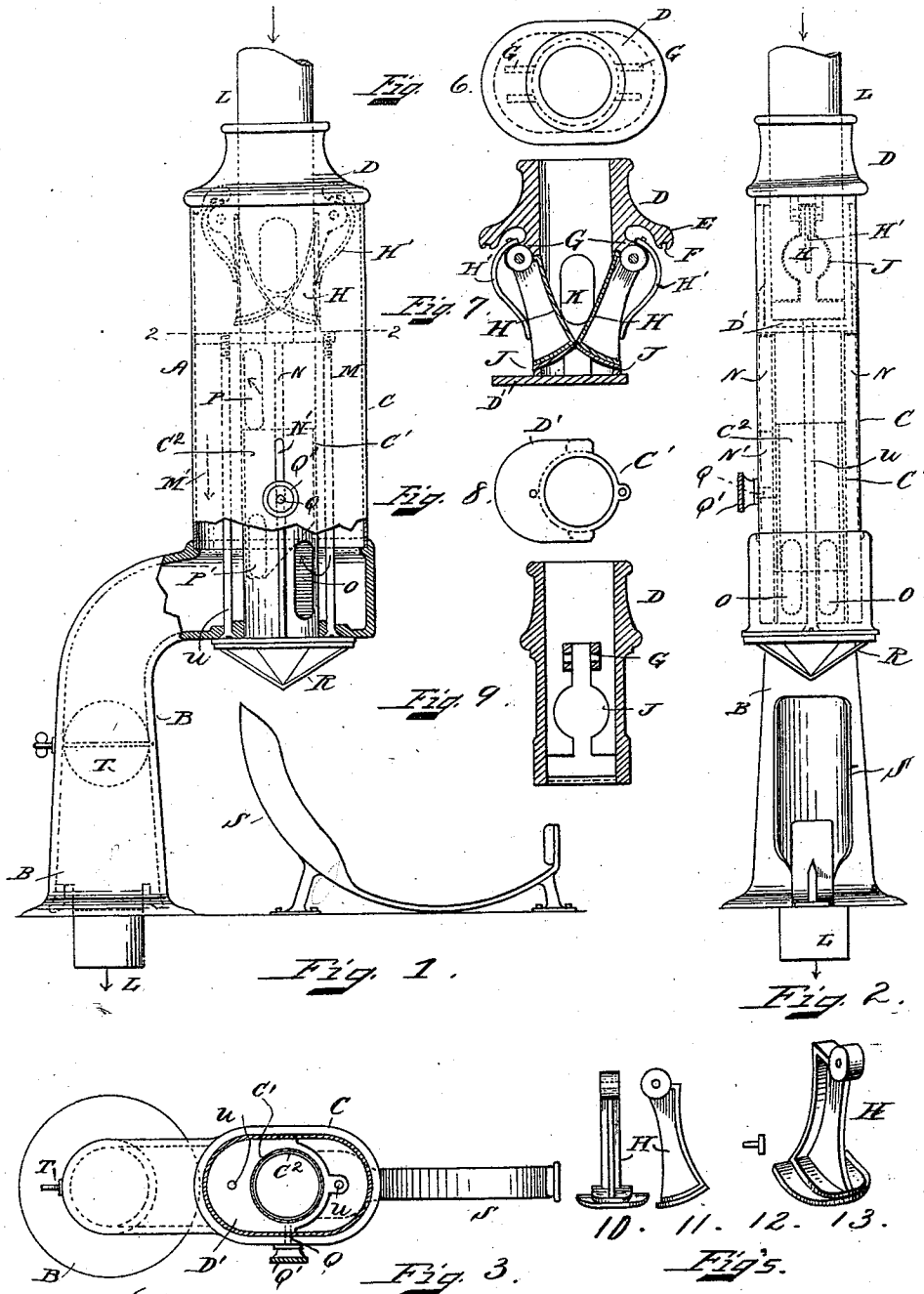


O. AMES.

TERMINAL FOR PNEUMATIC DISPATCH TUBES.

No. 527,039.

Patented Oct. 9, 1894.



Witnesses
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(No Model.)

