

(No Model.)

2 Sheets—Sheet 1.

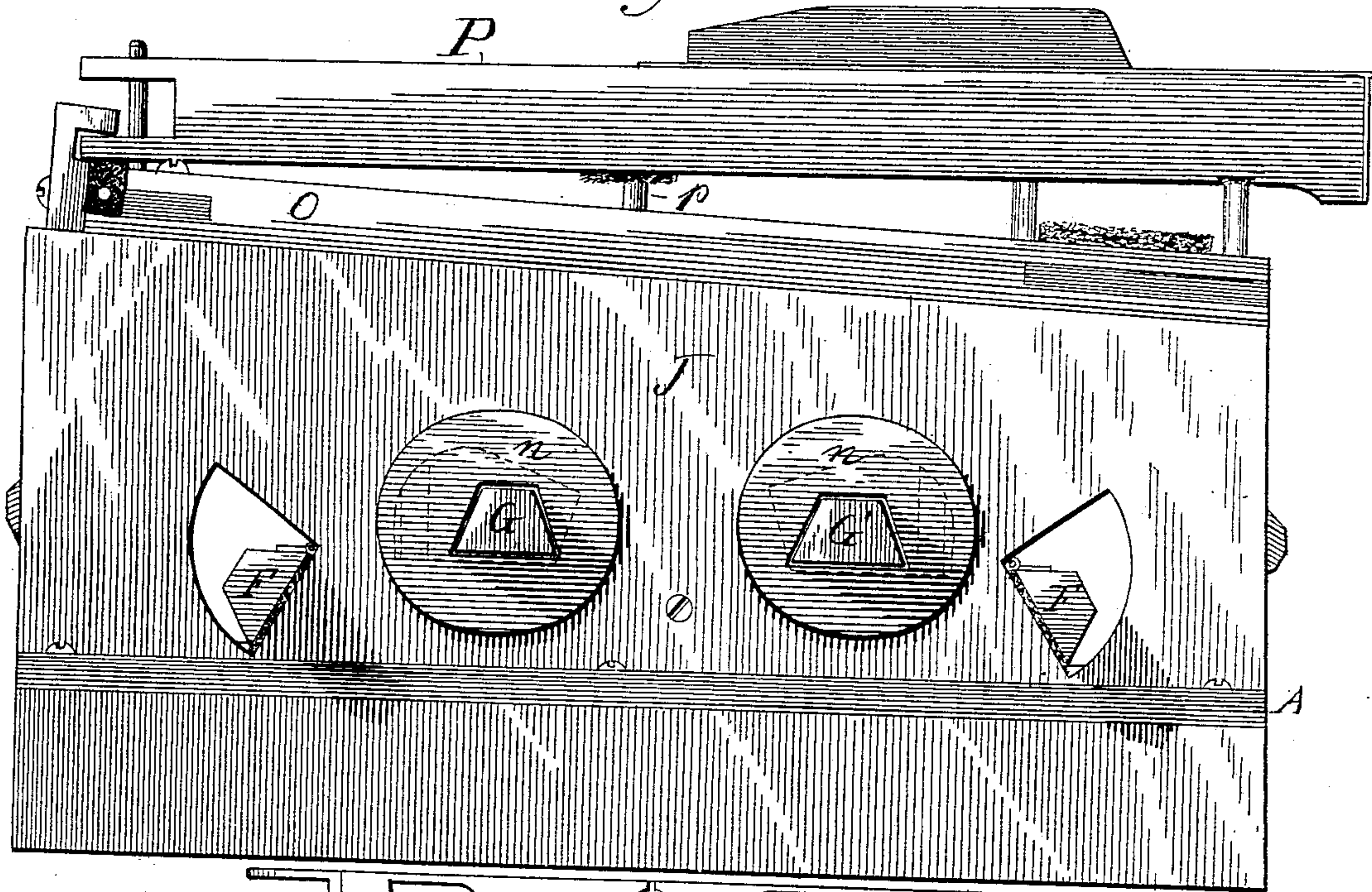
M. CLARK.

REED ORGAN.

