

M. J. MATTHEWS.
Reed-Organ.

No. 209,495.

Patented Oct. 29, 1878.

FIG. 1.

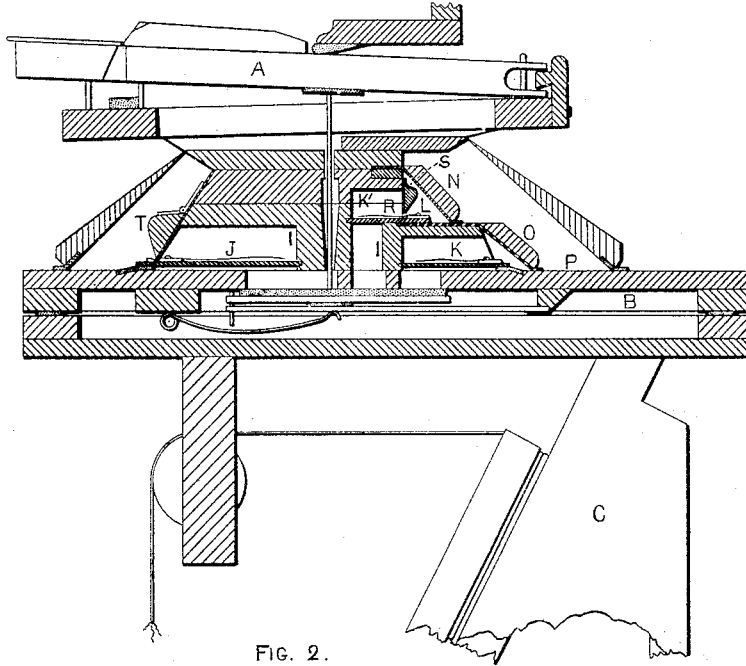


FIG. 2.

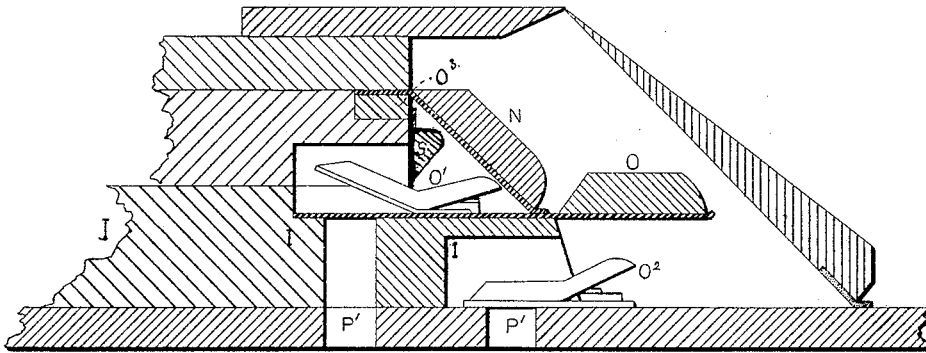
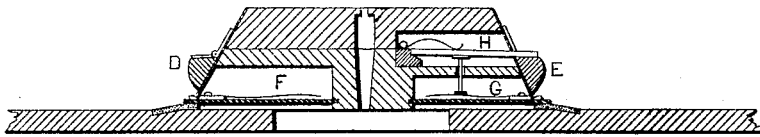


FIG. 3.



WITNESSES

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IMPROVEMENT IN REED-ORGANS.

Specification forming part of Letters Patent No. **209,495**, dated October 29, 1878; application filed October 14, 1876.

To all whom it may concern:

Be it known that I, MASON J. MATTHEWS, of Boston, in the State of Massachusetts, have invented certain Improvements in Reed-Organs, of which the following is a specification:

My invention relates to reed-organ mechanism. It consists of a combination of valves and other means for controlling the speech and varying the pitch of the reeds.

It is a simple and comparatively inexpensive means for producing the effect known as "*voix celeste*," and for lowering the pitch and changing the quality and power of tone of all or any part of an instrument.

The following specification, of which the accompanying drawings form a part, clearly sets forth the nature and manner of construction of my invention.

Figure 1 is a sectional elevation, showing the position of reeds, valves, valve-openings, and bellows. Fig. 2 represents a broken-off section as through the line of leak-valve. Fig. 3 is a section of tube-board, stop-valve, and mutes of an ordinary reed-organ.