2 Sheets—Sheet 2.

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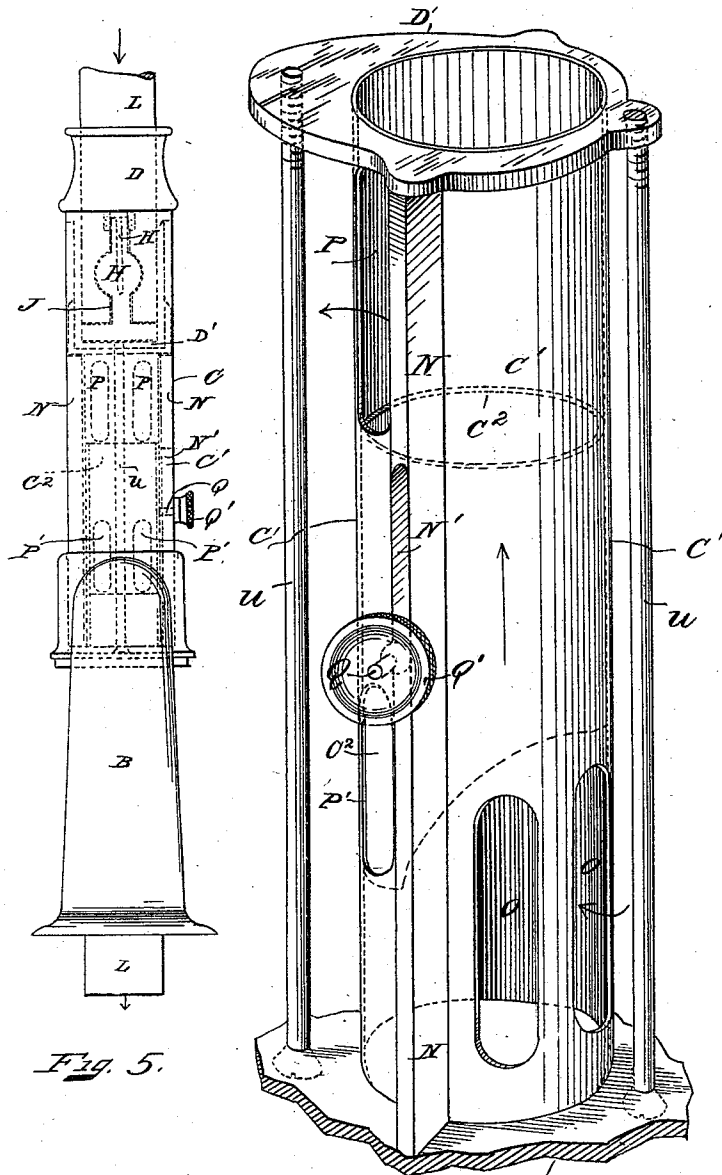


Fig. 5.

Fig. 4

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UNITED STATES PATENT OFFICE.

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TERMINAL FOR PNEUMATIC DISPATCH-TUBES.

SPECIFICATION forming part of Letters Patent No. 527,039, dated October 9, 1894.

Application filed November 1, 1893. Serial No. 489,772. (No model.)

To all whom it may concern:

Be it known that I, OAKES AMES, of Canton, county of Norfolk, and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Terminals for Pneumatic Dispatch-Tubes; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is to provide means for retarding the velocity of the carrier prior to its discharge from the pneumatic system at either the salesman's or the cashier's end, and it consists particularly in providing mechanism for controlling the direction of the air current at the terminal so as to oppose the carrier with a pressure which materially reduces its velocity when the carrier reaches said terminal, and it further consists of certain novel features, arrangements and combinations hereinafter described and particularly pointed out in the claims.

In the accompanying drawings Figure 1 is a side view of the terminal partly in section. Fig. 2 is an end view looking from the right hand end. Fig. 3 is a transverse section on the line 2, 2 of Fig. 1. Fig. 4 is an enlarged detail perspective view of the inner cylinder of the terminal. Fig. 5 is a detail view of the inner cylinder looking from the left hand, showing the upper and the lower air exit openings. Fig. 6 is a plan view of the top of the terminal. Fig. 7 is a detail view in section of the top casting of the terminal. Fig. 8 is a plan view of the bottom plate of the top casting. Fig. 9 is a detail view in section of the top casting of the terminal taken on a line at right angles to the view shown in Fig. 7. Figs. 10, 11, 12 and 13 represent respectively end, side, transverse section and perspective views of the valve.

Like letters of reference refer to like parts throughout the several views.

The terminal A, which is especially adapted for downwardly discharging carriers, is supported by the hollow standard B, and it consists of an outer cylinder C secured in the top of the standard B, and resting upon it is a casting D having a circular extension E provided with a groove F, into which the top of

the outer cylinder C is fitted. On the opposite sides of this casting are the lugs G, to which the upper end of each valve H is secured by a pin passing through the upper end of the valve and the lugs.