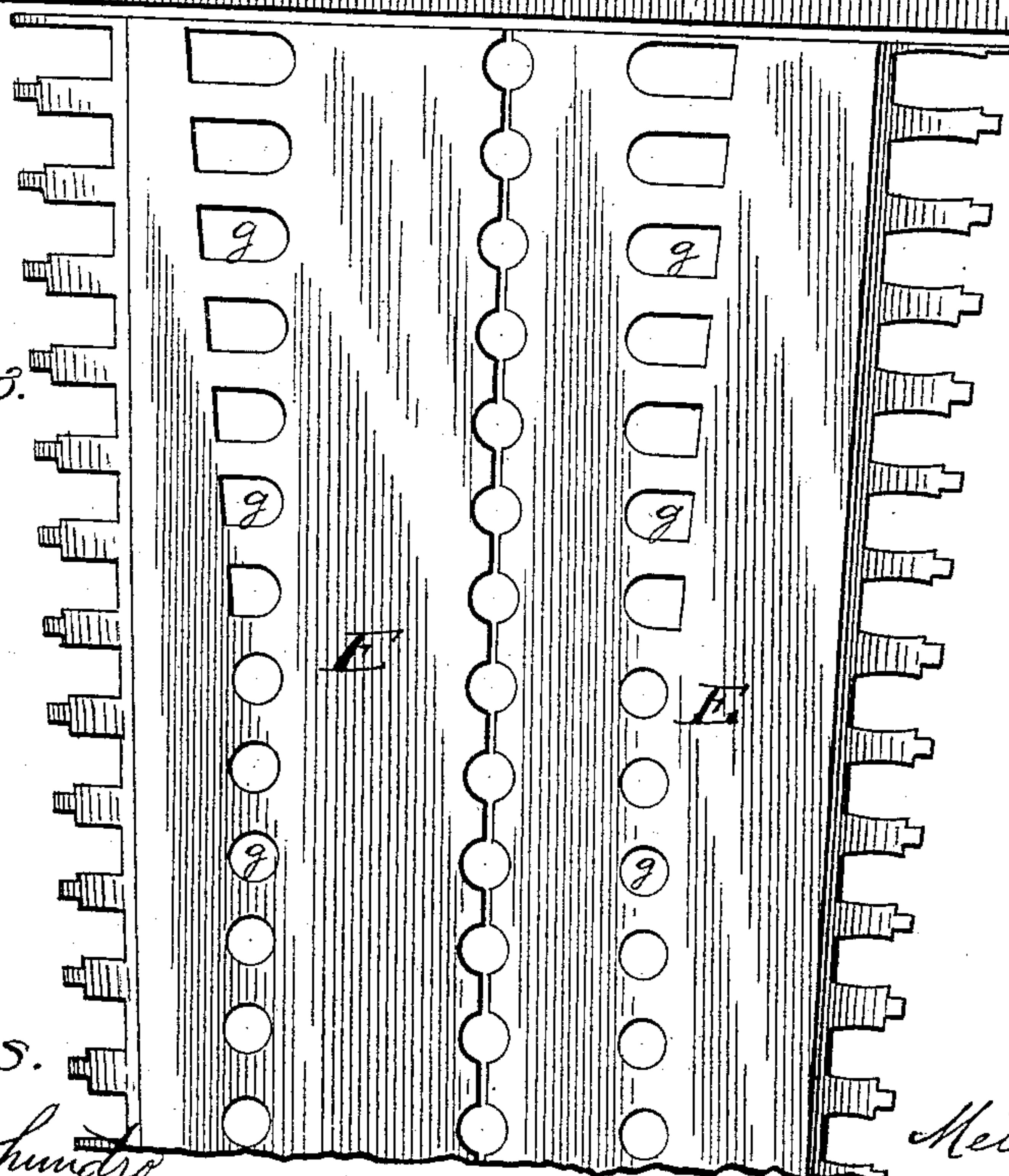
No. 292,099.

Patented Jan. 15, 1884.

Fig. 1.



Figs. 2 & 3.



Witnesses.

Chas. C. Quahndro.

Louis Volting

Inventor

Melville Clark

By

Wm. B. Lotz
Atty.

(No Model.)

