

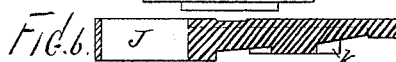
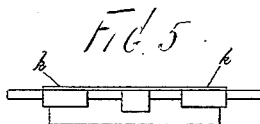
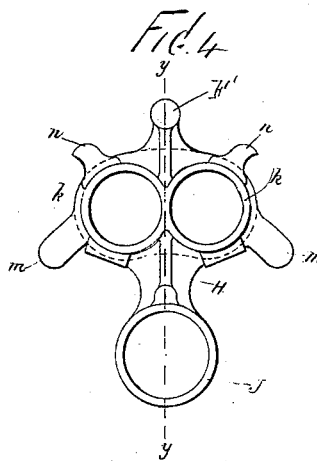
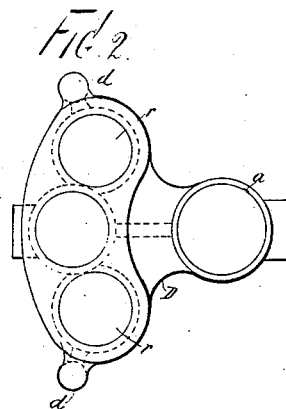
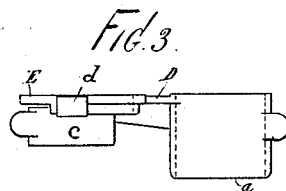
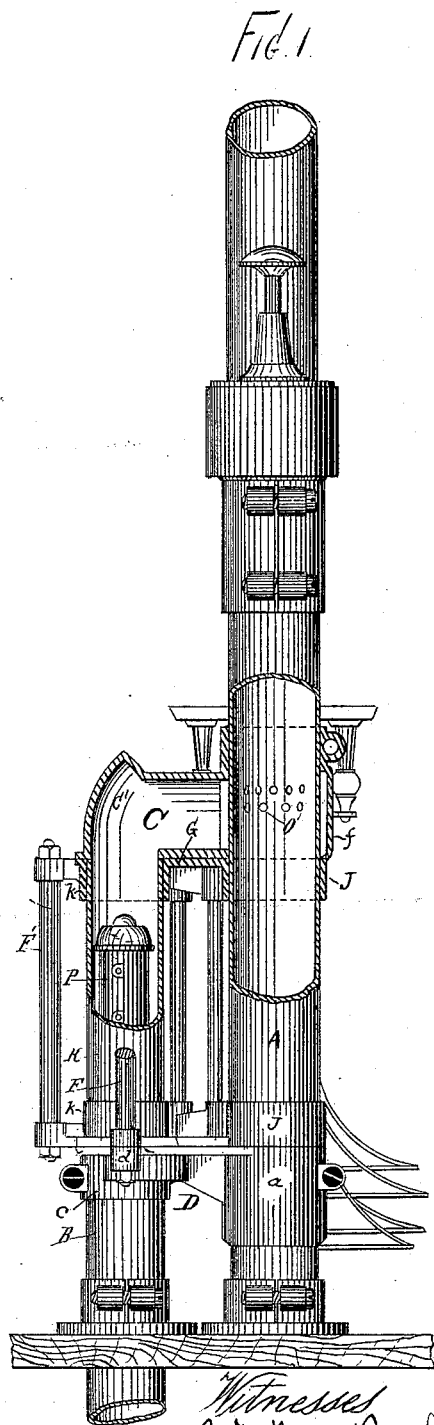
(No Model.)

2 Sheets—Sheet 1.

E. S. LEAYCRAFT.
SWITCH FOR PNEUMATIC TUBES.

No. 304,833.

Patented Sept. 9, 1884.



Witnesses
R. S. Van Buren
Jas J. Campbell

Inventor
E. S. Leaycraft
Per Short & Coe
attys

(No Model.)

