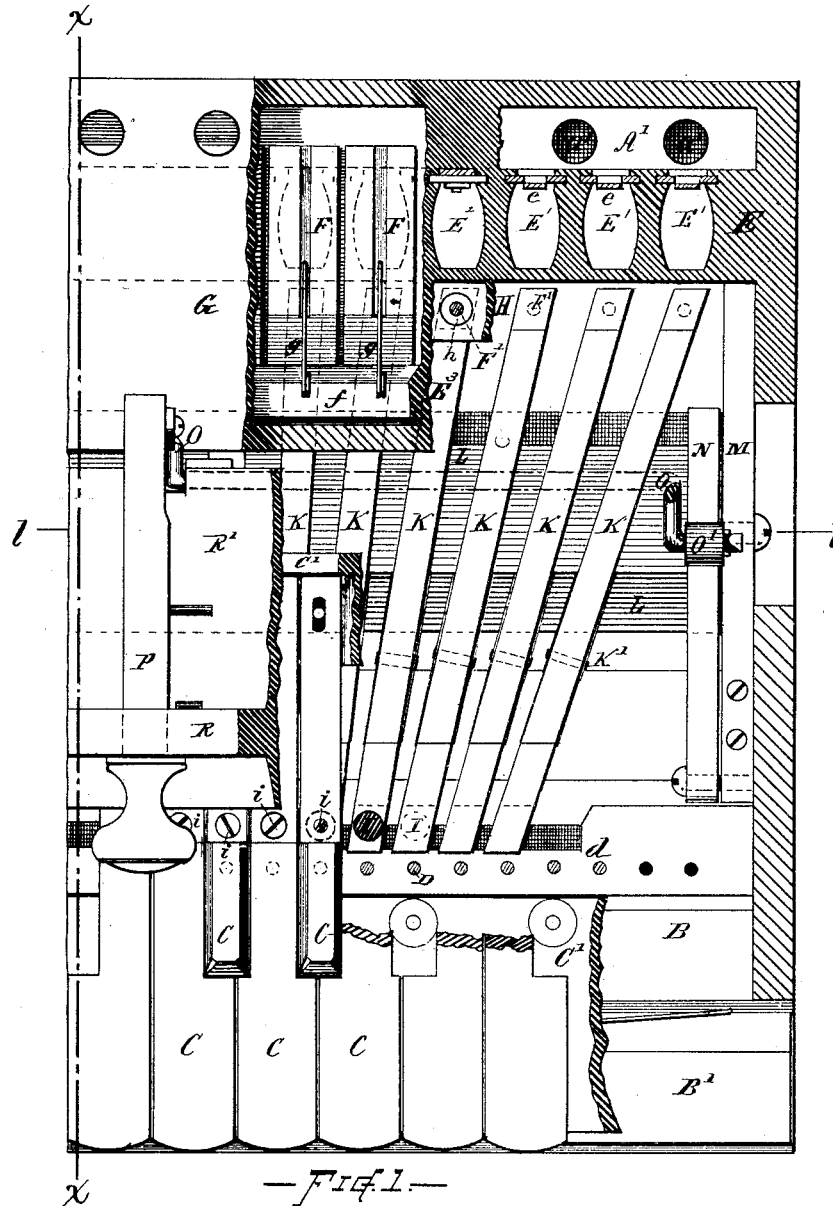


N. M. BOYNTON.
Organ-Action.

No. 213,968.

Patented April 8, 1879.



