

R. C. NICHOLAS.
REED-ORGAN STOP-ACTION.

Patented March 28, 1876.

No. 175,253.

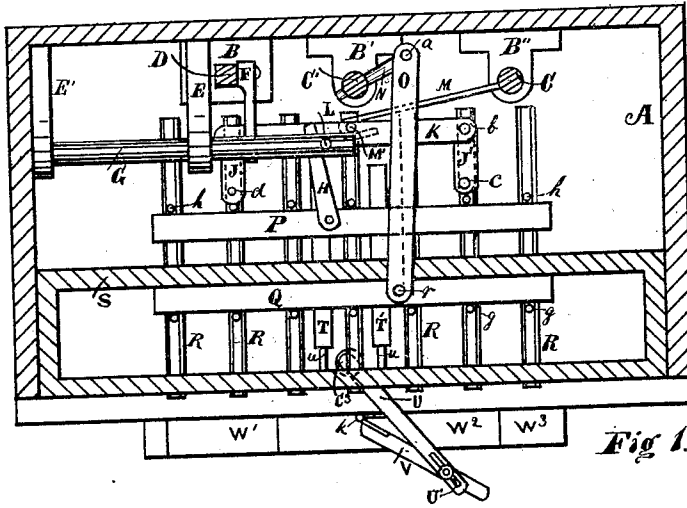


Fig 1.

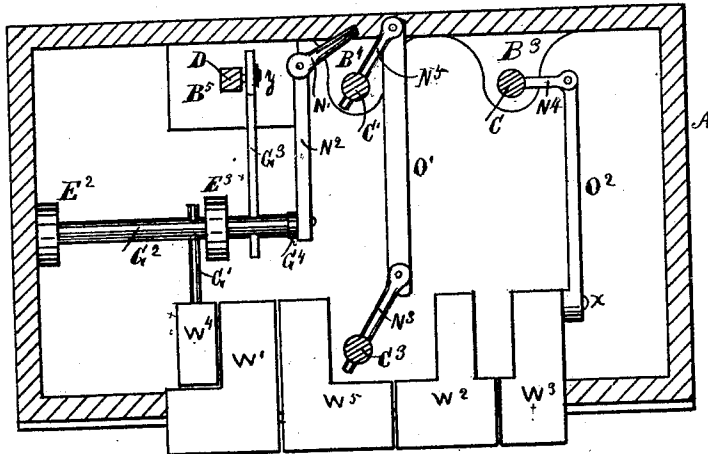


Fig 2

WITNESSES;
E. O. Whitney.
J. S. Long.

INVENTOR.
Robert C. Nicholas
Per E. H. Smith
his atty

UNITED STATES PATENT OFFICE.

ROBERT C. NICHOLAS, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO HIMSELF
AND LEVI E. WHITE, OF SAME PLACE.

IMPROVEMENT IN REED-ORGAN STOP-ACTIONS.

Specification forming part of Letters Patent No. **175,253**, dated March 28, 1876; application filed
February 18, 1876.

To all whom it may concern :

Be it known that I, ROBERT C. NICHOLAS, of Indianapolis, county of Marion, State of Indiana, have invented a new and useful Improvement in Stop - Action for Organs, of which the following is a description, reference being had to the accompanying drawings.

My invention relates to the manipulation of the stops in an organ, whereby I obtain a more ready control over them than heretofore; and it consists in the construction and arrangement of cranks, treadles, levers, and connecting-rods, connected with upright rods and stops, as hereinafter more fully described and set forth in the claims hereto annexed.

Figure 1 represents a plan view of the upper stop-section of an organ embodying my improvement. Fig. 2 is a plan view of the lower or bellows section of the same.

The cabinet-case of the organ is represented at A, at the front of which, near the bottom, as shown in Fig. 2, are arranged the treadles W^1, W^2, W^3, W^4 , and W^5 . All of these treadles except W^4 (which may be duplicated if required) are hinged or pivoted in the usual manner to the base of the organ. The treadles W^4 are pivoted with and attached to the arm G^1 , which is also attached to the shaft G^2 , said shaft being arranged to partially rotate in the bearings $E^2 E^3$. The shaft G^2 is provided at the inner end with a crank-arm or lever, G^4 , which extends upward and makes connection with the rod N^2 , which is also provided with a pivoted lever, N^1 , the action of which will be hereafter more fully described. The rod G^3 is also attached to the shaft G^2 , as shown, and extends back, and the rear end, which is provided with a fork, is arranged to operate on the stud y of the upright square rod D, which moves up and down in square sockets formed in the guides B^3 . The action of this part will hereafter be fully explained.