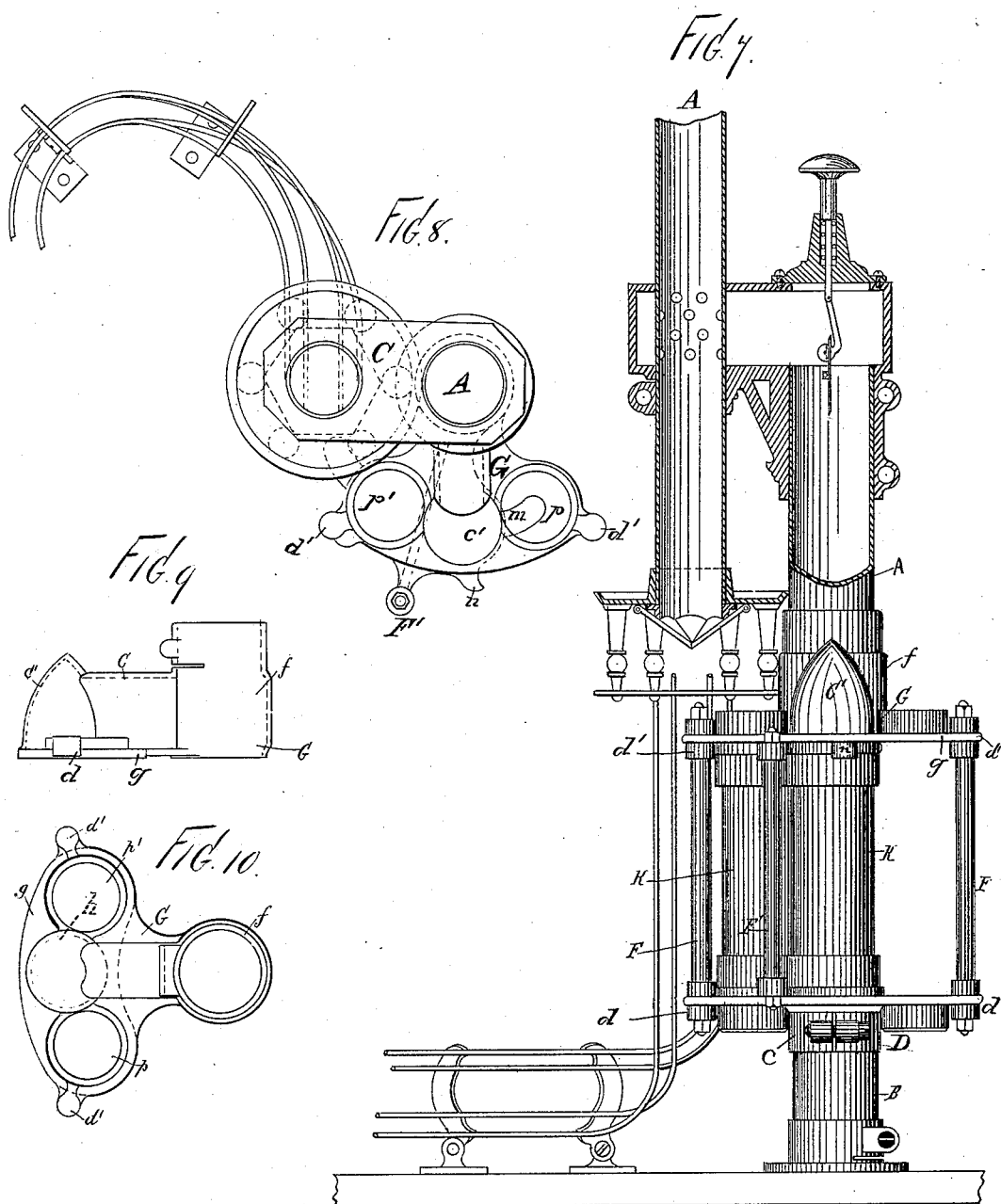
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UNITED STATES PATENT OFFICE.

EDWIN S. LEAYCRAFT, OF JERSEY CITY, NEW JERSEY.

SWITCH FOR PNEUMATIC TUBES.

SPECIFICATION forming part of Letters Patent No. 304,833, dated September 9, 1884.

Application filed January 11, 1883. (No model.)

To all whom it may concern:

Be it known that I, EDWIN S. LEAYCRAFT, a citizen of the United States, residing at Jersey City, in the State of New Jersey, have invented a new and useful Improvement in Switches for Pneumatic Tubes, of which the following, taken in connection with the accompanying drawings, is a full, clear, and accurate description.

In the accompanying drawings, Figure 1 represents in elevation a pneumatic tube with my improved switch applied thereto, a portion of the tubing being broken away to expose the interior. Fig. 2 represents in plan the lower portion of a stationary frame upon which the switch oscillates. Fig. 3 is an elevation thereof. Fig. 4 represents in plan one of the end plates of the moving switch-frame. Fig. 5 represents the same in elevation. Fig. 6 is a section thereof on the line 6 6, Fig. 4. Fig. 7 is a view similar to Fig. 1, looking at the device from one of the adjacent sides. Fig. 8 is a plan of the complete device. Fig. 9 is an elevation of the upper portion of the fixed frame within which the switch moves, and Fig. 10 is a plan of the same.

Corresponding letters indicate corresponding parts.

A represents a portion of the main circuit of a pneumatic tube.

B represents another portion in continuation of the same circuit.

C represents an air-chamber connecting the portions A and B of the circuit.

