W. O. TROWBRIDGE.

Reed-Organ.

No. 205,445. Patented June 25, 1878.

Fig.3.

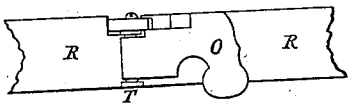


Fig.4.

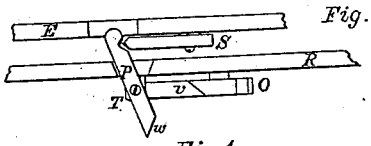


Fig.1.

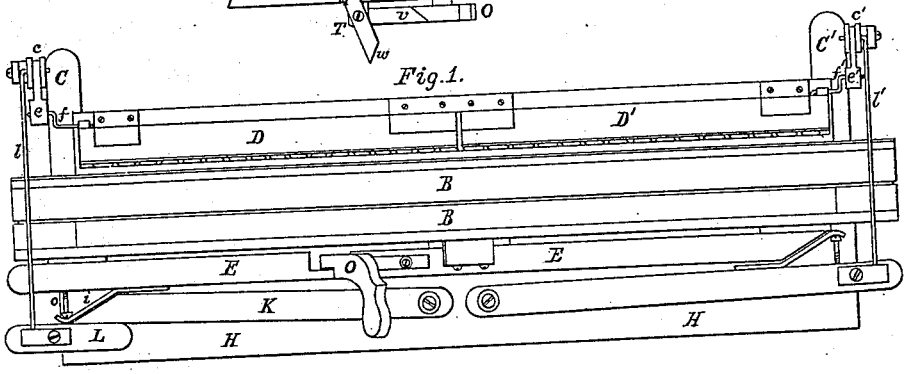
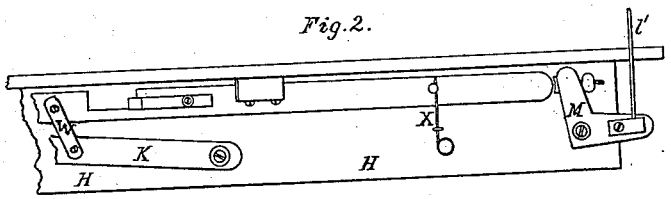


Fig.2.



WITNESSES:

J. P. Richardson

Philippe J. Mabille

INVENTOR:

W. O. Trowbridge

Mason J. Matthews

Atty.

UNITED STATES PATENT OFFICE.

WILLIAM O. TROWBRIDGE, OF NEWTON, MASSACHUSETTS, ASSIGNOR TO THE MASON & HAMLIN ORGAN COMPANY.

IMPROVEMENT IN REED-ORGANS.

Specification forming part of Letters Patent No. **205,445**, dated June 25, 1878; application filed May 6, 1878.

To all whom it may concern:

Be it known that I, WILLIAM O. TROWBRIDGE, of Newton, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Reed-Organs, which improvement is fully set forth in the following specification.

My invention relates to an improved mechanical device for operating, through the medium of a knee-board, the stop mechanisms of reed-organs. Its object is to secure, at the least possible expense, simplicity of construction, and to avoid all unnecessary friction, and thus provide an easy-working and reliable action.

It consists in a novel construction, arrangement, and combination of levers and tracker-rods, by means of which a firm downward mechanical movement is secured near each end of the instrument.

The following specification sets forth fully and in detail the nature, manner of operation, and construction of my invention.

Figure 1 is an elevation of that part of the front of my instrument on which the main features of my invention are mounted. Fig. 2 represents, in elevation, the mechanism which I prefer for the right-hand end of my instrument, the knee-board being removed. Fig. 3 shows, in elevation, the case-rail with a knee-board and sub-lever mounted thereon. Fig. 4 represents a plan view of the case-rail, operating or tracker rod with adjustable block, and knee-board with sub-lever.

