July 1, 1930. J. T. COWLEY 1,769,677

DISPATCH SYSTEM TERMINAL

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Fig. 1

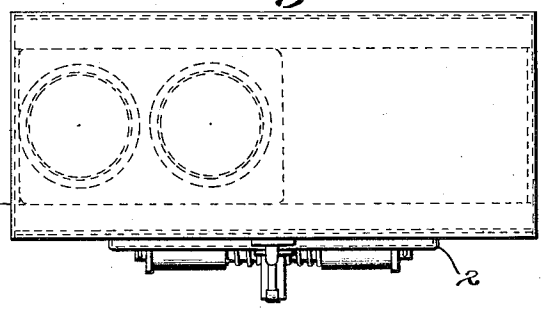


Fig. 2

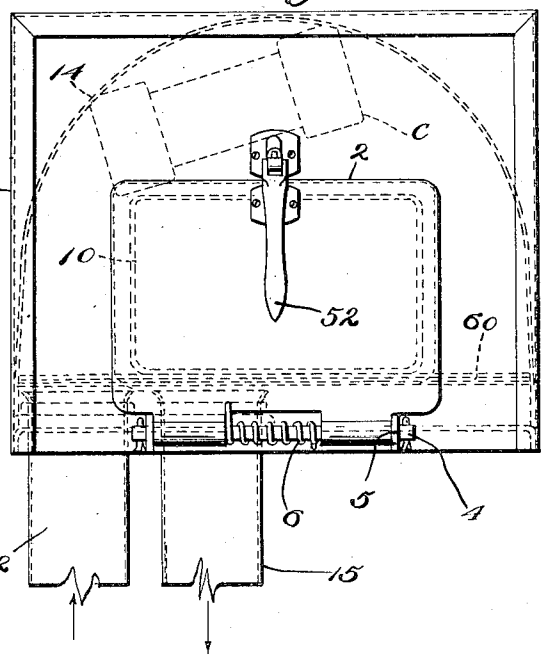


Fig. 3

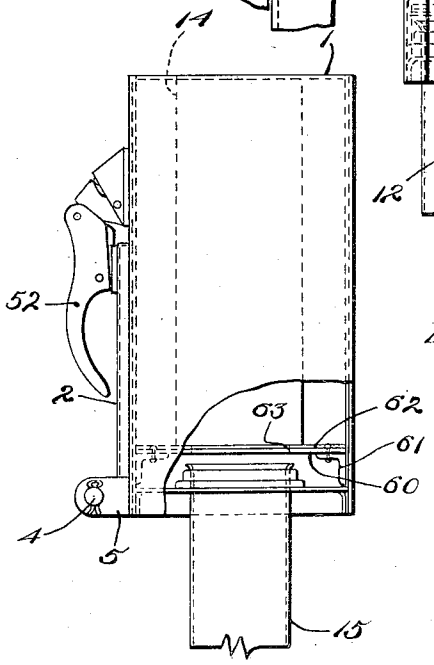
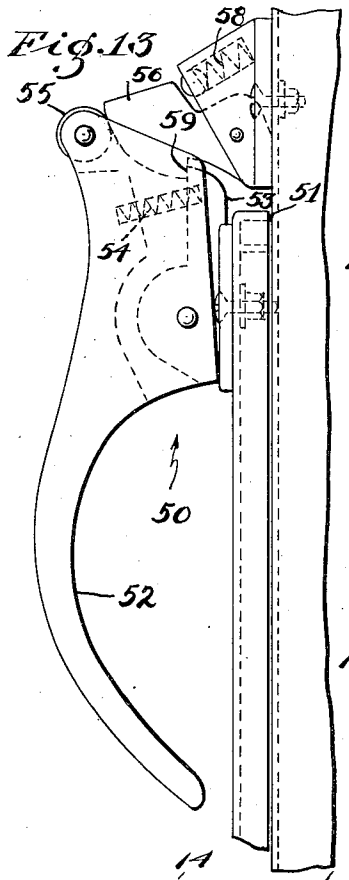


