(No Model.)

J. W. TRAINER.

ORGAN BELLOWS.

No. 252,338. Patented Jan. 17, 1882.

Fig. 1

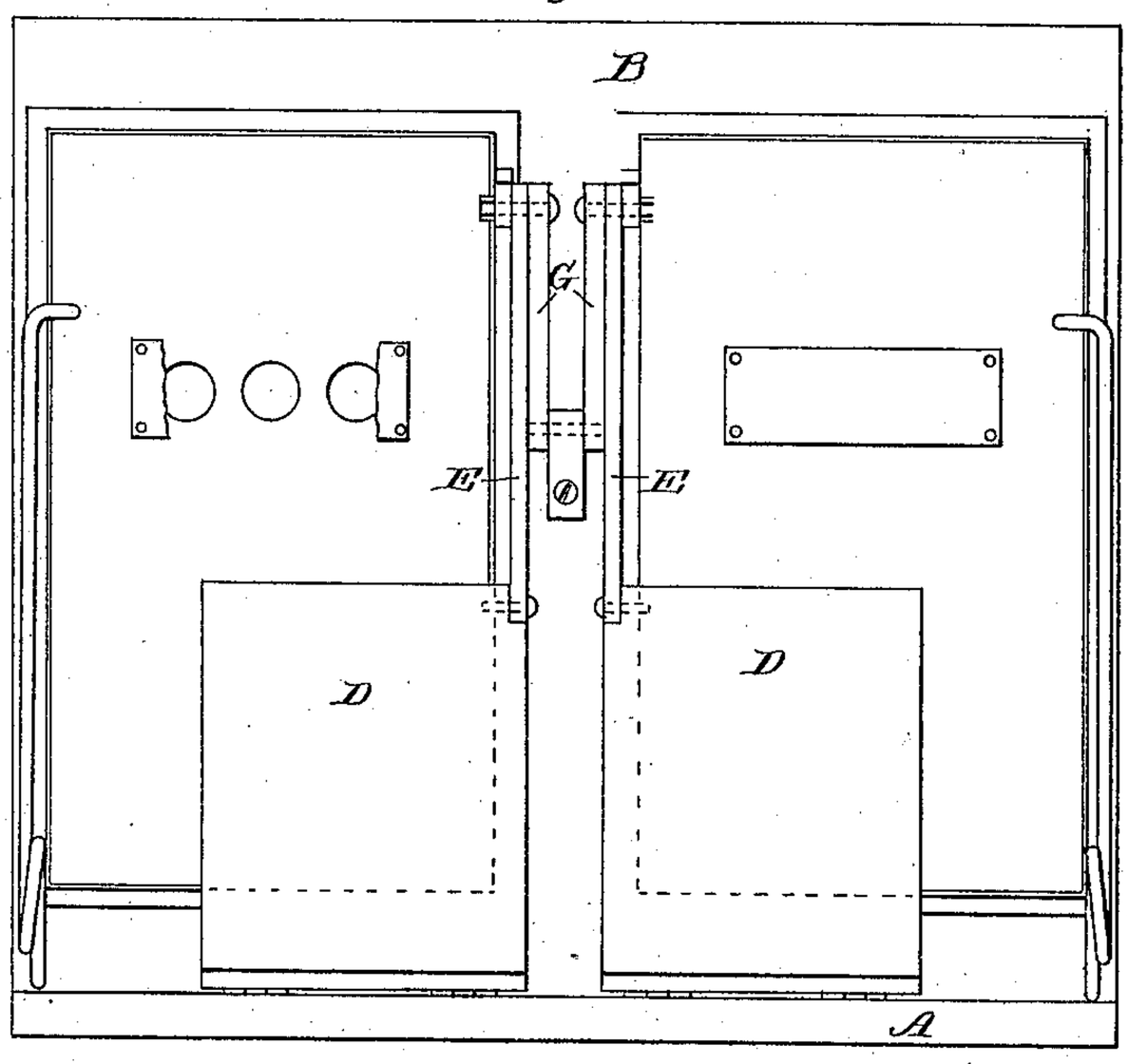

Fig. 2

Fig. 3.

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ORGAN-BELLOWS.

SPECIFICATION forming part of Letters Patent No. 252,338, dated January 17, 1882.

