

No. 653,438.

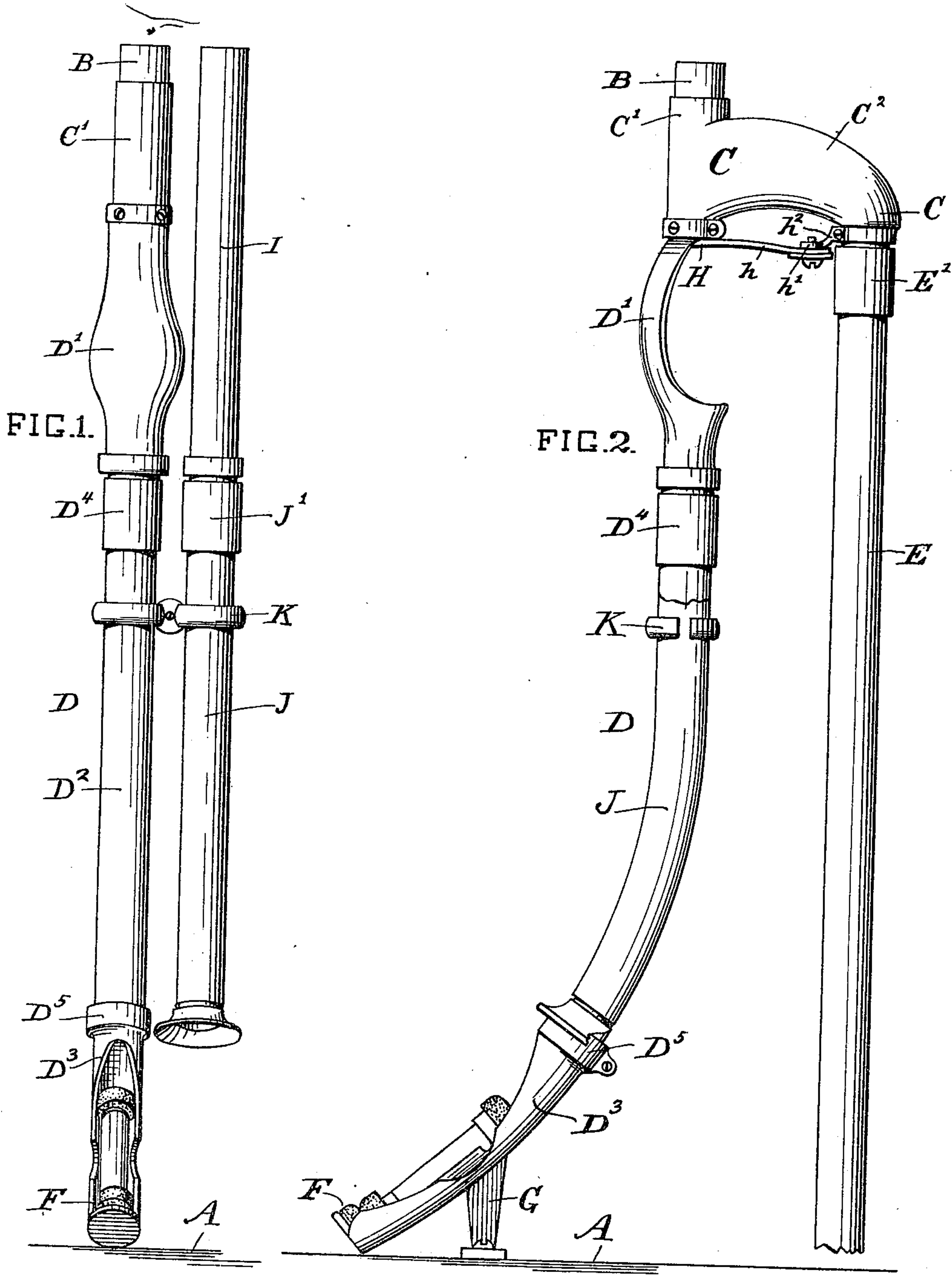
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C. H. BURTON.

TERMINAL FOR PNEUMATIC DESPATCH TUBES.

(Application filed May 17, 1900.)

(No Model.)



WITNESSES:
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TERMINAL FOR PNEUMATIC-DESPATCH TUBES.

SPECIFICATION forming part of Letters Patent No. 653,438, dated July 10, 1900.

Application filed May 17, 1900. Serial No. 16,955. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. BURTON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Terminals for Pneumatic-Despatch-Tube Systems, of which the following is a specification.

