

No. 669,485.

Patented Mar. 5, 1901.

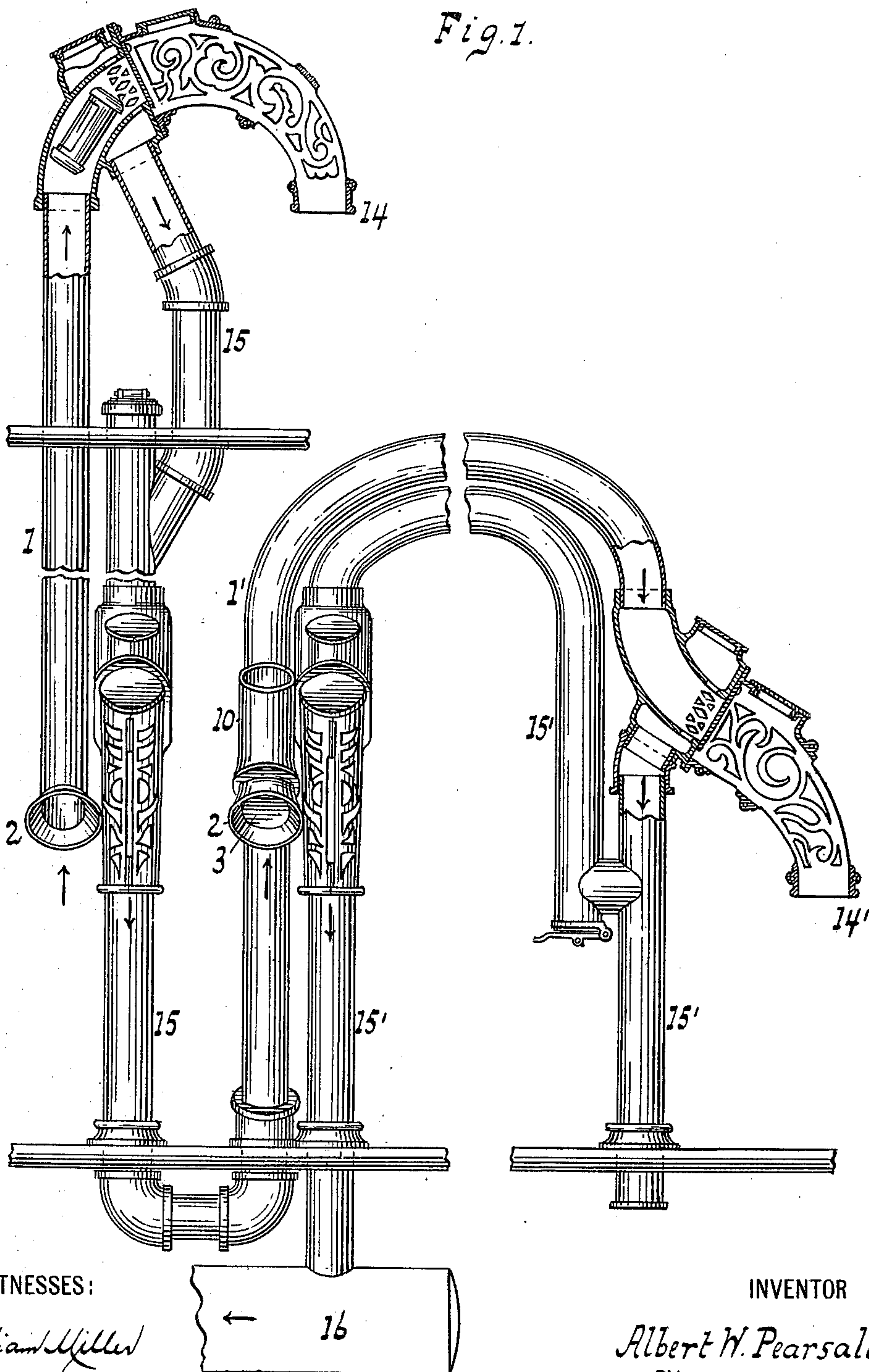
A. W. PEARSALL.
PNEUMATIC DESPATCH TUBE SYSTEM.

