

No. 793,983.

PATENTED JULY 4, 1905.

W. C. BOWEN.
FLAP VALVE FOR PIANO PLAYERS.
APPLICATION FILED JULY 30, 1904.

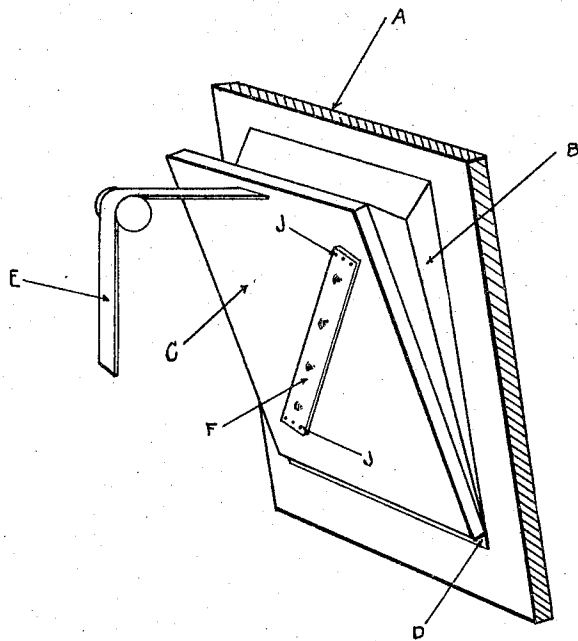


FIG. 1.

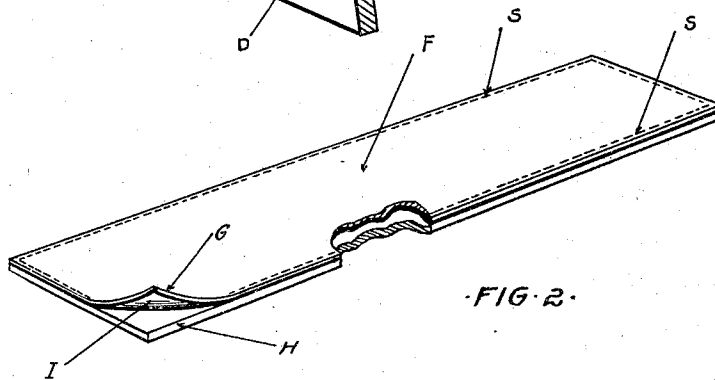


FIG. 2.

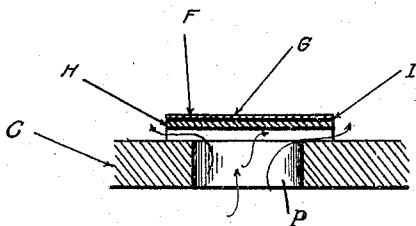


FIG. 3.

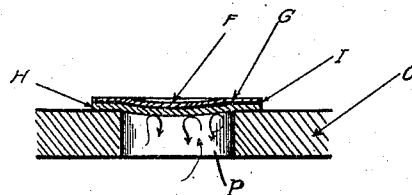


FIG. 4.

WITNESSES

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WALTER C. BOWEN, OF DETROIT, MICHIGAN, ASSIGNOR TO FARRAND ORGAN COMPANY, OF DETROIT MICHIGAN, A CORPORATION OF MICHIGAN.

FLAP-VALVE FOR PIANO-PLAYERS.

SPECIFICATION forming part of Letters Patent No. 793,983, dated July 4, 1905.

Application filed July 30, 1904. Serial No. 218,826.

To all whom it may concern:

Be it known that I, WALTER C. BOWEN, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Flap-Valves for Piano-Players, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to new and useful improvements in the construction of flap-valves for pumping-bellows, as hereinafter more fully described and particularly pointed out.

Figure 1 is a perspective view of the usual form of pumping-bellows, showing my invention applied thereto. Fig. 2 is a perspective view of the flap with a portion cut away and one corner of the strip rolled back to show the construction of the flap. Figs. 3 and 4 are cross-sections of the valve and air-port, showing the operation of the valve.

My invention is designed for use on any style of pumping-bellows, such as are used in organs or piano-players. Their usual construction is shown in Fig. 1, and consists of a backboard A, the sides and end folding webs B, and the movable board C. C is hinged at its lower end, as at D, to the backboard A, and arranged to swing back and forth on this hinge, thus contracting and expanding the bellows. This motion is usually imparted by a strap, such as E, and is actuated by any suitable mechanism, usually of pedal-movement, while a spring in the interior of the bellows contracts them when the tension on the strap is released. As these portions of the bellows are of the common form and are not comprised in my invention, I shall not more fully describe them.

The movable board C is provided with air-ports, as shown at *p*, and a flap-valve covering these ports, as F. This flap-valve is the subject of my invention. The ordinary flap-valve is constructed of leather, and no preparation of leather has yet been devised by which the leather may be rendered impervi-

ous to the air and also flexible and at the same time sufficiently soft so that its impact upon the movable board C is not accompanied by a more or less noticeable and very disagreeable noise when the bellows are being operated. Such a noise naturally detracts to a great extent from the valve of any instrument designed for musical purposes. To obviate this noise and at the same time to make a flap that will be impervious to the air and make a tight valve-seating with the edges of the air-ports, is the object of my invention. My flap consists of a strip of rubber-lined cloth G, superimposed upon a facing of soft leather H, the rubber lining I being laid next to the leather. I use rubber-lined cloth in preference to plain rubber, for the reason that the cloth backing prevents the rubber from becoming hard and cracking. The soft-leather facing H may be more or less porous, and yet the rubber-lined cloth will render the flap impervious to the air.

I attach the leather facing H to the strip G, preferably by stitching at the edges, as shown at S S in Fig. 2, or by any other suitable means. It is desirable that they should be attached only along their edges, for the reason that it leaves the leather flexible, and consequently permits the valve to seat quickly and gives the leather more freedom to so fit itself over the air-ports that a tight seating is secured. This flap-valve may be attached at its ends to the board C in the customary manner of attaching flap-valves, as shown at J in Fig. 1.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A flap-valve for pumping-bellows, comprising a strip of rubber-lined cloth and a facing of soft leather, attached to the bellows-board with the facing thereagainst, the rubber lining of the strip being superimposed upon the facing, and the strip being so attached thereto as to permit free relative movement between those portions of strip and facing lying over the bellows-ports.

2. A flap-valve for pumping-bellows, comprising a strip of rubber-lined cloth and a facing of soft leather, attached to the bellows-board with the facing thereagainst, the
5 rubber lining of the strip being superimposed upon the facing and the strip being secured thereto by being so stitched or otherwise suitably attached along the edges as to permit

free relative movement of the intermediate portions.

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

WALTER C. BOWEN.

Witnesses:

H. C. SMITH,
E. D. AULT.