(No Model.)

O. ERICKSON.

REED BOARD.

No. 598,176. Patented Feb. 1, 1898.

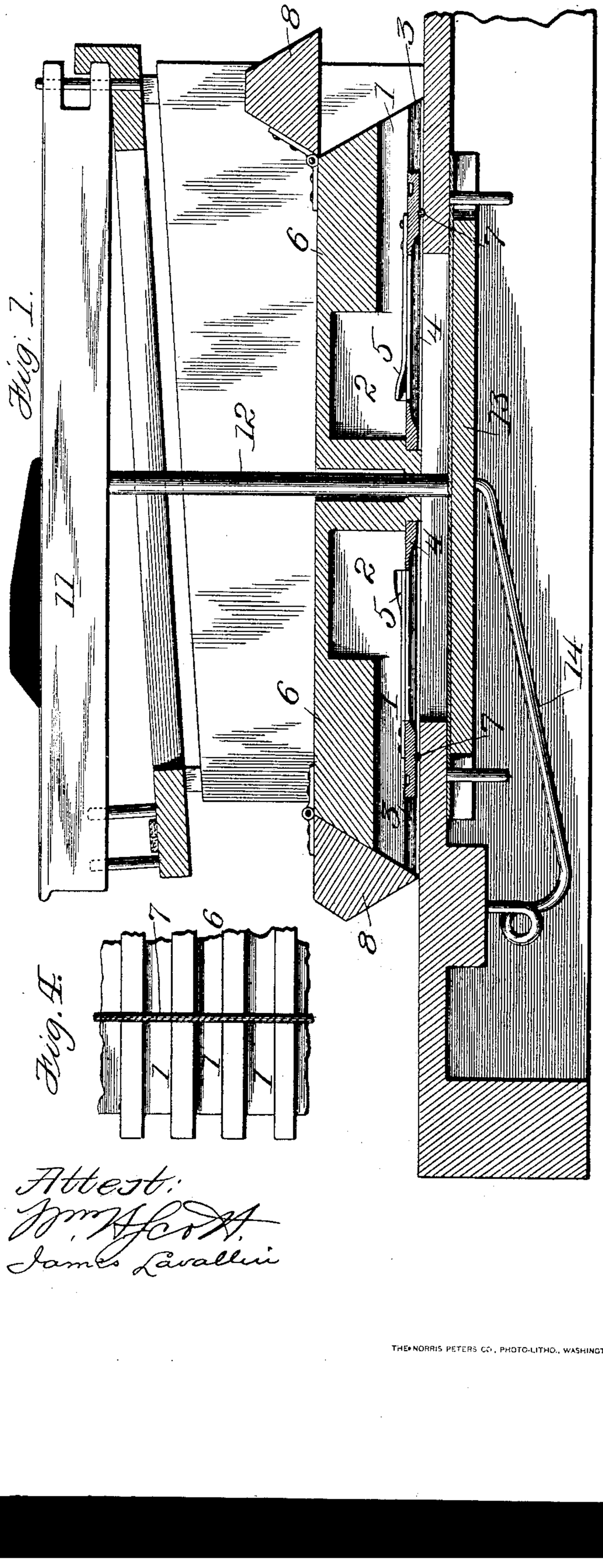

Fig. 1.

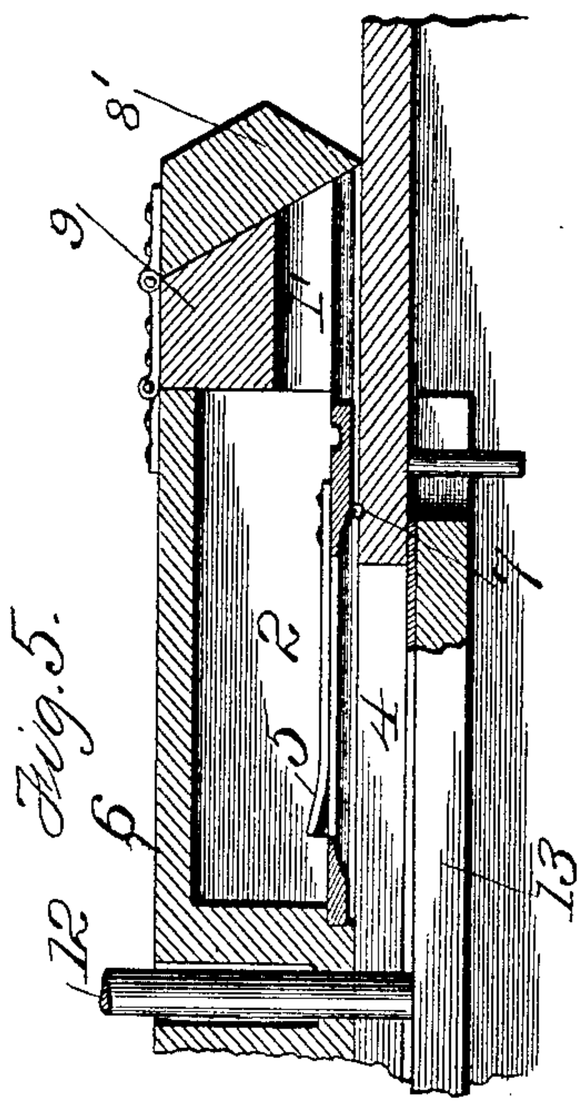

Fig. 5.

