

(No Model.)

G. G. WACKER.
ELECTRIC ORGAN ACTION.

No. 326,359.

Patented Sept. 15, 1885.

Fig. 1.

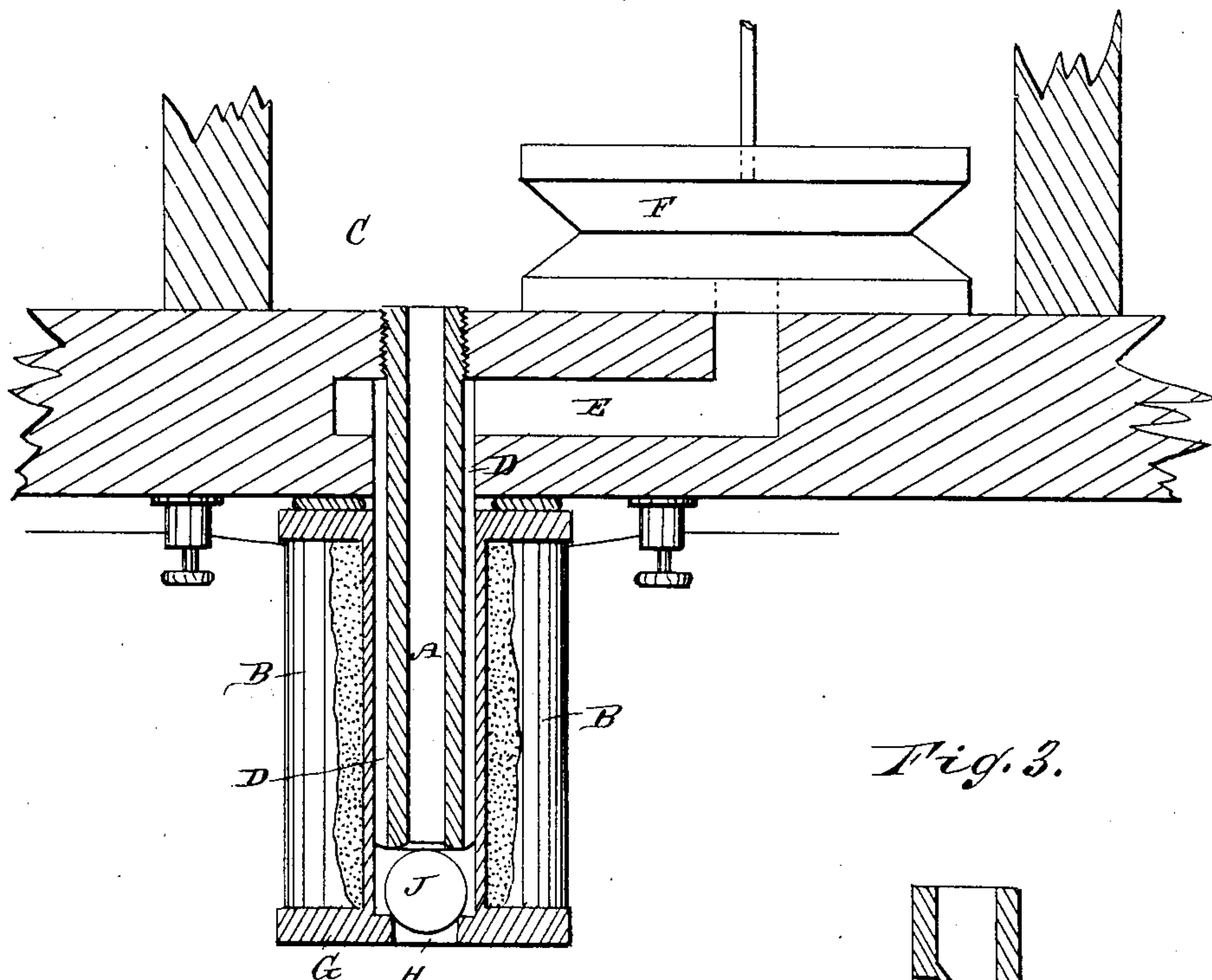


Fig. 3.

