





# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN ORGAN ACTIONS.

Specification forming part of Letters Patent No. 122,777, dated January 16, 1872.

Specification describing a certain Improved Organ Action, invented by JOHN H. ODELL, of the city, county, and State of New York.

My invention embraces the employment of a pneumatic-tube action for organs, in which the valves of the organ-pipes are opened by the inflation of a pneumatic lever, which is inflated by the admission of air through a pneumatic tube, whereby the key-board may be removed from the organ and placed at a considerable distance therefrom, and the usual arrangement of squares, levers, rollers, trackers, and electric wires may be dispensed with. My invention also embraces the combination of a self-acting exhaust-valve with the pneumatic lever, and the employment of certain other novel devices in connection therewith, so as to produce a quick return movement of the pneumatic lever, substantially as hereinafter described.

Figure 1 is a sectional elevation of my improved organ action, air-box, pneumatic tube, pneumatic lever, and sound-board; and Fig. 2 is a section thereof on the line *x x* of Fig. 1.

A represents the organ-key, and B a wind-box, which latter may be in the position shown in respect to the keys A, or in any other convenient position. The air-box is filled by the bellows E in the ordinary manner. C is a rod connecting the key A with a valve, D, in the box B. The valve D is closed by spring J, and opened when the key A is actuated. The opening of valve D admits air into the pneumatic tube G and inflates the pneumatic lever H, which thereby operates the valve I of the sounding-board F, with which valve I the pneumatic lever is directly connected by means of rod L; and the opening of the said valve I admits air to the pipes K upon the sounding-board and causes them to speak. A pneumatic lever, H, pneumatic tube G, and valve D are provided for each key and draw-stop of the organ. The capacities of the pneumatic tubes should be such that the inflation of the pneumatic lever will be quick and prompt. To insure the rapid closing of the pneumatic lever I place an exhaust-valve, M, on its under or movable side, as shown, the said valve M having attached to it by a pivot a pendent rod, N, extending downward between a pair

of grippers, O, which are pivoted to a frame, *a*, attached to the stationary side of the pneumatic lever, the said grippers being pressed against said valve-rod by springs P with sufficient force to hold the valve M open by friction until the pneumatic lever closes, thus facilitating the quick exhaust of the pneumatic lever, and allowing the valve I to be closed quickly by the spring R.

In order to effect the release of the grippers from their hold upon the rod N I provide fingers S, or any suitable equivalent device or devices, which may be placed on the movable side of the pneumatic lever, as shown, so as to come in contact with the upper end of the grippers O just previous to the cessation of the collapsing movement of the pneumatic lever, which fingers S open the grippers O sufficiently to cause the release of the valve-rod N and allow the valve M to be closed by its spring R.

In the example of my improvements here shown the pneumatic lever is operated by air-pressure; but my improvements may be also operated by an air-exhaust or suction, in which case the pneumatic lever and connected parts would need to be specially arranged for the use of such exhaust; but I consider the use of air-pressure to be preferable to an exhaust.

I do not limit or confine myself to the particular form, construction, or arrangement of any of the parts herein described, as they may be varied in many ways to suit the requirements of the construction without departing from my invention.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of pneumatic tubes G, wind-box B, and pneumatic lever H, as and for the purpose set forth.

2. The combination of pneumatic lever H with a self-acting exhaust-valve M, as and for the purpose described.

3. The combination of pneumatic tubes G, wind-box B, and key A, as and for the purpose set forth.

4. The combination of pneumatic tubes with pneumatic levers, substantially as herein shown and described.

5. The combination, with the exhaust-valve M, of the pivoted valve-rod N, substantially as described.

6. The combination of the grippers O, or their equivalent device or devices, with the valve M, substantially as herein shown and described.

7. The fingers S, operating substantially as described, in combination with the grippers O.  
JOHN H. ODELL.

Witnesses:

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