Fig. 2 represents a portion of the stationary switch-frame in which the switch moves. It consists of a metallic plate, D, in which is secured or formed a band, *a*, which encircles the main tube A. In the middle of the plate D is cut a hole provided with the band *c*, in such manner that when the plate D is placed in position said band *c* encircles and is secured to the end of the main tube B, while the band *a* encircles and is secured around the main tube A. Upon the sides of the plate D are the projections *d d*, through which are passed the stay-rods F, by means of which the two fixed portions of the switch-frame are held together.

G (see Fig. 9) represents the upper portion of the switch-frame, composed of the band *f*, the air-chamber C having a hollow dome-

shaped projection, *c'*, upon one end, and fitting into the band *f* at the other end, with a plate, *g*, corresponding with the plate E of Fig. 2, and having cut therein a circular hole, *h*, above which is attached the hollow dome-shaped projection *c'*, and when the frame G is placed in position the band *f* encircles and is attached or secured to the main tube A, so that the dome-shaped projection *c'* is immediately over the end of the main tube B. At the sides of the plate *g* are projections *d' d'*, through which are passed the other ends of the stay-rods F.

In Fig. 4 is shown one of a pair of plates, H, between which the switch-tubes K are held. These plates H are each provided with a band, J, and two bands, *k*, said bands *k* of each plate being placed in close contact with each other, as shown in Fig. 4. The plates H are connected by a bar, F', which forms a handle by means of which the switch is operated, and on the outer sides of said plate are the guards *m m* and the stops *n n*. The main tube A, at the portion encircled by the band *f* of the switch-frame G, is provided with a series of perforations or holes, *o*, so that the current may pass freely from one section of the tube to the other.

P, Fig. 1, represents a carrier in the switch-tube K. For the purpose of sending carriers in a direction from the switch-frame G toward the switch-frame D, there are cut in the plate *g* two holes, *p* and *p'*, Fig. 10, equal in size to the internal diameter of the tubes A and B. If, however, it is desired to send the carrier in the opposite direction, corresponding holes, *r r*, are cut in the plate D, the perforations *o* always being made underneath the band *f* of frame G. The switch-tubes K, being of the same diameter as the main tubes A and B, and being of a length sufficient to fit snugly between the plates D and *g*, are placed in the bands *k*, and the bands J are placed around the main tube A, between the plates D and *g*. From this arrangement it will be seen that one of the switch-tubes K of necessity must connect the opening of the tube B with the opening of the air-chamber C at the hollow dome-shaped projection *c'*.

The mode of operation is as follows: The air-current circulates freely through the tube A, and, passing through the perforations *o* into

the air-chamber C and dome-shaped projections *c'*, passes through the switch-tube K, and so through the pipe B to any desired point. The other switch-tube K is immediately in line with one opening, *p* or *p'*, in the plate *g*, and the one of the guards *m* is immediately beneath the other opening or hole *p* or *p'*. One of the stops *n*, by its contact with one of the stay-rods F, holds one of the switch-tubes K in line with the main tube B and the other switch-tube K in position to receive the carrier. The carrier being placed in said switch-tube, the switch is shifted by means of its handle F' across the plate D until the other stop *n* comes in contact with the other stay-rod F, and the switch-tube in which the carrier has been placed is brought immediately in line with the main tube B, thus allowing it to be carried by the air-current immediately established through said switch-tube into the main circuit, and thence to the point desired, the guards *m* always preventing the carrier from being placed in the wrong or improper opening. The passage of the switch-tubes in the frame while thus shifting the position of the switch causes a momentary interruption in the current and actuates the valves at the exits of the tubes of the main circuit, causing them to click or make a noise, thus announcing the entry of the carrier at the point where the switch-tubes are placed. When the carrier thus introduced by the switch into the main circuits is delivered from the main circuit at any desired points, it occasions a similar act-

uation of the exit-valves, thus announcing its delivery.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A switch for a pneumatic apparatus, consisting of two tubes held together in a suitable frame and pivoted upon a portion of the main tube of the apparatus, and an air-chamber opening into said tube and connected at will by said switch-tubes with another portion of the main tube of said apparatus.

2. A switch for a pneumatic apparatus, consisting of two tubes held together in frames pivoted upon a portion of the main tube of the apparatus, said frames being provided with guards and moving between plates attached to said tube, one of said plates being provided with three openings, the whole so arranged that when one of said switch-tubes is in line with the portion of the main tube in which the package or carrier is to be sent the said switch-tube is immediately under one of said openings, the other of said switch-tubes being immediately under another of said openings and ready to receive the carrier, while the third opening is closed by one of the guards attached to said switch-frame.

In testimony whereof I have hereunto set my hand this 30th day of December, 1882.

E. S. LEAYCRAFT.

In presence of—

CHARLES G. COE,
R. T. VAN BOSKERCK.