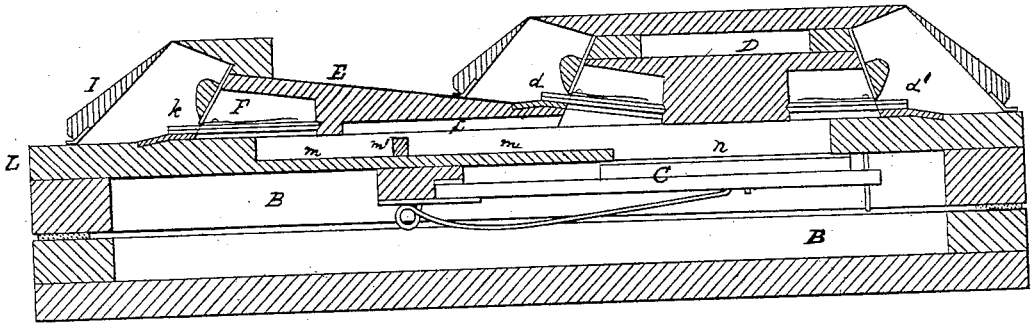
J. P. RICHARDSON.

Reed-Organ.

No. 205,682. Patented July 2, 1878.



WITNESSES:

W. J. Alden.

H. C. Hall.

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by his atty.
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UNITED STATES PATENT OFFICE.

JOHN P. RICHARDSON, OF CAMBRIDGEPORT, MASSACHUSETTS.

IMPROVEMENT IN REED-ORGANS.

Specification forming part of Letters Patent No. **205,682**, dated July 2, 1878; application filed May 6, 1878.

To all whom it may concern:

Be it known that I, JOHN P. RICHARDSON, of Cambridgeport, State of Massachusetts, have invented an Improvement in Reed-Organs, of which the following is a specification:

My invention relates to a novel construction of the tube-board and solo mechanism of reed-organs having exhaust-bellows.

Its object is to provide, at moderate cost, a soft, delicate, and emotional stop, without increasing the weight of the touch or unfavorably affecting either the quality of the tone or speech of the ordinary sets of reeds.

It consists in a reed or tube chest or chests constructed to hold, in addition to the two ordinary sets of reeds, a solo set arranged and located at the rear of the second or back ordinary set, all being operated by one row of valves, precisely as when there are two ordinary sets only.

The solo sets of ordinary instruments are usually mounted on the top and near the back of the wind-chest, and so require an independent set of valves, springs, and lever mechanism to connect with the parts operated directly by the keys; or they are mounted over the ordinary sets. This latter method has one of the advantages claimed for my invention—the employment of but one set of valves, and consequent cheapness; but it has the disadvantage that it materially injures the quality of tone of the ordinary sets. So much is this the case that some of the best organ-makers prefer to mount their solo sets on the top and near the back of the wind-chest, as before stated, notwithstanding the extra expense incurred.

The following specification, of which the accompanying drawing forms a part, clearly sets forth the nature and manner of construction of my invention.

The front of the instrument is represented as at the right-hand side of the drawing. B represents the wind-chest, and C the valves, both of which are of ordinary construction. On the top of the wind-chest B are mounted the tube-boards D and E. The tube-board D differs from those of ordinary construction only in that the grooves in which the reeds *d* are inserted are higher at the mouths of the tubes than at their inner ends, so that the reeds *d* may be drawn over the upper surface of the supplementary tube-board E, the thin edge of which passes under the heel of the reeds *d*, and is glued to the tube-board D. The tubes F, in which the solo-reeds *k* are inserted, are cut into the rear portion of the tube-board E. A series of channels or grooves, *i*, corresponding to the series of tubes F, are cut into the front portion of the tube-board E. A corresponding series of channels or grooves, each provided with a partition, *m'*, are cut into the mortise or valve-board L. The channels *m i* form air-passages, which lead into the valve-openings *n*. The air is thus drawn through the reeds *k*, over the partition *m'*, and along and through the channels *m i* and the valve-openings *n* to the wind-chest B. It is important that the passages *m i* should be large enough to carry all the air that the reeds *k* are capable of admitting. The floor of the passage *m*, being directly under the reeds *k*, together with the partitions *m'*, provide the necessary atmospheric conditions to secure the free action and reaction of the reeds *k*.

It is obvious that a long passage, similar to *m i*, at right angles with the reed, leading into a wind-chest, would be unfavorable to the speech of the reed. When the air-passage is made below the reed to the wind-chest it is necessary, in order to produce the best result, that it should be short and direct, as shown in connection with the ordinary tube-board D. The amplitude of the oscillation of a reed under these conditions is large and vigorous. The amplitude of oscillation of a reed treated as in the solo set of my instrument is small—less than the functional capacity of such reed. Hence the tone is peculiarly characteristic, and yet is free, prompt, and delicate.

A nearer or more distant resemblance of the tone of the solo set to the tone of the ordinary sets may be secured by lengthening or shortening or otherwise changing the capacity of the channels *m i*, or by making a very small hole through the floor of the channel *m* to the wind-chest B. This hole would require to be controlled by a small valve, which could be

held to its seat by a spring, which might be so light as to be scarcely perceptible on the touch of the manual.

The air-passage *m i* might be closed, and an opening cut through the floor of the channel *m* large enough to admit to the wind-chest all the air that could pass through the reed *k*. In this case, too, it would be necessary to employ valves. These could be mounted either inside the channels *m*, and so act in the direction of the air-current, or they could be outside and in the wind-chest.

A solo set might be mounted on the front of the first set of reeds *d'*, on the same plan as that described as at the back of the second set of reeds *d*, without exceeding the limits of my invention.

Having fully described my invention, I claim and desire to secure by Letters Patent—

1. The tube-board E, in combination with the channels *m i* and valve-openings *n*, all constructed and arranged substantially as herein set forth.

2. The tube-board E, mounted directly over the channels *m i*, and at the rear of the tube-board D, as and for the purpose set forth.

3. The channels *m i*, provided with partitions *m'*, in combination with the tube-board E and valve-openings *n*, substantially as specified.

In testimony whereof I have hereunto set my hand this 12th day of April, 1878, in the presence of two subscribing witnesses.

J. P. RICHARDSON.

Witnesses:
JAS. H. SOUTHACK,
H. C. HALL.