C. E. LYON.

Organ-Action.

No. 211,169. Patented Jan. 7, 1879.

Fig. 2

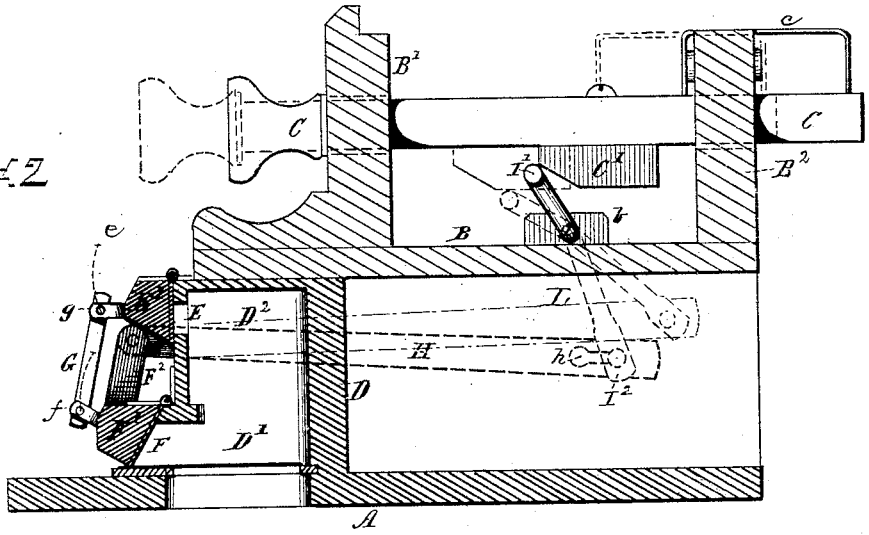
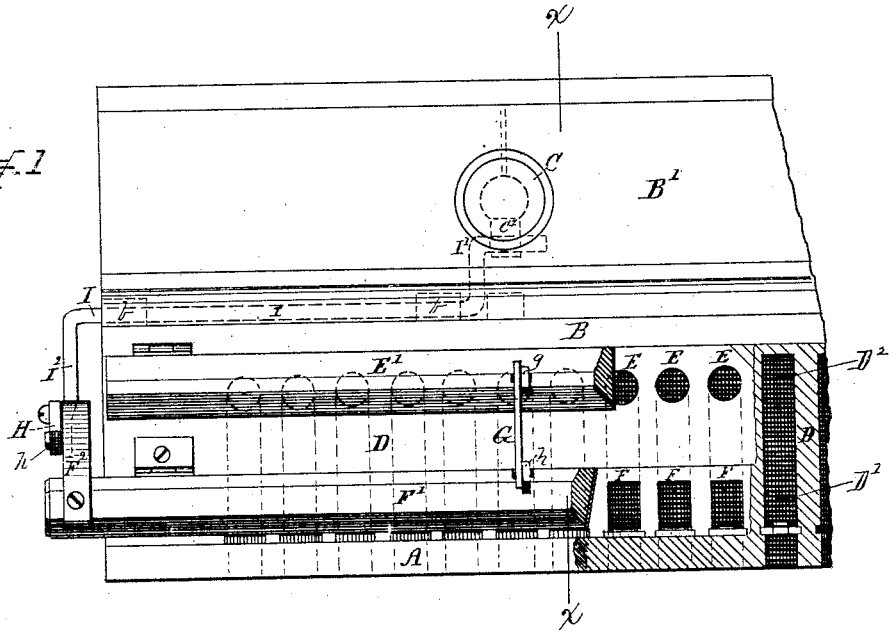


Fig. 1



Witnesses.

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UNITED STATES PATENT OFFICE.

CYRUS E. LYON, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN ORGAN-ACTIONS.

Specification forming part of Letters Patent No. **211,169**, dated January 7, 1879; application filed October 12, 1878.

To all whom it may concern:

Be it known that I, CYRUS E. LYON, 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 is a part front, part sectional, view of a portion of an organ-action, illustrating the nature of my invention. Fig. 2 is a vertical section of the same at line *x x*, Fig. 1.

One feature of my invention consists in providing the extended or chambered reed-cells in an organ-action with an upper or second series of openings or passages, in addition to the ordinary openings, and combining therewith a double set of mutes for closing said passages, as hereinafter described, whereby the power, quality, and variety of tone are enhanced and control thereof facilitated.

Another feature of my invention consists in the peculiar arrangement of the inclined lug and crank devices for operating the mutes, as hereinafter fully described.

The particular features claimed are hereinafter definitely specified.

In the drawings, A denotes the reed-board; B, the brace-board; B^1, the name-piece, through which are arranged the stop-pulls C; and D, the cell plate or board, which contains the reed-cells D^1, and upon the face of which are arranged the mutes or stop-valves.

