2 Sheets—Sheet 1.

R. E. LETTON.

ORGAN-ACTION.

No. 183,012. Patented Oct. 10, 1876.

Fig. 1.

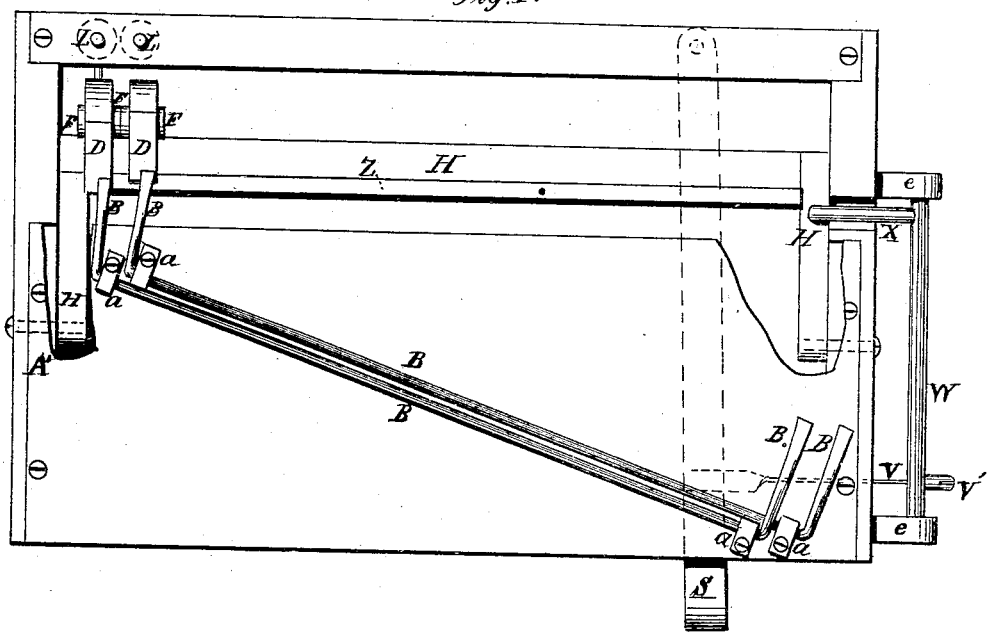
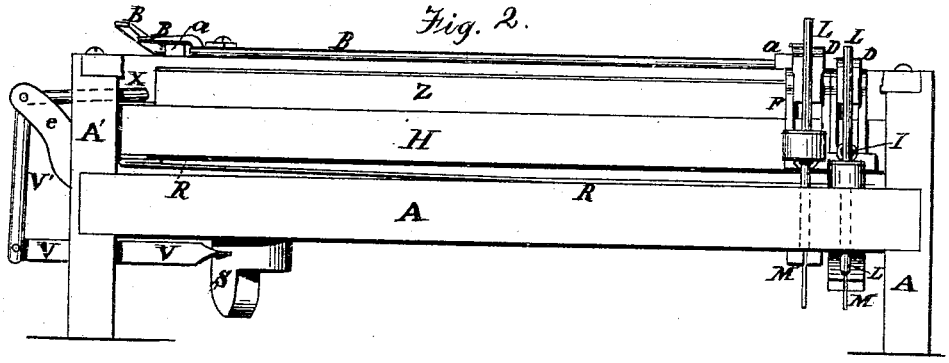


Fig. 2.



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2 Sheets—Sheet 2.

R. E. LETTON.

ORGAN-ACTION.

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Fig. 3.