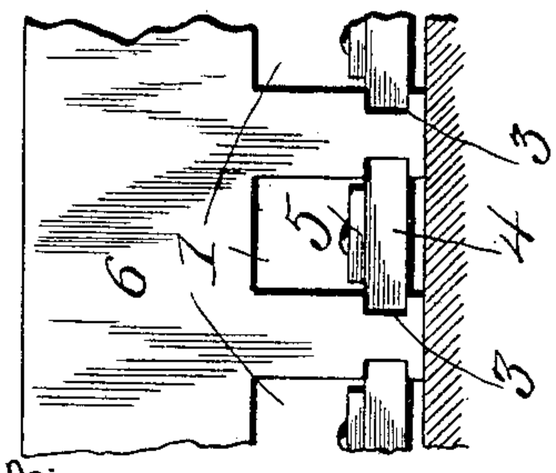

Fig. 3.

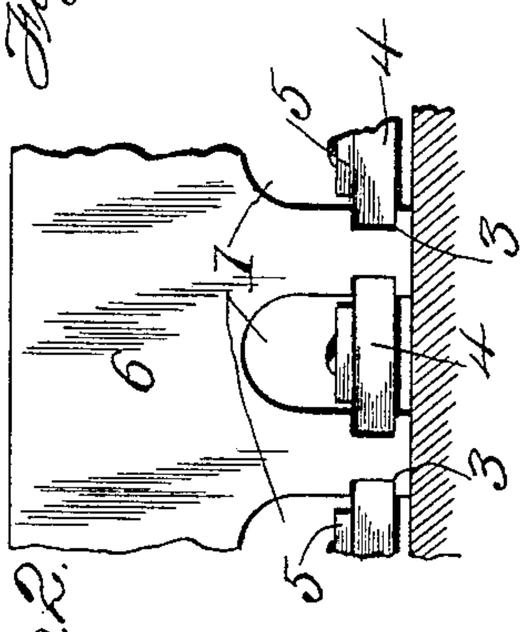

Fig. 2.

Fig. 4.

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UNITED STATES PATENT OFFICE.

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REED-BOARD.

SPECIFICATION forming part of Letters Patent No. 598,176, dated February 1, 1898.

Application filed March 8, 1897. Serial No. 626,529. (No model.)

To all whom it may concern:

Be it known that I, OTTO ERICKSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Reed-Organ Actions; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to that type of reed-organ actions in which provision is made for obtaining a pipe-tone from such type of actions.

The object of the present improvement is to provide a simple and effective arrangement of the pipe cells or chambers with relation to the reed cells or chambers of a reed-organ action, whereby a pure pipe-tone is obtained throughout the entire scale and length of keyboard, as will hereinafter more fully appear, and be more particularly pointed out in the claims. I attain such object by the construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section of a reed-organ action to which my invention in its preferred form is applied, such section being taken through the first reed in the fourth octave of a five-octave reed-organ action. Figs. 2 and 3 are enlarged detail front elevations of the "tube-board" with the mute removed and illustrating the wind-inlet ends of the pipe cells or chambers; Fig. 4, a detail inverted plan view of tube-board, showing the arrangement of the packing strip or cord, by means of which leakage beneath the reed is prevented; Fig. 5, a detail longitudinal section of a modified form of my present invention.

Similar numerals of reference indicate like parts in the several views.

In reed-organs for family use and the like compactness is one of the main requisites. Another very material requisite in connection with such compactness is the attainment of a pipe-tone from the ordinary reed-action in a simple and effective manner, such pipe-tone being preferable on account of its superior softness as well as fullness over the ordinary reed-tone. In the present improvement such pipe-tone result is obtained in a very effective and perfect manner by means of an outwardly-extending cell or passage that forms a prolongation of the ordinary reed cell or chamber, having a comparatively smaller cross-sectional area than such reed-cell and which may be termed the "outwardly-extending pipe cells or passages" of the present improved reed-organ action.

