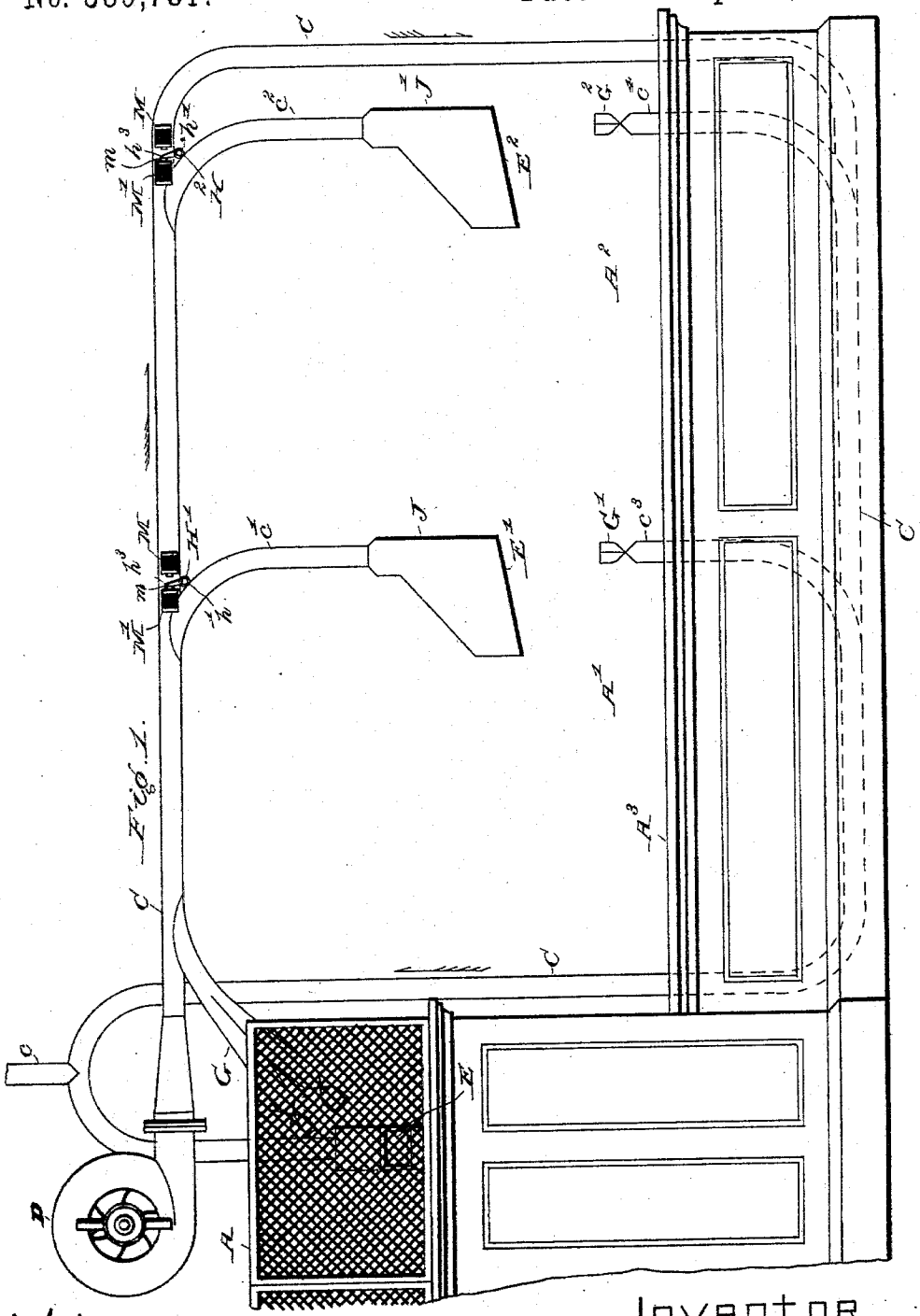
(No Model.) 2 Sheets—Sheet 1.

J. JACQUES.

PNEUMATIC DESPATCH TUBE.

No. 589,781. Patented Sept. 7, 1897.



