2 Sheets--Sheet 1

O. B. DOWD.

Pneumatic Dispatch-Apparatus.

No. 163,366. Patented May 18, 1875.

Fig. 1.

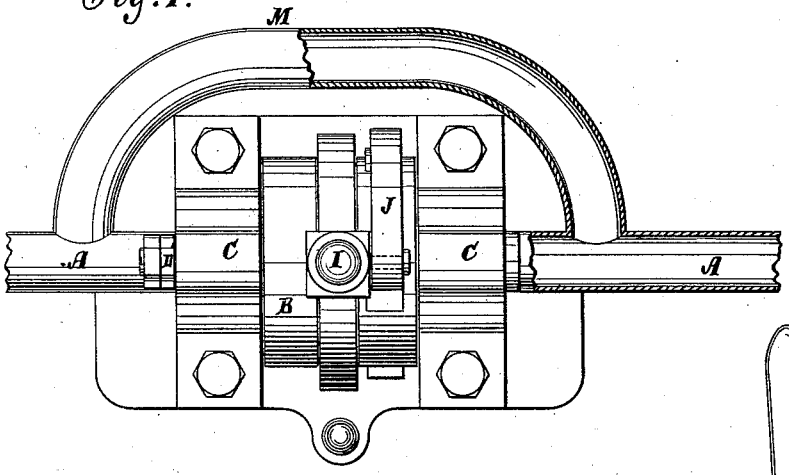


Fig. 2.

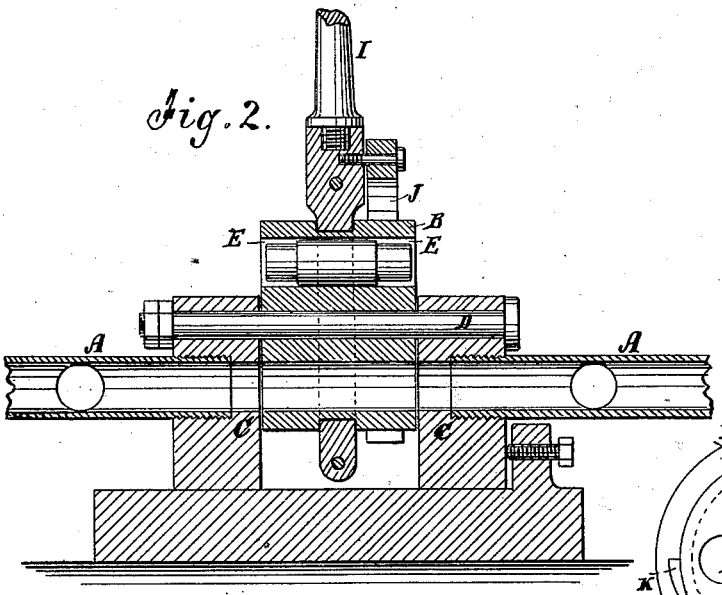


Fig. 3.

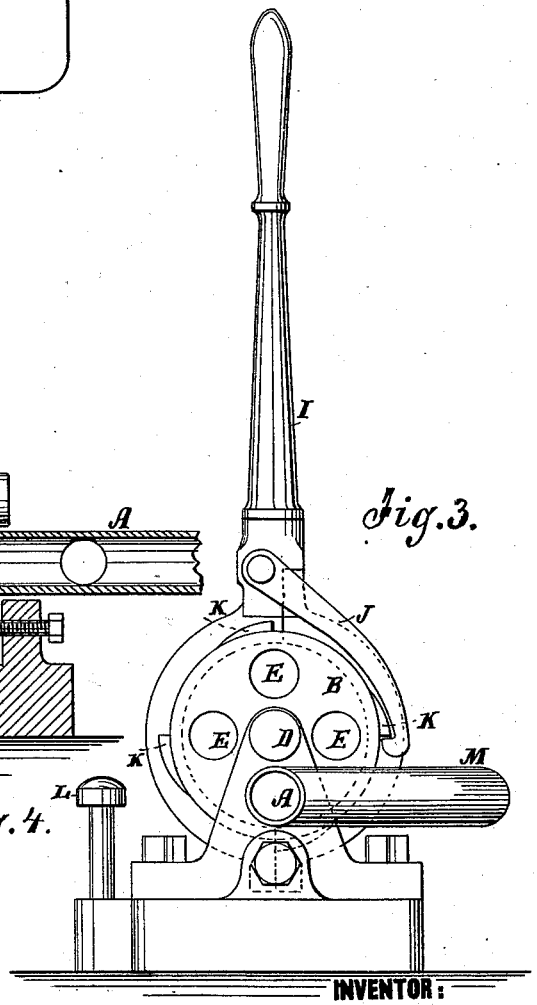
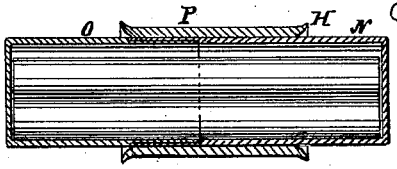


