

W. Robjohn, Pipe Organ.

N^o 54,603.

Patented May 8, 1866.

Fig. 1.

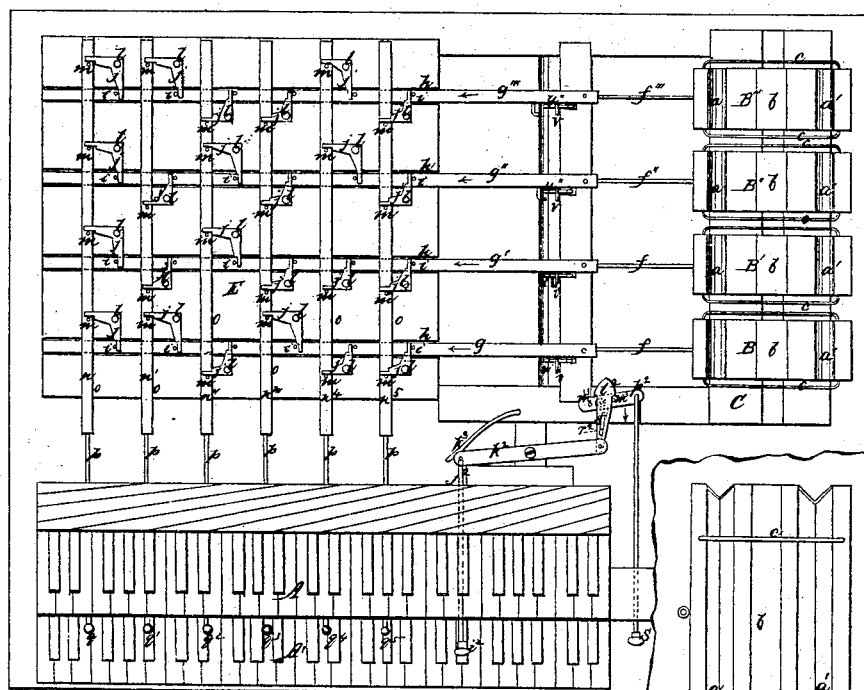
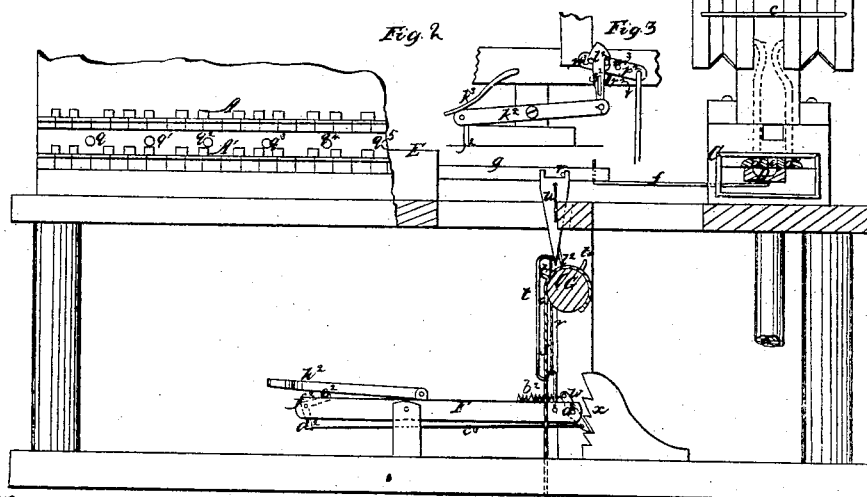


Fig. 2.

Fig. 3.



Witnesses
J. E. Gray
J. W. Lusk

Inventor.
W. Robjohn
Wm. & Co.
attys.

UNITED STATES PATENT OFFICE.

WILLIAM ROBJOHN, OF NEW YORK, N. Y.

IMPROVEMENT IN ORGANS.

Specification forming part of Letters Patent No. 54,603, dated May 8, 1866.

To all whom it may concern:

Be it known that I, WILLIAM ROBJOHN, of the city, county, and State of New York, have invented a new and useful Improvement in Organs; and I 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, in which—

Figure 1 represents a plan or top view of this invention. Fig. 2 is a sectional front elevation of the same. Fig. 3 is a detached view, showing the oscillation spring-dog *P* in a different position from that shown in Fig. 1.

Similar letters of reference indicate like parts.

This invention consists in the arrangement of what may be termed a "composition-board," in combination with the key-board or key-boards of an organ and with suitable buttons or finger-pieces, in such a manner that by the aid of said buttons and and composition-board the player is enabled to put on or take off any desired combination of stops without rasing the hand from the key-board.

