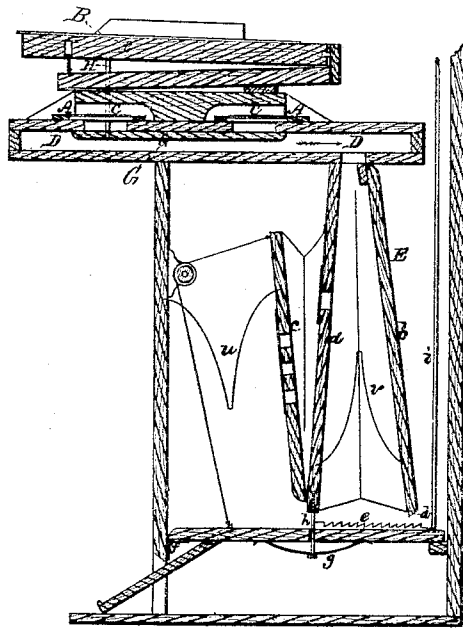


H. W. SMITH.

Reed Organ Bellows.

No. 134,104.

Patented Dec. 17, 1872.



Witnesses

S. N. Piper
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Inventor

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UNITED STATES PATENT OFFICE.

HENRY W. SMITH, OF WEST NEWTON, MASSACHUSETTS.

IMPROVEMENT IN REED-ORGAN BELLOWS.

Specification forming part of Letters Patent No. **134,104**, dated December 17, 1872.

To all whom it may concern:

Be it known that I, HENRY W. SMITH, of West Newton, of the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Reed-Organs, or various other instruments of like character; and do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawing, which denotes a vertical section of a reed-organ, (or the parts thereof to which my invention belongs,) with the additions necessary to the completion of my said improvement or invention.

In carrying out the said invention, I combine with the movable back-board of the bellows of the reed musical instrument or organ a stopping mechanism, such as will enable a performer to estop each board from forward movement in any desirable position within the range of its motion, the board being free to move backward, such being for the purpose of producing a crescendo sound of the reed by means of the exhaust portion of the bellows while in operation.

In the drawing, A denotes the reed; B, the key; C, the reed-chamber; D, the wind-chest; E, the bellows; G, the valve; H, the valve-rod; *a*, the stationary board of the bellows; *b*, the back or rear movable board; and *c*, the front movable board of such bellows, all being constructed and arranged in the usual way in reed-organs.

That portion of the bellows which is in front of the stationary board *a* is usually termed the "exhaust," or "exhauster," its movable board being operated by the performer, and by mechanism, or means well known to the workers of such instruments. The bellows-springs are shown at *u* and *v*.

To the lower part of the back-board *b* I apply a small triangular spur or saw tooth, *d*, and arrange under it a serrated rack or rack-bar, *e*, as shown, pivoted or hinged at its front end, or at *f*, to the organ-frame. To this rack I apply a spring, *g*, to force it into engagement with the tooth *d*, the said spring being supported by a rod, *h*, extended down from the stationary board *a*.

I also provide the rack-bar with a pedal-lever, or means of effecting its depression and holding it out of engagement with the tooth

d, as occasion may require. In the drawing, a rod, *i*, for such purpose, is shown as extending up from the rear end or part of the rack-bar. Such rod I so connect with a pedal or with the usual "knee-swell" as to enable a performer by such to effect the necessary depression of the rod, and the consequent downward movement of the rack-bar, as circumstances may require, to admit of the desirable motion or play of the back-board, the latter being estopped from such motion by suffering the rack to rise into engagement with the tooth. The back-board, however, can move backward as the inclined face of the tooth, resisting in succession the inclined faces of the teeth of the rack-bar, will readily slip over them and create a depression of the rack. Thus the rack and the tooth (whose rubbing-surfaces should be padded) will constitute no impediments to the rearward motion of the back-board, and only operate to stop it during a forward movement of it.

When the back-board is so arrested, it will be seen, that, by the action of the exhauster, the air may be drawn with greater force through the reed-opening, and, as a consequence, produce a stronger, or increasing, or crescendo sound of the reed, such being controlled or regulated by the performer while operating the bellows.

The serrated toothed rack-bar *e* and the tooth *d* thus enable the performer, at any time when desirable, to stop the advance of the back-board, it being free to retreat, as occasion may require.

I am fully aware of the invention constituting the subject of the United States Patent No. 91,882, granted to myself and S. D. Smith, as assignees of the inventor, Samuel H. Jones.

There is a material difference between my present invention and that of Jones, as, in the place of the peculiar rack-bar and stud used by him, which, though capable of stopping the motion of the back-board operate, to stop it from movements either forward or backward. I employ an angular or cam-shaped stud, and a rack serrated or having cam-shaped teeth, whereby the back-board is stopped from moving in one way only, viz., from advancing, it being free to retreat, as occasion may require, thereby saving the

performer the necessity of unlatching it before it can retreat, as would be required by the mechanism of Jones.

I claim—

In combination with the reed-organ or its bellows E, a back-board-stopping mechanism, substantially as described, to operate essentially in the manner and for the purpose specified, such mechanism consisting of the angular or

cam-shaped tooth *d*, the serrated rack-bar *e*, the spring *g*, and the rod *i*, connected or to be connected with or applied to a pedal or operative lever, or the equivalent thereof.

HENRY W. SMITH.

Witnesses:

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