2 Sheets—Sheet 2.

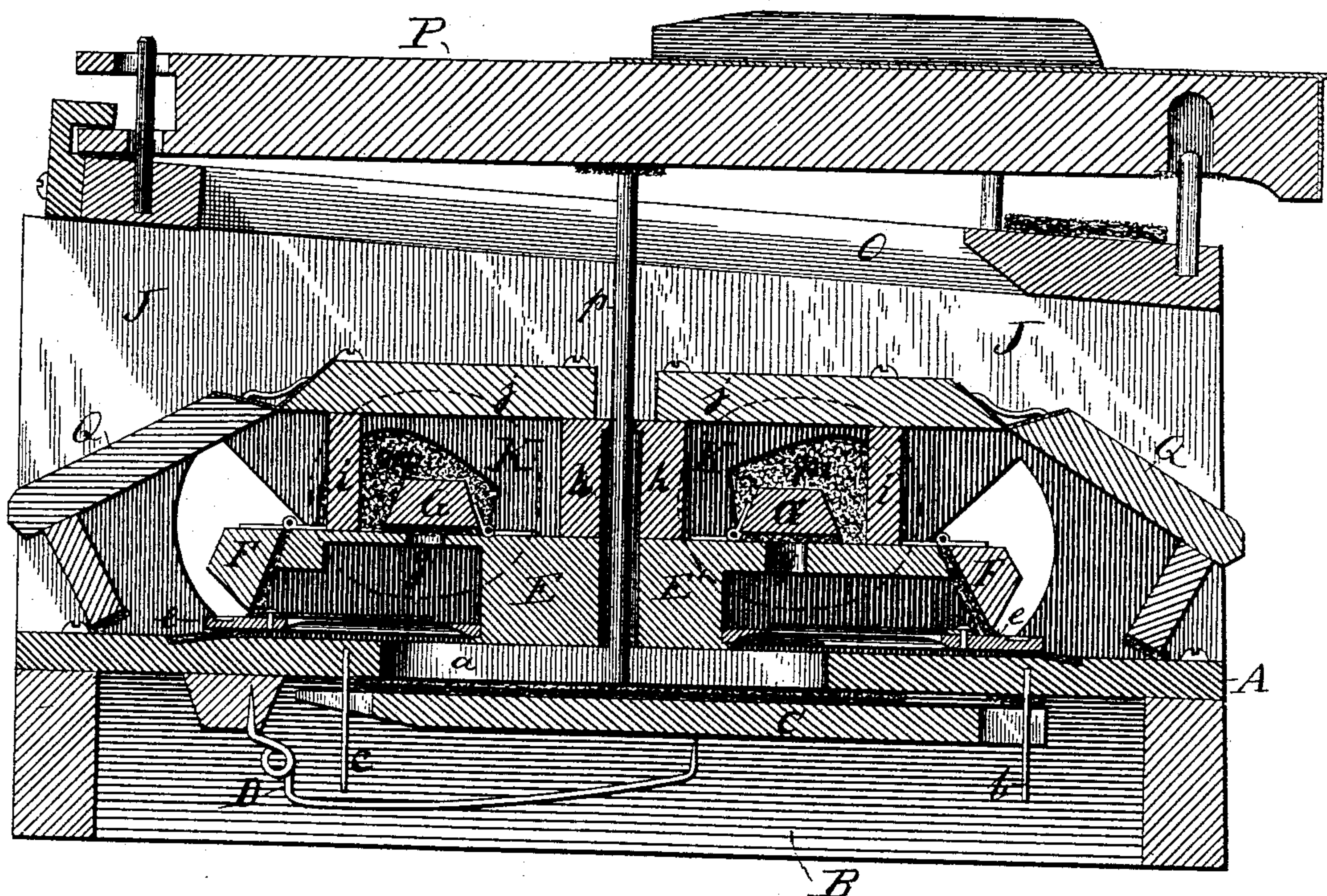
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Patented Jan. 15, 1884.

Fig. 2.



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UNITED STATES PATENT OFFICE.

MELVILLE CLARK, OF CHICAGO, ILLINOIS.

REED-ORGAN.

SPECIFICATION forming part of Letters Patent No. 292,099, dated January 15, 1904.

Application filed February 5, 1883. (No model.)

To all whom it may concern:

Be it known that I, MELVILLE CLARK, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful
5 Improvements in Reed-Organ; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which
10 form a part of this specification.

This invention relates to the actions of reed-organs; and it is my object to produce by simple means various distinct qualities of tone not heretofore accomplished.

15 My invention consists in arranging over the reed-cells of an organ a chamber, the only air inlet or outlet to or from which is through openings made in such reed-cells above the vibrating ends of the reeds, said openings being closed, when desired, by suitable mutes;
20 and, further, in the novel means employed for the closing the ends of such chamber where the ends of the mutes above referred to are passed therethrough.

25 In the accompanying drawings, Figure 1 represents an end elevation of the action; Fig. 2, a cross-section of the same, and Fig. 3 a detached plan view of the reed-cell boards.

Corresponding letters in the several figures
30 of the drawings designate like parts.

A denotes the reed-board, that is slotted to provide an air-passage, *a*, for each pair of reeds, to communicate with the wind-chest B, below such reed-board, through cushioned valves C,
35 oscillating on studs *b*, guided on steady-pins *c* and pressed to their seats by springs D.

