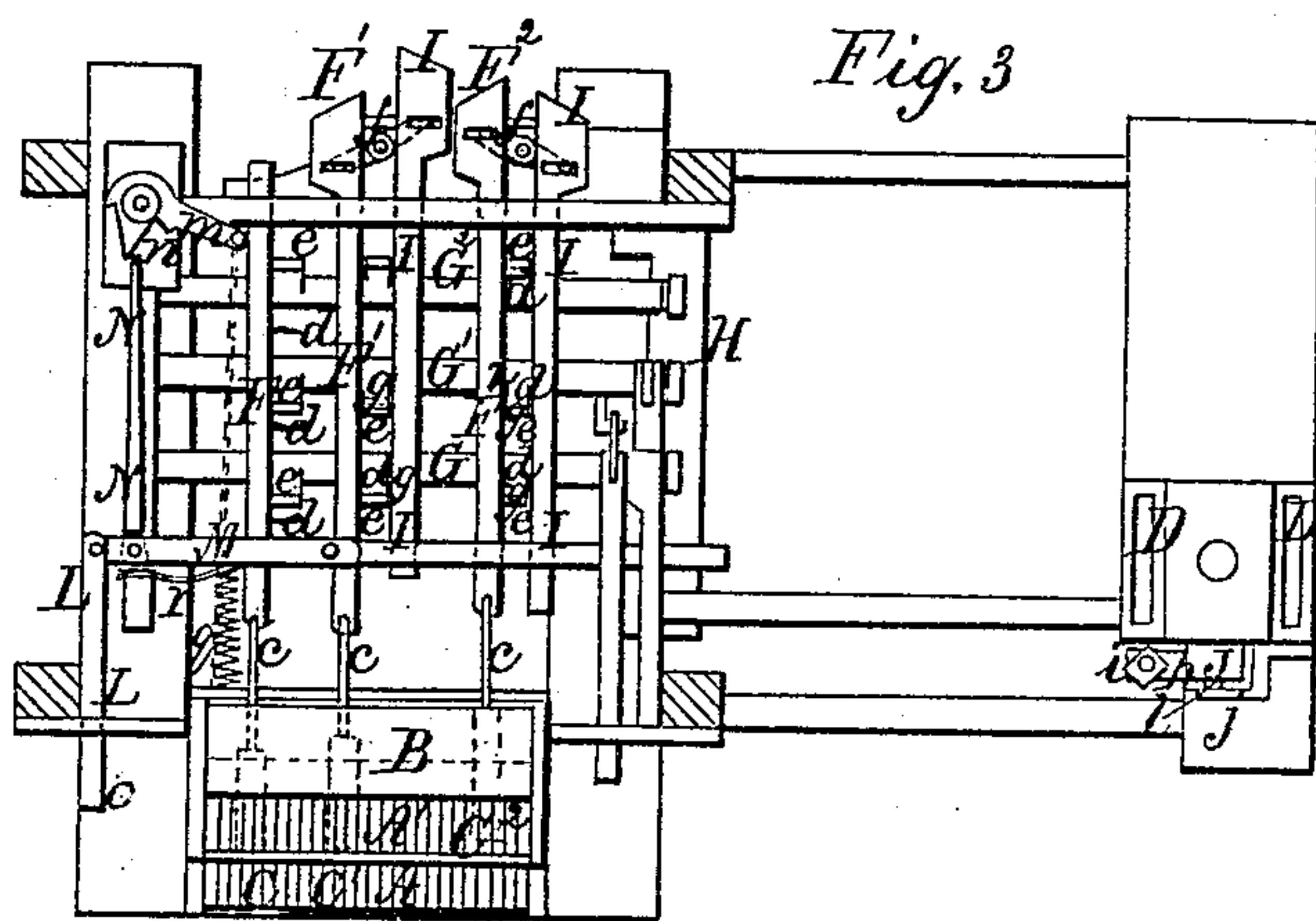