The keys A, wind-chest B, and bellows C, being of ordinary construction, need not be described.

In an ordinary "two-set" instrument the stop-valves D E rest on the face of the tubes F G. It is quite difficult to get these valves D E to close so securely that they shall not leak and cause the small reeds to cipher; and, even if they should be made perfectly air-tight, they would not be likely to remain so; hence the employment in all first-class instruments of mutes H as auxiliary to the valves D E. These mutes H, where they have been employed, have hitherto been deemed indispensable, so that they have afforded a barrier to the introduction of a third or over set of reeds in the same tube-board. Some makers adopt another but much more objectionable means for preventing reeds ciphering. They make a communication between each tube and the wind-chest by an air-hole. This hole is supposed to be large enough to carry off any air that may leak through a badly-fitted or deranged valve.

In most cases where one set of reeds has been mounted over another set some such plan has been adopted, or the instrument left

in a condition for which no reputed manufacturer would be responsible.

In order to dispense with both the mutes and holes referred to, and yet produce a perfect instrument in the respects named, I have employed pneumatic valves N O, which are assisted in closing by the exhaust power of the bellows.

The grooves in which the reeds J K L are inserted are all cut in the same piece of wood, and thus differ from instruments ordinarily constructed. Over the reeds L is a cap, K', with grooves cut in its lower side corresponding to the grooves in the tube-board I, so that the reeds L are provided with suitable resonating-tubes. The reeds K L are controlled by the valves N O. These valves N O are hinged, preferably, by leather to the strip O³ and tube-board I, and reach beyond the reeds K L and away from the face of the tubes. The lower corner edge of each valve N O rests, one on the tube-board I and the other on the mortise-board P. Angle-pieces are inserted below each end of the valves N O, so that an air-chamber is formed, which extends the whole length of the reeds controlled by each valve. Outside the range of each set of reed-tubes is another tube, leak-tube, shown in Fig. 2. A hole, P', is made from this leak-tube to the wind-chest.

In each tube is mounted a small leak-valve, O¹ O². When either stop-valve N or O is open, its corresponding leak-valve is closed partly by its own weight and mainly by the suction of the air as it rushes through the hole P'. Should any air leak into the chamber below the stop-valve when closed, it will pass through the leak-hole P' to the wind-chest, so that the reeds will not cipher.

Mounted over the tubes R is a shade-valve, S, which is held in the position shown by a torsion-spring. Between the lower edge of this shade-valve S and the reeds L is opening sufficient to admit of air to the tubes R, so that the reeds L will speak.

The stop-draws, which operate these valves N and S, are labeled "seraphone" and "*voix celeste*." Seraphone is a single-set solo; *voix celeste*, a double-set solo. When the seraphone stop-draw is out both the valves N and S are

open. When the *voix celeste* stop-draw is out the valves N and T are open. The advantage of this arrangement is that it is not necessary, as in ordinary cases, to mistune the reeds to obtain the *voix celeste* effect. The reeds L may be in perfect tune with the main sets of the instrument. The shade-valve S, when shut, lowers the pitch sufficient for celeste purposes. I have used this arrangement for solo effects only. It may be advantageously employed on any set or part of a set, for it not only lowers the pitch, but it changes the quality of tone, making it softer and smoother.

My invention is not confined to the precise details hereinbefore described, but is susceptible of several modifications, which may readily suggest themselves to mechanics ordinarily skilled in the art.

The shade-valve S may be attached to and form a part of the stop-valve N. This stop-valve N, in that case, may be divided into two parts. The lower part may be hinged to the upper part, celeste effect to be produced by the

opening of the lower part alone, and seraphone effect to be obtained by the opening of the whole.

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

1. The tube-board I, constructed in one piece, having the two ordinary sets of reeds J K and the over-set L, together with the cap K', in combination with the stop-valves N O and the leak-valves O¹ O², substantially as specified.

2. The combination and arrangement, with the tubes R and reeds L, of the shade-valve S and stop-valve N, substantially as and for the purpose described.

3. The combination of the subject-matter above claimed (clause 2) with the reeds J for the effect and purposes specified.

In testimony whereof I have hereunto set my hand this 13th day of September, 1875, in the presence of two subscribing witnesses.

MASON J. MATTHEWS.

Witnesses:

C. F. SOUTHACK,
LOWELL M. COOKE.