H. H. WINGER.

REED-ORGAN STOP-ACTIONS.

No. 195,469. Patented Sept. 25, 1877.

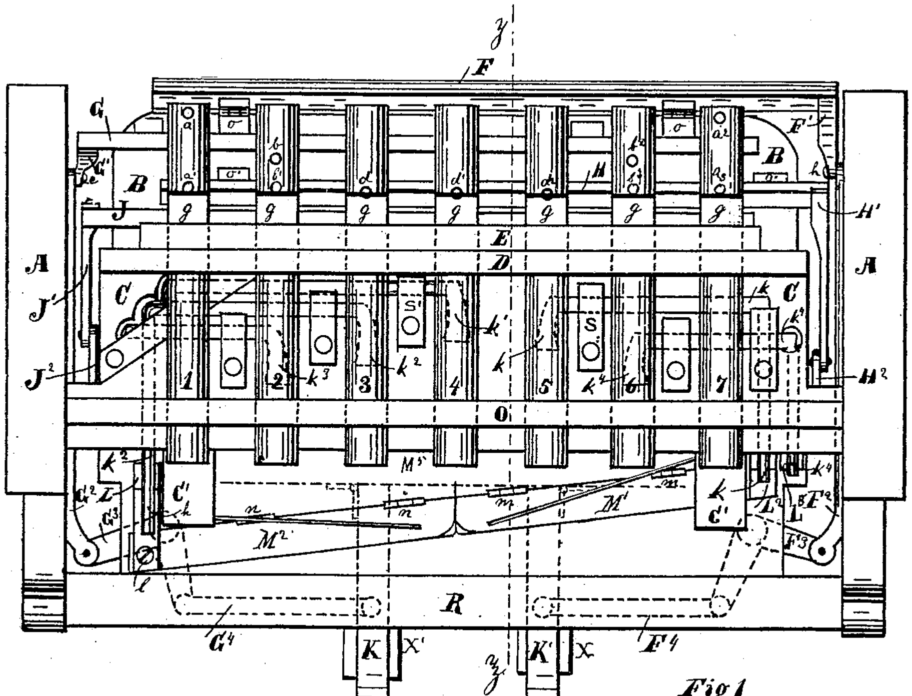

Fig 1

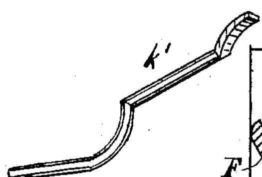

Fig 4.

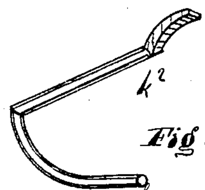

Fig 3

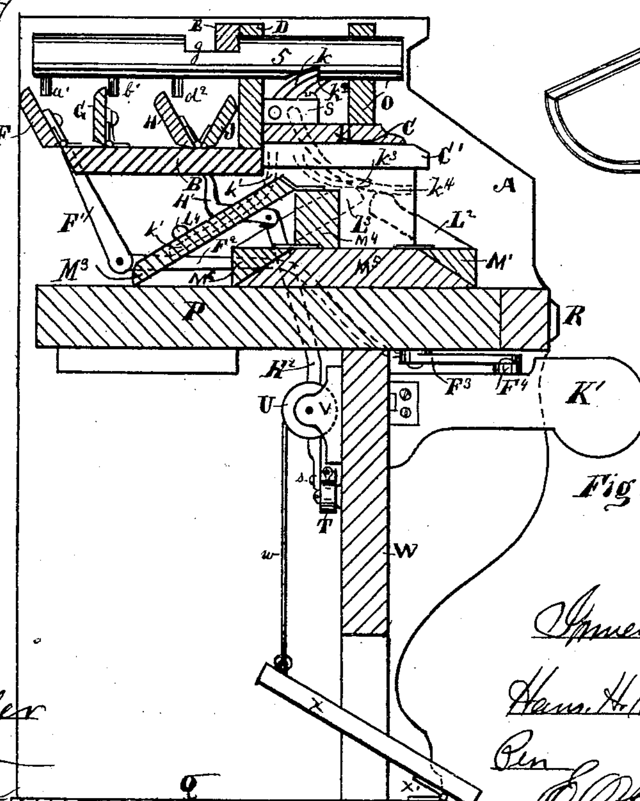

Fig 2

Witnesses

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UNITED STATES PATENT OFFICE.

HANS H. WINGER, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO CHARLES O. HILLSTROM, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN REED-ORGAN STOP-ACTIONS.