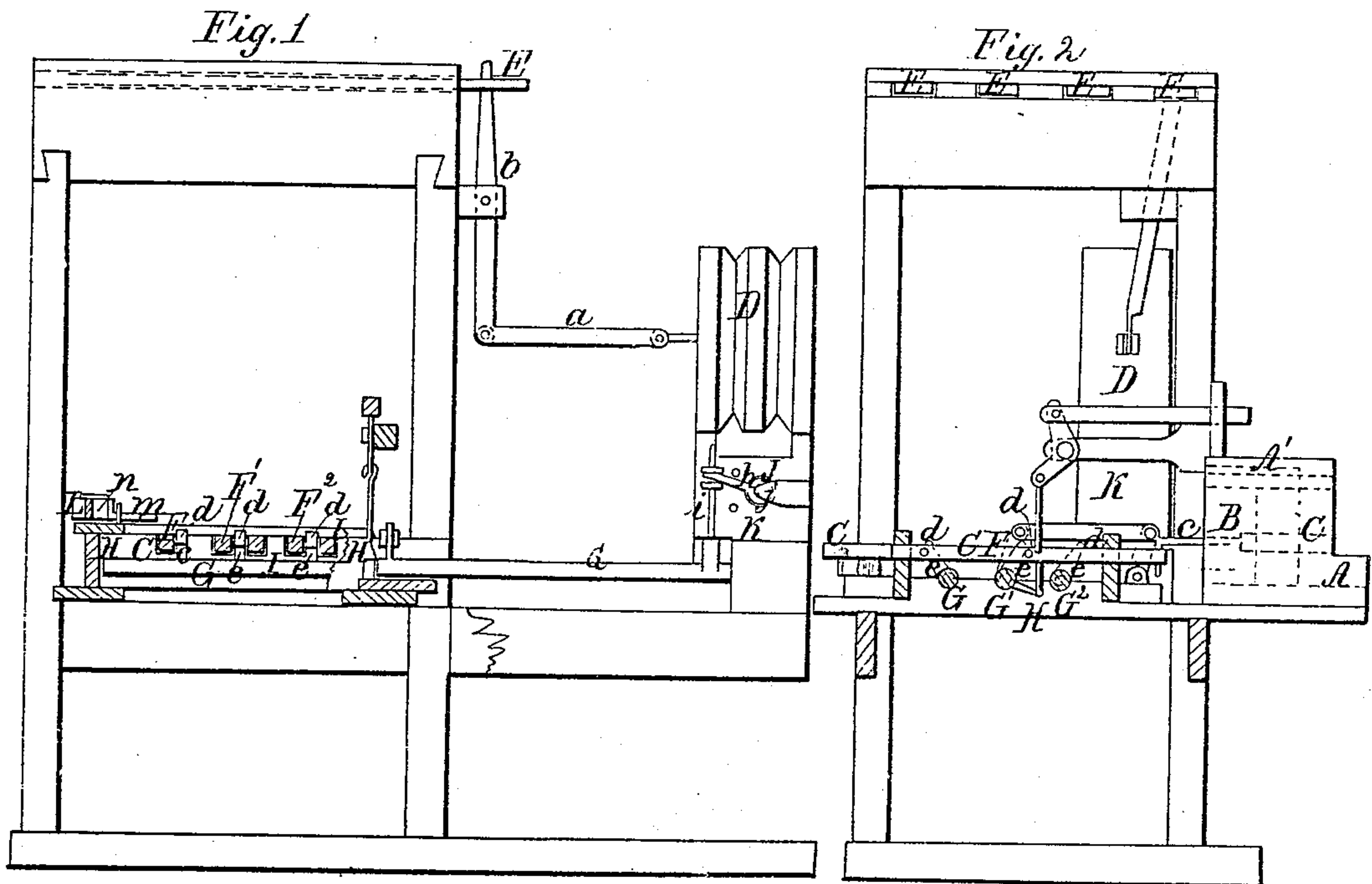