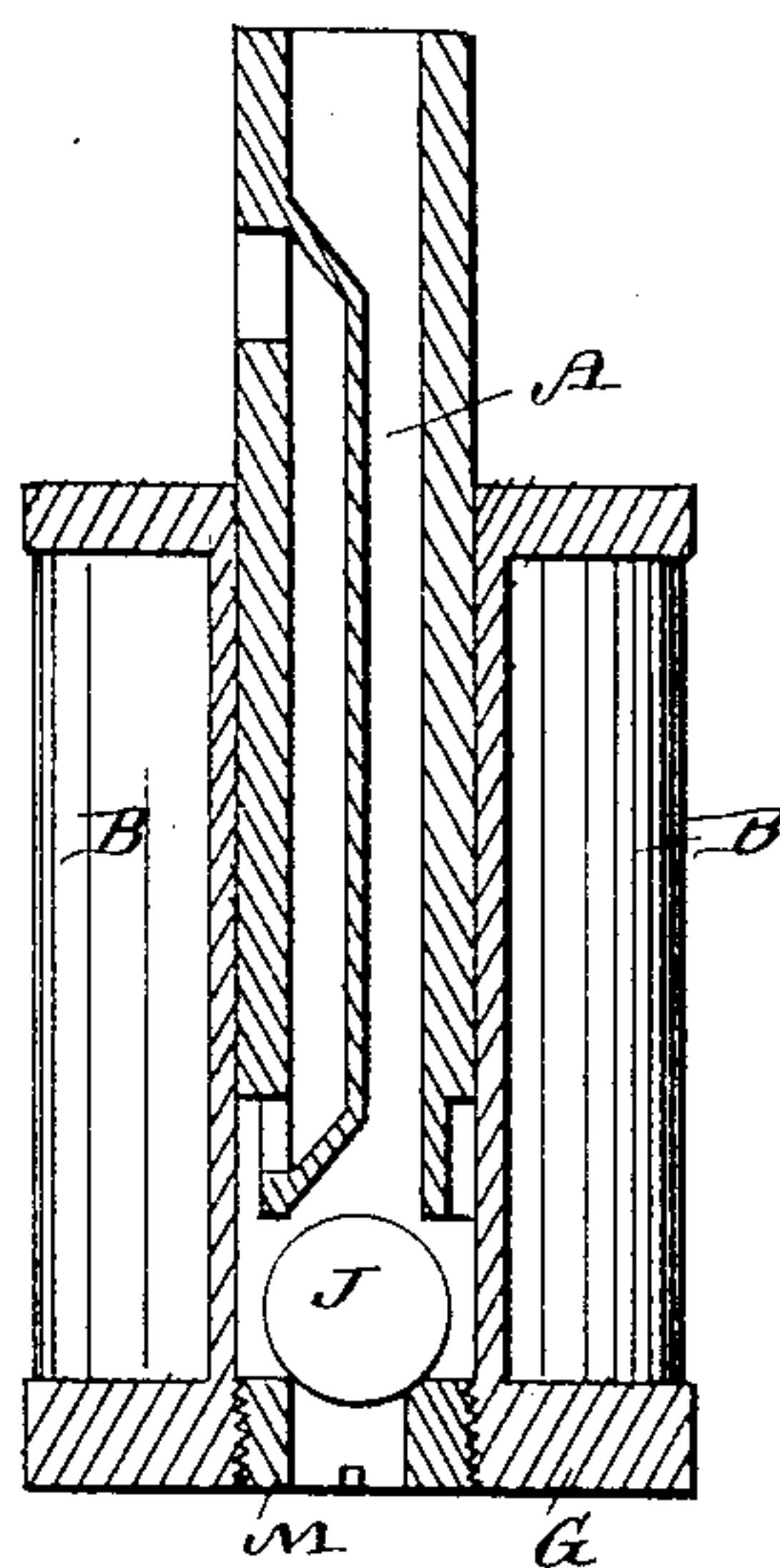
