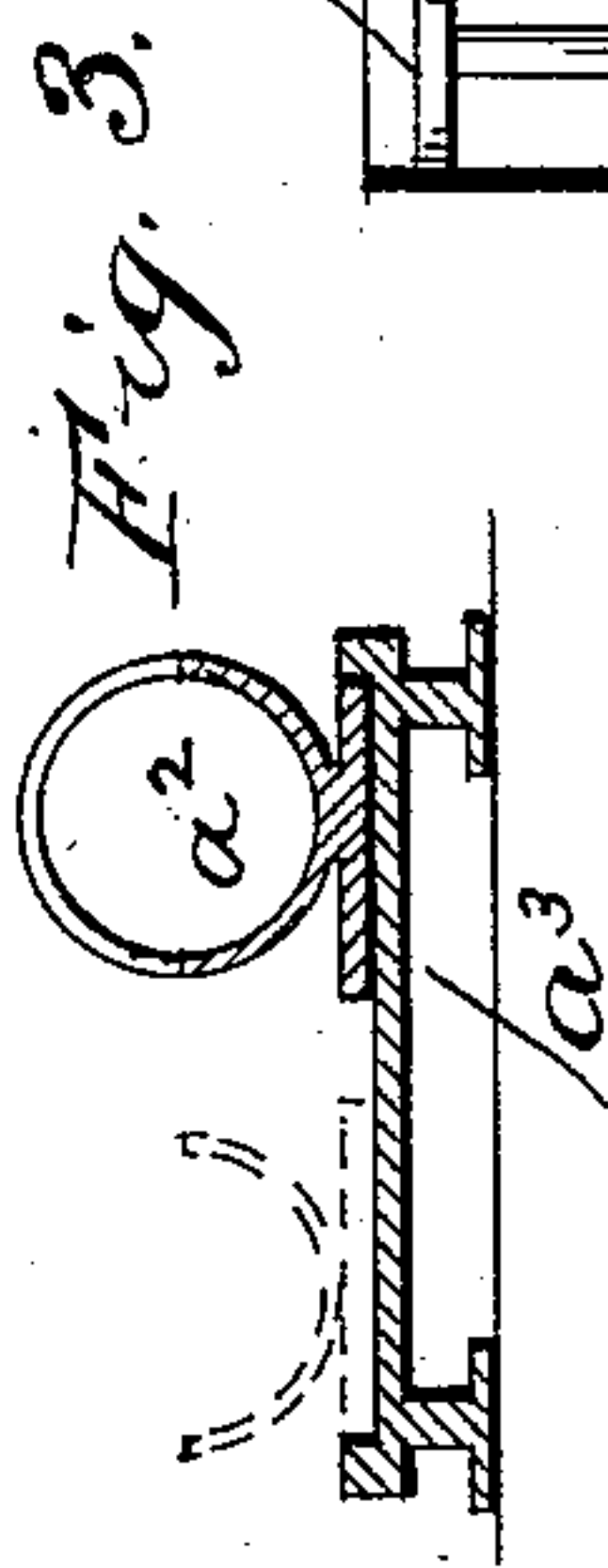
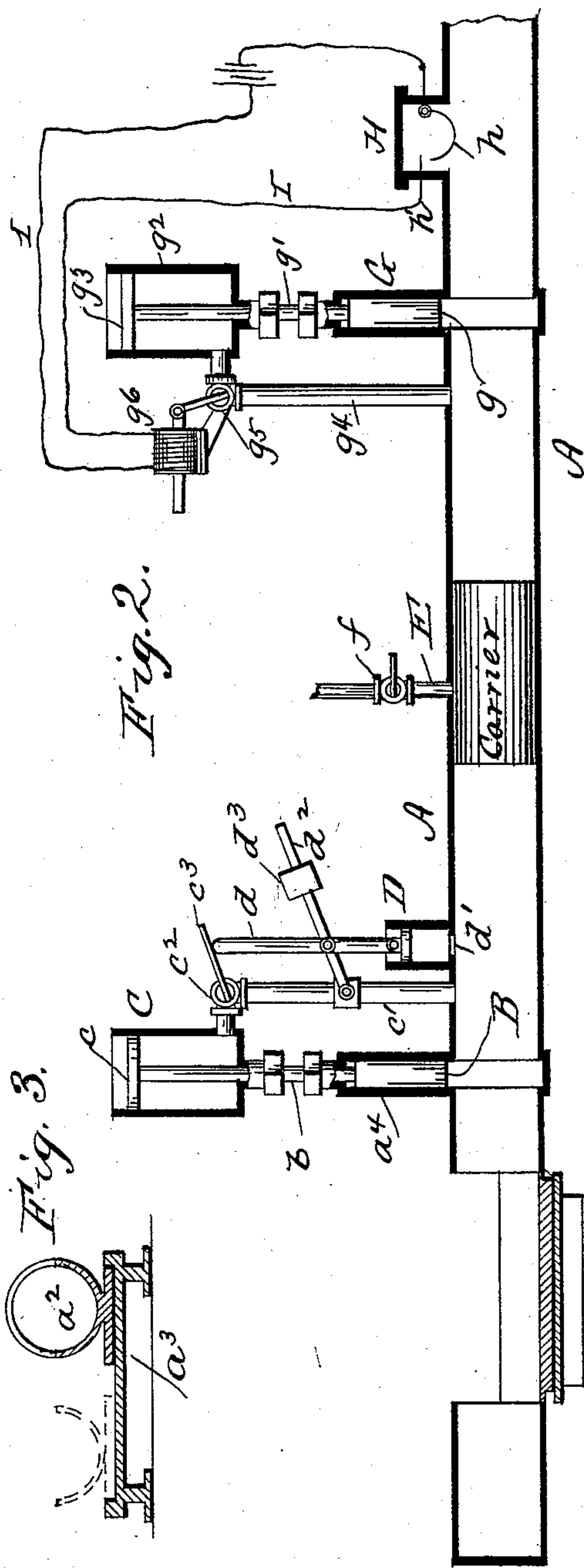