My invention relates to pneumatic-despatch-tube apparatus such as is commonly used in stores and large commercial houses for transmitting cash between a central cashier's office or station, usually located in the basement of the building, and a large number of outlying salesmen's stations; and my invention resides more particularly in a terminal device for use at the central or cashier's station of the type technically known in the art as a "consecutive-delivery" terminal—that is, one in which the carriers arriving from a salesman's station are caused to be received, handled, and returned with the necessary change and memorandum of sale in the order in which they are transmitted to the cashier, thus insuring the delivery of change to purchasers in the order in which they are waited upon.

The primary purpose or object of my invention is to simplify the construction of terminals of this character, thus at the same time improving their operation and reducing their cost of production. Other objects and advantages of my invention will appear later in the subjoined description thereof.

My invention in its preferred form is illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of my improved terminal; and Fig. 2 is a side elevation thereof, partly broken away.

Similar letters of reference refer to similar parts throughout both views.

Referring to the drawings in detail, A may indicate the top surface of a cashier's table or desk at which a series of my improved consecutive-delivery terminals connected with a corresponding number of distant salesman's terminals may be located side by side.

B designates the pneumatic-despatch tube, through which the carrier is caused to travel under the suction of an air-current from the

salesman's station to the cashier's office and which relatively to the cashier's station may be styled the "receiving-tube."

C is a coupling, preferably a hollow casting, in substantially the form shown in Fig. 2 and comprising a short straight vertical tubular member C', having the same bore as the despatch-tube B, and a lateral branch C², which terminates in a downwardly-turned end C³. In the upper end of the tubular member C' is secured the end of the receiving-tube B. To the lower end of the same is secured the delivery-chute, which is designated as a whole by D, and to the downwardly-turned end C³ of the lateral branch C² is secured, as by a sleeve E', the vacuum-pipe E, which communicates with the suction side of the blower or other exhaust apparatus.

Referring now to the delivery-chute D, this latter is preferably constructed in three sections D', D², and D³, as shown. The upper section D', which is somewhat in the nature of a hopper, is simply a short tubular casting bulged outwardly from each end to a slightly-enlarged diameter centrally of its length and cut away on its upper rear portion, as shown in Fig. 2, for a double purpose, as hereinafter disclosed. The intermediate section D² is simply a piece of tubing bent or drawn to the required curvature and removably secured to the lower end of section D' by a sleeve D⁴. The lower section or foot-piece D³ is a short tubular casting slightly curved symmetrically with the curve of the intermediate section D² and cut away on its upper surface, as shown, for the convenient removal of a carrier and removably secured to the lower end of the section D² by a split sleeve D⁵, as shown. The cut-away portion of this section is preferably slightly longer than the length of a carrier, so as to expose to view a second carrier, which may arrive before the first carrier has been removed. The foot of the chute is provided with a felt or other elastic buffer F to receive the impact of the incoming carriers, and the chute may be supported at its lower end in a rigid relation to the counter or desk by means of a standard G, secured to the latter and to the under side of the section D³.

By making the delivery-chute D in three

separable sections, as shown, the two members D' and D^3 can always be made in uniform sizes, while the intermediate member D^2 can be made in varying lengths and degrees of curvature to suit the varying requirements of different offices or central stations. This is a distinct and important advantage in the direction of rendering uniform the manufacture, and thus cheapening the cost of production of devices of this character.

At H is shown a leather disk or flap valve having a shank h , which is suitably secured, as at h' , to a lug or bracket h^2 on the downwardly-extending end C^3 of the coupling C. The office of this flap-valve is to guard the vacuum in the exhaust-pipe E by preventing the admission of air to the tubes of the system through the lower end of the tubular member C' .

I is the return-tube of the system, through which the carrier with the required change is returned from the cashier to the salesman at the latter's station, and J is the sending terminal-piece of this tube, being separably connected thereto by a sleeve J' , as shown. The sending terminal-piece J is curved conformably to the curve of the delivery-chute D, and may be secured in rigid parallel relation thereto, as by a bracket K. The object of making the sending-piece J separable from the sending-tube I, instead of integral therewith, as heretofore, is the same as in the case of the sectional delivery-chute—to accommodate terminals of varying lengths and degrees of curvature. All the parts of my improved terminal, it will be observed, except the curved members D^2 and J, can be made in standard sizes and measurements, the members D^2 and J alone being varied to suit the needs and requirements of individual systems.