Sheet 1, of 2

W. Robjohn. Pipe Organ.

No. 93,349.

Patented Aug. 3, 1869.



Witnesses

Charles D. French
Geo. H. Mabey

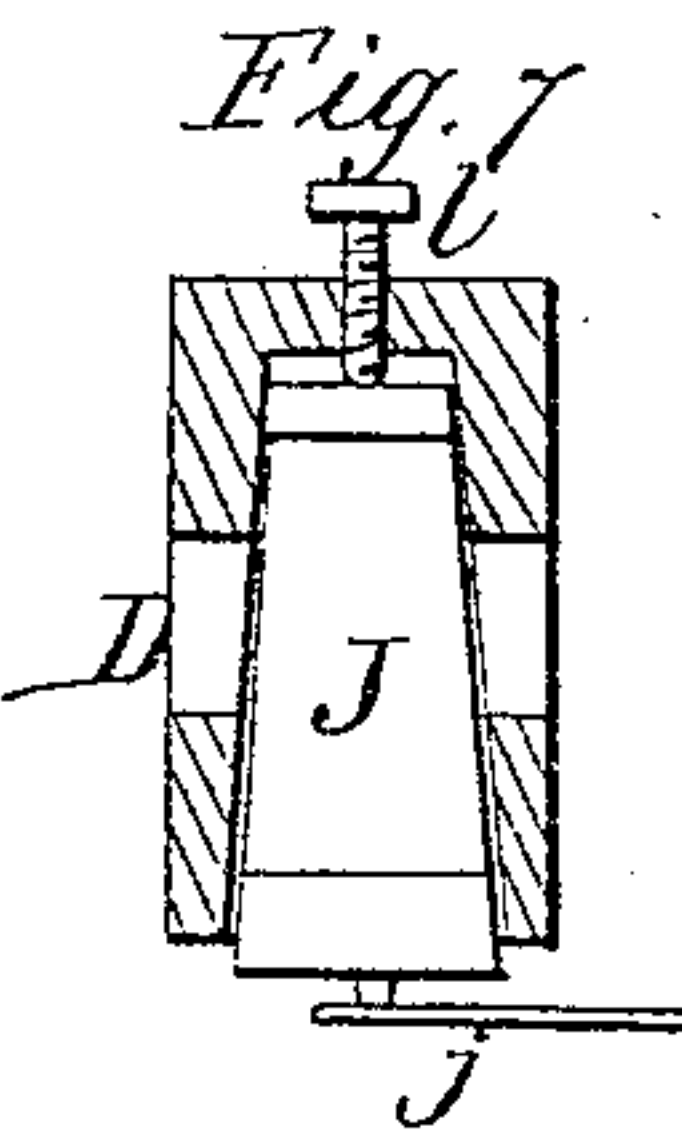
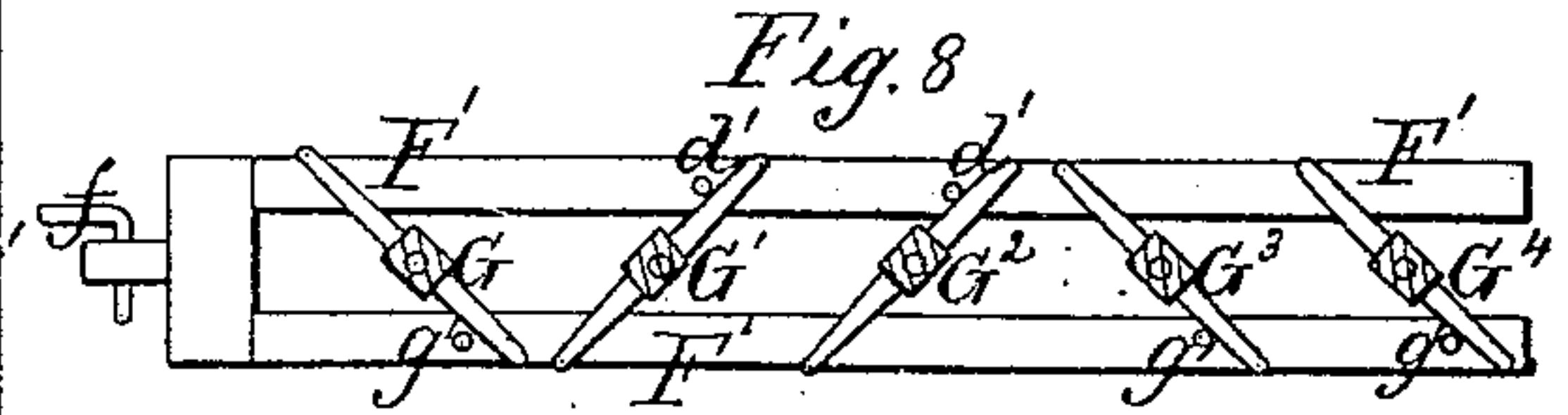
