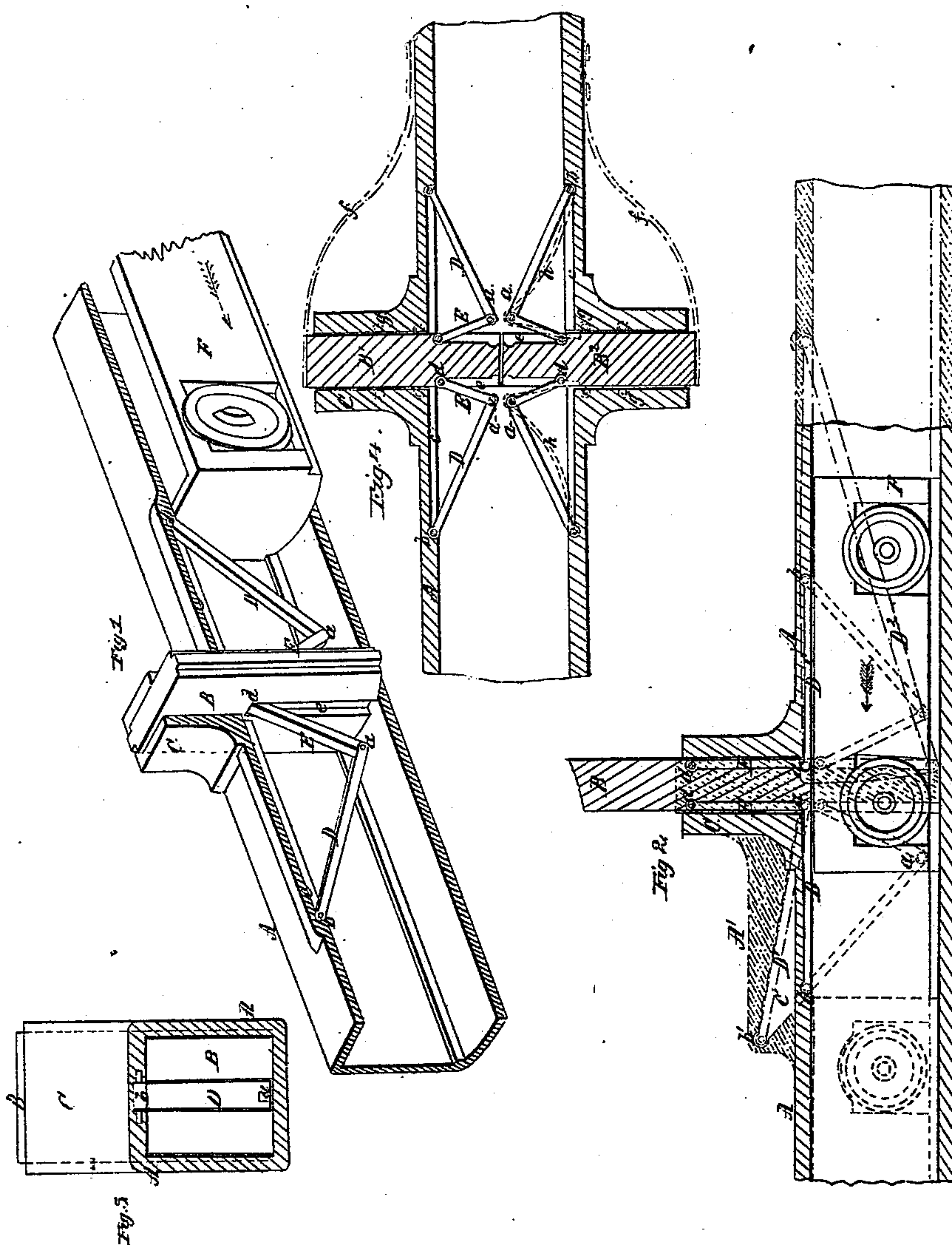


A. E. BEACH.  
PNEUMATIC TUBE.

No. 64,400.

Patented May 7, 1867.



Witnesses

*Wm. G. McManus*  
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Inventor

*A. Ely Beach*



# United States Patent Office.

A. ELY BEACH, OF STRATFORD, CONNECTICUT.

Letters Patent No. 64,400, dated May 7, 1867.