Fig. 1a



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Fig. 4

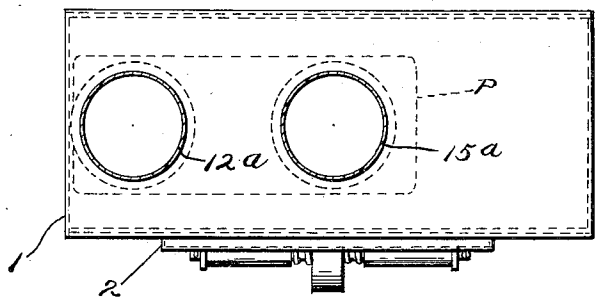
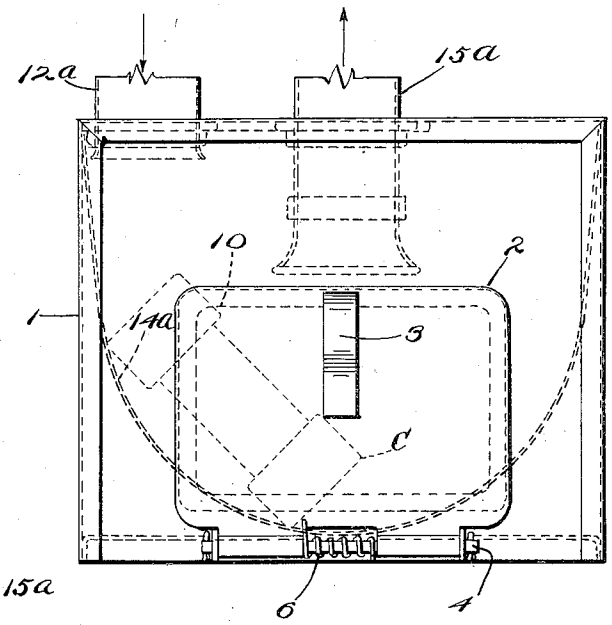


Fig. 5



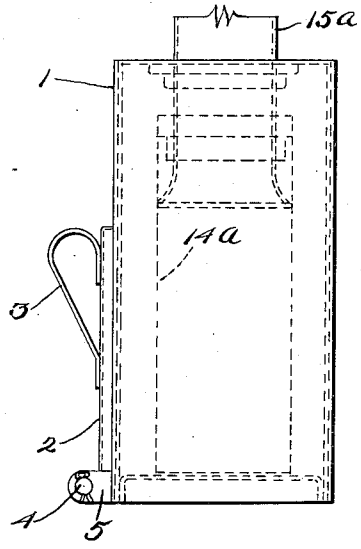


Fig. 6

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DISPATCH SYSTEM TERMINAL

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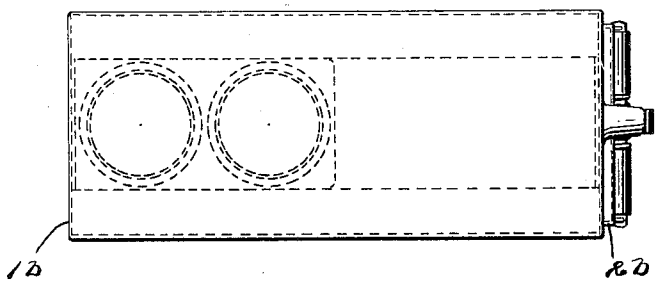