The treadle W^3 has one end of the connection-rod O^2 pivoted at X. The rod O^2 , extending back and to the rear end, is pivoted to the lever N^4 , which has one end attached to the round upright rod C, which partially rotates

in the bearing B^3 , the operation of which will be hereafter described.

Near the central part of the front of the organ, between the treadles W^5 and W^2 , is also a round upright rod, C^3 , which partially rotates in the bearings formed or attached to the bottom of the organ and to the inside of the front part above the bellows. To this round rod C^3 is attached a lever, N^3 , which is also pivoted to the front end of the connecting-rod O^1 . To the rear end of this rod O^1 is also pivoted another lever, N^5 , which in turn is attached to the upright round rod C^1 , which partially rotates in the bearing B^4 , as shown in Fig. 2.

The square upright rod D extends upward through the guide B near the upper section, as shown in Fig. 1, and has the lever F pivoted to the upper end. This lever F is attached to the partially-rotating shaft G, which is supported above the stops R by the bearings E^1 . At the inner end of the shaft G is also attached the lever L, (an end view only being shown.) This lever extends downward and is pivoted to the connecting-rod H, which in turn is pivoted to the stop-sliding bar P, which is arranged above the stops R at the rear of the frame S, and is operated, by means of the treadle W^4 and its connection, to move back and pull the stop R by means of the pins $h h$ arranged in the stops R at the rear of the slide P, as shown. The round upright rod C^1 can be operated by the same treadle, W^4 , by having the lever N^1 connected therewith, which would cause a partial rotation of the rod C^1 , which also extends up above the stops R, and is provided with the lever N near its upper end, which lever connects with the connecting-rod O, that is pivoted at the other end with the stop-slide Q at r , as shown. By pressing down the treadle W^4 , it would cause the slide Q, by its connecting-levers and rods, to be moved forward, which, acting against the other set of pins $g g$ of the stops R, would move the stops forward, and at the same time the pins $h h$ at the rear of the slide P would move said slide forward. If the treadle W^4 is connected with the upright rod C^1 , then the connecting-rod G^3 or F should be disconnect-

ed from the square upright rod D, and if the treadle W⁴ is connected with the square rod D, then it should be disconnected from the rod C¹, the object being to get two motions, one the opposite of the other, by the same treadle.

The upright round rod C is provided at the upper end with a rod, M, one end of which is formed with a hook which hooks around the pin M', that is attached to the bar K, which unites and operates any two or more stops R, by means of the pivoted connection-ties or rods J J', the rod C being operated, with its connections, by means of the treadle W³, as shown. The upright rod C¹ being connected with the stop slide Q, as before described, is also operated, by means of the knee of the performer, to throw the stops in or out, as required. To accomplish this movement, the upright rod C³ is used at the front of the organ. The upper end of this rod is provided with a lever, U, the outer end of which is connected with the hinged lever V at U', as shown. Any movement of the knee that would force the hinged lever V toward the organ will partially rotate the rod C³, and by its connection with the stop slides Q will move it back, together with the slides P, or forward if the reverse motion is given to the hinged lever V by the knee. The slides P and Q are united together by the cross-slides T T', which operate on wires or rods u u, as shown. By these arrangements of stops, I obtain a more complete control of the different tones of the organ than heretofore and a greater variety of changes, which are necessary to a complete organ.

What I claim as new, and wish to secure by Letters Patent, is—

1. In an organ, the combination of the treadle W⁴, rod G¹, shaft G², rod G³, square upright rod D, lever E, shaft G, lever L, pivoted connecting-rod H, and stop-slide P, arranged as shown, for the purpose specified and set forth.

2. In an organ, the combination of the treadle W⁴, rod G¹, shaft G², lever G⁴, connecting-rod N², lever N¹, round upright rod C¹, lever N, pivoted connecting-rod O, and stop-slide Q, arranged as shown, for the purposes specified and set forth.

3. In an organ, the combination of the hinged lever V, slotted lever U, round upright rod C³, lever N³, pivoted connecting-rod O¹, lever N², round upright rod C¹, lever N, pivoted connecting-rod O, and stop-slide Q, arranged as shown, for the purposes specified and set forth.

4. In an organ, the combination treadle W³, connecting-rod O², lever N⁴, round upright rod C, hooked arm M, pin M', connecting-tie K, connecting pivoted bars J J', and stops R, arranged as shown, for the purposes specified and set forth.

5. In an organ, the combination of the stop-slides P Q, cross-slides T T', slide-rods u u, stops R, and pins h h g g, arranged as shown, for the purposes set forth and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT C. NICHOLAS.

Witnesses:

E. O. FRINK,
L. E. WHITE.