## IMPROVEMENT IN PNEUMATIC TUBES.

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, A. ELY BEACH, of Stratford, in the county of Fairfield, and State of Connecticut, have invented a new and useful Improvement in Valves for Pneumatic Tubes and other purposes; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view, in part sectional, of my improvement, showing the valve closed and about to be opened by an approaching car

Figure 2 is a side sectional elevation of my improvement, showing the valve opened and a car in the act of passing the valve.

Figure 3 is a front or end elevation of my improvement, in part sectional, showing the valve closed.

Figure 4 is a horizontal sectional plan view of a modification of my improvement, showing the method of employing divided valves.

Similar letters of reference in the several figures indicate the same parts.

The nature of my invention consists in the employment of a pneumatic valve so constructed as to be operated by the car on its approach near to the valve, substantially as hereinafter described.

A, figs. 1, 2, 3, is the pneumatic wall or tube, to be of the form shown, or any other desired form, and B is the pneumatic valve, in this example of rectangular shape, moving vertically in the tube A, guided by grooves in the side of the tube and by a stuffing-box, C, rising above the tube, as shown. D E are levers jointed together at *a*, their opposite ends pivoted respectively at *b* at the end of a recess, *c*, in the roof of the tube, and at *d* to the valve at the upper end of a recess, *e*, in the face of the valve, which recess *e* receives the levers E, while the recess *c* receives the levers D when the valve opens. F is the pneumatic car supposed to be moving in the direction of the arrow. In fig. 1 the valve B is represented as closed, and the advancing car F, by contact with lever D, forces it up and opens the valve B, allowing the car to pass the valve, and when the car has passed the valve falls by gravity. The valve may have levers D E and their adjuncts arranged upon both sides of the valve, in which case the valve will be operated by the car in whichever direction it moves. A modification of the arrangement of the lever, against which the car strikes in raising the valve, is indicated by D<sup>1</sup> in fig. 2. In this figure the roof of the tube is raised into the form of a hood, A', forming a recess, *c'*, which accommodates the movement of the lever D<sup>1</sup>, having its pivot at *b'*. When this modification of my improvement is used, the rise of the valve will be more gradual than when the arrangement of the lever D, shown in fig. 1, is employed. The position of the valve and levers, when the valve is open, and the car in the act of passing the valve, is shown in fig. 2. Instead of two jointed levers a single lever may be employed, when desired, to operate the valve, as indicated by D<sup>2</sup> in fig. 2. One end of this lever is pivoted to or above the roof of the car; the other end of lever D<sup>2</sup> extends under the bottom of the valve B. The lever D<sup>2</sup> occupies an inclined position, so that when the car advances, as before described, the lever D<sup>2</sup> is raised, by contact with the car, to a horizontal position, and carries up the valve, which closes by gravity after the car has passed.

Fig. 4 illustrates a modification of my improvement in which the valve is divided into two parts, B<sup>1</sup> B<sup>2</sup>, with levers D E and their adjuncts operating substantially as before described. When this arrangement is employed the car passes between and in contact with two levers D, pushing them and their attached valves aside, thus simultaneously opening the two valves B<sup>1</sup> B<sup>2</sup>. In this example the valves B<sup>1</sup> B<sup>2</sup> move horizontally and are closed by springs *f*, which press in the valves, as shown. Whenever any of the valves are arranged in such position as not readily to close by gravity, they may be made to close by springs or weights. In some cases the levers D E may be made in one piece in the form of springs, as shown in red at *h*, fig. 4. In order to reduce the friction of the valves rollers *g*, shown in red, fig. 4, or equivalent devices, may be employed.

I do not limit or confine myself to the exact form or construction of any of the parts herein shown, as the mechanic skilled in the art will know how, without departing from my invention, to carry it out practically in a variety of forms.

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

The employment, in combination with pneumatic walls or tubes, of automatic valves operating substantially as herein shown and described.

A. ELY BEACH.

Witnesses:

WM. F. McNAMARA,  
J. A. SERVICE.