J. & E. Foster,

Tremolo,

No. 53,803. Patented Apr. 10, 1866.

Fig. 1.

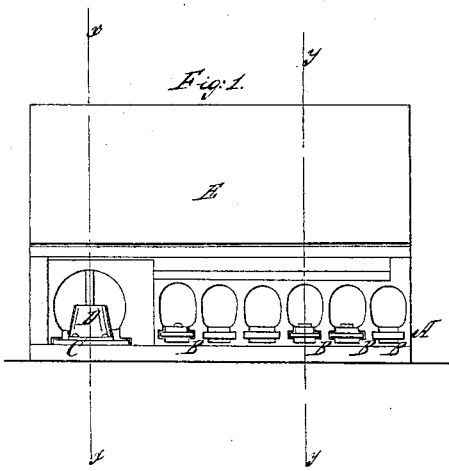


Fig. 2.

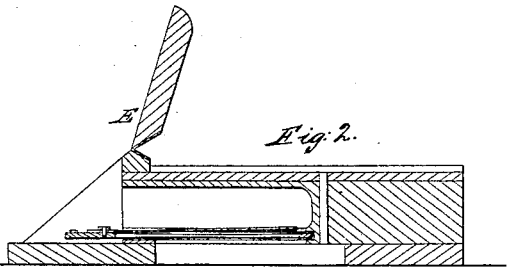


Fig. 3.

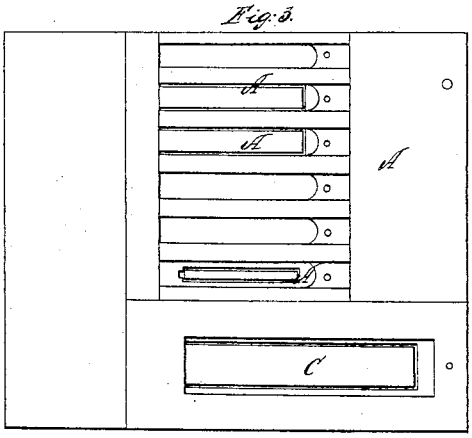
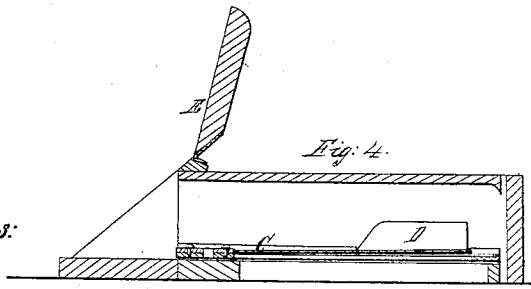


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOSEPH FOSTER AND EPHRAIM FOSTER, OF KEENE, NEW HAMPSHIRE.

IMPROVEMENT IN MUSICAL INSTRUMENTS.

Specification forming part of Letters Patent No. **53,803,** dated April 10, 1866.

To all whom it may concern:

Be it known that we, JOSEPH FOSTER and EPHRAIM FOSTER, of Keene, in the county of Cheshire and State of New Hampshire, have invented a new and useful Improvement in Musical Instruments; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a front view of a portion of a reed-board, showing the openings for the reeds of a melodeon, the swell being thrown up. Fig. 2 is a sectional view on the line *y* of Fig. 1. Fig. 3 is an under-side view of a portion of a reed-board of a melodeon with our improvement applied. Fig. 4 is a sectional view on the line *x* of Fig. 1.

Similar letters of reference indicate like parts.

This improvement consists in applying a large reed to reed-instruments or pipe-organs for the purpose of producing a tremolo tone. It may be applied in different ways, and its vibration is to be so slow as not to produce a musical tone. In reed-instruments of the class of melodeons and cabinet-organs it may be inserted in the reed-board as other reeds are inserted and used with the swell closed, when it will put the air in motion, both outside and inside the reeds and reed-board, and so produce the tremolo tone; or it may be placed inside of the wind-box with the swell open or closed. It may be used with one or more sets of reeds, as may be desired. A register should be provided to govern the access of the air to the reed.

In applying our invention to pipe-organs it may be attached to the side of the conducting-pipe, between the bellows and wind-box, with an air-passage through the sides of the conducting-pipe sufficient to put the reed in motion, which will cause the air inside of the conducting-pipe to be vibrated so as to produce a tremolo. In all cases it is to be used with a valve and register.

In this illustration we have shown our invention applied to the reed-board of a melodeon.

A is a section of a reed-board, and the letters B designate several of the common reeds, made and inserted in the usual manner, the places of the valves to which they are applied being seen in the front view, Fig. 1, and in the under-side view, Fig. 3.

The valve for the tremolo is seen on the left-hand end of the section of the reed-board here shown, and corresponds in size to the increased size of its reed over the common reeds.

The tremolo-reed is designated by the letter C, and it is loaded with a weight, D, to cause its vibrations to be slow. Its valve is to be opened by a rod or other convenient device passing down through the block or reed-board, and is to be connected with a register in the ordinary way. The reed C for the tremolo is inserted in the reed-board in the same manner as the common reeds.

When two sets of reeds are used in an instrument the reed-board is increased in width and the second set of reeds put on the opposite side from the first set, with a swell-board, the same as above shown, at E, an opening being made through the other side of the board opposite the place where the tremolo-reed is inserted, which will make a tremolo for both sets of reeds.

When an instrument is to be played without the tremolo its valve is kept closed, and when the tremolo is to be introduced its valve is opened, when it will be made to vibrate with more or less rapidity, according to its size and the weight of its load D and the energy with which the currents of air move. All the air in the wind-box, as well as that which has passed the reeds, will be agitated by the vibration of the tremolo-reed, and consequently all the notes played while the tremolo-valve is open will be tremolo notes, the harmony being preserved, since the tremolo-reed, in consequence of its construction, is vibrated so slow as not to produce a distinct musical tone, but only putting the whole volume of air on both sides of the reed-board in slow vibration.

We claim as new and desire to secure by Letters Patent—

The tremolo-reed C, constructed as above shown, and applied to musical instruments, substantially as described, to produce a tremolo tone for all the notes which are played while the tremolo-reed is operated.

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