Fig. 4.



WITNESSES:

A Bennemendorf
C Seligniek

INVENTOR:

O. B. Dowd.

BY Munn & Co.

ATTORNEYS.

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

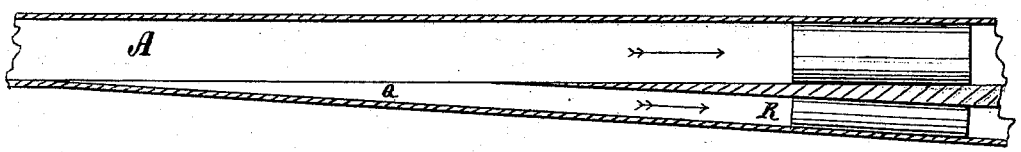
2 Sheets--Sheet 2.

O. B. DOWD.

Pneumatic Dispatch-Apparatus.

No. 163,366. Patented May 18, 1875.

Fig. 5.



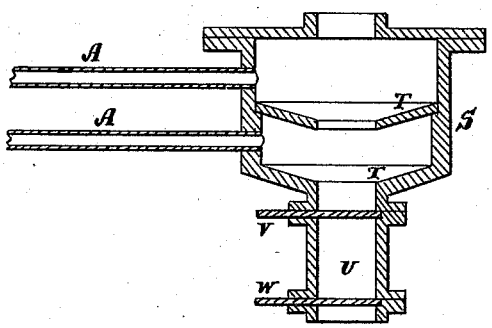


Fig. 6.

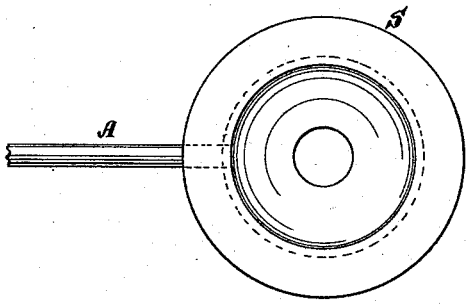


Fig. 7.

WITNESSES:

A Bennemendorf.
A Sedgwick

INVENTOR:

O. B. Dowd

BY Munn & Co.

ATTORNEYS

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

OLNEY B. DOWD, OF NEW YORK, N. Y.

IMPROVEMENT IN PNEUMATIC DISPATCH APPARATUS.

Specification forming part of Letters Patent No. **163,366**, dated May 18, 1875; application filed June 13, 1874.

To all whom it may concern:

Be it known that I, OLNEY B. DOWD, of the city, county, and State of New York, have invented a new and Improved Pneumatic Dispatch Apparatus, of which the following is a specification:

The object of the invention is to provide simple, cheap, and efficient means for sending letters, messages, and small packages through small pipes, say about an inch and a quarter in diameter, using a compressed elastic fluid (preferably hydrogen gas) as the propelling power.

In carrying out the invention, it is designed to have two pipes joining the local stations with the central station, with a circuit of the impelling-fluid passing out through one and back through the other, and worked by pressure in a reservoir at the central station. It is designed to make the apparatus useful for hotels, offices, and private houses by a special circuit to each, the outgoing pipe being connected with one of the contrivances for stopping the carrier, so as to discharge into it, and the other connected, so as to allow of the return of the fluid, and having the apparatus for introducing the carrier to be returned to the central office. For short local connections, of a quarter to a half a mile, or thereabout, air may be used to advantage as the impelling medium; and in this case only one tube may be employed, the tube having connection at the central office with a vacuum-chamber, to draw in the carrier, and also with a pressure-chamber, to move it out, with cocks for changing the connection as required, and the pipe would be open to the atmosphere at the local station while the carrier is passing. At other times the pipe would be connected with the exhaust-chamber, and be closed by a cap at the local station, to be removed to put in the carrier.