The valves are held normally in position shown in dotted lines, Fig. 1, and close the passage through the inner cylinder C' and thereby divert the air from a downward direction through said inner cylinder out through the openings J, through which the valves travel, and also out through the two opposite openings K in the casting D. The valves H are held closed, as shown in Fig. 1, by the suction of the air current passing out through the four openings in the top casting, and assisted by the springs H'. The openings J are of a shape as shown in Fig. 9. The air current after passing through the openings J and K is directed by the bottom plate D' of casting D to the passage M on the right hand side of the terminal between the outer and inner shells C, C'. This passage M is separated from the opposite side of the terminal by the two vertical strips N on each side between the outer and inner cylinders C, C', so that the air is compelled to pass through the openings O in the bottom of the inner cylinder C' and up through the interior of said cylinder to the openings P, thence into the passage M' and down into the hollow casting B and out through the main air tube L.

The bottom plate D' of the top casting D, together with the vertical strips N, prevent the air, after it has passed through the openings J and K, from entering the passage M', and direct it into the passage M and thence the air current passes through the interior of the cylinder C' to the passage M'.

The area of the four openings J and K in the top casting D, as well as the passages M and M', are preferably of greater area than the main tube so as to afford sufficient area to prevent choking of the current.

Within the inner cylinder C' there is arranged a sliding cylinder C² adapted to move vertically within the inner cylinder C' by operating the pin Q, which pin slides up and down in the slot N' in one of the vertical strips N, and said inner cylinder C² is secured in its adjusted position by means of thumb

screw Q'. This sliding cylinder C² is provided for the purpose of directing the current either through the top openings P or the lower openings P' on the left hand side of the inner cylinder C'.

When in the position shown in dotted lines, Figs. 1 and 4, the entire current passes up the interior of the inner cylinder C' and meets the carrier after it has passed through the valves H, and the air then passes out through the openings P into the passage M' and then on to the main tube L, but if this pressure is found too strong and retards the carrier too much the sliding cylinder C² can be raised so as to allow a portion of the current to pass directly through the interior of the inner cylinder C' and out through the lower openings P' to the passage M', and thereby not oppose to the head of carrier the entire pressure of the air current. If the pressure of the air current is still found to be too strong and retards the carrier too much, the inner cylinder C² can be raised up so as to entirely close the upper openings P and thus compel all the air current to pass across the cylinder and out through the lower openings P' to the passage M'. In this arrangement while the pressure is not led up to meet the head of the carrier coming through the terminal, nevertheless it opposes the passage of the carrier and retards its velocity, as its velocity is necessarily diminished in passing through the current crossing the interior of the cylinder through which the carrier is moving, so that while the current is not led up to meet the head of the carrier it is still in opposition to the travel of the carrier passing through the terminal, and thereby retards its velocity.

From the above it will be seen that as the carrier enters the terminal from the main tube L it first impacts and opens the valves H, then enters the interior of the inner cylinder C' where it meets the main current, as above described, and is retarded to such a degree that it opens the valve R, and then passes into the receiving chute S at a minimum velocity, and rolls on to the table from the chute. The terminal can be used at either the cashier's or the salesman's end.

If from any cause the carrier should stop in the terminal the air current can be shut off by closing the valve T, whereupon the carrier would immediately drop from the terminal by its own weight, open the valve R and pass on into the chute S.

The screws u pass up through the bottom of the standard B and are screwed into the bottom plate D' of the top casting D, and thereby secure firmly together in their proper positions all the parts of the terminal.

As is well known in pneumatic systems the impact valve R, at the bottom of the terminal, is kept closed by the suction of the air current.

I do not limit myself to the exact arrangements and descriptions shown as the same may be varied without departing from the spirit of my invention.

Having thus ascertained the nature and set forth the construction of my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination, with a pneumatic dispatch tube system, of a terminal and means for directing the propelling air current through said terminal in opposition to the travel of the carrier.

2. The combination, with a pneumatic dispatch tube system, of a terminal, means for directing the propelling air current through said terminal in opposition to the travel of the carrier, and means for varying the pressure of the air current moving in opposition to the travel of the carrier.

3. In a pneumatic dispatch tube system, a terminal consisting of an inner cylinder through which the carrier passes from the main tube and an outer cylinder, valves closing the passage between the main air tube and the inner cylinder and diverting the air current into the outer cylinder, and means for directing the air current into the inner cylinder below the valves in a direction opposite to the travel of the carrier, whereby the velocity of the carrier is reduced in passing through said terminal, substantially as set forth.

4. The combination, with a pneumatic dispatch tube system, of a terminal and means for directing the propelling air current through said terminal across the line of travel of the carrier whereby the travel of the carrier is opposed and its velocity is retarded.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 7th day of October, 1893.

OAKES AMES.

Witnesses:

A. S. TEMPLE,
F. A. SPEAR.