Upon the reed-board A are glued two longitudinally-tapering boards E E', with their rear edges adjoining. These boards E E' are
40 gouged out from their under sides through their exterior beveled edges, to form cells for reeds *e* proportional to the increasing sizes of such reeds, that are shifted into bottom side grooves of such cells to lie close upon the reed-
45 board A and over the air-passages *a*. The end openings to the cells are closed by mutes F, that are hinged to the top edge, and are to be operated by stops.

Through the top of each reed-cell, and above
50 the vibrating end of each reed, there is cut an opening, *g*, which are in size proportional to

the reeds. These openings are covered by suitable mutes, G G', which are hinged each with one edge upon the reed-cell board, and are operated by suitable stops in any usual
55 manner.

Upon the reed-cell boards I secure a central strip, *h*, and two side strips, *i*, and secure cap-plates *j* to said strips to form a chamber, K, over each row of openings *g* and mutes G or
60 G'. Suitable end boards, J, of the organ-action are provided, and through each an opening, *m*, is formed for the passage therethrough of the ends of the mutes, such openings *m* being of sufficient size to allow of said mutes being
65 oscillated by the stops that are connected with the projecting ends of said mutes. Pasteboard disks *n* are mounted upon the projecting ends of mutes G G', and serve to close the openings
70 *m*, said disks being lined on their faces, which contact with outer face of end boards, J, with cloth or felt, which construction serves to render the chamber K as air-tight as possible without closing their joints with glue or cement.
75 On opening the mutes G the small amount of air that will be drawn or circulated through the openings *g* from the chambers K is so conducted to the reeds that it gives them immediate vibration by striking the end of the vibrating part of the reed-tongues, and the tone
80 so confined in the vacuum resonant chamber is made very smooth and pipe-like, and almost a fac-simile of a wooden-pipe tone of a great organ. On opening the ordinary mutes F the tone is discordant, windy, and jingling, while
85 all the harshness of a reed tone disappears at once when turned into the vacuum-chamber, where it becomes instantly modified to a sweet, flute-like quality, and is perfectly even from the lowest bass note to the highest treble note,
90 and has not a break in the quality.

By the above-described arrangement there can be produced in an instant the loudest or the softest tone any organ is capable of, and at the same time four distinct qualities of tone,
95 besides a perfect "vox-humana" effect, all the qualities of tone being very marked. They are produced in the following order, viz: For the first combination the stops for mutes F are pulled in the ordinary way; for the second,
100 the stops that open the mutes G are pulled, and mutes F are closed; for the third com-

bination, the mutes F and G for the front row of reeds only are opened; and for the fourth, the mute F for the front row of reeds and both mutes G and G' are opened.

5 O is the key-board; P, one of the keys. p is a valve-rod, and Q are the swells, that are all of the usual construction and arrangement.

The organ is built in the ordinary way to all outside appearances; and my improvement
10 does not interfere with the appliances of the common reed-organ, as sub-bass coupler, &c.

The additional expense for applying my improvement to an organ-action is so exceedingly small that it will not increase the cost of man-
15 ufacture to any notable extent.

I am aware that a chamber arranged above the cell-board of a reed-organ and having communication with said cells, said communicating passages being closed by a mute or stop,
20 has been used; but in such cases it has heretofore been the custom to provide such chamber with an inwardly-opening valve, which is opened when but a small amount of air is contained in such chamber; and, further, when
25 the chamber above referred to has been employed, it has been customary to pass the stems for operating the reed-valves therethrough. This construction and arrangement I disclaim, as it would be impracticable in connection with
30 my invention, it being especially desirable that as much of a vacuum as possible should be created in my chamber without gluing or bushing the parts of the same.

By experiments I have found that it is prac-
35 tically impossible to exclude all air from my

chamber K, the pressure being such that a small quantity of such is forced through the joints of the top and sides thereof; and I have also found that the small quantity of air thus ad-
40 mitted to said chamber, after the parts thereof have been formed with as close joints as possible without gluing or bushing, is the exact quantity needed to obtain the quality of tones sought, and that when other openings are formed and
45 more air admitted the tone becomes harsher in proportion to the quantity thus admitted.

What I claim is—

1. In a reed-organ, the boards EE', provided with an opening, g, for each reed-cell, in combination with mutes G, for closing said open-
50 ings, and a chamber, K, said chamber having no other inlet or outlet than through said openings g, as and for the purpose set forth.

2. In a reed-organ, the boards EE', that form the reed-cells and have openings g, one for each
55 reed-cell, communicating with vacuum-chambers K above such reed-cells, and provided with mutes G, the ends of which are passed through openings m in end boards, J, and have
60 disks or washers n, for closing the ends of such chambers K, all constructed and arranged substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

MELVILLE CLARK.

Witnesses:

LOUIS NOLTING,
H. W. HUEHL.