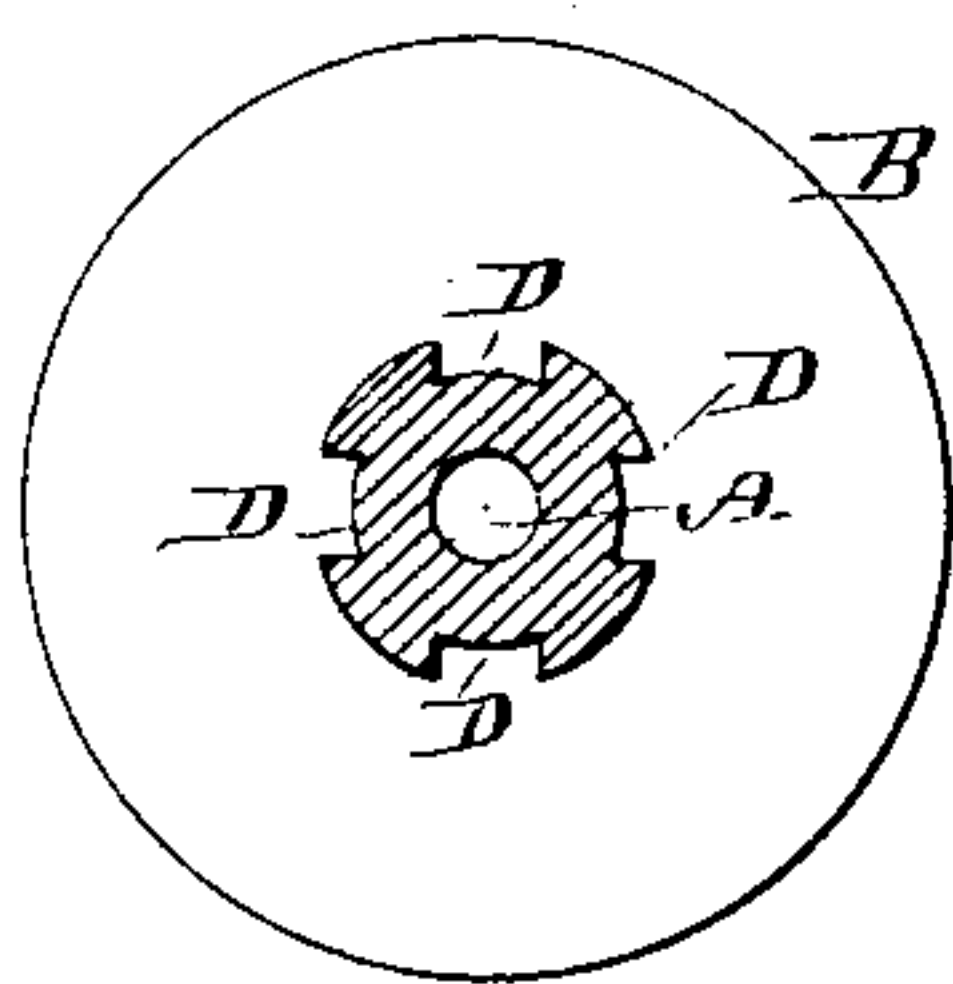