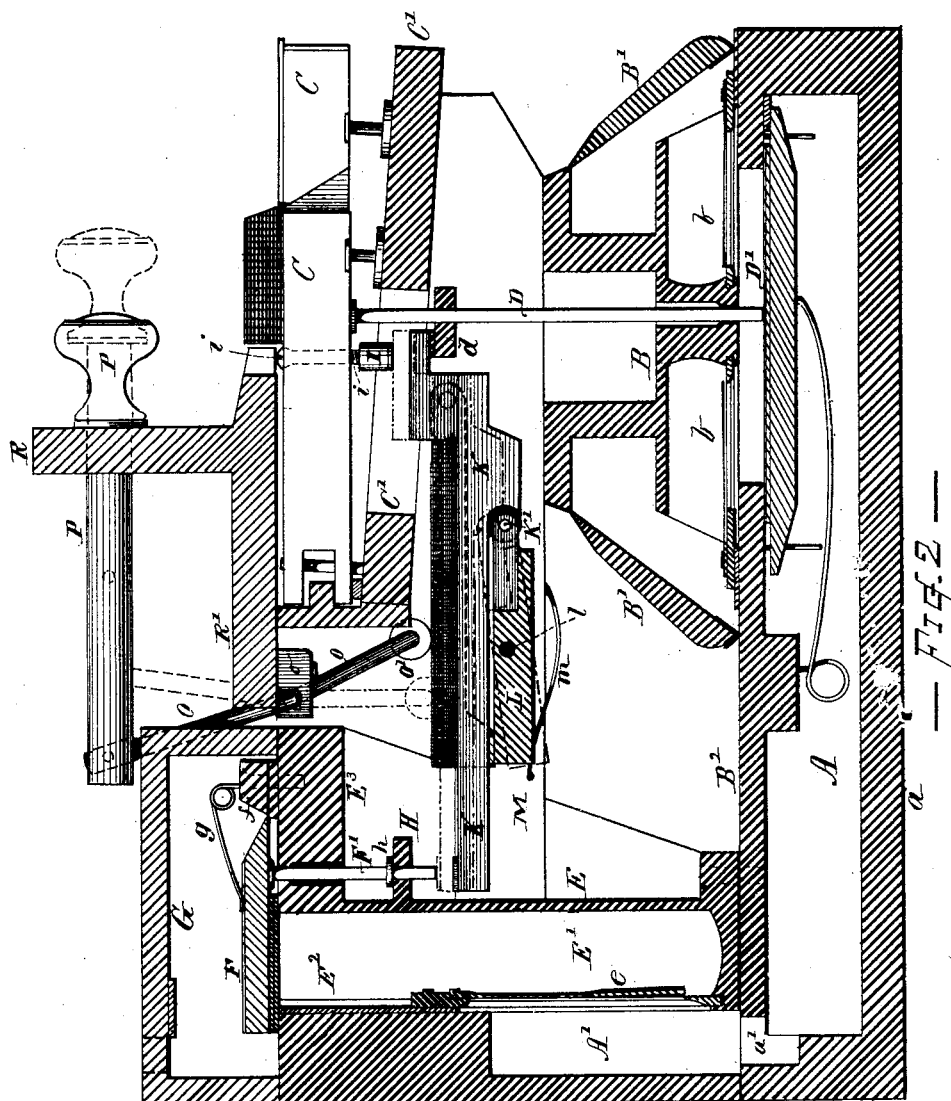
WITNESSES.
E. L. Furman
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INVENTOR
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UNITED STATES PATENT OFFICE

NEWELL M. BOYNTON, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO
THE LORING AND BLAKE ORGAN COMPANY, OF SAME PLACE.

IMPROVEMENT IN ORGAN-ACTIONS.

Specification forming part of Letters Patent No. **213,968**, dated April 8, 1879; application filed
October 28, 1878.

To all whom it may concern:

Be it known that I, NEWELL M. BOYNTON, of Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Organ-Actions; and I declare the following to be a description of my said invention sufficiently full, clear, and exact to enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 represents a plan view of such parts of an organ-action as are necessary to illustrate the nature of my invention, portions of the upper work being shown broken away to reveal parts beneath. Fig. 2 represents a vertical section of the action on a line, *x x*, transversely to the reed-board.

The nature of my invention consists, first, in the employment, in a reed-organ action, of a sub-bass action with operating mechanism, arranged substantially as hereinafter described, whereby said sub-bass action may be readily connected with or disconnected from the main action, as hereinafter more fully set forth; second, in the employment, in a reed-organ action having a sub-bass section or register, of an operating-lever mechanism and devices for raising and depressing the fulcrum thereof, for connecting and disconnecting the sub-bass action with and from the main action, substantially as hereinafter described.

Another feature of my invention consists in arranging the sub-bass-action pitmen and their operating parts or levers at the exterior of the wind-chest, substantially as described, and dispensing with the mute or wind-stop above the valves to the sub-bass register, as hereinafter set forth.

Other minor features of my invention will be understood from the following description, the particular features claimed being hereinafter definitely specified.

In the drawings, A denotes the wind-chest, from which the air is exhausted by the bellows beneath the board *a*. B indicates the ordinary cell-board, with reed-cells *b b* and swells B¹, of the usual construction. C' is the key-frame, with keys C arranged thereon in

the customary manner, with pitmen D extending down to the valves D'. E indicates the sub-bass section, arranged at the rear part of the action-board B², and provided with an auxiliary wind-chest, A', that communicates with the main wind-chest A by means of openings *a'*. The reed-cells E¹ and reeds *e* of the sub-bass are arranged in the manner illustrated, said cells being extended upward beyond the reed to any desired height, as at E², thus producing a kind of pipe for each reed. At the top part I projects the board, as at E³, to form a ledge or table, upon which is secured the hinge-strip *f* of the sub-bass valves F, which valves close down over the openings of the cells E¹, as indicated.

The valve-operating pitmen F' pass down through the ledge or projecting board E³ to the exterior of the cell-board E, and also through the openings of a guide strip or bar, H, upon which they are supported and prevented from dropping through by means of collars *h*, which rest on the top of said bar.

