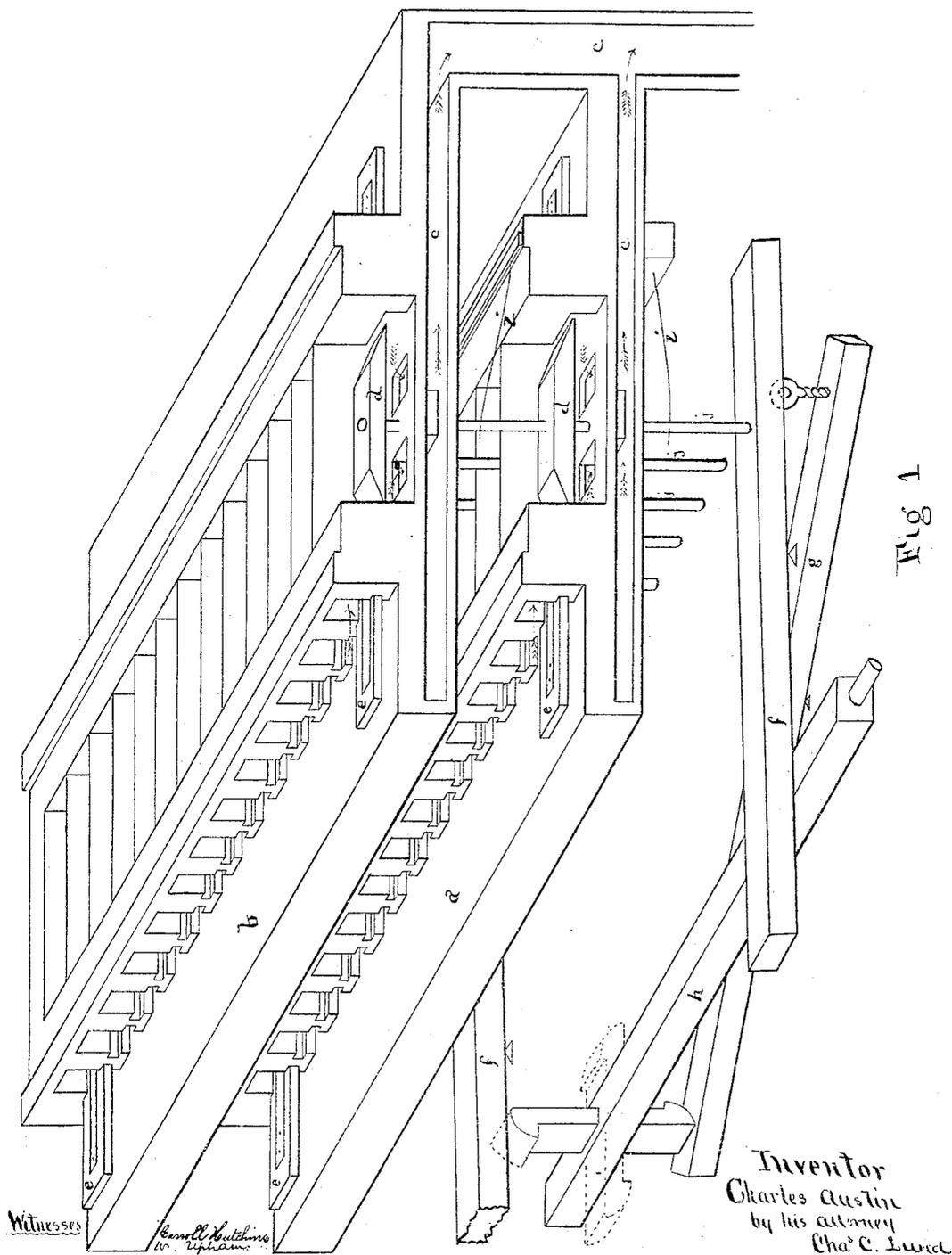


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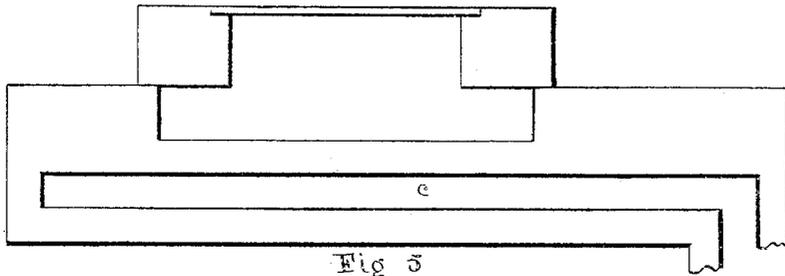