Fig. 2.



WITNESSES:

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ELECTRIC ORGAN-ACTION.

SPECIFICATION forming part of Letters Patent No. 326,359, dated September 15, 1885.

Application filed March 18, 1884. (No model.)

To all whom it may concern:

Be it known that I, GEORGE G. WACKER, of the city, county, and State of New York, have invented a new and Improved Electric
5 Organ-Action, of which the following is a full, clear, and exact description.

The object of my invention is to provide certain new and useful improvements in organ-actions operated by electricity, whereby
10 the friction is reduced, the binding of parts is avoided, and the springs are dispensed with.

The invention consists in the combination, with a pneumatic valve, of an electro-magnet
15 having two separate air-channels connected with the wind-chest and pneumatic lever, and of a ball-valve held below the bottom of the tubular core of the magnet.

The invention also consists in various parts and details and combination of the same, as
20 will be fully set forth hereinafter.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate
25 corresponding parts in all the figures.

Figure 1 is a sectional view of part of my improved electric organ-action. Fig. 2 is a sectional plan view of the magnet. Fig. 3 is a sectional view of a modification.

30 The tubular core A of an electro-magnet, B, is screwed into the bottom of the wind-chest C, and is in communication with the said wind-chest, the tubular core projecting downward.

35 In the outer surface of the tubular core longitudinal grooves D are formed.

A channel, E, extends from a small bellows or other pneumatic lever, F, on the upper surface of the bottom of the wind-chest C to
40 the upper parts of the grooves D, so that the pneumatic lever will be in communication with the said grooves. The pneumatic lever is connected with the organ-valves or with mechanism for operating the said valves.

45 The core A does not extend down to the lower end or to the bottom plate, G, of the magnet, which bottom plate is provided with a central aperture, H, closed by a ball-valve, J, resting on the upper surface of the said
50 plate. The bottom edges of the core are beveled to fit against the ball-valve. The dis-

tance between the lower end of the core and the plate G is so large that when the ball-valve J closes the opening H the lower end of the tubular core is open, and, vice versa, when
55 the lower end of the core is closed the opening H is open.

In place of providing the tubular core with the grooves D, the opening of the tube A can be divided by a longitudinal partition, as
60 shown in Fig. 3.

If desired, an apertured screw-plug, M, can be screwed in the opening of the plate G.

The operation is as follows: If the circuit is closed, the core A becomes magnetized and attracts the ball J, thus closing the lower end
65 of the tubular core and opening the opening H in the plate G. The compressed air in the wind-chest presses down the bellows or pneumatic lever F, and thus the organ-valve is op-
70 erated. The bellows can be compressed by the compressed air, as the interior of the bellows is connected by the channel E and the grooves D with the exterior air, the pressure of which is less than the pressure of the air in the wind-
75 chest. If the circuit is broken, the ball J drops and opens the lower end of the tubular core A and closes the opening H of the plate G. A communication is thus established between the chest and the interior of the bellows
80 F or pneumatic lever by means of the grooves D and the channel E. As the pressure on the inside and outside of the bellows is the same, the bellows rises and is again in position to be depressed as soon as the ball J is attracted by
85 the core A.

To prevent the ball being held on the end of the core by the residual magnetism, the ball is provided with a thin coating of paper or other non-conducting material.
90

The play of the ball can be adjusted by means of the screw M.

In my improved electrical organ-action no springs or pivoted parts are required, there is no friction, and no parts can bind or stick.
95

The pneumatic lever can be arranged on the outside of the wind-chest as well as in the same.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—
100

1. In an electric organ-action, the combination, with a pneumatic lever, of an electro-

magnet, a tubular core in the same, and a ball-valve or armature held between the lower end of the core and the bottom plate or disk of the magnet and within the said magnet, substantially as herein shown and described.

2. In an electric organ-action, the combination, with a pneumatic lever, of an electromagnet, a core having two separate air-channels, and a ball-valve for closing one of the said channels, substantially as herein shown and described.

3. In an electric organ-action, the combination, with a pneumatic lever, of an electromagnet having two separate air-channels, of which one is connected with the pneumatic lever and the other with the wind-chest, and of a ball-valve held below the core, substantially as herein shown and described.

GEORGE G. WACKER.

Witnesses:

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C. SEDGWICK.