The composition-board consists of a series of longitudinal and transverse slides and elbow-levers arranged in relation to each other and to a series of pneumatic levers connecting with the draw-stops of the organ in such a manner that by the action of each of the transverse slides one or more stops are opened, and also one or more closed, and any desired combination of stops can be drawn out or pushed in by a simple pressure of the thumb or finger on one of the buttons or finger-pieces.

Instead of operating the valves of the pneumatic levers by means of the slides of the composition-board, they may also be operated by a pedal, which acts on a roller furnished with wipers, which, by the intermediate action of suitable forked levers, transmit the motion of said roller to the stops. The pedal is provided with a spring-pawl, which can be made to catch in the teeth of a serrated standard, and, according to the position of the spring-pawl, one or more of the pneumatic levers are brought into or out of action, and one or more draw-stops of the organ are drawn out or pushed in.

In organs with two or more key-boards a spring-button or finger-piece is provided, which connects with a rocking spring-catch and

working-lever in such a manner that by pressing on said spring-button the position of the coupling is reversed—that is to say, when the key-boards are uncoupled the operation of coupling the same is effected by a simple pressure on said button, and vice versa.

A A' represent the two key-boards of an organ, the draw-stops of which are to be operated by the action of pneumatic levers B B' B'' B''', &c., which are connected to them by any suitable mechanism. Each of these pneumatic levers consists of two oblong boxes, *a a'*, with flexible sides connected to the opposite sides of one and the same center part, *b*, and the outer plates or boards of said boxes are connected by suitable rods *c*, so that if one of the boxes is drawn out the other must close, and vice versa. The boxes *a a'* are supplied with wind from the trunk C, which connects with the same through ports or channels *d d'*, and these ports are opened and closed by means of an ordinary D-valve, D, as clearly shown in Fig. 2, and the cavity in the face of which serves to establish a communication between either of the supply-channels *d* or *d'* with the exhaust-port *e*.

In Fig. 2 of the drawings the port *d'* is open to take wind, and the port *d* communicates with the exhaust-port, and the box *a'* is in the act of being inflated, while the box *a* empties. By this arrangement of the valve D and channels *d d'* the change in the course of the wind is effected with little power, and by using square boxes *a a'* a pneumatic lever of considerable power is obtained, whereas if flaps of the ordinary construction are used one-half of the power of the wind is taken up by the end connections of said flaps.

The valves D of the several pneumatic levers are operated by means of rods *f f' f'' f'''*, &c., which form the connection between said valves and the longitudinal slides *g g' g'' g'''*, &c. These slides are fitted into suitable guide-grooves *h* in the board E, and from each slide project a series of pins or studs, *i*, which form the bearing-points for the elbow-levers *j* in moving the slides *g g'*, &c. These elbow-levers are either constructed of simple bell-crank, as shown, or they may be constructed in any other suitable manner, and they have their fulcrum on screws or pivots *l*, secured in the board E. One arm of each of these elbow-levers is in-

tended to act on one of the studs i , which project from the slides g g' , &c., and the other arms of said elbow-levers are acted upon by studs m , which project from slides n n' n'' n''' n^4 n^5 , &c. These slides extend transversely across the board E , and they are guided in suitable grooves o . Rods p extend from their ends through the box which supports the key-boards and buttons. q q' q^2 q^3 q^4 q^5 , &c., attached to the end of these rods, are in such a position that the player is enabled to reach the same conveniently with the thumb of either hand without raising said hand from the key-board.

By referring to Fig. 1 it will be noticed, that the elbow-levers j are secured to the board E in different positions, so that by pressing the button q , for instance, the slides g , g' , g'' , and g''' are moved in the directions of the arrows marked thereon in Fig. 1, and the valves connected to these slides are opened, causing the appropriate pneumatic levers to act on the corresponding draw-stops. By pressing the button q' the slides g' and g'' only are opened, and if the slides g' g'' happen to be open they are closed. The button q^2 opens the slides g' g'' and closes the slides g g''' , &c., and the button q^5 closes all the slides which happen to be open.

From this description it will be readily understood that each of the buttons q q' , &c., controls one or more stops, and any desired combination of stops can be drawn out or pushed in by the organist at a moment, and without taking the hand off from the key-board.