Fig. 7

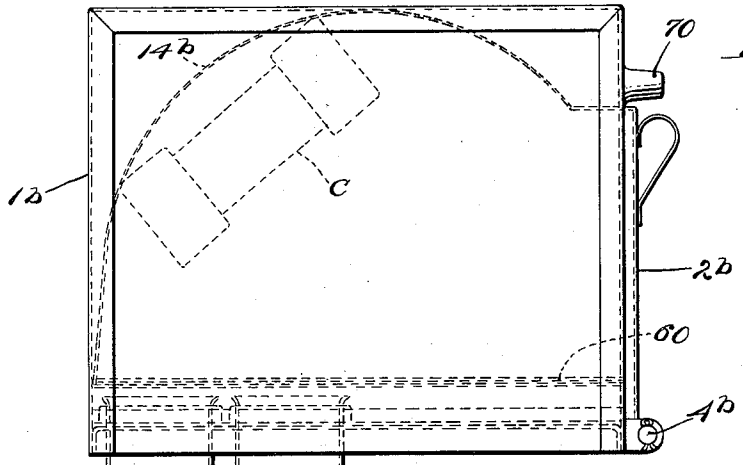
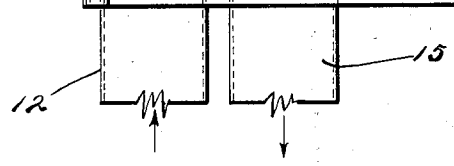


Fig. 8



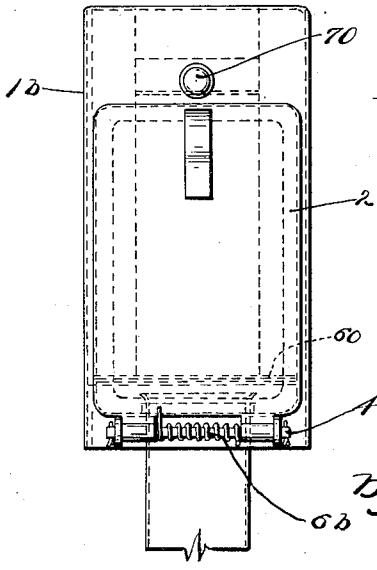


Fig. 9

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DISPATCH SYSTEM TERMINAL

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Fig. 10

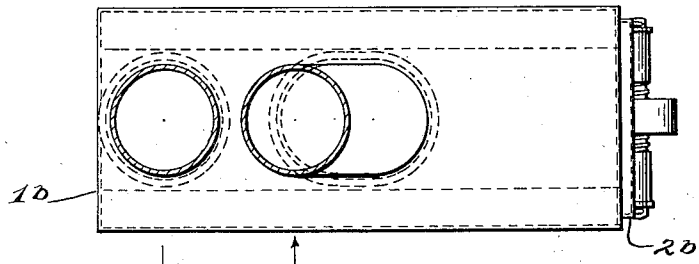
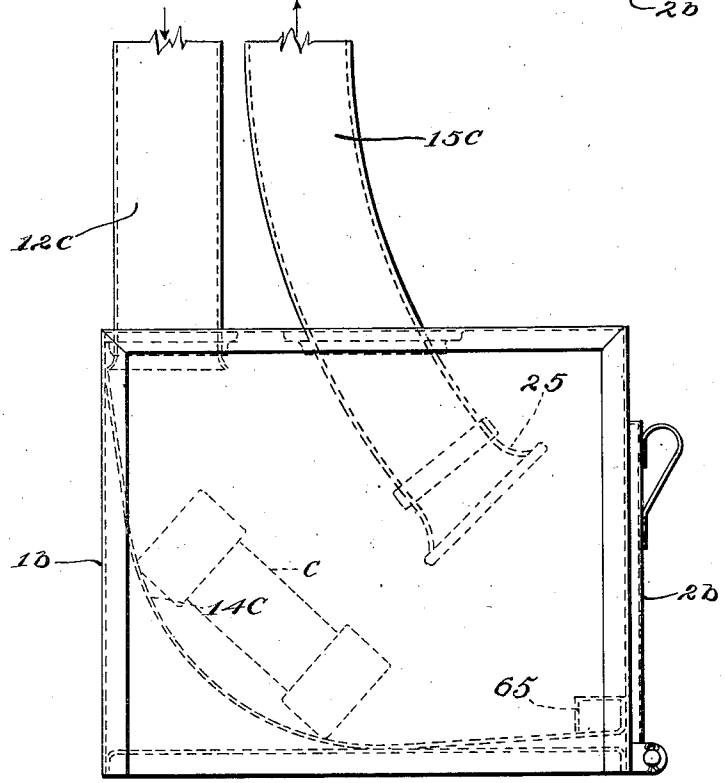