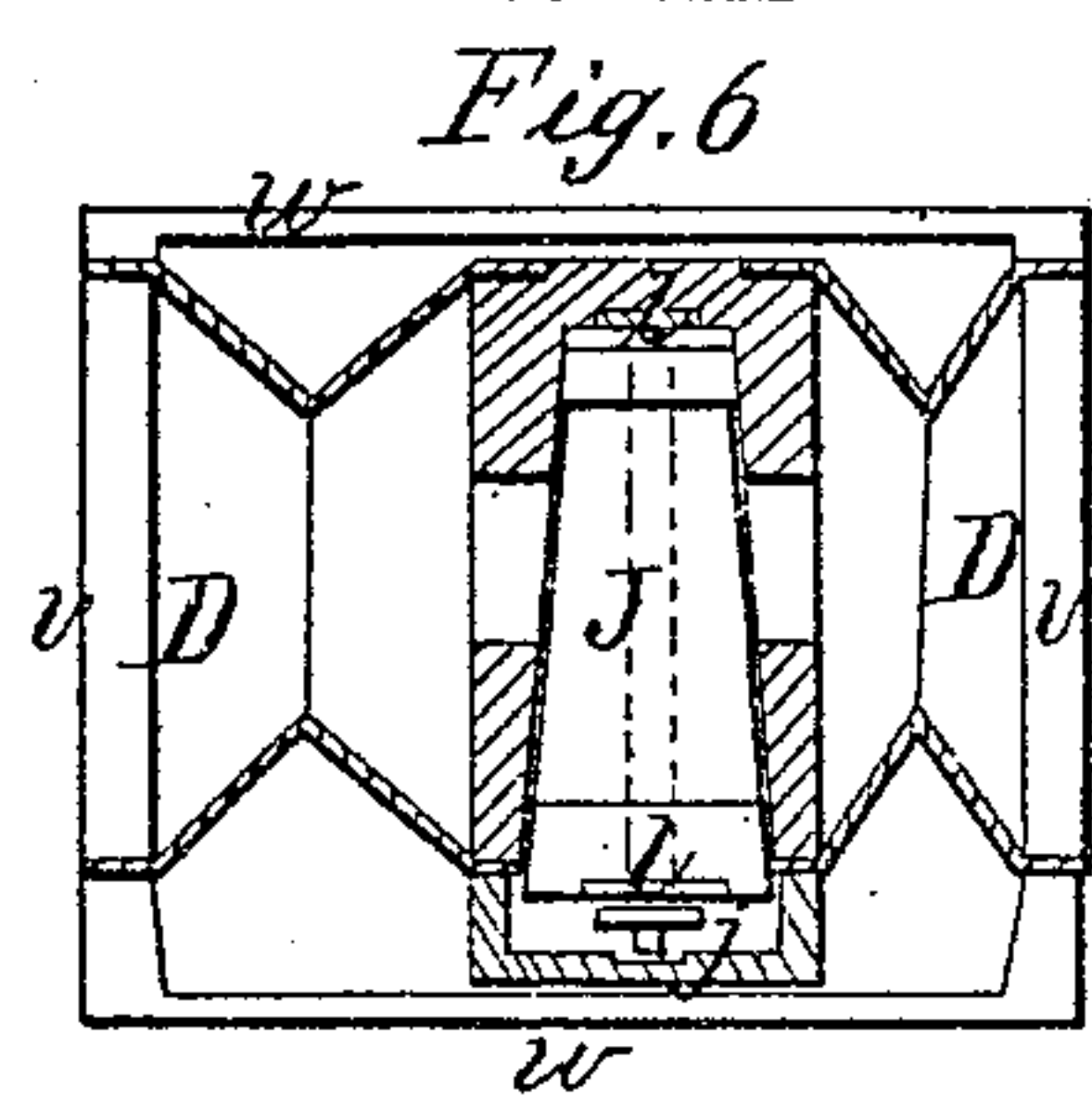
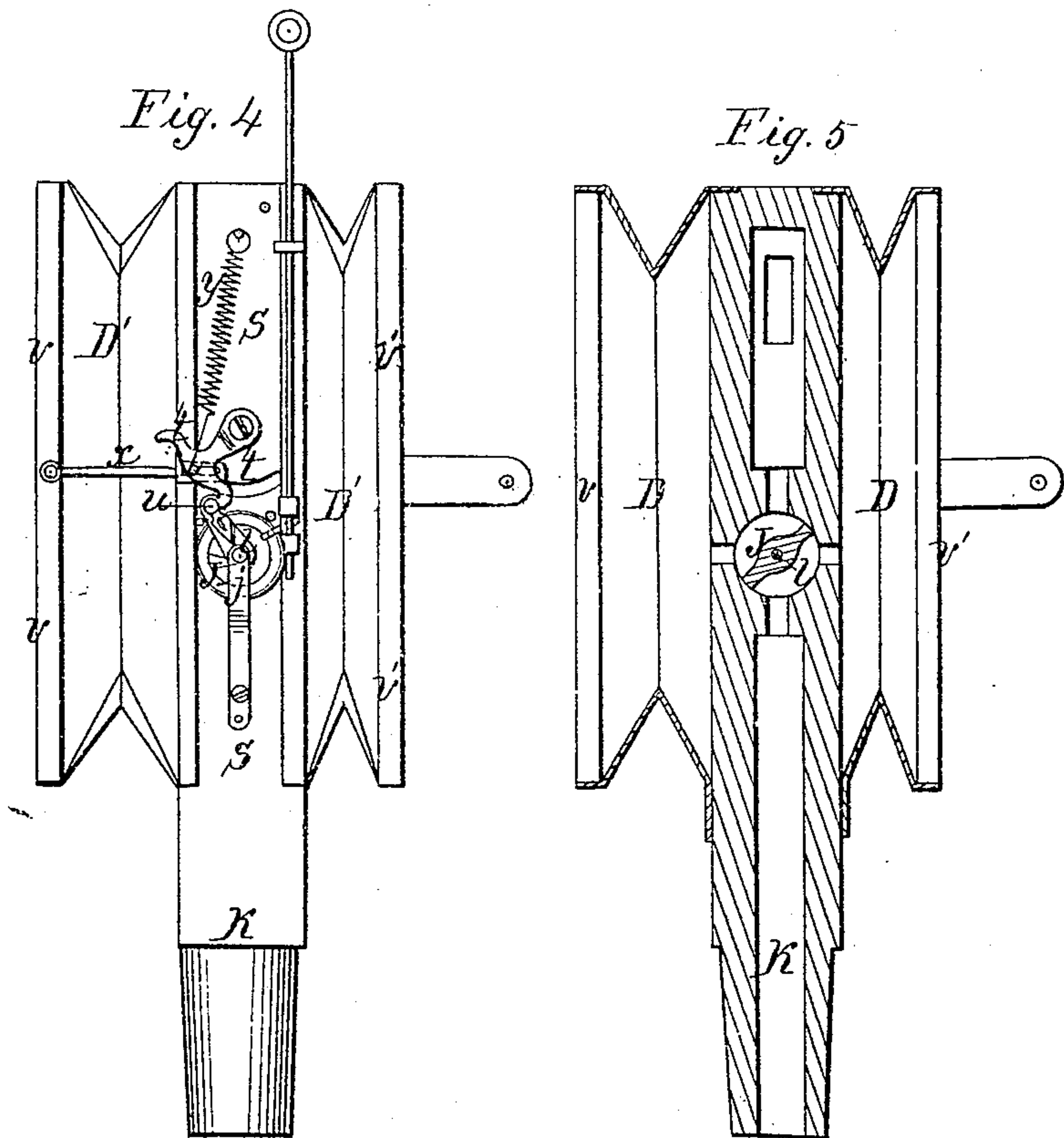
Inventor