(Application filed Oct. 3, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



WITNESSES:

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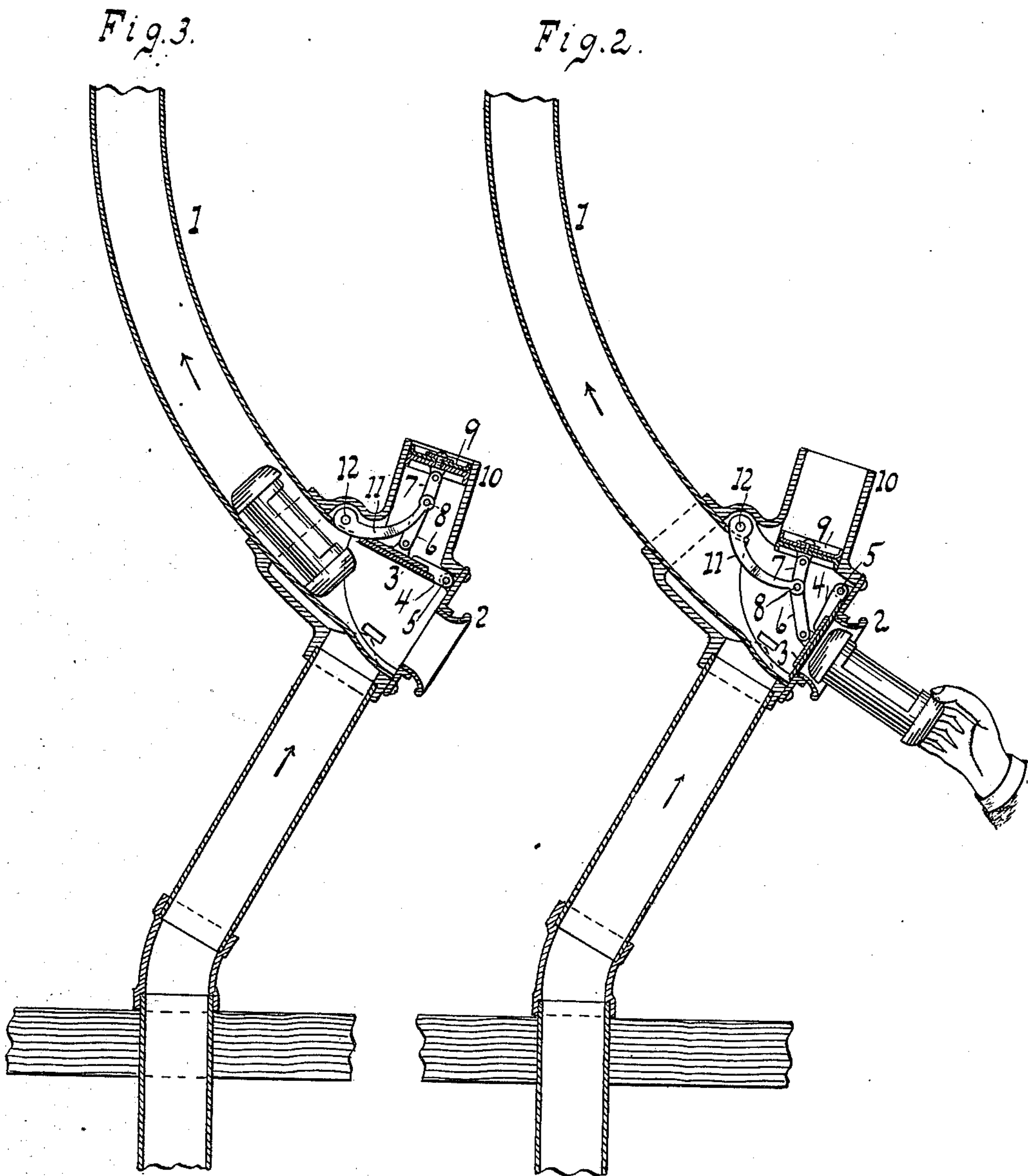
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UNITED STATES PATENT OFFICE.

ALBERT W. PEARSALL, OF MOUNT VERNON, NEW YORK, ASSIGNOR TO THE
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PNEUMATIC-DESPATCH-TUBE SYSTEM.

SPECIFICATION forming part of Letters Patent No. 669,485, dated March 5, 1901.

Application filed October 3, 1900. Serial No. 31,863. (No model.)

To all whom it may concern:

Be it known that I, ALBERT W. PEARSALL, a citizen of the United States, residing at Mount Vernon, in the county of Westchester and State of New York, have invented new and useful Improvements in Pneumatic-Despatch-Tube Systems, of which the following is a specification.

By means of this invention an inlet or door at which a carrier is introduced into a vacuum despatch-tube can be kept automatically closed at ordinary periods or when no carrier is being introduced. Power can thus be saved, as air is not permanently entering or, as it is popularly called, "sucked" in at such inlet.

This invention is set forth in the following specification and claims and illustrated in the annexed drawings, in which—

Figure 1 is a diagrammatic view of such a system. Fig. 2 shows an inlet or door closed. Fig. 3 shows the same open.