Specification forming part of Letters Patent No. **195,469**, dated September 25, 1877; application filed June 14, 1876.

To all whom it may concern:

Be it known that I, HANS H. WINGER, of Indianapolis, county of Marion, State of Indiana, have invented a new and useful Improvement in Organ Stop-Actions, of which the following is a description, reference being had to the accompanying drawings.

The object of my invention is to obtain a more ready control of the stops of an organ, and to regulate the sound, by means of devices arranged to operate as hereinafter set forth and claimed.

Figure 1 represents a top view of my improved organ. Fig. 2 is a sectional view taken through the line *y z* of Fig. 1. Figs. 3 and 4 represent different forms of the bent wires that operate the different mutes and swells, and are made to operate right and left or front and rear.

In the drawings, A A represent the end frames of the organ, which are united together by the front bar R, frame P of the wind-chest, front partition W, and bottom Q, as shown in Fig. 2. Above the partition P is secured the reed-board M^5, and to the front and rear of this reed-board are hinged the mutes or stops M^1 M^2 at one end, and M^6 at the other end, as shown. Above the reed-board M^5 is secured the swell-support M^4, to which is attached the back swell M^3. Above the swell-support M^4 are arranged the key-frames C′ C′, as shown, and above the key-frames C′ is arranged the stop-board C, and extending upward at the front and rear of the stop-board C are arranged the stop-guides O D, in which the stop-rods 1 2 3 4 5 6, &c., are arranged to slide forward and backward. At the rear of the stop-guide D is attached a bar, E, which extends into notches *g* formed in the stop-rods 1 2, &c., to prevent the rods from being drawn too far forward or pushed too far back. B represents an extended table, the front edge of which is secured to the rear of the stop-board C at the bottom, or it may be secured to the lower edge of the stop-rod guide D. On the table B are hinged or pivoted the bars F G H J, arranged to be operated by a swinging motion, as shown. Below the wind-chest P the front partition W extends to the base of the organ-frame, and to the front of the partition W are hinged the knee-levers K K^1 that operate the stop-rods 1 2 3, &c. On the stop-board C, between stop-rod guides O D, are secured, in suitable journal-boxes S, the bent wires *k* k^1 k^2 k^3 k^4, which are bent at one end in one direction to form a curved point to engage with the stops 1 2 3, &c., and in different ways at the other end, according to different means, by which the bent wires are manipulated, as follows: The wire k^1 has one end curved upward and forward, and engages with an inclined notch in the bottom of the center stop-rod 4, and the other end curves downward through the stop-board C, and, extending backward, engages with a projecting lug, L^4, on the rear swell M^3, (shown in dotted lines,) so that any movement of the stop-rod 4 forward depresses the front curved end of the bent wire k^1, and causes the rear curved end to lift the rear swell M^3, and the swell M^3 will be held open until the rod 4 is moved back, which will release the front curved end of wire k^1, and allow the swell M^3 to close. The swell M^3 can also be opened by a pressure on the treadle X, and closed by a pressure on the treadle X′, to the left of X, (see Fig. 1,) as follows, to wit: By pressing down on the treadle X, the cord *w*, which passes over the pulley U, causes the end of the lever T which is over the treadle X to be raised, thus depressing the other end of the lever T. This motion pulls down the connecting-rod H^2, and this rod in turn is attached to the curved or angular rod H^1, in such a manner as to draw it downward at its connecting end. The other end of the curved or angular rod H^1 is securely attached to one end of the hinged stop-bar H, as shown in Fig. 2; and when operated as above described, the bar H moves forward at its upper side, (the lower side being hinged,) and the stop-pin d^1, which projects below the stop-rod 4, as shown in Fig. 2 at d^2, is moved forward, carrying the stop 4 with it, thus causing the bent wire k^1 to partially rotate in the bearing S′ and open the swell M^3, as before described. By pressing on the treadle X′, at the left of the treadle X, a reverse movement is given to the stop-rod 4 and swell M^3, by means of levers and bent connecting-rods arranged opposite those just described, to operate the hinged stop-bar J in the same manner, so as to throw off the stop 4 and close the swell M^3.

