

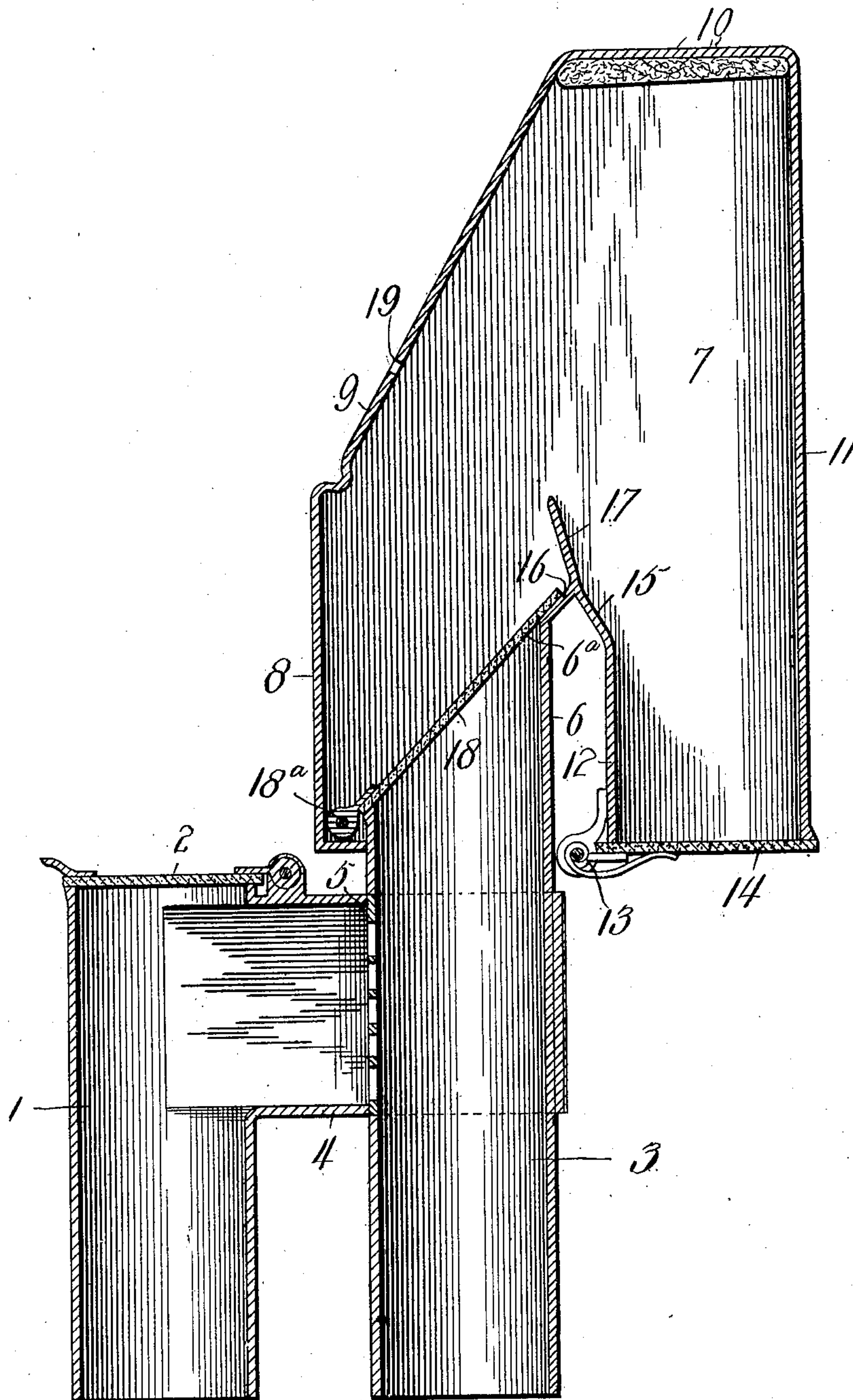
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C. H. BURTON.

TERMINAL FOR PNEUMATIC TUBE SYSTEMS.