Fig. 11



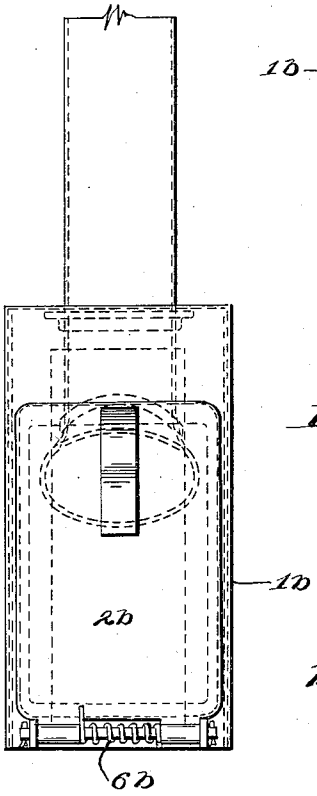


Fig. 12

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Patented July 1, 1930 1,769,677

UNITED STATES PATENT OFFICE

JAMES T. COWLEY, OF SYRACUSE, NEW YORK, ASSIGNOR TO THE LAMSON COMPANY, OF SYRACUSE, NEW YORK, A CORPORATION OF MASSACHUSETTS

DISPATCH-SYSTEM TERMINAL

Application filed November 15, 1928. Serial No. 319,489.

This invention pertains to pneumatic dispatch systems and more particularly to a dispatch and delivery terminal for such systems. This terminal may readily conform with the artistic and pleasing appearance of the various furnishings that are now commonly employed in mercantile or similar establishments and takes the place of the obviously mechanical unæsthetic and often untidy pneumatic terminal structure heretofore commonly used. The latter has ordinarily comprised separate delivery and dispatch tubes each with a noisy valve or cover and a basket or other open receptacle disposed adjoining the same in which arriving carriers are caught and in which idle carriers are contained.

The terminal afforded by the present invention in some respects is an improvement upon the terminal of the same general character disclosed and claimed in copending application, Serial No. 274,434 of James T. Cowley, filed May 2, 1928. In accordance with the present invention the structural arrangement may be more simple and somewhat more compact and the number of movable parts is reduced, the arrangement of the ends of the delivery and dispatch tubes and/or of the deflector being such as to prevent the immediate movement of the carrier from one tube to the other before the same is received by the clerk or the like. Thus the present invention affords a pneumatic tube terminal which requires little space and which may be readily concealed in whole or part, if desired, or, if exposed, may be finished in any suitable manner to conform with the appearance of the surrounding store furnishings. This terminal also is less noisy than the usual open terminal arrangement since arriving carriers are stopped and retained within a closed receptacle until the same is opened by the operator. A terminal of this character conveniently may be built into or combined with any suitable portion of the store furnishings, such as a counter, bench, stack of shelving, or the like.

In the accompanying drawings:

Fig. 1 is a top plan view of one form of terminal, the position of certain parts being indicated by dotted lines;

Fig. 2 is a similar side elevational view of the same;

Fig. 3 is an end elevation thereof;

Figs. 4, 5 and 6 are views corresponding to Figs. 1, 2 and 3 respectively and showing a slightly different form of the invention;

Figs. 7, 8 and 9 are views corresponding to Figs. 1, 2 and 3 respectively and showing a further development of the invention;

Figs. 10, 11 and 12 are views corresponding to Figs. 1, 2 and 3 respectively, but show a still different embodiment of the invention; and

Fig. 13 is an enlarged side elevation of a latch assembly.

Referring first to Fig. 1, which shows one embodiment of the present invention, it is evident that my improved terminal comprises a box 1 which may be of any suitable form but which preferably is rectangular, having an interior thickness somewhat greater than but substantially of the order of the diameter of a conventional carrier.