Wm. Robjohn
Munn & Co.

W. Robjohn.
Pipe Organ.

N^o 93,349.

Patented Aug 3, 1869



Witnesses
Geo. W. Mabey
Custard L. L. L.

Inventor
Wm Robjohn
Mumms &

United States Patent Office.

WILLIAM ROBJOHN, OF NEW YORK, N. Y.

Letters Patent No. 93,349, dated August 3, 1869.

IMPROVEMENT IN ORGANS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM ROBJOHN, of New York city, in the county of New York, 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, forming a part of this specification, in which—

Figure 1 represents a front view, partly in section, of my improved organ.

Figure 2 is a side view, partly in section, of the same.

Figure 3 is a plan or top view of the same.

Figure 4 is a front view of the tremulant pneumatic lever.

Figure 5 is a vertical transverse section of the same.

Figure 6 is a horizontal section of the same.

Figure 7 is a detail horizontal section of the same, showing a modification in the construction of the valve.

Figure 8 is a vertical section of the composition-board, showing a modification in the construction of its parts.

Similar letters of reference indicate corresponding parts.

This invention relates to certain improvements on the organ-improvement for which Letters Patent, No. 54,603, were granted to me on the 8th day of May, 1866.

The present invention has for its object to simplify the devices on the composition-board referred to in the aforesaid Letters Patent, as well as the pneumatic lever, and to provide a reliable and practicable tremulant pneumatic lever, and a reversible coupler for the key-boards.

The connection between the slides which are acted upon by the buttons or finger-pieces and the oscillating valves of the pneumatic levers that actuate the draw-stops, is in this apparatus produced by a series of oscillating rockers, thereby doing away with the elbow-cranks and their numerous pivots, and consequently with a great amount of friction.

The valves of the pneumatic levers are made oscillating, and not reciprocating, and can thereby be operated with greater ease, as they are not moved against a direct pressure of air.

The reversible coupler is so arranged that it is reversed by every motion of a button, whatever be its position.

The tremulant pneumatic lever which is interposed in a suitable position between the wind-trunk and the pipes has its two movable side-pieces so connected that when one side is inflated it will automatically be cut off from the air-supply, and the other side connected with the same, whereby reciprocating or other motion

is imparted to the draw-stops or other devices for producing a tremulo or other vibrating action.

A A' are the two key-boards of an organ, fitted into the frame B.

C, C¹, C², C³, &c., are the buttons or finger-pieces for operating the pneumatic levers D.

Of the latter, but one is represented in the drawing, although one is to be provided for and connected with every draw-stop E, by means of rods *a b*, or their equivalents, as shown in fig. 1.

The buttons C, C¹, C², &c., are connected, by rods *c c*, with slides F, F¹, F², &c., respectively, each slide having a number of projecting pins, *d d*.

G, G¹, G², &c., are a number of transverse rock-shafts, hung in the composition-frame H, one for each pneumatic lever and draw-stop.

Each rock-shaft G, G¹, &c., has as many projecting ears *e e* as there are slides F, F¹, &c.

Every slide, with the exception of the first one, F, which sets all the draw-stops in action, is at its outer end connected, by means of pivoted cross-pieces *f*, with reverse slides I, so that when a button is touched to push one slide out, the reverse slide connected with the same will be drawn in.

The reverse slides have pins *g g* where their operating-slides have none, and *vice versa*.

When a slide is pushed by its button, it will, with its stops *d*, strike one or more of the ears of the rockers G, G¹, &c., and will turn them to open the valves of the pneumatic levers connected with them, while its reverse slide will actuate the remaining rockers in the opposite direction, and will thereby reverse the valves of their levers.

As the pins in the various slides are differently disposed, all desired combinations can be produced by pushing the desired buttons.

The valve J is arranged in the air-channel K, which carries the air from the trunk to the pneumatic lever D, and is of conical form.

An arm, *h*, on it, is, by an adjustable rod, *i*, connected with a crank of the rocker pertaining to such valve.

When the valve is opened by the aforesaid means, the air is let into the lever, and the same has thereby one department inflated to pull the draw-stop.

