J. R. PERRY & S. R. PERRY.

Improvement in Reed-Organ Bellows.

No. 115,635. Patented June 6, 1871.

Fig 1

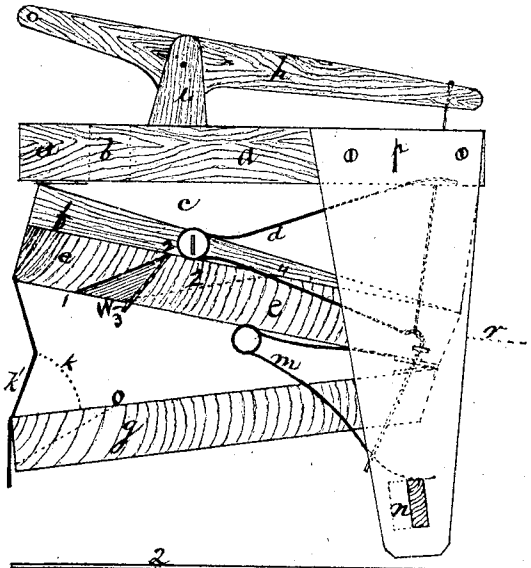
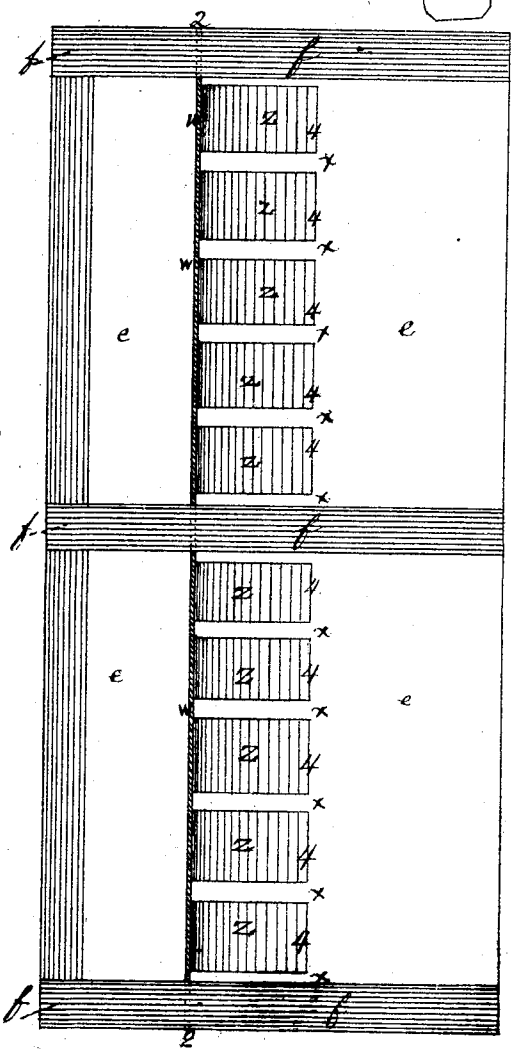


Fig 2



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Improvement in Organ Bellows

Witnesses
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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

JOSEPH R. PERRY AND SAMUEL R. PERRY, OF WILKESBARRE, PA.

IMPROVEMENT IN REED-ORGAN BELLOWS.

Specification forming part of Letters Patent No. 115,635, dated June 6, 1871.

We, JOSEPH R. PERRY and SAMUEL R. PERRY, of Wilkesbarre, in the county of Luzerne and State of Pennsylvania, have invented a new and useful Improvement in the Construction and Operation of Organ-Bellows, of which the following is a description, reference being had to the drawing relating to this invention.

The objects of this invention are, first, to avoid the necessity of constructing valve-chambers in horizontal organ-bellows, and at the same time arrange the clappers or leathers to operate without noise; second, to arrange the expanding springs in such a way as to be able to make the most rapid transition in playing from very loud to very soft; third, to prevent the thumping noise occasioned by the reacting of the exhaust-boards against the vibrating-boards, when made in the usual way.

Figure 1 shows an end view of the bellows, in which *a* is the upper board, on which the reeds are secured; *b*, the opening, to pass the air from the reeds into chamber *c*, which is expanded by the springs *d*, operating against the vibrating-board *e*.

The upper portion of the vibrating board has a strip or ledge at each end and in the middle, as shown by letter *f*, which is also shown on the top side of the board, Fig. 2, *f f f*. These strips are used to hold the board together, which is made of two pieces, as follows: The front piece of this board is beveled off according to the dotted lines shown on the end view, Fig. 1, running from 1 to 2, and the back end is then beveled off, running from 2 to 3, and on this face is placed the leather valve or clapper *w*. Then on the dotted line running from 3 to 4 are cut out the slots *z*, which admit the air through the said valve.

A plan view of the vibrating board *e* is shown in Fig. 2. It will be noticed that a partition-wall is left standing between each slot or opening, as shown by the *x* on each, in Fig. 2. In forming this board, after the above-described slots are cut away, the valve-leather *w* is glued against the upper edge of the front board, and also against the back board under the cross-pieces *f f f*, Fig. 2. It will be seen that by this method of constructing the valve it will lie against the openings by gravity, and is raised sufficiently to draw air out of chamber *c* when operated on by the exhaust-board below. Letter *g* indicates the exhaust-board, attached to the vibrating-board in the usual manner. The board is now open and no reacting-spring shown.

In constructing the valves for these boards they may be made as the one above described, or in the following manner, as shown in Fig. 1: After facing off the front edge of the board *g* we proceed to cut out slots, running in the direction of the dotted line shown on the end at letter *o*, a sufficient distance back from the front to admit the air passing under the folds or flaps *k'* of the exhaust-bellows, when it is brought up against board *e*. We have discovered that by letting the said folds cover about three-fourths of the air-slots, as shown by the dotted line *k*, when the air is nearly expelled, it will act against the freedom of its passage, and diminish the action and force of the exhaust against the vibrating board *e*, thus preventing the noise usually made by exhaust-boards. The spring *d* is placed on the outside of the bellows and secured by a screw to hold it in a uniform position; its lower end is made to pass down and through a staple. To this end is attached a cord or wire, passing up and through the upper board of the bellows and fastened to the lever *h*, which lever is fastened to the post *i*. The upper and curved end of the spring rests against the upper board *a*. By this means the pressure of spring *d* may be removed at will by operating on the lever *h* either by a foot-pedal or knee-lever, as desired, and the tone of the instrument immediately changed from very loud to very soft—as by thus operating the spring *d* and lifting it away from its bearing there remains only the pressure of the remaining spring or springs in the expanding-chamber *c*, which must of necessity require a much longer time to expand itself and soften the tone in the proportion of the pressure remaining.

Having thus described our improvement, what we claim as our invention, and desire to secure by Letters Patent, is—

1. The inner fold *k'* of the exhaust-bellows,

arranged as described, in connection with the valve-passage *o*, for the purpose of partly covering said passage when the fold is contracted.

2. The expanding-spring *d*, arranged in connection with the lever *h* and the bellows-boards, as described, and for the purpose of taking the spring off at any point, so as to reduce the pressure of the said bellows.

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