Witnesses-
Kirkby Hyde.
Grace E. Hibbert

Inventor-
James Jacques,
By Albert M. Moore,
His Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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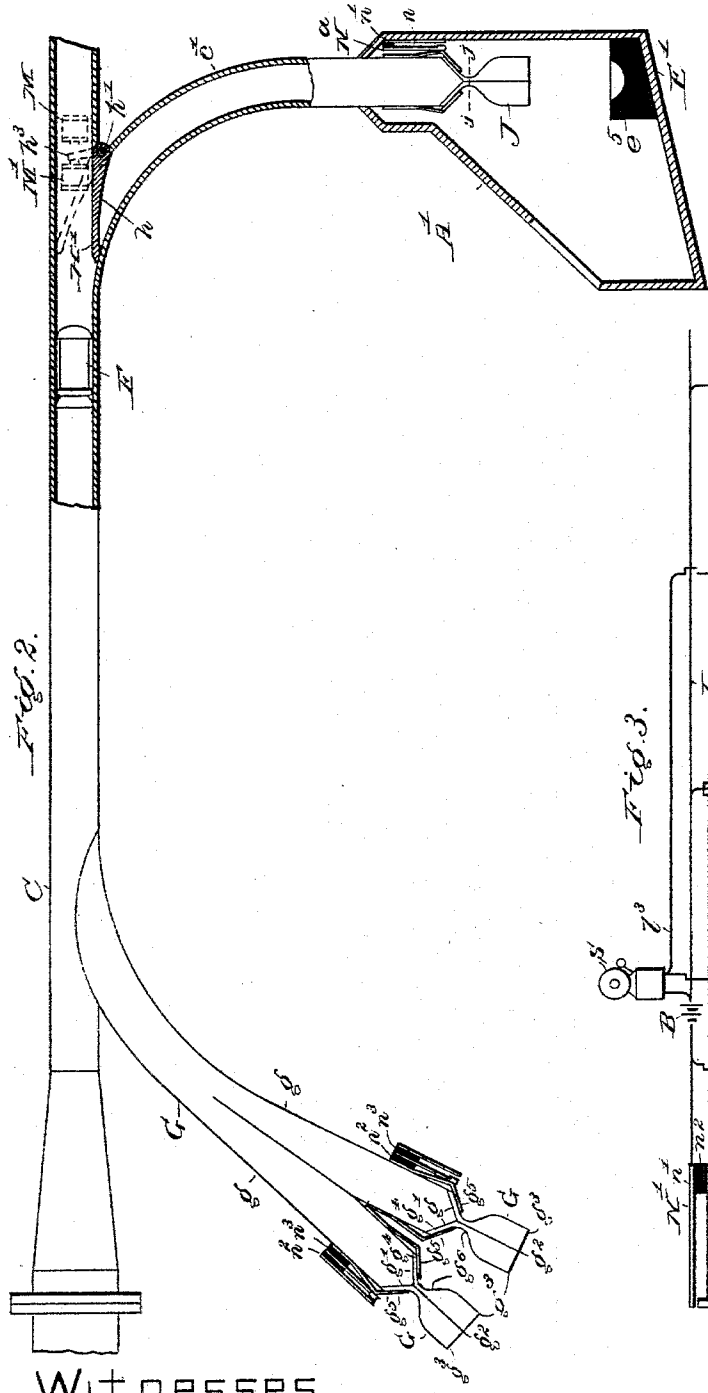


Fig. 2.

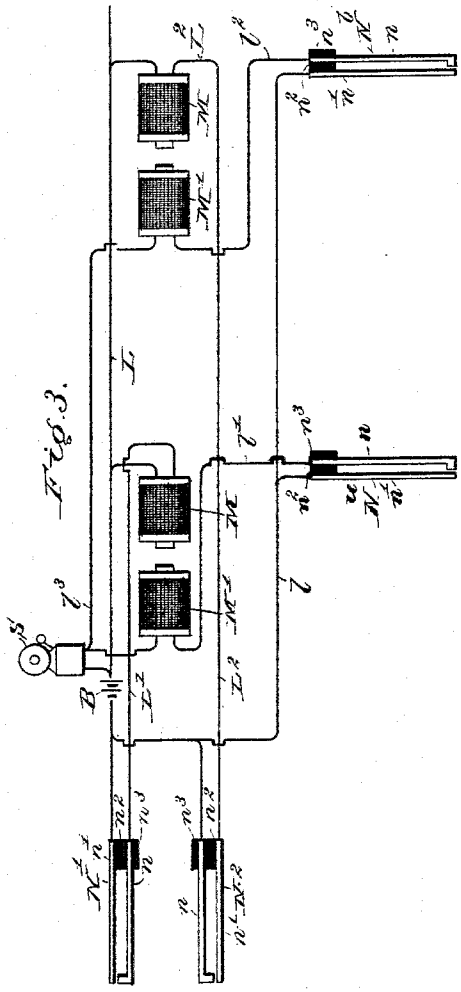


Fig. 3.