In this embodiment of the invention the door is shown as provided with a latch mechanism 50 which is adapted not only to secure the door in locked position but also is effective in permitting the ready breaking of the vacuum seal which may be provided by the gasket 51 arranged about the opening 10. Thus, if there is a subatmospheric pressure within the box, the movement of the door outwardly against the atmospheric pressure is aided by this arrangement, which is shown more particularly in Fig. 13, a lever 52 being pivotally mounted upon the door and arranged outwardly of a fixed striker element 53, the adjoining ends of the lever and striker normally being urged apart by a coil spring 54 and this end of the lever preferably carrying a roller 55. A latch block 56 is pivotally mounted upon the wall of the box adjoining opening 10 having a downwardly curved or inclined surface engageable by the end of the striker element 53 and by the roller 55. A spring 58 yieldably urges the latch element 56 toward the lever. When the door is closed the striker element 53 fixed upon the door causes the member 56 to compress spring 58 and permits the striker member to engage the recess

59 provided for this purpose, thereby holding the door in its closed position. When the door is opened the handle portion of lever 52 is pulled upwardly, pressing the roller 55 inwardly and swinging the latch member 56 about its axis to compress spring 58 and to release the end of striker element 53. At the same time the lever 52 acts as a pry bar to push the door away from the opening and to oppose the action of atmospheric pressure in holding the same in its closed position.

Door 2 preferably may be mounted upon pintle 4 which is disposed in brackets 5 at the bottom of the box, a spring 6 being associated with this hinge in order to urge the door into a normally closed position.

The end of the delivery tube 12 extends upwardly through the bottom of the box at one end thereof. A curved deflecting plate 14 is arranged to engage carriers moving upwardly out of this tube and to turn the same to a position where their longitudinal axis are at an angle to the axis of the tube end. Thus, in the embodiment of the invention shown in Figs. 1, 2 and 3, the deflector plate 14 may be arched and may extend from one side of the box 1 to the other. The end of the dispatch tube 15 preferably is juxtaposed to that of the delivery tube and is arranged adjoining the opening 10 so that a carrier may be conveniently inserted therein when the door is open. The portions of tubes 12 and 15 which project into the box conveniently may be in juxtaposed parallelism, being arranged at a distance from each other much less than the longitudinal extent of an ordinary carrier.

A false bottom 60 may be disposed within the box 1 to support the carrier in convenient relation to the door opening. This bottom may be supported by angles 61 and may be covered by a layer of sound deadening material 62. Suitable openings 63 in plate 60 are aligned with the ends of the delivery and dispatch tubes to permit the movement of carriers therethrough.

It is evident that the tube portions 12 and 15 are connected to the conventional central station and blower system so that ordinarily a continuous draft of air may circulate through the box 1, passing inwardly, as indicated by the arrow adjoining tube 12, and passing outwardly through tube 15, as indicated by the corresponding arrow. Due, however, to the disposition of the deflector plate 14 and the arrangement of the two ends in juxtaposition, a carrier C of normal length which is received from the tube 12 will not be drawn into the tube 15 but will be cast upwardly against the curved portion of deflector plate 14, whence it will drop into a substantially horizontal position in front of the door 2. Since the thickness of the interior of the box is substantially of the order of the diameter of the carriers, the same will remain juxtaposed to the door. Thus, the door 2 may be swung downwardly against the action of spring 6, and the arriving carrier may be readily removed. A carrier which is to be dispatched may be inserted in the end of tube 15, and, upon the closing of door 12, a sufficiently strong circulation of air is set up to cause the movement of this carrier through the dispatch tube to the central station.

Figs. 4, 5 and 6 illustrate a box 1 of the general character shown in Figs. 1, 2 and 3 with a closure 2 and a handle 3, but in this embodiment of the invention the delivery and dispatch tubes both extend into the top of the terminal chamber, these tubes being designated respectively by numerals 12^a and 15^a and the deflector plate 14^a being curved or bowed downwardly i. e., being in an inverted position in relation to that shown in Fig. 2.

Preferably in this embodiment of the invention the dispatch tube may extend downwardly for a substantial distance into the terminal chamber so that its open end adjoins the upper edge of opening 10 while the delivery tube may terminate just below the top wall of the chamber. It is evident that with this embodiment of the invention gravity assists the air current passing through pipe 12^a and causes the arriving carrier to engage the curved plate 14^a and to slide or drop downwardly to a substantially horizontal position adjoining the door 2, thus being deflected to a position wherein it will not be caught in the air draft passing into dispatch tube 15^a.