Figure 1 is a plan view of the apparatus for introducing the carriers into the pipes at intermediate points, with a part represented in horizontal section. Fig. 2 is a longitudinal sectional elevation. Fig. 3 is an end elevation of Figs. 1 and 2. Fig. 4 is a sectional elevation of the carrier. Fig. 5 is a sectional elevation of the switch. Fig. 6 is a sectional elevation, and Fig. 7 is a plan view, of the contrivance for stopping the carrier.

Similar letters of reference indicate corresponding parts.

A represents two sections of pipe, through which the carriers are to be impelled according to my plan, said pipes being of lead, and, preferably, tin-lined when air is used, but not necessarily. The pipes are supposed to form one of the members of a circuit connecting one station with another. B is a disk, of metal or other suitable material, arranged to turn between the terminals C of these two sections on a pivot, D, parallel with them, but a little to one side, so that holes or pockets E in it may be brought into line with the bore of the tubes, and thus form connection for the carriers, to be forced along through it. This disk is as thick as the length of the carrier H, and is employed for introducing carriers to the tubes at stations, the carriers being placed in the pockets when out of line with the tubes, as shown in Fig. 2, and then turned into line. For turning the disk a lever, I, pawl J, and ratchet-teeth or tappets K may be used, together with a stop-pin, L, for arresting the lever at the right point for the pocket to register exactly with the tubes. The stop-pin may be adjustable, for shifting it to the exact position required. As the disk will cut off the connection of the pipes while it is being turned, I propose to connect a turn-out, M, with the sections A, to maintain a connection around the disk B, while it cuts off the direct connection, so that the action of the impelling-fluid will not be interrupted. N and O represent the two cups, and P the packing-band, forming the carrier for being impelled along the tubes to convey the messages or packages. The two cups fit together, one in the other, snugly, to hold by friction, and the band packs it at the middle portion only, so that it will not bind in the curves of the tube, as it would if packed at the ends. The packing will, in practice, be contrived so that the edge against which the fluid impinges will swell outward a little, to pack against the sides of the tube. Q represents a slot through the bottom of an ascending curve or incline, forming a passage into a smaller branch tube, R, for diverting

small carriers from the main line, the carriers to be diverted from the main tube being smaller than the others, so that the latter will pass over the slot, while the former will fall through it. These small carriers will be impelled along the large tubes by the large carriers; but they will fit their own lateral tubes, so that they will be impelled by the fluid in them. The stopping contrivance consists of a vertical tank, S, of cylindrical form, with one or more conducting-pipes, A, discharging into it tangentially, so that the carrier will be caused to travel around in circles until its momentum is spent, with a conical or concave bottom, T, having a hole in the center, toward which the carrier will converge as its velocity ceases, so as to fall through into a trap, U, from which it may be taken out without material loss of fluid by closing gate V behind it and opening gate W. Bristles, flexible rubber strips or blocks, or other yielding obstructions, may be fixed on the surface of the tank, to aid in arresting the carriers.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the dispatch-tube and pocket-disk, of ratchet-lever I, pawl J, ratchets K, and regulating stud-pin L, substantially as specified.

2. The dispatch-carrier H, composed of two cups, N O, and enlarged at the middle by a packing-band, P, substantially as specified.

3. The packing-band D, combined with the middle portion of the carrier, substantially as specified.

4. The pipe A, slotted at Q, and provided with branch R, as and for the purpose specified.

5. The cylinder or tank S, one or more concave bottoms, T, and a discharging-trap, U V W, in combination with one or more conducting-pipes, entering the tank tangentially, substantially as specified.

OLNEY B. DOWD.

Witnesses:

T. B. MOSHER,

ALEX. F. ROBERTS.