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UNITED STATES PATENT OFFICE.

JAMES JACQUES, OF LOWELL, MASSACHUSETTS.

PNEUMATIC-DESPATCH TUBE.

SPECIFICATION forming part of Letters Patent No. 589,781, dated September 7, 1897.

Application filed May 11, 1896. Serial No. 591,030. (No model.)

To all whom it may concern:

Be it known that I, JAMES JACQUES, a citizen of the United States, residing at Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented a certain new and useful Improvement in Pneumatic-Despatch Tubes, of which the following is a specification.

My invention relates to pneumatic-despatch tubes; and it consists in the devices and combinations hereinafter described and claimed.

In United States Patent No. 564,427, granted to me July 21, 1896, I have shown a main line of tubing having sidings or short branches at the different outlying stations, each siding being normally disconnected from the main line by a mechanical switch, and a series of send-off boxes at the central station equal in number to the outlying stations, and means whereby the opening of any send-off box will connect the siding at the corresponding outlying station with the main line, the switch being opened when an armature secured thereto is attracted by an electromagnet arranged in an open electric circuit adapted to be closed by the opening of said send-off box, and substantially the same combination is shown herein, but not herein claimed.

In the apparatus shown and described in the present application the discharge of the carrier at the outlying station causes the switch to be restored to position to disconnect the siding from the main line by closing another electric circuit containing another electromagnet which attracts in the opposite direction from that above referred to an armature carried by said switch, preferably the same armature as is used in connecting the siding to the main line.

In the system herein described a signal device at the central station may be operated by the closing of the electric circuit last named to show that the carrier is delivered at the outlying station and that the main line of tubing is open.

The system is shown in the drawings as arranged for a cash-carrier, but may be used for any of the purposes of a pneumatic-despatch-tube system.

In the accompanying drawings, on two sheets, Figure 1 is a front elevation of a central station and two outlying stations provided with my improvement; Fig. 2, a side elevation of two send-off boxes at a central station and a receiving-box at an outlying station, said receiving-box and a part of said despatch-tube being in central vertical section; and Fig. 3 is a diagrammatic representation of the electric circuits, including the battery, circuit-closers, electromagnets, and alarm device, and the mechanical switches, which normally disconnect the siding from the main line.

In Fig. 1, A is a central station, as a cashier's desk in a store; A' A^2, outlying stations, as salemen's stations at a counter A^3; C, a continuous main line of tubing extending from the central station A through all the outlying stations A' A^2 and back to the central station; D, a fan or blower which sends a constant current through the main line C in the direction indicated by the arrows adjacent to said main line and out at the usual vent-pipe *c* near the end of said line at said central station, the momentum of the carrier F carrying it past said vent-pipe and into a suitable receiver E at said central station, these parts being of the usual construction and as shown in said previous patent.

At the cashier's desk or other central station there are as many send-offs G as there are outlying stations, each consisting of a short branch pipe g, leading into the main line and beveled at g' g' at its free end on opposite sides, a box or funnel g^2, formed in halves g^3 g^3 and having two leaves g^4 g^4, which normally rest upon and fit the bevels g' g', and thus close the said free end of said branch pipe g, and springs g^5 g^5, which connect the halves g^3 g^3 of said box g^2 to said branch pipe g and keep them closed. The bottom g^6 g^6 of each half of the box g^2 is inclined, so that a cylindrical carrier F, of the usual construction, may be forced into and through the box and into the branch g, the halves of said box separating to allow of this. At each outlying station there is a similar send-off G' G^2, connected by a branch c^3 c^4 to the main line, through which a carrier may be sent from such station to the central station.