The cell plate or board D, I make of somewhat greater thickness than in ordinary actions, and form the reed-cells D^1 with upward-extending chambers D^2; and at the upper part of said chambers I form openings or auxiliary passages E to the exterior of the plate D separate from and in addition to the ordinary cell-opening F, which latter is retained in its customary position and form, thus giving two sets of openings into the reed-cells D^1 D^2 for the passage of air into and exit of sound from said cells.

Separate mutes E′ and F^1 are arranged over the two series of openings E and F, respectively, said mutes being hinged to the front part of the cell-plate D, to swing upward for opening the passages, and are provided with suitable springs for closing them, in the ordinary manner. Said mutes E′ F^1 are, in the present instance, linked together for action by means of a bar, G, pivoted to short projecting arms *e* and *f* on the respective mutes, so that when the mute F^1 is raised the mute E^1 will also be elevated by the same action. If preferred, however, a separate action or stop can be used for opening the mute E, and I design to employ such mutes both with separate and combined operating devices.

The mute F^1 is raised by means of the connecting-bar H, the forward end of which is pivoted to the mute-arm F^2, while its rear end, which is furnished with a loop or eye, *h*, (see dotted lines, Fig. 2,) is attached to the downwardly-projecting arm I^2 of the crank shaft or rod I in such manner that it can be readily disconnected, when desired, by raising the loop *h* from the crank-pin at the end of said arm I^2.

The crank-shaft I is supported in bearings *b b* on the upper side of the brace-board B, with its actuating-crank I^1 projecting upward and forward in an inclined position, as indicated in Fig. 2, beneath the pull-bar C, where it is engaged and pressed downward with an easy and uniform rolling movement, when said pull-bar C is drawn, by means of the inclined surface of a lug or block, C′, fixed to the lower side of the pull-bar C, as illustrated.

By arranging the crank-bars I I^1 on the brace-board B and the inclined lugs on the under side of the pulls, while said pulls are arranged through the name-piece B^1 and rear support-piece, B^2, a very simple and perfectly-operating stop device is produced, while the said parts being so arranged upon the brace B B^1 greatly facilitates the operation of putting the organs together, since the action proper can be adjusted to position first, and the brace B and parts connected therewith then put on as a whole and secured in place, simply requiring the looping on of the eyes *h* to the arms I^2 to complete the connection.

The inclined lug C′, working against the crank I^1 in inclined position, as shown, gives

an easy movement to the parts, while the friction and direction of pressure is such that the action is prevented from pounding or striking back with a sharp blow when the pulls are pressed in. A wire, *c*, arranged to work in a groove in the piece B^2, serves to prevent the pull C from turning or revolving so as to carry the lug C′ out of place.

By forming upper openings in the reed-cells in the manner described, greater power is given to the reeds while the quality of tone is improved; and by the aid of the double set of mutes greater variety of tone can be produced, while the action is under complete control.

I am aware that reed-cells have heretofore been provided with chambers for improving the tone of the reeds, and I do not broadly claim chambered reed-cells; neither do I claim, broadly, an inclined surface or wedge for moving the mute-operating devices.

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

1. In combination with the reed-cell having opening F and mute F^1, the upper opening or auxiliary passage, E, and mute E^1, substantially as and for the purposes set forth.

2. In a reed-organ action, the cell-board D, constructed substantially as hereinbefore described, with high-chambered reed-cells D^1 D^2, having lower openings, F, and upper openings, E, provided with separate mutes F^1 and E′, as set forth.

3. In combination with the cell-board D, having reed-cells with two openings, the double mutes E′ F^1, connecting-link G, arm F^2, connecting-bar H, crank-rod I, and pull C C′, substantially as and for the purposes set forth.

4. The combination, substantially as shown and described, of the mute F^1, having arm F^2, the connecting-bar H, crank-shaft I, supported in bearings *b b* on the brace-board B, with its crank end I^1 inclined upward and forward, and the pull-bar C, provided with an inclined lug, C^1, at its lower side, for engaging said crank end and operating the parts in the peculiar manner set forth.

5. The combination, in an organ-action, of the brace-boards B B^1, the pull-bar C, arranged in relation thereto as shown, and provided at its lower side with an inclined lug, C′, and the operating crank-shaft I, supported in bearings *b b* on said brace-board, with its crank end inclined upward, as shown, whereby, when the stop or pull is drawn, said crank will be depressed with a uniform rolling motion, as hereinbefore set forth.

Witness my hand this 30th day of September, A. D. 1878.

CYRUS E. LYON.

Witnesses:
CHAS. H. BURLEIGH,
SWIFT B. LYON.