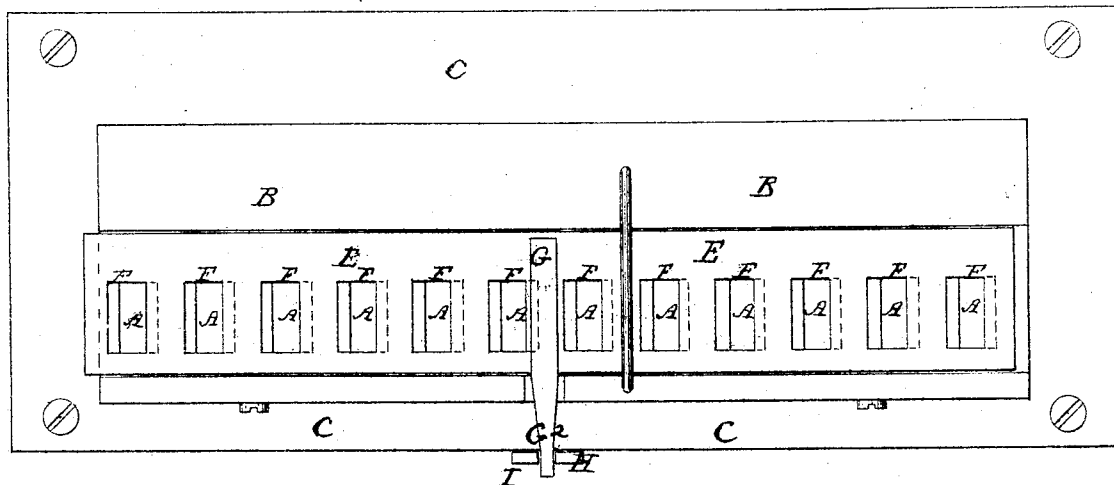


A.K. HEBARD . ORCANS.

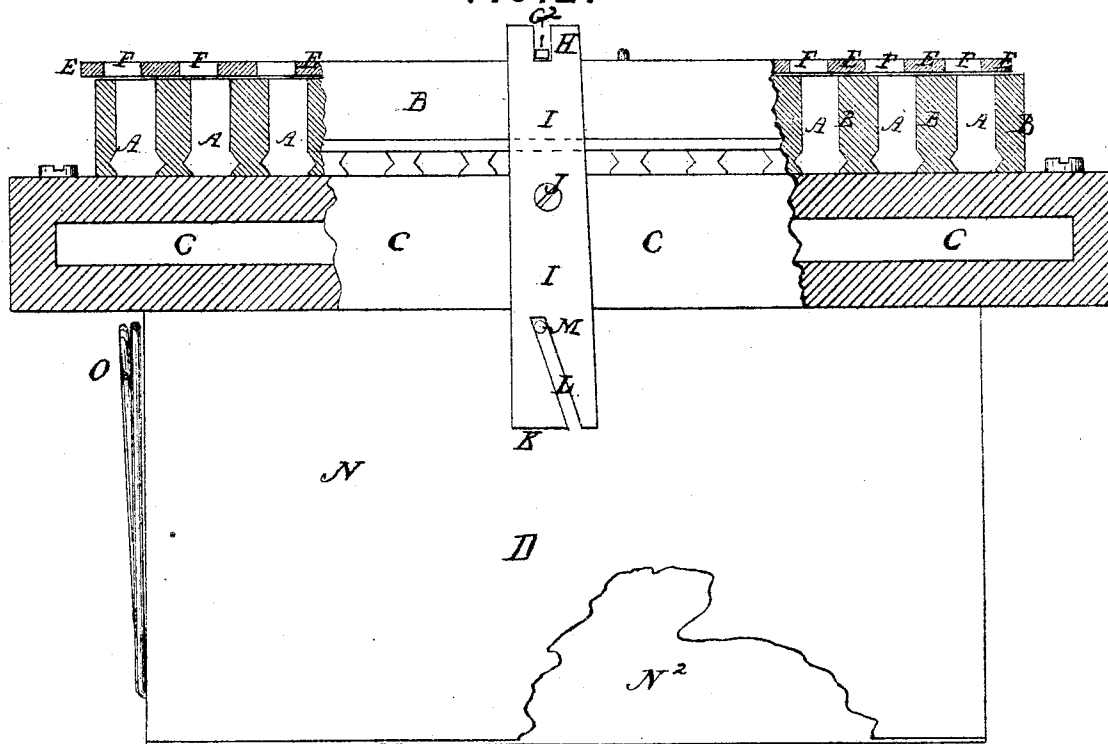
No. 121,246.

Patented Nov. 28, 1871.

FIC. 1.



FIC. 2.



WITNESSES.

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C. H. Pease

INVENTOR.

Albert K. McClure,

UNITED STATES PATENT OFFICE.