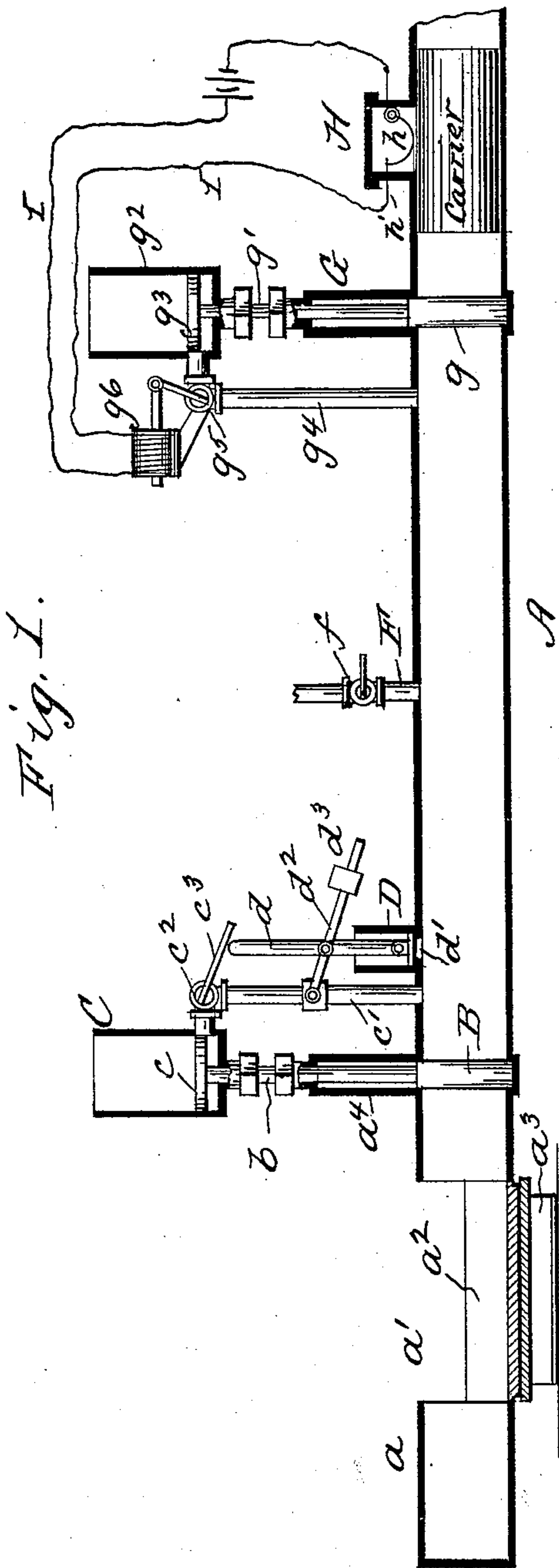