The valves are provided with the usual springs *g*, and are covered in and protected by the perforated box or casing G, which can be readily removed for inspecting the valves and reeds when required.

Extending from positions beneath buttons I on the under sides of the keys C to positions beneath the respective valve-operating pitmen F', I arrange a series of actuating-levers, K, the fulcrum-supports K' of which I make adjustable by action of the stop-pull, or in such a manner that they can be readily raised or depressed by the stop or swell devices, so as to bring the levers within reach of the buttons I, attached to the several keys C, and thus putting the sub-bass in action, or to carry them out of reach of said buttons when the sub-bass is not required, thus relieving the keys of the strain and labor of working the sub-bass action. In the present instance the levers K are fulcrumed or hinged at K' to one edge of a rocking support-bar, L, which latter is pivoted to the frame-pieces M at its ends *l*, and provided with a spring, *m*, for retaining the parts in their disconnected position, or with the levers depressed, their front ends resting upon the packing along the guide-strips *d*, and out

of reach of the buttons I. (See full lines, Fig. 2.) The rocking bar L is operated by a lever, N, having its front end pivoted to the frame-piece M, and provided at its rear end with a downward projection or lug, which rests upon the rear edge of the rocker-piece L. The roll O' on the end of the crank-rod O works upon the top of the lever N, as indicated, and when the pull-bar P, to which the opposite end of the crank-rod O is attached, is drawn out, said lever is pressed down by the roll O', and by rocking the piece L elevates the fulcrums or supports K', and thereby raises the levers K into a position where they engage the buttons I and pitmen F, thus connecting the sub-bass action with the main action, (see dotted and broken lines, Fig. 2,) so that the sub-bass valves will be opened by depression of the keys C.

The crank-rods O are supported in bearings *o* on the under side of the board R', and the stop-pulls P are arranged through the name-board R in the usual manner.

The buttons I are adjustably attached to the keys C by means of screws *i* passing down through said keys in the manner shown, whereby said buttons can, from the upper side of the keys, be readily adjusted to give the desired accuracy in the working of the action, and to take up any looseness occasioned by shrinkage or wear.

By arranging the levers K, pitmen F', and valves F in the manner illustrated the working parts of the action are all at the exterior of the wind-chest and in convenient locality for inspection, while in the sub-bass action I dispense with the mute or stop above the valves F, since the valves do not act with the keys unless the actions are connected. The keys are relieved from the strain of the valve-springs *g* and the weight of the operating-parts while playing all music in which the sub-bass is not required, thus rendering the pressure or resistance of the keys uniform throughout the full length of the bank.

I do not desire to confine my invention to the particular form and arrangement of lever mechanism herein shown, since said levers K can be modified in form and position, and other devices can be employed for raising their fulcrums, to bring them into or out of action, without departing from the spirit of my in-

vention. Said lever mechanism could, if required, be used within the wind-chest A in place of the ordinary lever devices and sub-bass valve attachments, but I prefer the arrangement herein shown.

What I claim as of my invention, and desire to secure by Letters Patent, is—

1. In a reed-organ action, the combination, with the main action and sub-bass register-valves, of a series of actuating-levers and an adjustable fulcrum-bearer for supporting the same, whereby the fulcrums of said levers are raised and depressed for throwing the sub-bass valve mechanism into and out of action, substantially as and for the purposes hereinbefore set forth.

2. The combination, substantially as hereinbefore set forth, of the main wind-chest A, the sub-bass section E, having reed-cells E¹, with reeds *e*, auxiliary wind-chest A', with passages *a'*, the top ledge or projection E³, perforated for pitmen, and the valves F, arranged without mutes, as shown.

3. In a reed-organ action, the sub-bass section E, having reed-cells E¹, with prolonged chambers extending as pipes above and beyond the ends of the reeds, in the manner indicated at E², substantially as shown, for the purpose stated.

4. The combination, substantially as hereinbefore set forth, of the sub-bass cell-board E, having top ledge or projection E³, with valves F, the guide-bar H, the valve-pitmen F', arranged through said ledge and guide, and the actuating-levers K, above and exterior to the wind-chest and beneath the pitmen.

5. The combination, substantially as hereinbefore set forth, of the actuating-levers K, the rocking bar L, supporting their fulcrums K', the keys C, provided with buttons I, the pitmen F', and valves F, for the purpose stated.

6. The combination, substantially as hereinbefore set forth, of the fulcrum or rocker-bar L, supporting the levers K, the bearing-lever N, spring *m*, crank-bar O, with roll O', and pull P, for the purposes described.

Witness my hand this 24th day of October, A. D. 1878.

NEWELL M. BOYNTON.

Witnesses:

CHAS. H. BURLEIGH,
GEORGE W. WARD.