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WITNESSES:

H. F. Royce

H. J. Anderson

INVENTOR

Charles H. Burton,

By

S. P. Walhauser,

Attorney

UNITED STATES PATENT OFFICE.

CHARLES H. BURTON, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO THE UNITED STATES PNEUMATIC COMPANY, OF WASHINGTON, DISTRICT OF COLUMBIA, A CORPORATION OF MAINE.

TERMINAL FOR PNEUMATIC-TUBE SYSTEMS.

No. 891,144.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES H. BURTON, a citizen of the United States, residing at Washington, District of Columbia, have invented certain new and useful Improvements in Terminals for Pneumatic-Tube Systems, (Case B,) of which the following is a specification.

The present invention consists of certain new and useful improvements in pneumatic store service systems, and has particular relation to the despatching and receiving terminal of such systems.

In the general type of pneumatic store service systems now in common use, the entrance to the despatching tube, and the terminal at the end of the receiving tube are located closely adjacent to one another, the terminal usually being extended somewhat above the entrance to the despatch tube, its end portion being curved downwardly. Both the entrance to the despatch tube, and the exit of the despatch tube are usually provided with spring hinged doors, the door at the exit of the terminal being so balanced that normally the tension of the spring hinge is sufficient to keep it tightly closed, but when the carrier arrives thereon, the additional weight is sufficient to cause the said door to swing open and allow the carrier to drop.

The despatching and receiving tubes are generally arranged side by side, a communication therebetween being usually located adjacent to their upper portions. The upper end of the receiving tube is usually extended beyond the despatch tube entrance, and the terminal is attached to, or carried by such end, and a valve is so mounted within the terminal, that it will normally be in a position to close the end of the receiving tube.

It is with special relation to the parts of pneumatic store service systems just briefly referred to that my present invention is designed, and therefore the principal object is to provide a terminal for the reception and delivery of the carrier, in which accurate and efficient means are provided for the guiding of the carrier therethrough, so that said carrier will be readily transmitted to the exit

door in proper position to readily open said door.

Another object is to provide a new form of communication between the despatch tube and the receiving tube.

Other and further objects and advantages of the invention will be apparent from the following detailed description, pointed out in the appended claims, and illustrated in the annexed drawings.

On the accompanying sheet of drawing I have illustrated my invention in a longitudinal sectional view, a portion only of the despatch tube and receiving tube being shown.

Like characters of reference refer to corresponding parts in the description and the drawing.

1 designates a despatch tube, the upper end of which is closed by a spring hinged door 2.

3 designates a receiving tube which preferably extends along side of the despatch tube 1, and 4 designates a short length connecting pipe by means of which communication is established between the despatch tube 1 and receiving tube 3. This pipe 4 extends at right angles to the despatch tube 1 and receiving tube 3, its connection with the tube 3 being a swiveled one. That is, one end of the pipe 4 loosely encircles or embraces the tube 3 within the plane of a guard grating presently referred to, and said mounting permits of a horizontal movement of the despatch tube relatively to the receiving tube 3, where such a movement is necessary or desirable, to accommodate the terminal to any particular space requirements. At the junction of the pipe 4 with the receiving tube 3, a portion of the receiving tube is left open, such opening being approximately the same size as the diameter of pipe 4, and into this opening is placed a perforated guard plate or grating 5.

6 designates the upper end of the receiving tube 3. This upper portion projects somewhat beyond the upper end of the despatch tube 1, and the end thereof is beveled off to form a valve seat 6^a.

7 designates the terminal in which the car-

rier is received. This terminal is carried by, or attached to, the upper portion of the receiving tube 3. The terminal comprises a short front vertical wall 8, the upper end of which terminates in an inclined portion 9, such inclined portion ending in a horizontal top portion 10.

11 designates a long vertical rear wall and 12 designates a short vertical wall, which, in conjunction with the lower portion of the wall 11, form a short tube.