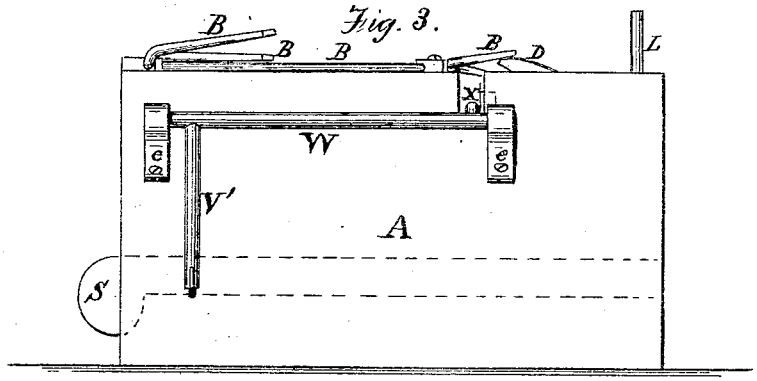


Fig. 4

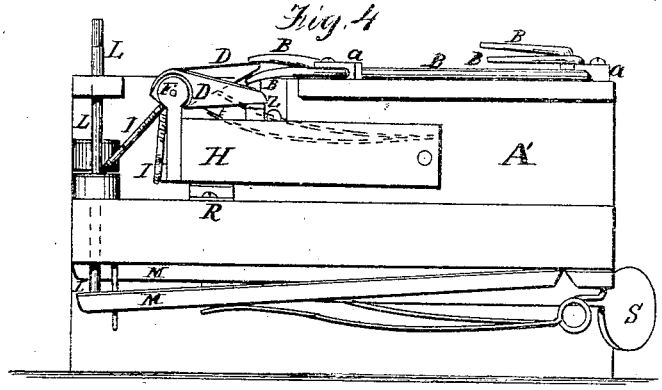
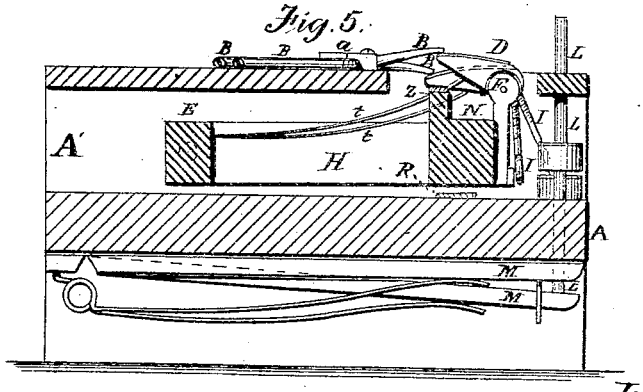


Fig. 5.



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UNITED STATES PATENT OFFICE.

RAPHAEL E. LETTON, OF QUINCY, ILLINOIS.

IMPROVEMENT IN ORGAN-ACTIONS.

Specification forming part of Letters Patent No. **183,012**, dated October 10, 1876; application filed May 29, 1876.

To all whom it may concern:

Be it known that I, RAPHAEL E. LETTON, of Quincy, in the county of Adams and State of Illinois, have invented a new and useful Improvement in Octave-Couplers, of which the following is a specification, reference being had to the accompanying drawings.

The invention relates to an improved octave-coupler, and, in the present instance, is described as applied to an organ. It consists of the devices hereinafter more specifically described.

Figure 1 is a plan view of a device embodying the elements of the invention, showing the action-frame depressed. Fig. 2 is a rear elevation of same. Fig. 3 is an end elevation of pedal operating the action-frame. Fig. 4 is an end elevation, showing depression of one jack, the case being broken out. Fig. 5 is the reverse of Fig. 4.

In the accompanying drawings, A represents the case of an organ, upon the upper surface of which are secured, as shown, the couplers B, the length of each being equal to an octave on the key-board. These couplers consist of metal bars, and are arranged, as shown, to rotate in the blocks *a*, being operable by the keys of the instrument. The under side of each key is in the usual relation to the upper end of each sticker, and is provided with a suitable cushion, to secure contact with the coupler B.