The operation of my improved terminal will be readily understood from the foregoing description. The air-current flowing through the system begins at the open mouth of the sending terminal-piece J and flows thence through the sending-tube I to and through the salesman's terminal, thence back through the receiving-tube B through the coupling C, and thence by way of the vacuum-tube E to the exhaust side of the blower. A carrier arriving from the salesman's station through the tube B is under the impulse of the air-current until it has entered and passed through the short tubular member C' of the coupling C, whereupon by its momentum and gravity it opens the flap-valve II, drops into the hopper-section D' , (the flap II instantly closing in its rear,) slides down through the chute, and comes to rest in the footpiece D^3 , as shown. Succeeding carriers which may arrive before the first carrier has been removed are successively brought to rest in the delivery-chute, the latter by its construction, as shown, necessitating the removal of the carriers one at a time in the exact order in which they are received. The carriers are sent back to the salesman's station by simply inserting

them into the mouth of the sender J when they are at once acted upon by the suction in the system and carried to their destination.

The cutting away of the hopper-section D' of the chute along its upper rear portion, as shown in Fig. 2, provides the necessary space for the free play of the flap-valve II and at the same time permits the air to freely enter the chute behind the discharging-carriers, thus preventing the formation of a partial vacuum in rear of the carriers which would hinder their free delivery.

By the construction and arrangement of parts or elements constituting my improved terminal, as shown and described, I do away with all unsightly switch-boxes or terminal devices at the end of the receiving-tube B for changing the direction of movement of the carrier or preventing the impairment of the suction by the admission of external air as well as with the cumbersome perforated hoppers sometimes employed to conduct the carrier from the receiving-tube to the delivery-chute. In place of the latter I employ simply a short section of tubing of slightly-enlarged diameter centrally of its length rigidly connected to and in line with the discharging end of the receiving-tube and cut away through a portion of its length to permit play of the flap-valve II and the admission of air freely in rear of a discharging-carrier and constituting in itself an integral portion of the delivery-chute D.

While I have described my invention as a "cashier's" terminal, I wish it to be understood that it is not limited in its application to a cashier's station, but may with equal advantage be employed as a consecutive-delivery terminal at the salesman's end of the line, particularly where the salesman's terminal is of the type known as "downward discharge."

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

1. In a consecutive-delivery terminal, the combination with a hollow coupling adapted to be connected to the end of the receiving-tube and having a vertical tubular member for the passage of discharging-carriers, and a lateral branch for the passage of the air-current to the exhausting device, of a flap-valve pivoted on said lateral branch and normally closing the lower end of said tubular member of the coupling, and a delivery-chute connected to the latter, said delivery-chute being cut away in the rear near its upper end for the purpose of permitting the free operation of the valve and also to prevent the formation of a vacuum in rear of a discharging-carrier, substantially as described.

2. In a consecutive-delivery terminal, the combination with a hollow coupling adapted to be connected to the end of the receiving-tube and having a vertical tubular member for the passage of discharging-carriers, and a lateral branch for the passage of the air-current to the exhausting device, of a suit-

ably-pivoted valve-disk normally closing the lower end of said tubular member of the coupling, and a delivery-chute connected to the latter, said delivery-chute being cut away on its rear and front sides near its upper and lower ends respectively for the respective purposes of permitting the free operation of the valve-disk and the consecutive removal of the discharging-carriers, substantially as described.

3. A delivery-chute for consecutive-delivery terminals, comprising in combination an upper or hopper section adapted to be secured in line with the discharging end of the receiving-tube, a lower or footpiece section in which the carriers are brought to rest, and an intermediate tubular section, the length and curvature of which may be varied to suit the requirements of individual systems, said parts being separably united to form a complete chute, substantially as described.

4. In a consecutive-delivery terminal, a delivery-chute comprising an upper or hopper section adapted to be secured in line with the discharging end of the receiving-tube, a lower or footpiece section in which the carriers are brought to rest, and an intermediate tubular section, the length and curvature of which may be varied to suit the requirements of individual systems, said parts being separably united to form a complete chute, in combina-

tion with a sending terminal-piece adapted to be separably connected to the sending-tube, and which in respect of length and curvature may also be varied to suit the requirements of individual systems, substantially as set forth.

5. In a consecutive-delivery terminal, a delivery-chute comprising an upper or hopper section adapted to be secured in line with the discharging end of the receiving-tube, a lower or footpiece section in which the carriers are brought to rest, and an intermediate tubular section, the length and curvature of which may be varied to suit the requirements of individual systems, said parts being separably united to form a complete chute, in combination with a sending terminal-piece adapted to be separably connected to the sending-tube, and which conforms substantially in respect of length and curvature to the intermediate section of the delivery-chute, and means for uniting the same laterally in fixed relation to the delivery-chute, all substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my invention I have hereto subscribed my name in the presence of two witnesses.

CHARLES H. BURTON.

In presence of—

SAMUEL N. POND,
HUGO ASH.