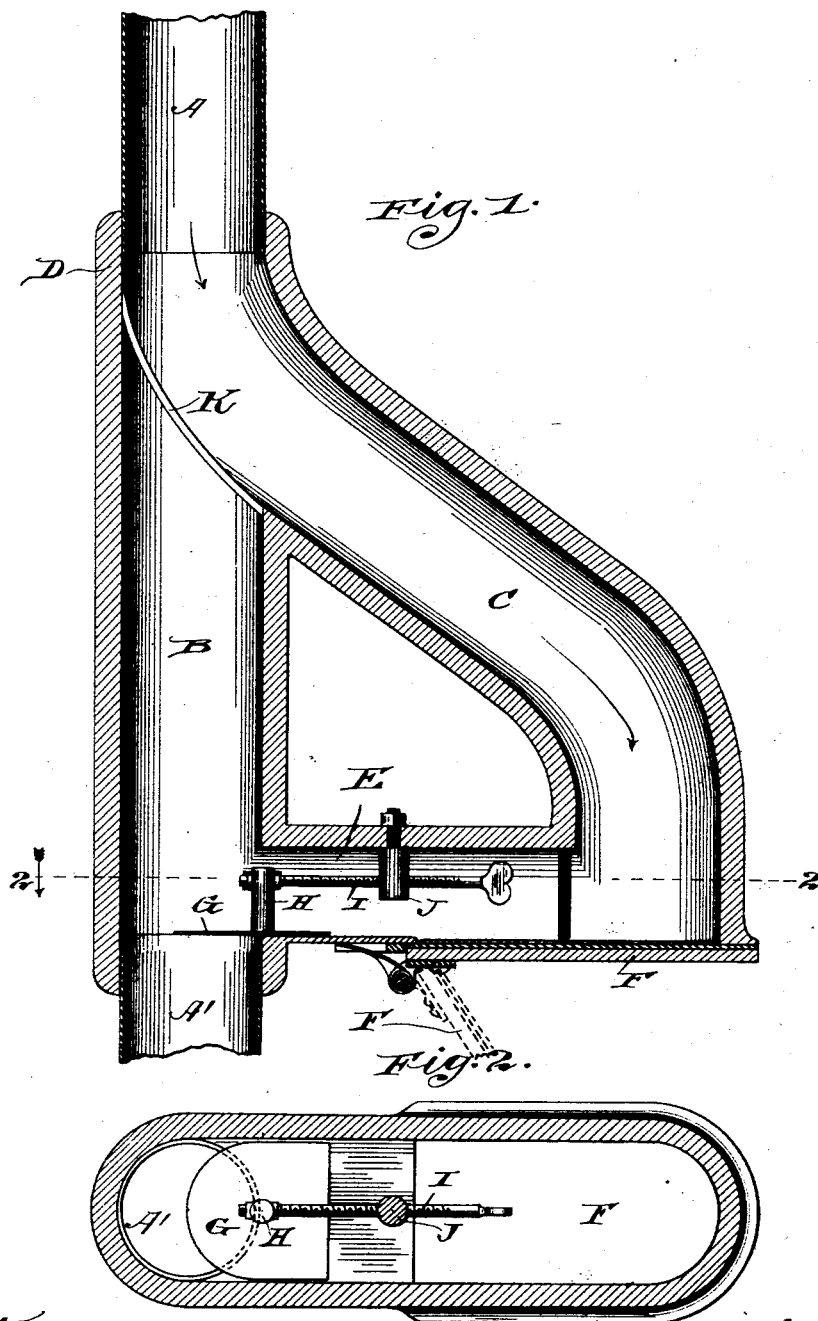


(No Model.)

L. G. BOSTEDO & E. A. FORDYCE.  
RECEIVING BOX FOR PNEUMATIC DISPATCH TUBES.

No. 525,583.

Patented Sept. 4, 1894.



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# UNITED STATES PATENT OFFICE.

LOUIS G. BOSTEDO AND EDMOND A. FORDYCE, OF CHICAGO, ILLINOIS.