B represents an ordinary wind-chest, upon which the main features of my invention are mounted. C C′ are posts or standards, located near the back of the wind-chest B. The levers *c c′*, bearing the toggles *e e′*, are hinged to these posts C C′, and reach forward far enough to admit of the toggles *e e′* engaging with the crank-wires *f f′*. These crank-wires *f f′* are inserted in the stop-valves D D′, so that when the levers *c c′*, either or both of them, are depressed by any means the stop-valves D D′ are caused to open.

The mechanism thus far described is employed in the organs manufactured by the Mason & Hamlin Organ Company. In these instruments the levers answering to those indicated by *c c′* are depressed each by a stop, and altogether, or such a number of them as is desirable to give full organ effects, by means of a knee-board, through the medium of a long stout iron rod, having arms projecting in suitable directions to connect with the knee-board and to secure the required downward movement at each end of the instrument. This action is reliable; but it is also cumbersome and expensive.

In my invention I dispense with this iron rod, and substitute therefor the wooden tracker-rod E, the lever K, and the knee-lever O. These are all mounted on the roller-rail H, which is of ordinary construction. On the under side of the left-hand end of the tracker-rod E is a brass incline, *i*. This incline *i* may be made of other material than brass; or it may be formed out of the tracker-rod E itself. The lever K is fastened by one of its ends and by one screw near to the center of the roller-board H. The other end of this lever K is beveled, so that it presents a surface nearly to and parallel with the under face of the brass incline *i*. Fastened on the under side of this lever K is a block of wood, L. One end of the wire rod *l* is inserted in the block L, precisely as the other end is represented as inserted in the lever *c* at the left-hand end of Fig. 1. The wire rod *l′* is similarly connected with the lever *c′* and the lever M. While the operating tracker-rod E is being moved in the direction of the right-hand end of the instrument by means of the pressure of the knee on the knee-board O, the brass incline *i* presses against the beveled end of the lever K and forces it down, and the end of the tracker-rod E, in which the screwed wire is inserted, presses against the upper arm of the knee-lever M, and causes the depression of the lower arm, and thus the levers *c* and *c′*, or as many more as may be desired, are drawn downward and the stop-valves opened. The return of the tracker-rod E to its normal position is secured by the springs which close the stop-valves D and D′, and by the additional spring X. The adjustment of the brass incline *i* is obtained by the screw *o*.

Fig. 1 merely represents the knee-board O as placed in or about the position it occupies

in my instrument, and does not show the manner in which it is mounted. This is shown in Figs. 3 and 4.

E is the tracker-rod, hereinbefore referred to; P, the sub-lever; O, the knee-board; R, a rail, which forms a part of the case; and S, a self-adjusting block or strip of wood. A metal swell-holder, T, having two ears or arms, is fastened to the front of the case-rail R. The knee-board O is mounted between these two arms. A screw passes through each arm into the upper and lower sides of the knee-board to form a hinge. The upper screw serves as a pivot, upon which the sub-lever P is made to turn.

When the knee-board O is drawn to the left, and the bevel *v* is in contact with the bevel *w*, the knee-board O and sub-lever P are practically one. The rear end of the sub-lever P engages with the adjusting-strip S. A piece of thick felt is inserted between the tracker-rod E and the self-adjusting strip S, so that the friction which would be caused by a more rigid fastening is avoided. The downward movement of the lever K may be secured by the toggle W, as shown in Fig. 2, and this action may be employed at both ends of the instrument.

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

1. In combination with the knee-board, stop-valves, and ordinary stop mechanism of a reed-organ, the operating tracker-rod E, the lever K, knee-lever M, and rods *l l'*, all constructed and arranged substantially as and for the purpose specified.

2. The knee-board O, sub-lever P, or its equivalent, and metal holder T, in combination with the operating tracker-rod E, the lever K, knee-lever M, and self-adjusting strip S, all constructed and arranged substantially as and for the purpose set forth.

W. O. TROWBRIDGE.

Witnesses:

LOWELL M. PALMER,

JOHN H. REARDON.