The present improved construction is distinguished from that of the usual or ordinary reed-organ action in the following manner: In such usual and common type of reed-organ actions the smallest reed-frame at the treble end of a five-octave action is one and three-eighths inches long and the largest reed-frame at the bass end of such action is three and one-fourth inches long, with the intermediate reed-frames of gradually-decreasing lengths from that of the largest to that of the smallest of the reed-frames of the action. In such action the heels of the series of reed-frames project outside the reed-cells about three-eighths of an inch, so that the lengths of the reed-cells are correspondingly reduced and vary from one inch in length at the treble end to two and seven-eighths inches at the bass end of the action. Such lengths are entirely inadequate to admit of a formation that would impart a pipe-tone to the action, as I have found from extensive practice and experiment that the small outwardly-extending cells that afford a pipe-tone in my improved construction must have a length ranging from seven-eighths of an inch at the treble end of the action to as much as two inches at the bass end thereof, the vertical height of these pipe-tone-producing cells ranging from one-fourth to one-half an inch.

By proportions substantially as above given the necessary graduation in the pipe-tone imparted to the organ-action is attained in a very perfect manner, the present construction being incapable of adding strength or volume to the tone. On the contrary, its sole purpose and effect is to transform the reed-tone of the action into a milder and softer pipe-tone.

In the accompanying drawings the outwardly-extending pipe cells or passages are designated by the reference-number 1 and, as

shown, extend outwardly in substantially a horizontal direction from the regular reed-cells 2.

In the present invention the reed-cells 2 will in all cases be made of greater cross-sectional area than the pipe cell or passage 1 and will be usually made shorter than the ordinary reed-cell of an organ. By such construction the reed cells or chambers will extend above the pipe-cells, so as to afford ample space for the vibration of the reed, as well as to remove any rankness in tone of such reed, &c., by affording the necessary space to qualify the same.

In the present description what is termed the "pipe-cell" 1 will consist of a passage smaller than the reed-cell and which extends outwardly from such reed-cell and is mainly outside the active or sound-producing part of the reed-tongue, and which pipe-cells vary in height from one-fourth to one-half of an inch and never exceed five-eighths of an inch. What is termed the "reed-cell" in the present description will consist of a chamber or cell having the ordinary height, which is never greater than three-fourths of an inch and which reed-cell is adapted to house or inclose the free vibrating and sound-producing part of the reed-tongue.

With the present improved arrangement of the pipe-cells as outward and horizontal extensions of the reed-cells the required graduation between the two to obtain the required note or volume of sound can be readily and conveniently attained by the lengthening of the one cell and a corresponding shortening of the other cell.

The bottom of the pipe-cells 1 will in my preferred construction, as shown in Figs. 1, 2, 3, and 4, be on a plane with that of the reed-cells 2 and will have its side walls formed with holding-grooves 3 for the reception of the frame 4, that carries the reed-tongue 5.

In order to prevent leakage of wind underneath the different reed-carrying frames 4 in the present construction, a groove is formed in the under surface of the tube-board 6 in which is placed a packing strip or cord 7 of any elastic flexible material.

In my preferred form of pipe cell or passage 1, as illustrated in Fig. 2, the top of the same is of a bowed or circular top formation, which I find gives superior tone in portions of the action. It is, however, within the scope of my present invention to make such cells or passages of a rectangular form, as shown in Fig. 3.

The pipe-cells 1 of the present invention may be formed wholly in the tube-board 6, as illustrated in Figs. 1, 2, 3, and 4, in which case the usual dead mute or valve 8 will be used in conjunction therewith, or the said pipe-cells may be arranged in a hinged portion 9 of the tube-board 6 in the form of a series of cells or passages 1′ through the same, as shown in Fig. 5. This hinged portion may be formed with grooves similar to the grooves 3 in the pipe-cells heretofore described, through which the reed-frame can slide. In this construction an ordinary mute or valve 8′, controlling the passages 1′, will be employed.

The other auxiliary parts of the reed-action will be of any usual constuction.

In Fig. 1, 11 is the key, connected by rod 12 to the valve 13, held to its seat by spring 14.

I am aware that prior to my invention a combined pipe-cell and reed-cell has been used in reed-organ actions, the one being arranged above the other in parallel relation with a graduated communication between the two. I therefore make no claim, broadly, to any such construction of pipe and reed cells; but,

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

1. In a reed-organ action, the combination of a reed, a reed-cell of the usual height and having a length that will receive and house the active or vibrating portion of the reed-tongue, a pipe-cell forming an outward extension of the reed-cell, and extending a distance out past the supporting-frame of the reed-tongue, and a mute controlling the inlet of said pipe-cell, substantially as set forth.

2. In a reed-organ action, the combination of a reed, a reed-cell of the usual height and having a length that will receive and house the active or vibrating portion of the reed-tongue, a pipe-cell forming an outward extension of the reed-cell, and extending a distance out past the supporting-frame of the reed-tongue, and made of a lesser cross-sectional area than the reed-cell, and a mute controlling the inlet to said pipe-cell, substantially as described.

3. In a reed-organ action, the combination of the series of reed-frames, the tube-board, and the packing strip or cord arranged in a groove in the under surface of said board, substantially as set forth.

In testimony whereof witness my hand this 4th day of March, 1897.

OTTO ERICKSON.

In presence of—
ROBERT BURNS,
HENRY A. NOTT.