When the valve is moved in the opposite direction by the action of the reverse slide, the other side of the lever is inflated, and the draw-stop moved in the opposite direction.

The valve J, which is more fully shown in figs. 5, 6, and 7, is, as aforementioned, of conical form, and is held against its seat by a spring, *j*.

It is made to work tight or loose, by means of an adjusting-screw, *l*, which is either put through the valve, as in fig. 6, or through the seat, as in fig. 7, and

which serves to hold the valve a suitable distance away from its seat.

The slides F, &c., instead of being connected with reverse slides, as aforesaid, can be slotted, as in fig. 8, to embrace the rock-shafts G, G', &c., in which case slides have pins *d' g'*, respectively, above and below the rock-shafts, to act on the ears of the latter, in opposite directions, such ears projecting from both sides of the rock-shafts, as shown.

By this arrangement, the amount of friction in operating the pneumatic levers is still more reduced.

The coupler, for connecting and disconnecting the key-boards of the organ, is operated by a rod, which is shown by dotted lines in fig. 3, and which is connected with a lever, *m*, that is pivoted to the frame of the composition-movement.

From the lever *m* projects a wedge-shaped bar, *n*, as in fig. 3.

The reversing-button *o* is attached to a slide, L, which is at its back end pivoted to a pivoted lever, M.

A spring, *q*, draws the button out.

A bar, N, is pivoted to the lever H, and is, by a spring, *r*, retained in a certain position, and still permitted to swing to the right and left.

When the button *o* is pushed, it pushes the bar N against the wedge *n*, on one side of its point, and thereby swings the lever *m*, so as to move the coupler in one direction.

The spring *q* will, on account of the changed position of the wedge, come against the opposite side of the wedge, and will thereby reverse the position of the coupler. Thus, at every motion of the button *o*, the coupler will be reversed.

The pneumatic lever above described is either as mentioned in my aforesaid Letters Patent, or it may have its sides fixed and its middle portion movable, as indicated in fig. 1.

A pneumatic lever, D', for producing a tremolo, is shown in fig. 4.

It is the same as that above described, and provided with a valve, J, in its middle stem *s*, and with a rod, *i*.

On the face of its stock is pivoted an anchor, *t*, which plays over an arm, *u*, that projects from the valve.

The two movable side-plates V V' of the lever are connected with each other by a bar, W, as in fig. 6, so that when one is inflated, the other must be emptied, and *vice versa*.

The anchor is connected with a spring, *y*, which tends to pull it up to either side after it has passed the centre.

By means of a rod, X, the anchor is connected with one side-plate V.

When the V-side is inflated, it draws, by the rod X, the anchor toward it, and the anchor, during this motion, swings the arm *u* of the valve, thereby turning the valve and letting the air into the V'-side of the lever.

When that side is being inflated, it draws the side V toward the middle end, and the rod X pushes the anchor, so as to swing the same and turn the valve, and thus the air blown through this lever produces a constant vibration of its sides, and a consequent motion of the tremolo or other devices.

Having thus described my invention,

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

1. The rock-shafts G, G', &c., connected with the pneumatic levers, and provided with projecting stops *e e*, so that they may be worked by the slides F, F', &c., substantially as herein shown and described.
2. The slides F', F'', &c., for operating the pneumatic levers, when connected with the reverse slides I I, substantially as and for the purpose herein shown and described.
3. The slides F, F', &c., when slotted and provided with two sets of pins, *d' g'*, to operate directly the pneumatic levers, substantially as herein shown and described.
4. The valve J of the pneumatic lever, when held against its seat by a spring, *j*, and when adjustable on the seat by the screw *l*, substantially as and for the purpose herein shown and described.
5. The reversible coupler, consisting of the lever *m*, wedge *n*, slide L, lever M, and bar N, all combined and operating substantially as and for the purpose herein shown and described.
6. The tremolo pneumatic lever D', provided with the anchor *t*, rod X, spring *y*, and arm *u*, on the valve, all arranged and operating substantially as herein shown and described.

WILLIAM ROBJOHN.

Witnesses:

FRANK BLOCKLEY,
ALEX. F. ROBERTS.