The action-frame H, in the present instance, consists of a frame composed of the front bar E and rear bar N, which are arranged parallel to the length of the case, and are suitably connected at each end by cross-pieces. The front of the frame is pivoted or otherwise suitably hinged to the sides or bottom A′ of the case, or to the sides of the case A by pivots or bearings. Below the rear portion of the frame is provided the spring R, to give it an elastic upward action. The rear of the bar N is provided with the pivot-stands F, in each of which is pivoted the center of the rear part of one of the jacks D, the front part of which extends toward the key-board, its extremity being immediately below one end of the coupler, and having an elastic upward action through the medium of the spring *t*, so that when the coupler is depressed the front end of the jack D is also depressed, and the jack thus slightly rotating upon its pivot, its rear end is somewhat elevated. The ridge Z extends across the action-frame below and opposite the rear ends of the jacks, and serves to arrest the descent of said ends below the proper point, and to keep them in close contact with the action-frame. To the rear end of the jack is secured the pin I, in such manner as to project downward and rearward, its lower end, when the jack is in its normal position, lying against the cushion *t*, which serves to retain the front end of the jack properly elevated. The pin I is of such length that, when the jack is operated by the coupler, as aforesaid, the rear end of the pin is thrown out, so as to be directly over the button on the sticker L, the lower end of which is in contact with the elastic reed-valve M, its upper end being below, and so as to be acted upon by the descent of the key (not shown) in the usual manner. It is therefore clear that any key can be played as desired without affecting the jacks D.

The operation of the above mechanism may be thus described: A certain key is struck. This sounds the reed directly under the key, and at the same time rotates the coupler B, the opposite end of which actuates the jack D an octave from the key struck, causing the jack to operate, throwing out the pin I, and forcing down the action-frame H, which brings down with it the jack D and pin I, thereby operating the sticker L, and causing the corresponding reed, which, for convenience of illustration, will be called "Rel.," to speak as long as the action-frame is depressed, all of the other stickers remaining elevated and the reeds silent, and the couplers no longer elevated by the elastic action of the frame H, are lying flat, so that the reeds, or any one of them, including the one under the key which operated the reed Rel., may be sounded as desired by playing the keys, the reed Rel. sounding, meantime, and continuing to sound until the action-frame is allowed to rise, which permits the ascent of the sticker, and determines the sound of the reed Rel.

For the purpose of operating the action-frame H, a stop or knee-pedal, S, is provided, the rear end of which is pivoted to the under side of the case A, its front formed into a

head, in rear of which is pivoted to the pedal the draw-rod V, which extends outward beyond one side of the case A, its extremity being pivoted to the lower end of the arm V′, the upper end of which is rigidly attached to one end of the rock-shaft W, working in bearings in the brackets *e*, and provided at the end last aforesaid with the arm X, which extends through a vertical slot in the case A, having its end therein in contact with the upper surface of one end of the action-frame H, so that, when it is desired to retain the action-frame in its depressed position, it is only necessary to operate the pedal S, the movement of which depresses the action-frame, the elastic action of which restores the pedal to its initial position as soon as the pressure on the pedal is removed.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. An organ or analogous wind instrument in which the octave of a certain reed or note is sounded and may be prolonged as desired, while said reed or any other reed or reeds, note or notes, except said octave, may be sounded at will, substantially as specified.

2. An elastic action-frame carrying a vibrating jack or other equivalent means of operating the sound-producing element of an organ or other analogous wind instrument, substantially as specified.

3. An action-frame for organs and analogous wind instruments, having an elastic tension, as described, in combination with a means of operating the sticker-pin, substantially as specified.

4. An action-frame for organs and analogous wind instruments, having an elastic tension, as described, in combination with an octave-coupler, substantially as specified.

5. An action-frame for organs and analogous wind instruments, pivoted or hinged at one side, and having an elastic tension at the other, substantially as specified.

6. An action-frame for organs and analogous wind instruments, which, being depressed, permits, and being released, determines, the operation of the sound-producing element of the instrument, substantially as specified.

7. In an organ or analogous wind instrument, the pedal S and draw-rod T, in combination with an elastic action-frame, substantially as specified.

8. The coupler B, in combination with the vibrating pivoted jack D, substantially as specified.

9. The combination of a coupler, mounted upon an elastic action-frame, with a jack having an elastic action, substantially as specified.

In testimony that I claim the foregoing improvement in octave-couplers, as above described, I have hereunto set my hand this 3d day of May, 1876.

RAPHAEL E. LETTON.

Witnesses:

CALEB M. POMROY,

EDWIN A. CLARKE.