Fig 5

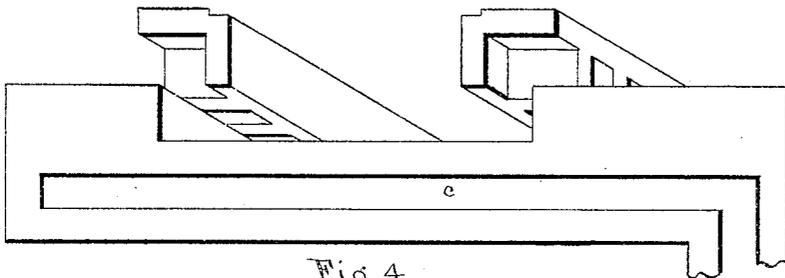


Fig 4

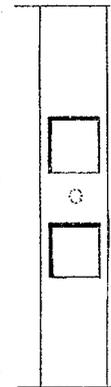


Fig 7

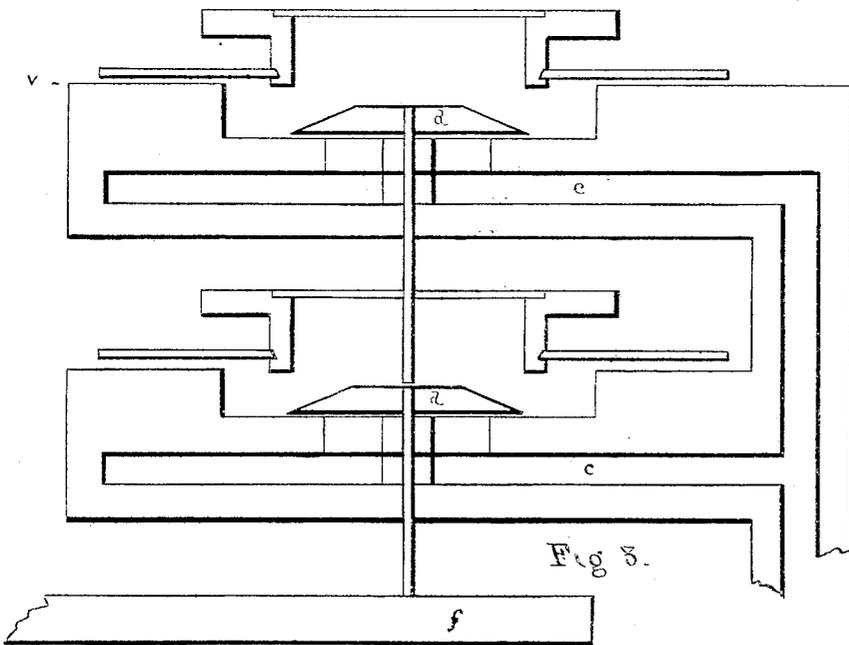


Fig 3.



Fig 2

Witnesses
W. Upham,
C. Hutchins

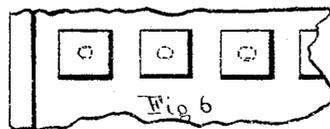


Fig 6

Inventor
Charles Austin
by his attorney
Chas. C. Sand

UNITED STATES PATENT OFFICE.

CHARLES AUSTIN, OF CONCORD, NEW HAMPSHIRE.

IMPROVEMENT IN REED-ORGANS.

Specification forming part of Letters Patent No. 135,975, dated February 18, 1873.

To all whom it may concern:

Be it known that I, CHARLES AUSTIN, of Concord, in the county of Merrimack and State of New Hampshire, have invented an Improved Action for Reed-Instruments; and I do hereby declare the following to be a full and accurate description thereof, reference being had to the accompanying drawing and the letters of reference marked thereon.