(No Model.)

S. F. LEAKE.
PNEUMATIC DISPATCH TUBE RECEIVER.

No. 431,700.

Patented July 8, 1890.



WITNESSES:
Geo. F. Byington
L. R. Miller

INVENTOR
Saml. F. Leake
By *S. J. VanStavorn*
Attorney

UNITED STATES PATENT OFFICE.

SAMUEL F. LEAKE, OF PHILADELPHIA, PENNSYLVANIA.

PNEUMATIC DISPATCH-TUBE RECEIVER.

SPECIFICATION forming part of Letters Patent No. 431,700, dated July 8, 1890.

Application filed October 26, 1889. Serial No. 328,247. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL F. LEAKE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Pneumatic Dispatch-Tube Receivers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has relation to apparatus for stopping a carrier in the receivers of pneumatic dispatch-tube systems by admitting into the receivers ahead of the carrier a charge or supply of air under pressure in addition to the normal air in the receivers. In another pending application filed by me of an even date herewith, Serial No. 328,248, I have shown, described, and claimed an apparatus for admitting such air-pressure into the receiver under the control of the carrier as it passes into and moves or travels through the same, in which case such receiver is always free of such additional air-pressure, except when a carrier is traveling through it.

My present invention has for its object to charge or supply a closed receiver with a supply of compressed air for reducing the momentum of the carrier, and provide devices actuated by such compressed air and under the control of the moving carrier for admitting the latter to and its escape from the receiver without concussion.

My invention accordingly consists of the combinations, constructions, and arrangements of parts, as hereinafter described and claimed.

Reference is had to the accompanying drawings, wherein—

Figure 1 is a sectional elevation of a pneumatic dispatch-tube receiver and devices attached thereto in their normal position embodying my improvements. Fig. 2 is a like view showing the operative parts in the position to which they have been moved by a carrier passing into the receiver; and Fig. 3 is a cross-section of the movable section of the receiver, from or into which the carrier is withdrawn or inserted.

A represents the receiver end or tube of a

pneumatic dispatch-tube, having near its rear end a a cut-away or broken section a' , between the ends of which is a semi-cylindrical section a^2 , which, if desired, may be arranged to move laterally on a table or support a^3 . Adjacent to said movable section a^2 and in the tube A is a recess or pocket a^4 , in which is a sliding gate or valve B for normally closing that part of tube A, as indicated in Fig. 1. This valve B is secured to a plunger or stem b , which passes through a stuffing-box on recess a^4 and through a corresponding device on a cylinder C, wherein it is provided with a head or piston c . The cylinder C at its lower end has a pipe-connection c' with the tube A in front of valve B, and in pipe c' is a cock c^2 , having a stem c^3 , which impinges against the upper end of a plunger d in cylinder D, communicating by way of opening d' with tube A, and having attached thereto a suitably-fulcrumed lever d^2 , provided with an adjustable weight d^3 , whereby the pressure of lever d^2 on plunger d may be varied, as desired. In advance of gate or valve B the tube A has a pipe-connection F, provided with cock f , leading to a supply of compressed air or to an air-compression pump, (not shown in the drawings,) which valve is manually or otherwise operated, as desired.