In the drawings in Fig. 2 is shown a despatch-tube 1, having a bell or inlet mouth at 2 for the introduction or reception of a carrier. A door 3 normally closes this opening 2, and such door is held in closed position by the vacuum in the system. A carrier forced against the door to open the latter can be pushed or inserted into the tube; but after the entry of the carrier said door will again close. This door, or rather its arm 4, is jointed or pivoted at the opening at 5. The links 6 and 7 are jointed or pivoted to one another at 8, and one of said links is jointed to the door, while the other is jointed to a plunger 9 in the branch or elbow portion 10 of tube 1. A lever or arm 11 is jointed to the link-pivot 8 and swings at the point or fulcrum 12, fixed to a suitable part of the system. As seen, the vacuum in the system causes the door and plunger connected to one another, as noted, to be exposed to pressure, and such pressure acting against the outside of the plunger causes the latter to move inward along branch 10 or toward tube 1 and automatically close or hold door 3 normally shut. In applying the invention to practice the door and plunger were made of equal area and the door was found to automatically close and stay shut

when free, while a carrier forced from outside against the door of course opens the latter temporarily. The arrangement shown is readily constructed or applied to use, the plunger, moving at an angle to the door, not being in the way or interfering with the satisfactory operation of the device or system. The pivots or hinges 5 and 12 are fixed or applied to the tube or casting so as not to be in the way or to allow a ready insertion and travel of the carrier. The plunger or valve 9, while in practice conveniently made of equal area with door 3, could be of larger or different area and still embody this invention.

In Fig. 1 is shown a manner of securing suction or vacuum in a system. Air entering into tube 1 at the left of Fig. 1 is drawn along toward outlet 14 by tube 15. This outlet is shown as at higher level than inlet 2, while another outlet, as 14', might be at the same or at a lower level than an inlet; but this detail is of course arranged or varied to suit the user. The air in tube 15 is drawn along into tube 1' by tube 15', communicating with the main suction-drum 16. Say an inlet, as that of tube 1', is opened for introducing a carrier. The other inlets, if any, can stay closed to cause as much suction as possible at the open door.

In a system as, for example, seen in Fig. 1, when a permanent current of air or partial vacuum with a resultant propelling flow is to be kept up an inlet for a permanent inflow must be provided. One way of providing an inlet allowing continuous flow through the system is by omitting a door at one pipe—say, for example, the pipe 1 at the start or extreme left of Fig. 1—so that its mouth or bell 2 is permanently open, while other mouths—as, for example, inlet of pipe 1'—is only open for the entry of a carrier and otherwise permanently closed or provided with a door. This, however, is a detail for the builder, which perhaps needs no special mention here.

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

1. In a pneumatic-despatch-tube system an inlet having an opening for the reception of

carrier, and a door swinging inwardly when opened and normally closing said opening and held in closed position by the vacuum in the system and atmospheric pressure substantially as described.

2. In a pneumatic-despatch-tube system an inlet having a receiving-opening, a door at said opening and a plunger for closing the door substantially as described.

3. In a pneumatic-despatch-tube system an inlet having a receiving-opening, a door and a plunger for closing the door, said door and plunger being of equal area substantially as described.

4. In a pneumatic-despatch-tube system an inlet having a receiving-opening, a door for the opening, and a plunger, said door and plunger being connected and both exposed to the vacuum of the system substantially as described.

5. In a pneumatic-despatch-tube system an inlet having a receiving-opening, a door and a plunger for the door, said door and plunger being made to move at an angle to one another substantially as described.

6. In a pneumatic-despatch-tube system a door, a plunger for closing the door, links jointed to one another and to the door and plunger, and an arm or lever having a pivot or fulcrum on the tube system and connected to

the joint between the links substantially as described.

7. An exhaust or suction drum, a despatch-tube, and a connecting-tube 15' between the drum and despatch-tube, combined with an additional despatch-tube and a connection 15' between the despatch-tubes, said despatch-tubes having inlets and outlets substantially as described.

8. In a pneumatic-despatch-tube system an inlet having a receiving-opening, a door swinging inwardly when opened and normally closing said opening, and separate means operated by atmospheric pressure for closing said door after being opened by the passage of a carrier through the opening.

9. In a pneumatic-despatch-tube system, an inlet having a receiving-opening, a door swinging inwardly when opened and normally closing said opening and separate means operated by atmospheric pressure and pivotally connected to the door for closing the same.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ALBERT W. PEARSALL.

Witnesses:

W. C. HAUFF,

E. F. KASTENHUBER.