13 designates a spring hinge at the lower end of wall 12, and 14 designates a door mounted upon the spring hinge 13, the tension of such spring hinge being sufficient to normally retain the door in a closed position. The short vertical wall 12, terminates at its upper end in an inclined wall portion 15, and from the upper part of this inclined member 15, a downwardly inclined portion 16 extends to the upper end of the receiving tube 6. This downwardly inclined portion 16 is arranged at substantially the same angle as the beveled upper portion of the receiving tube 3.

17 designates a short deflecting wall which extends upward within the terminal 7, the object of which is to provide a line of division and deflection between the entrance to the terminal and the exit therefrom. Within the terminal 7, and adjacent to the outlet end of the receiving tube 3, a valve 18 is located. This valve has a suitable hinge connection 18^a within the terminal and is retained closed on the seat 6^a at the end of the receiving tube 3 by the suction therein. The arrangement of this valve relatively to the end of the receiving tube is such that when the valve is in its normal, or closed, position, the beveled end 6^a of the tube and the inclined portion 16, forms its seat.

19 designates an air admission port that is formed within the inclined portion 9 of the terminal 7.

21 designates a buffer that is secured to the top portion of the terminal. This buffer may be of any preferred construction, for example, I have illustrated an ordinary cushion consisting of packed hair with a cloth covering.

The operation of the invention is as follows:—The circuit of the air is up the receiving tube 3, through the grating 5 and short pipe 4, thence down the despatch tube 1 to a suction appliance, not shown. The terminal 7 is normally closed at all points excepting the air port 19, hence there is normally no working pressure or suction of air in the terminal. The carrier coming up the receiving tube 3, rapidly passes over the grating 5, and strikes and opens the valve 18, the momentum of the carrier being such that it continues on into the terminal until it contacts with

the inclined portion 9 of the terminal, by which it is guided up to the buffer 21, which stops the carrier's upward movement, and caused it to drop down along the rear wall 11 of the terminal, enter the tube formed by walls 11 and 12, and then onto the door 14, which, owing to the weight of the carrier overcoming the tension of the spring hinge causes the door to swing open and allow the carrier to be discharged. As soon as the carrier opens the valve 18, the air within the terminal will be drawn down the tube 3 and through the tube 4, into the despatching tube 1. This establishes a line of suction from the terminal which acts upon the valve 18 immediately after the carrier has passed, causing said valve to promptly swing to its closed position by suction.

It will be understood that the grating 5 at the junction of the receiving tube 3 and the short pipe 4, serve the important function of preventing any part of the carrier being drawn into the despatch tube, should such parts become separated or broken from the carrier during its transmission to the terminal.

I claim as my invention:—

1. In an apparatus of the class described, a despatch tube; a receiving tube arranged parallel thereto; a swivel connection between said tubes; a terminal at the end of the receiving tube and provided with a wall forming a line of division and deflection between its entrance and its exit; a valve mounted in the terminal and normally closing the entrance thereto by suction, but adapted to be opened by impact of a carrier, and a door on said terminal for the delivery of the carrier.

2. In an apparatus of the class described, a despatch tube; a receiving tube; a pipe connection between the despatch tube and the receiving tube; a terminal provided with a division wall at the end of the receiving tube; a valve mounted in said terminal normally retained in a closed position, but adapted to be opened by the impact of the carrier; the said terminal being provided with an air admission port, and with an inclined portion which form a guide for the carrier, and a spring hinged door which is normally retained in a closed position, but which is adapted to be opened by the weight of the carrier.

3. In an apparatus of the class described, a despatch tube; a receiving tube; a pipe connection between the despatch tube and the receiving tube; a terminal at the end of the receiving tube; a valve mounted in the terminal and adapted to be normally retained in a position to close the entrance thereto by suction, but which is opened by the impact of the carrier; a carrier guide within the terminal having an air admission port formed therein; a buffer at the top of the terminal;

a spring hinged delivery door carried by the terminal normally retained in a closed position, but which is opened by the weight of the carrier; and a division and deflecting wall
5 extending within the terminal adapted to divide the entrance to the terminal from the exit therefrom.

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

CHARLES H. BURTON.

Witnesses:

D. P. WOLHAUPTER,
R. C. BRADDOCK.