## RECEIVING-BOX FOR PNEUMATIC DISPATCH-TUBES.

SPECIFICATION forming part of Letters Patent No. 525,583, dated September 4, 1894.

Application filed September 4, 1893. Serial No. 484,761. (No model.)

*To all whom it may concern:*

Be it known that we, LOUIS G. BOSTEDO and EDMOND A. FORDYCE, of Chicago, Illinois, have invented certain new and useful Improvements in Receiving-Boxes for Pneumatic Dispatch-Tubes, of which the following is a specification.

This invention relates to a receiving box for a pneumatic dispatch tube of the class which is used to carry cash between the salesmen's stations and the cashier's station in mercantile houses.

The box which is hereinafter described is applicable for use either at the cashier's station or at the salesmen's stations, and some of the features thereof are adapted for use in boxes in intermediate positions in the line and the box may have a movable switch. We have shown it, however, as adapted to the cashier's station. These devices, which are sometimes called receiving boxes, have been made in various ways, and they usually comprise a branch tube connected with the receiving tube of the system and terminating with an open end to which a hinged door is applied, and which door is automatically opened by the impact of the carrier thereon. The closing of the end of the branch tube by the door, we have found permits the forming of an air cushion above said door which is often of such strength or density as to sustain the carrier and prevent its proper discharge. Our improvements provide a terminal in which a relief or vent is furnished to prevent this air cushion. A further difficulty which has been encountered in the operation of these pneumatic dispatch tube systems is due to the fact that when the door is opened by the impact of the carrier thereon, the air rushes in through the door opening, there being a strong current induced by the passage of air through the main tube under suction. The vent above described permits of the escape of this air without passing through the branch tube in which the carrier is descending, and therefore the induced current does not operate to hold the carrier in the branch nor prevent its discharge. We have also further improved the construction of the box by applying therein a regulating valve which can

be adjusted so as to vary the strength of the current which passes through the main tube. We have also improved the construction of the box itself as to the material and form in which it is made. These receiving boxes have usually been constructed from wood and rectangular in form. The receiving or suction tube has been projected through such boxes with a branch or switch therein to deflect the carrier to the discharge aperture. It is difficult to make these wooden boxes air tight, and they are unsightly even when carefully and expensively constructed. We make the box from a single, integral casting which is interposed in the main tube and provide in this casting a section to which the separated ends of the main tube is connected, a delivery branch having a door pivoted thereto at its end, and a vent passage between the lower end of the branch above the door and the main tube section.

In the accompanying drawings, Figure 1 is a sectional elevation through the box showing the ends of the main pipe connected thereto and showing the valve and its adjusting mechanism in elevation; and Fig. 2 is a sectional plan below the line 2—2 of Fig. 1.

In the drawings, A A' represent the separated ends of the main tube which are connected to the box. The latter is substantially triangular in outline and is cast integral having the straight section B and the curved branch or discharge pipe C which unite in a stem D which is connected to the section A of the main pipe. The lower end of the branch C is connected with the section B by the semi-cylindrical pipe E. The lower end of the branch C is open and the hinged door F, which is hinged to the bottom wall of the semi-cylindrical pipe E, closes the discharge opening of the branch, said door having an actuating spring to render it self-closing.

A valve G carried upon a short stud H, mounted upon a threaded bolt I threaded in the post J, slides on the flat bottom wall of the semi-cylindrical pipe E and is adapted to be projected into the bore of the section B so as to regulate the amount of air passing therethrough; or, in other words, to regulate the force of the current. This regulation will

be found desirable where a series of boxes are connected to the same suction tube. Those nearest the source of power will have their valves so set as to equalize the force of the blast with those most remote. This regulation is also important where pipes of different lengths are connected into the same suction or trunk pipe. The friction of the air passing through a long pipe being greater than in passing through a short pipe, the valve furnishes means for equalizing the force of the blast in the two pipes.