Near the front end of tube A is another pocket or recess G, in which is a valve or gate g for normally closing the said end of tube A, as indicated in Fig. 1, and this valve g is connected to a plunger g' , which passes through stuffing-boxes on said recess G and on a cylinder g^2 , within which it has a head or piston g^3 . The cylinder g^2 has a pipe-connection g^4 with tube A to the rear of valve g , and in said pipe g^4 is a valve g^5 , the stem of which is in engagement with the armature or core of an electro-magnet or solenoid g^6 . The latter is included in the battery-circuit 1 1, the terminals $h h'$ of which are located within a recess H on tube A in front of valve g , and one of said terminals or contacts h is a movable contact and is in the path of a traveling carrier in tube A to close said terminals and circuit, as indicated in Fig. 1, said circuit 1 1 or its terminals being normally open, as shown in Fig. 2.

The operation is as follows: The gates or

valves g B being normally down, the receiver, or that part of tube A between said valves, is normally closed, and the cock f being open a supply of compressed air is admitted to tube
 5 A between its gates or valves g B. A traveling carrier arriving at the terminal h closes it against terminal h' to close the circuit 1 1, whereupon the magnet or solenoid g^6 becomes active and opens valve g^5 in pipe g^4 to admit
 10 the air-pressure in tube A to cylinder g^2 , which pressure acts on plunger-head or piston g^3 to raise the gate or valve g . The continued movement of the carrier in tube A compresses the air under pressure therein, reducing the
 15 momentum of the carrier, and when such compression of air rises above that of the pressure exerted by lever d^2 on plunger d of cylinder D said plunger is raised by such compressed air to open valve c^2 in pipe c' to ad-
 20 mit the air-pressure in tube A between valve B and the advancing carrier to cylinder C to raise gate B, at which time the carrier is almost brought to a state of rest, having sufficient momentum, however, to carry it to the
 25 open section a' of tube A, from which it is removed as desired. The valves or gates g B automatically return to their normal positions after the carrier passes by the same, and a fresh supply or charge of compressed air is
 30 admitted to the tube A between said valves by opening cock f in pipe F.

From the foregoing it will be noted that the receiver A is close or sealed at both ends by the movable valves or gates g B, that the air-
 35 pressure is manually or equivalently admitted to the receiver, that the carriers as they arrive at the gate g actuate devices for lifting the latter, so as to advance into the receiver against the air-pressure therein, that the air-pressure
 40 admitted to tube A is used under the control of the carrier for raising the valves or gates g B in advance of the carrier, and that the latter is brought to a state of rest or its momentum is diminished within a short length of re-
 45 ceiver by the compressed air admitted thereto.

As the novel constructions and arrangements of parts herein set forth may be greatly varied without departing from the spirit of

my invention, I do not confine myself to the same as shown and described. 50

What I claim is—

1. In a pneumatic dispatch-tube, the combination of a carrier-receiver tube closed at both ends, one of said ends being movable, an air-supply for maintaining a constant pressure in
 55 said receiver independent of the actuating-pressure of the system, and mechanism for actuating said movable end of the receiver to open it to the carrier, substantially as set forth.

2. In combination with a receiver-tube A, 60 an air-pressure pipe F for said tube, a gate or valve at the inlet end of said tube, a cylinder having a piston connected to said gate, pipe-connection between said tube A and said cylinder, a cock in said pipe, and mechanism con- 65 trolling the opening and closing of said cock, substantially as set forth.

3. In combination with tube A, having valves g B, air-compression-supply pipe F, and actuating mechanism for valves g B under the 70 control of a moving carrier in said tube, substantially as set forth.

4. In combination with tube A, the valve g , having plunger, a cylinder for said plunger, pipe-connection between said cylinder and 75 tube, a cock in said pipe-connection, and electrical devices in engagement with said cock and under the control of a moving carrier in tube A, substantially as set forth.

5. In combination with tube A, the valve B, 80 having cylinder C, pipe-connection with cock c^2 between said cylinder and tube A, and cylinder D, communicating with tube A and having a weighted plunger engaging with cock c^2 and controlled by the movement of a car- 85 rier in tube A, substantially as set forth.

6. In combination with tube A, air-pressure pipe F and movable end valves g B, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in 90 presence of two witnesses.

SAMUEL F. LEAKE.

Witnesses:

S. J. VAN STAVOREN,
 CHAS. F. VAN HORN.