It may be further noted that in this embodiment of the invention the ends of tubes 12^a and 15^a are spaced at a distance from each other less than the length of a normal carrier. Obviously when a carrier is to be sent to the central station the door 2 is opened and the carrier inserted into the open end of tube 15^a. Then upon closing of the door 2 the air current through the terminal chamber will propel the carrier to the receiving station.

Figs. 7, 8 and 9 illustrate an embodiment of the invention similar to that shown in Figs. 1, 2 and 3 but with a door 2^b with a suitable pintle 4^b and spring 6^b applied to the end rather than the side of the terminal chamber 1^b, it being evident that the door may be arranged at the side or the end of the chamber, as is preferred, in accordance with the positioning of the same in relation to the normal location of the clerk and surrounding portions of the shelving, counter, or the like. It is furthermore evident that the delivery tubes 12 and 15 are arranged in parallel juxtaposition, as shown and described in reference to Figs. 1, 2 and 3. In this embodiment of the invention the deflector plate 14^b of the same general type as plate 14 of Fig. 1, is arched upwardly but terminates adjoining the top of the door 2^b. button 70 may be disposed above the door

opening to be engaged by the thumb of the band that opens door 26, thereby facilitating this operation when a vacuum exists within the terminal.

In the use of a terminal of this character the carrier passes upwardly through tube 12, engages deflector plate 14[b] and is thrown into a substantial horizontal position adjoining the door 2[b] where it readily may be grasped by the clerk when the door is opened, the dispatch tube 15 being disposed nearer the door so that the departing tubes may be more conveniently inserted therein.

Figs. 10, 11 and 12 illustrate a terminal chamber or box of the same general character as shown in Figs. 7, 8 and 9 and with the various portions thereof designated by similar reference numerals, but in this embodiment of the invention the delivery and dispatch tubes are shown as projecting into the upper portion of the box. With this arrangement of the delivery tube 12[c] may terminate just below the box top and the deflector plate 15[c] may curve downwardly from the same toward the door 2[b] at the opposite side of the box. The dispatch tube 15[c] may curve downwardly and have a flared open end 25 adjoining the door 2[b]. Thus, entering carriers passing downwardly from the open end of tube 12[c] under the influence of the air blast and gravity will engage the curved deflector plate 14[c] and be swung thereby to a substantially horizontal position adjoining the door 2[b] where they may be readily grasped by the hand of the operator, being so positioned, however, that they will not return to the central station through tube 15[c] until the operator has again dispatched the same. Obviously the open end 25 of tube 15[c] is so positioned as to permit the convenient dispatching of the carrier to the central station. In this embodiment of the invention, a stop 65 may prevent the entering carrier from hitting the door.

It is evident from the above description that, in accordance with the present invention, a simple, compact, convenient and attractive pneumatic dispatch terminal may be provided to suit a wide variety of conditions, having its closure arranged at either the side or the end, depending upon the normal position of the receiving clerk and the surrounding furnishings, and having the dispatch and delivery tubes projecting into either its bottom or top wall in accordance with the preferred disposition of the same. It is further evident that such a delivery terminal may be arranged to permit the convenient disposal of the arriving carriers adjoining the door so that they may be readily grasped by the clerk or operator and that the delivery tube may be positioned to permit the convenient dispatch of a carrier to the central office, the ends of these tubes, however, being so disposed in accordance with the present invention that without necessity of moving parts, valves, flaps, or the like, the return of an unopened carrier to the central office is avoided, although normally a constant circulation of air may pass through the terminal chamber.

In certain installations of a terminal of the character disclosed herein it may be provided with doors at either side or at a side or end or any other desired locations so that access may be afforded to the carriers from a plurality of positions adjoining the terminal rather than merely from one side or one end of the same.