ALBERT K. HEBARD, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN REED ORGANS.

Specification forming part of Letters Patent No. 121,246, dated November 28, 1871.

To all whom it may concern:

Be it known that I, ALBERT K. HEBARD, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Organs; and that the following is a full and exact description of the same, reference being had to the accompanying drawing.

In reed organs the tones of the reeds are observed to more or less "flatten," and the object of this invention is to prevent such "flattening." For such purpose the invention consists in the arrangement of a slide over the air-passages to the reeds for opening and closing the same, in a partial degree, to the passage of air to the reeds, which slide is connected with the bellows to receive motion therefrom, and is so actuated thereby as to close and open in a partial degree, the air-spaces leading thereto in direct proportion to the variations of the bellows action, thereby securing a uniformity of action of air upon the reeds at all positions of the bellows, and, consequently, an even quality of tone to each reed, preventing its flattening.

In the accompanying drawing the present invention is illustrated as arranged in connection with a bellows adapted to sound the reeds by a suction of air through them; Figure 1 being a plan view, showing a series of reed-chambers with my improvement applied; Fig. 2, an elevation from one side with several of the reed-chambers and the air-box to which the suction-bellows are connected in partial longitudinal vertical section.

A A in the drawing represent a series of spaces or chambers arranged in a common frame, B, and each constructed for the reception of a reed. The several reed-spaces A, as in reed organs, communicate with the ordinary exhaust air-box C below the same, with which is to communicate the bellows D of the organ. The bellows D are constructed with a spring, O, for throwing and holding the leaves N N² apart and otherwise similarly to the ordinary exhaust or suction-acting bellows of organs for the purpose of sounding the reeds in spaces A by sucking or drawing air through them; E, a slide, arranged for a sliding motion from end to end of the frame B and along and over the line of the reed-spaces A. This slide E is provided with a series of openings, F, corresponding in shape, size, and relative position

apart to the openings leading into the reed-spaces A, so that the slide E can be brought by its openings F to leave a free and uninterrupted entrance for air to the reed-spaces A, or to partially or wholly close the same to the entrance of air; G, a rod, fixed to slide E and, by its projecting end G², placed in the bifurcated upper end H of a vertical lever, I, turning upon a fulcrum, J, fixed in the walls of the air-chamber C; L, a slot in lower end K of lever I and extending along the lever for a portion of its length in a diagonal or incline direction; M, a pin, fastened to one leaf, N, of the bellows D and in position to connect the said leaf N with the diagonal slot L of the lever I. As the leaf N, which is the hinged or swinging leaf of the bellows D, by exhausting air from the chamber between the leaves N and N², moves toward the leaf N², a movement is produced of the slide E, hereinbefore referred to, along the length of the reed-frame B across the several reed-spaces A; the slide moving in that case, which is the closing movement of the leaves N and N², to the right, and in the other case, when the leaves N N² move away from each other, to the left. The leaf N is thrown open by the torsion action of the spring O, hereinbefore referred to, as in ordinary exhaust-acting bellows, which spring, when the leaf N is upon or against the leaf N², is at its greatest torsion, as is obvious, and between its extreme closed and open positions at a torsion of proportionate strength.

From the above description it is obvious that with a proper relative arrangement of the slide E upon the reed-spaces for the proper pitch of tone to the reeds when sounded with the leaves N N² of bellows open, or nearly so, to their full extent—that is, with the slide E arranged by its openings F to partially close the air-passages to the reeds, (see Fig. 1)—as the leaf N approaches the leaf N² the reed air-passages, by the movement of the slide E, continue to be further opened, when the leaf N having reached the leaf N², at which point the spring O is at its greatest torsion, the said air-passages are fully open, giving a free and uninterrupted communication of air with the reeds. By an arrangement and action of the slide in connection with the action of the bellows to an organ, substantially as above described, a regulation of the passage of air to the reeds is secured, it being by the movement of the slide actuated by the bellows in direct proportion

to the varying conditions of the action of bellows, whereby, as is self-apparent, a uniform quality or pitch of the tone to the reeds is obtained and the flattening of the same obviated.

Although I have herein particularly described my improvement in detail in connection with a suction or exhausting-bellows, it is adapted as well to bellows arranged to force or blow air through the reeds, it being manifest that the position of the several parts for such adaptation have only to be reversed, producing then a substantially similar action and effect in connection with the passage of air to the reeds.

In lieu of the slide E a hinged flap piece may

be employed and, as it is obvious, the same result accomplished.

Having thus described my improvement in organs, I shall state my claim as follows:

A slide, E, or its equivalent, arranged in connection with the reed or reeds of an organ and connected to the bellows thereof for operation, substantially as and for the purpose described.

The above specification signed by me this 19th day of July, A. D. 1870.

ALBERT K. HEBARD.

Witnesses:

ALBERT W. BROWN,
EDWIN W. BROWN.

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