The operations of the slides g g' , &c., and of the draw-stops governed by them can also be effected by the pedal F . This pedal connects by a strap, r , with a roller, G , which is subjected to the action of a spring, s , that has a tendency to turn the same in the direction of the arrow marked on it in Fig. 2. The strap r is connected to the roller and to the pedal in such a manner that by depressing the outer end of the pedal the roller G is turned in a direction opposite to said arrow. From the surface of the roller G project the wipers t t' t^2 t^3 , which act on forked levers u u' u^2 u^3 , the upper forked ends of which straddle pins v , inserted in the sides of the slides g g' g'' g''' . The tappets t t' , &c., in the roller G are so arranged that when the roller is rotated in the direction opposite to the arrow marked thereon in Fig. 2 the tappet t^3 acts first on the lever u''' and opens the slides g''' , and as the motion of the roller proceeds the tappet t^2 acts on the lever u'' and slide g'' , &c., until all the slides are opened, and if the roller is allowed to follow the action of the spring s said slides are successively closed. In order to retain the roller G in any desired position, the pedal is provided with a spring-pawl, w , which catches in a serrated standard, x , as shown in Fig. 2. This spring-pawl swings on a pivot, a^2 , and the spring b^2 is connected to it so that its point is thrown out toward the teeth of the

serrated standard x . From the point of the pawl extends a rod, c^2 , which connects with one arm, d^2 , of an elbow-lever, d^2 e^2 , that is hung on a pivot, f^2 , in the outer end of the pedal F . The arm e^2 of said elbow-lever bears on the treadle h^2 , which is pivoted to the upper edge of the pedal as shown.

By stepping with the foot on the treadle the point of the pawl is drawn backward, and the roller G can be allowed to follow the action of the spring s until the desired number of slides are closed; and by taking the foot off the treadle in a dextrous manner the pawl can be made to catch in either of the teeth of the serrated standard x , so as to keep the desired number of slides g g' , &c., open and the rest closed.

By changing the position of the tappets, and by providing several rollers and pedals, any combination of stops could be drawn out or pushed in by the action of the foot, and the desired crescendo and diminuendo are effected with the least possible exertion, and without interruption of the playing.

For the purpose of coupling the several key-boards A A' of the organ, I have also provided a button, i^2 , which the player can reach without lifting the hand from the key-board. This button is secured to the outer end of a rod, j^2 , which connects with one end of a rocking spring-lever, k^2 , the other end of which bears a double-acting spring-dog, l^2 . This spring-dog is hinged to the rocking lever, so that it can freely swing in either direction, and its head is situated between two studs or pins, m^2 m^3 , which project from a working lever, p^2 . This lever connects with the coupling mechanism, and from its edge projects a spring, r^2 , which catches in a slot, s^2 , in the dog l^2 . In the position in which the lever p^2 is shown in Fig. 1 the two key-boards A A' are uncoupled, and if the button i^2 is pressed in, the dog l^2 acts on the stud m^3 , and the lever p^2 is turned down in the direction of the arrow marked near it in Fig. 1, and the two key-boards are coupled. When the button i^2 is released it is returned to its original position by the spring k^2 acting on the lever k^2 , and the spring r^2 throws the dog l^2 in such a position that it is ready to catch over the stud m^2 . If the button i^2 is again pressed in, the key-boards are uncoupled, and the dog l^2 is again reversed by the action of the spring r^2 , so that the same is always ready to act on one of the studs and to couple or uncouple the key-boards, as the case may be. If desired, the coupling may be effected by the ordinary stop S .

I do not claim as my invention the use of buttons, or their equivalents, which can be reached by the player without raising the hand from the key-board, and which serve to operate one or more draw-stops of an organ; neither do I claim the application of one or more pedals for the purpose of operating one or more draw-stops; neither do I claim, broadly, the use of pneumatic levers for the purpose

of assisting in the operation of the draw-stops of an organ; but

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

1. The composition-board E, constructed of a series of longitudinal slides, $g\ g'\ g''$, &c., and a series of transverse slides, $n\ n'\ n''$, &c., when the same is applied in combination with buttons or finger-pieces $q\ q'\ q''$, &c., and with pneumatic levers B B' B'', &c., substantially in the manner and for the purpose described.

2. The use of an ordinary slide-valve, D, of that class commonly known as "D-valves," in combination with the two parts $a\ a'$ of a pneumatic lever, and with rods c , connecting said parts, substantially as and for the purpose set forth.

3. The spring-pawl w and serrated standard u , in combination with the treadle n^2 , pedal F, and with the slides $g\ g'\ g''$, &c., which serve to

impart motion to the draw-stops of an organ, substantially as and for the purpose described.

4. The roller G, with wipers $t\ t'\ t^2$, &c., spring s , and strap r , in combination with the pedal F, levers $u\ u'\ u''$, &c., and slides $g\ g'\ g''$, &c., substantially as and for the purpose set forth.

5. The oscillating spring-dog l^2 and button or finger-piece i^2 , in combination with the mechanism which serves to couple and uncouple the several key-boards A A', &c., constructed and operating substantially as and for the purpose described.

The above specification of my invention signed by me this 29th day of November, 1865.

WILLIAM ROBJOHN.

Witnesses:

WM. F. MCNAMARA,
C. L. TOPLIFF.