The hinged stop-bar H also operates on the stop-pins d and d^2, and thus moves three stops, 3, 4, and 5, forward at the same time; and by this movement the swells or mutes M^1 and M^2, at the front of the reed-board M^5, are also lifted by means of the bent wires k^2 and k, which are operated by the stop-rods 3 and 5 in the same manner as wire k^1 under stop-rod 4, already described. The end of the bent wire k^2 that engages with the mute M^2 is curved forward, as shown in Fig. 3, and the front curved end h rests on the lever-arm L, which is secured on the outer end of the mute M^2, as shown, in such a manner that when the curved end of the wire k^2, that is under the stop-rod 3, is depressed, by drawing the stop forward the other curved end h also depresses the lever L on the mute M^2, and causes it to open. When the stop 3 is pressed back then the mute M^2 is closed.

The mute M^1 is also operated in the same manner by the bent wire k, stop-rod 5, and lever L^2, which is attached to the rear mute, each of which is operated to open and close in the same manner as mutes M^1 M^2, by bent wires k^3 and k^4, which have their outer ends bent so as to engage with levers L^5, attached to the mutes—one at each end of the organ; but they are operated or opened by means of the hinged stop-bar G, which, in its forward movement, engages with the pins b b^2, and moves the stop-rods 2 and 6 forward. This movement is accomplished by means of the knee-lever K, by forcing the knee-lever K in the direction of its accompanying arrow, Fig. 1. The connecting-rod G^4 communicates the motion to the bell-crank G^3 and to the connecting-rod G^2, which has its rear end pivoted to a downward-projecting arm or lever, G^1, which is securely fastened to the hinged stop-bar G, so that any movement of the lower end of the projecting arm or lever G^1 backward will cause the bar G to swing on its hinges, and move the stops 2 and 6 forward. The stop-pins b and b^2 in these two stop-rods 2 and 6 are doubled—that is, there are two pins in each bar, b b^1, b^2 b^3, and the hinged bar H is provided with notches, (not shown,) to allow these double pins b b^1 to pass by, and not engage with the hinged bar H, in such a manner as to allow the front hinged bar J, by a movement of the treadle, by the side of treadle X, to press the stops 2 and 6 back when required, as before described, only that the hinged bar J engages with the extra pins b^2 b^3 in front of the pins b b^1 of the stop-rods 2 and 6.

The stop-rods 1 and 7 are operated to move in and out, and to operate other mutes, when required, in the same manner; and the rods 1 and 7 are also provided with stop-pins a a^1 a^2 a^3. The pins a and a^2 engage with the rear hinged bar F, and are moved forward by means of levers and cranks F^4 F^3 F^2 F^1, actuated by the knee-lever K′, in the same manner as those operated by the knee-lever K, above described. The front pins a^1 and a^3 of the stop-rods 1 and 7 also pass through the opening in the hinged bar H, and engage with the front hinged bar J, to be thrown back as before described.

By my improved method of operating the stop-rods 1 2 3, &c., and the different mutes and swells, I have perfect control of each and all parts thereof, and can at will change the tone of the music, and by very convenient means; and by the arrangement of a suitable catch, I may hold the knee-levers K K′ partially back and the rear swell or mute M^6 slightly open at all times, until released by a pressure of the knee, which will free the lever K, and allow the mute M^6 to close.

The connection between the treadles X and levers T can be varied from the cord or rope w by the introduction of levers and rods or bell-cranks, if desired, and dispense with the rope w and sheave U.

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

1. The combination of the stop-rods 3, 4, and 5, having pins d d^1 d^2, the hinged bar H, treadle X, and intermediate devices for operating the said bar from the treadle, as set forth.

2. The combination of the stops M^1 M^2 and swell M^3, the stop-rods having inclined notches, and the bent wires, each bearing, at one end against the inclined edge of the notch of one of the stop-rods, and at the other on an arm of one of the stops or swells, as specified.

3. The combination of the series of stop-rods 1 2 3, &c., each provided with a pin, the hinged bar J, arranged to operate on all the pins, and the treadle X′, connected to and operating the bar J, as set forth.

4. The combination of the series of stop-rods, provided with pins, as set forth, the bar J, hinged to the table B, operated from a treadle, and one or more hinged bars operating on pins on some of the stop-rods, and connected to and operated by a knee-lever, K or K′, as set forth.

5. The end stop-rods, each provided with two pins, combined with the hinged bars J and F and devices for operating the latter, as specified.

6. The combination of the series of stop-rods, a hinged bar, J, operating on all of said stop-rods, and supplemental bars, constructed and arranged to operate each a part of the stops, as specified.

7. The hinged stop-bar H, combined with the stop-rods and their pins, and having recesses to permit the passage of some of said pins, as set forth.

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

HANS H. WINGER.

Witnesses:
E. O. FRINK,
I. F. RANDOLPH.