Application filed October 25, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. TRAINER, a citizen of the United States of America, residing at Fort Wayne, in the county of Allen and State of Indiana, have invented certain new and useful Improvements in Organ-Bellows; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 is a front elevation of so much of an organ as is necessary to illustrate the nature of my invention. Fig. 2 is a vertical section between the pumpers. Fig. 3 is a similar section, showing a modified form.

In the drawings, A represents the bottom or supporting part of the device; B, the vertical perforated partition, through which the air is drawn by the pumpers; C C, the pumpers, and D D the pedals or treadles.

It will be seen that the pumping apparatus is of the character used in those organs in which a vertically-arranged air-receiver is employed and a vertical partition or upright through which the air is drawn from the receiver.

Heretofore it has been customary to operate the vertically-arranged pumpers by means of either a belt or strap with pulleys, or by complicated crank mechanisms. The object of this invention is to avoid the difficulties, inconveniences, and expense incident to the employment of the mechanisms customarily used, and aiming to make practicable the pumpers of a bellows which shall combine cheapness of manufacture and durability to a greater degree than has been accomplished heretofore. The use of straps or belts has necessitated an expensive apparatus for supporting and guiding the straps, the rollers and braces being a large item in the manufacture of the cheaper organs; and, moreover, the straps used for this purpose are liable to much wear and to a variation in length, which cause much difficulty. By two or three cheaply-constructed pieces of wood and two or three pivot-screws I have succeeded in providing a pump-operating mechanism which is much more durable than the straps or belts heretofore used, which operates the pumpers with greater ease and power, and is of much less cost.

In the drawings, E is a link or rod pivoted to the treadle at *a*. At its upper end it is pivoted to another link or rod, F, which in turn is pivoted also to the inner edge of the pumper-board *b*. The pivot *c*, which connects the links or rods E and F, unites them both pivotally to a lever, G, which at its inner end is pivoted to the partition B between the pumpers C C. Preferably it is connected to the partition by a bracket or offset, H, though it may be secured to the partition by means of a recess formed therein, if desired.

The link or rod E is, when the treadle is in its uppermost position, as near as possible at right angles to both the link F and the lever G, it being, however, at somewhat of an acute angle to the last said lever, so that as the foot of the operator descends, the angle approaches a right angle, and the resistance of the foot is lessened, while, on the other hand, the movements of the link F and the bellows are not cramped or interfered with by the lever. The lever operates to always hold the pivot *c* of the links E and F at the proper point. By this mechanism a pumper may be operated with about one-half of the power that is necessary to operate it if use be made of the ordinary strap and roller appliances.

The parts E, F, and G, as will be readily seen, are exceedingly simple in construction and can be made at a cost which is practically merely nominal, while at the same time they will last as long as any other part of the bellows.

In Fig. 3 I have shown a modified form of the pumper-operating mechanism, which may be employed, if desired. In this case the parts may be of metal, but they preserve the advantages already set forth in the matter of a saving of power and of convenience of arrangement and attachment. The part F in this case is formed in the shape of a bell-lever, one of the arms of which is pivoted to the pumper-board near the upper end, the longer arm being connected to the treadle by a rod or link, E. A short lever, G, is pivoted to the part F, near the middle thereof, and is also pivotally connected to the partition B in the manner already described. A construction of this latter sort can be made to occupy an exceedingly small

space, and is on this account especially desirable under many circumstances.

What I claim is—

1. In an organ having a pumping mechanism of the character described, the vertical link E, the part F, pivoted to the link E and to the pumper, and a supporting arm or lever, G, pivoted between the pumpers to the vertical board which supports the pumpers, substantially as set forth.

2. The combination, with the treadle, the pumper, and the vertical board which supports the pumpers, of the link E, pivoted to the treadle, the link F, pivoted to the pumper, and the lever G, pivotally connected to the link F and to the board B at a point below the inner end of the link F, substantially as set forth.

3. The combination, with the treadle, the pumper, the vertical board B, which supports the pumper, and the series of levers pivotally connected to the treadle, to the pumper, and to the board B, of devices, substantially such as described, for supporting the levers upon the board B between the pumpers, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN W. TRAINER.

Witnesses:
ROBERT STRATTON,
HAMILTON BAKER.