In operation the carrier passes to the box in the direction indicated by the arrow and is deflected by the guide K into the branch tube, the air current passing straight through the section B. The carrier being delivered with considerable force strikes the door F and opens it, passing out. Now, if there were no provision for permitting the air which passes into the tube C to pass to the suction tube, an air cushion would be formed above this door, but the semi-cylindrical pipe E furnishes an open passage or communication which prevents the formation of such air cushion. When the door is opened by the impact of the carrier thereon, the induced current of air rushing in through the opening would, in the absence of the passage furnished by the pipe E, tend to impede the delivery of the carrier, if not to wholly arrest it, but when the door opens the air which enters through the opening rushes through the pipe E into the suction pipe, taking of course the shorter course through said pipe rather than the longer route through pipe C and thence to the suction.

It will be observed that the door is hinged at a point between the inner side of the branch tube C and the section B. This is done for two reasons: first, to give a greater leverage on the door so that it may the more readily open by the impact of the carrier thereon; and, second, to permit the air which enters through the open door to pass more directly to the suction.

It will be observed by reference to the dotted lines in Fig. 1 of the drawings that there is a triangular space above the door when the same is open, so that the air may rush in and pass directly and by a short course into the tube A'.

The box may be cast all in one piece, or it may be parted vertically or cast in mating halves. The pipe C is preferably curved from end to end, first, because its delivery end is thus brought into a horizontal plane; and, second, because the curved form acts to retard the carrier to some extent and breaks the force of the discharge. The precise form of the parts is not essential. The pipes B and C are shown as being cylindrical and the pipe E as semi-cylindrical, its flat bottom adapting it to the flat door.

The relief or vent is applicable to receiv-

ing boxes of other forms. The particular device shown is intended as a downward discharge terminal but the vent may be and is in practice applied to a downward discharge terminal, to receiving and discharge boxes having movable switches, and to boxes in horizontal lines of pipe having a horizontal discharge. The manner of hinging the door and the regulating valve is also applicable to the various forms of boxes above mentioned.

Without limiting ourselves to precise details of construction, we claim—

1. A receiving box for pneumatic dispatch tubes adapted to be connected to the receiving and suction tubes, having a curved discharge branch, and a vent or relief passage communicating with the branch and with the suction tube, substantially as described.

2. A receiving box for pneumatic dispatch tubes adapted to be connected with the separated ends of the receiving and suction tubes, having a curved branch having an open end through which the carrier may be delivered, a pipe or passage connecting the branch near its open end with the suction tube, and a hinged door for closing the end of the branch, substantially as described.

3. A receiving box for pneumatic dispatch tubes adapted for connection with the separated ends of the receiving and suction tubes and having a curved branch with an open end, a pipe or passage formed with a flat bottom wall and communicating with the lower end of the branch and with the suction tube, an opening in said bottom wall and a hinged door applied to said opening, substantially as described.

4. A receiving box for pneumatic dispatch tubes adapted for connection with the receiving and suction tubes and having a curved branch with an open end, a pipe or passage formed with a flat bottom wall communicating with the lower end of the branch and with the suction tube, an opening in said bottom wall, a hinged door applied to said opening, the hinged end of the door being arranged intermediate the line of the inner wall of the branch and the suction tube, substantially as described.

5. A receiving box for pneumatic dispatch tubes cast integral and of substantially triangular form having a straight section adapted to be connected with the separated ends of the dispatch tube, a curved discharge branch with its opening arranged at right angles to the wall of the dispatch tube section, a guide arranged at the junction of said sections, a pipe or passage communicating with the branch at its lower end and with the suction end of the main pipe section, and a hinged door in the lower wall of said pipe or passage, substantially as described.

6. A receiving box for a dispatch tube system constructed to provide a straight passage

and adapted to be interposed in and form a part of the dispatch tube, a curved branch for delivering the carrier, a pipe or passage connecting the lower end of the branch with the suction of the dispatch tube, and a movable valve arranged in said vent and projected into the dispatch tube whereby to regulate the passage of air therethrough, substantially as described.

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