My improvement consists in the arrangement of a single set or two or more sets of reeds, one set above another, in such a manner that the action of the air upon the valves will tend to close instead of tending to open the valve, permitting the use of much lighter springs than are employed to close the valves of reed-instruments, as ordinarily constructed, giving an easy action to the keys when any number of sets of reeds is employed with which the instrument is furnished. I also claim that the reeds will respond more promptly to the touch upon the keys by my arrangement than by any other arrangement in use.

Referring to the drawing, Figure 1, at *a* and *b* are shown two sets of reed-boards, each of which may contain one or two sets of reeds. More reed-boards may be used, if desired, placing them one above another, in the same manner as shown. A single set of reed-boards may also be arranged on the same principle. *c*, the wind-chest; *d d*, valves; *e*, reed-blocks; *g*, the coupling-lever; *h*, the coupler; *i i*, springs; *j*, valve-pins. The bellows employed are the ordinary suction-bellows, the air passing to the reeds through the openings or cells which contain the reed-blocks, and being permitted to act upon the reeds by means of the valves, raised by the valve-pins resting upon the keys. The valve-pins for each set, except the lower one, rest upon the top of the valves of the set below. The valve-pins of the lower set rest upon the keys. The valve-pins are firmly attached to their respective valves. Each valve must be separated from its neighbor by a thin partition, as shown in the drawing. I am enabled to place my successive sets of reeds and reed-boards one above the other only by passing the valve-pins through the wind-chest. I do this, and at the same time prevent leakage of air through the holes through which the valve-pins pass, by gluing

small blocks between the top and bottom of the wind-chest, and passing the valve-pins through the blocks, so that the air from the wind-chest does not come in contact with the valve-pins; and to allow the air to pass freely from the front to the back of the wind-chest, I leave sufficient spaces between the blocks, as shown in the drawing.

Blocks may be used, or the pins may be passed through the wind-chest through any kind of tube or case of wood or metal, so that the air shall not escape through the holes occupied by the valve-pins, but at the same time shall be permitted to pass freely from the front to the rear of the wind-chest. The position of these blocks or tubes with reference to the valves and wind-chest is shown at Fig. 7, with the apertures between them through which the air passes from the front to the rear of the wind-chest.

By thus passing the valve-pins through the wind-chest I am enabled to arrange my valves so that the action of the bellows will create a suction upon the valves which will tend to close it, instead of placing my valve so that the action of the bellows will tend to open it, and using a spring of sufficient force to hold the valve closed against the pressure of the air, as instruments are now constructed; and I am enabled to place my successive sets of reeds above each other, in a position where they are easily accessible for tuning and adjustment when they may need adjustment.

The detail of the construction of my invention is illustrated by the sections, Figs. 2, 3, 5, 6, and 7.

Fig. 2 is a longitudinal section, showing the position of the valves and blocks which conduct the valve-pins through the wind-chest. Fig. 3 is a vertical transverse section upon a line drawn through the center of one of the cells, as from *x*, Fig. 2. Fig. 5 is a vertical transverse section upon a line drawn through the center of one of the partitions which divide the cells, as at *y*, Fig. 2. Fig. 6 is a horizontal section at the top of the wind-chest, showing the holes covered by the valves, as from *z*, Fig. 2. Fig. 7 is a horizontal section, showing the blocks through which the valve-pins pass, as upon a line drawn from *w*, Fig. 2. Fig. 4 is a horizontal section as seen from below upon

a line drawn horizontally from *v*, Fig. 3. Fig. 1 shows the arrangement with the cover and one end removed to show the interior.

I use small and light wire springs upon the valve-pins, as shown at *i*, Fig. 1, to make the action of the valves more certain.

I claim—

In reed-instruments having either one reed-set or two or more reed-sets, placed one above

the other, the valve-pins passing through the wind-chest, in combination with the blocks, tubes, or casings, substantially as described.

Concord, N. H., May 20, 1872.

CHARLES AUSTIN.

Witnesses:

CHAS. C. LUND,
CARROLL HUTCHINS.