I claim:

1. A terminal for a pneumatic dispatch system having a delivery and a dispatch tube, said terminal comprising a box having a single normally closed door, the ends of the delivery and dispatch tubes projecting into the box in substantially parallel juxtaposition to each other and accessible upon opening the door.

2. A terminal for a pneumatic dispatch system having a delivery and a dispatch tube, said terminal comprising a box having a normally closed door, the ends of the delivery and dispatch tubes projecting into the box in such positions in relation to each other that a carrier can not pass directly from one tube to the other.

3. A terminal for a pneumatic dispatch system having a delivery and a dispatch tube, said terminal comprising a box having a normally closed door, the ends of the delivery and dispatch tubes projecting into the box with their open ends spaced at a distance less than the length of a normal carrier.

4. A terminal for a pneumatic dispatch system having a delivery and a dispatch tube, said terminal comprising a box having a normally closed door, the ends of the delivery and dispatch tubes projecting into the box in such positions in relation to each other that a carrier can not pass directly from one tube to the other, and a curved deflector adjoining the delivery tube to engage the end of a tube leaving the same and to turn it out of alignment with the end of the carrier dispatch tube.

5. A terminal for a pneumatic dispatch system having a delivery and a dispatch tube, said terminal comprising a box having a normally closed door, the ends of the delivery and dispatch tubes projecting into the box with their open ends spaced at a distance less than the length of a normal carrier, and a curved deflector adjoining the delivery tube to engage the end of a carrier leaving the same.

6. A terminal for a pneumatic dispatch system having a delivery and a dispatch tube, said terminal comprising a box having a normally closed door, the ends of the delivery and dispatch tubes projecting into the box

in substantially parallel juxtaposition, and a curved deflector arranged to turn a carrier leaving the delivery tube at an angle out of alignment with the dispatch tube.

7. A terminal for a pneumatic dispatch system having a delivery and a dispatch tube, said terminal comprising a box having a normally closed door, the ends of the delivery and dispatch tubes projecting into the box in substantially parallel juxtaposition, and a curved deflector arranged to turn a carrier leaving the delivery tube at an angle out of alignment with the dispatch tube, said dispatch tube being located nearer the door than said delivery tube.

8. A terminal for a pneumatic dispatch system having a delivery and a dispatch tube, said terminal comprising a box having a normally closed door, the box having a width of the order of the diameter of a normal carrier, the ends of the delivery and dispatch tubes projecting into the box in juxtaposition to each other, and substantially in parallelism with each other.

9. A terminal for pneumatic dispatch systems comprising a box, delivery and dispatch tubes connected to the box, the latter having an opening in one side thereof, a swinging door covering the opening, latch mechanism for the door including a latch element pivoted upon the box, a handle for said latch mechanism, the handle contacting with and pivoting said element and thus acting as a lever to pry the door away from the box wall.

10. A terminal for pneumatic dispatch systems comprising a box, delivery and dispatch tubes connected to the box, the latter having an opening on one side thereof, a swinging door covering the opening, latch mechanism for the door including a latch element yieldably mounted on the box, a striker fixed to the door engageable therewith, and a handle on the door to disengage the element from the striker and to act as a lever to pry the door edge away from the box.

11. A terminal for a pneumatic dispatch system comprising a housing providing a substantially air-tight chamber for the reception of carriers, a normally closed door giving access to said chamber, a delivery tube which enters the housing and which is adapted to deliver carriers into the chamber, a dispatch tube communicating with the chamber, the end portions of the delivery and dispatch tubes being substantially parallel and accessible upon opening the door, and means within the chamber for deflecting arriving carriers laterally away from the dispatch tube.

Signed by me at Syracuse, New York, this second day of November, 1928.

JAMES T. COWLEY.

DISCLAIMER

1,769,677.—*James T. Cowley*, Syracuse, N. Y. DISPATCH-SYSTEM TERMINAL. Patent dated July 1, 1930. Disclaimer filed June 19, 1936, by the assignee, *The Lamson Company*.

Hereby enters this disclaimer to claim 1 of the specification.

[*Official Gazette July 7, 1936.*]