At each outlying station A' A^2 is arranged a branch or siding c' c^2, the entrance to which is normally closed by a mechanical switch H'

H^2, each being represented as a flap or gate h, Fig. 2, capable of closing either the main line or the entrance to the siding, said flap being rigidly secured to a shaft or pivot h' at the acute angle where said siding leaves said main line, and each shaft h' having rigidly secured thereto a radial arm h^3, carrying an armature m, adapted to be attracted by an electromagnet M, there being such a magnet M at each outlying station.

Each electromagnet M is connected by its own conducting-wire L' L^2 to one pole of the battery or electric generator B, and all said magnets M are connected by the single return-wire L to the other pole of said battery or generator.

In each conductor L' L^2 is arranged at the central station a normally open circuit-closer N' N^2, consisting of a pair of springs n n', insulated at n^2 n^3 from each other and from the corresponding send-off, which is preferably of metal, but so supported on said send-off that the opening of said send-off by thrusting a carrier therein crowds the springs n n' into contact and closes the circuit through the corresponding electromagnet M and swings the corresponding gate h in such a manner as to make the adjacent siding continuous with the main line, as indicated by dotted lines in Fig. 2, the normal position of said gate being shown by full lines in said Fig. 2. In practice the carrier is marked to indicate the outlying station to which it belongs, and the corresponding send-off is similarly marked.

The above-described parts are or may be all as shown and described in said previous patent in construction and operation except that in said patent the flap or gate h is represented as provided with a finger which projects into the siding when the siding is opened into the main line and which is struck by the carrier in passing to restore the flap to its normal position and to disconnect said siding from said main line. When the flap or gate h is opened, it will be held open by the pressure of the current of air, or may be held open by a spring-pawl acting upon oppositely-beveled surfaces of the pivot of said flap or gate, as shown in said previous patent.

In the system herein shown and described the free outer end of each siding is provided with a discharge-box or discharger J J′, which may, for convenience, be in construction precisely like the send-offs G G′ G^2 above described, (and is so represented in Fig. 2, although the funnel-shaped part of said discharger J J′ below the horizontal dotted line j in said Fig. 2 serves no necessary purpose,) and said discharger J J′ supports a normally open circuit-closer N^a N^b, as shown in Figs. 2 and 3, (precisely like the circuit-closers N' N^2 above described,) and adapted to be closed by a carrier passing through said discharger—that is, by the opening of the halves of said discharger just as the circuit-closers N' N^2 are closed by opening the send-offs. At each switch H' H^2 is another electromagnet M′, arranged on the opposite side of the armature m from the electromagnet M at the same switch and connected by a conducting-wire l' l^2 to the circuit-closers N^a N^b and then to the wire l^3, which runs to one pole of the battery or electric generator B and by a common wire l to the other pole of said battery, Figs. 2 and 3, so that when a carrier is discharged from a siding the circuit is closed through the corresponding magnet M′ and the flap or switch is restored to position or disconnects said siding from the main line.

An audible electric signal, as a buzz-bell or other electric bell S, is arranged in the line l^3 between the battery B at the central station and the nearest outlying station, so that the operator at the central station is notified of the safe arrival of the carrier and the opening of the main line.

The drop-box E′ is of ordinary construction, is like the box-receiver or drop-box E at the central station, and has a buffer or cushion e^5 on which the carrier falls from the discharger J.

I claim as my invention in a pneumatic-despatch-tube system—

1. The combination of a main line of tubing connecting a central station with an outlying station, a siding or branch at said outlying station, a mechanical switch adapted to be opened to connect said main line and said siding, an electromagnet having an armature movable with said switch, an electric circuit including said magnet, a circuit-closer in said circuit arranged at said siding and normally open but closed by the passage of a carrier through said siding to close said switch and to disconnect said main line and said siding, as and for the purpose specified.

2. The combination of a main line of tubing connecting a central station with an outlying station, a siding or branch at said outlying station, a mechanical switch adapted to be opened to connect said main line and said siding, an electromagnet having an armature movable with said switch, an electric circuit including said magnet, a circuit-closer in said circuit arranged beyond said switch and normally open, but closed by the passage of a carrier through said siding to close said switch and to disconnect said main line and said siding, as and for the purpose specified.

In witness whereof I have signed this specification, in the presence of two attesting witnesses, this 6th day of May, A. D. 1896.

JAMES JACQUES.

Witnesses:
ALBERT M. MOORE,
HAWTHORNE DREW.