

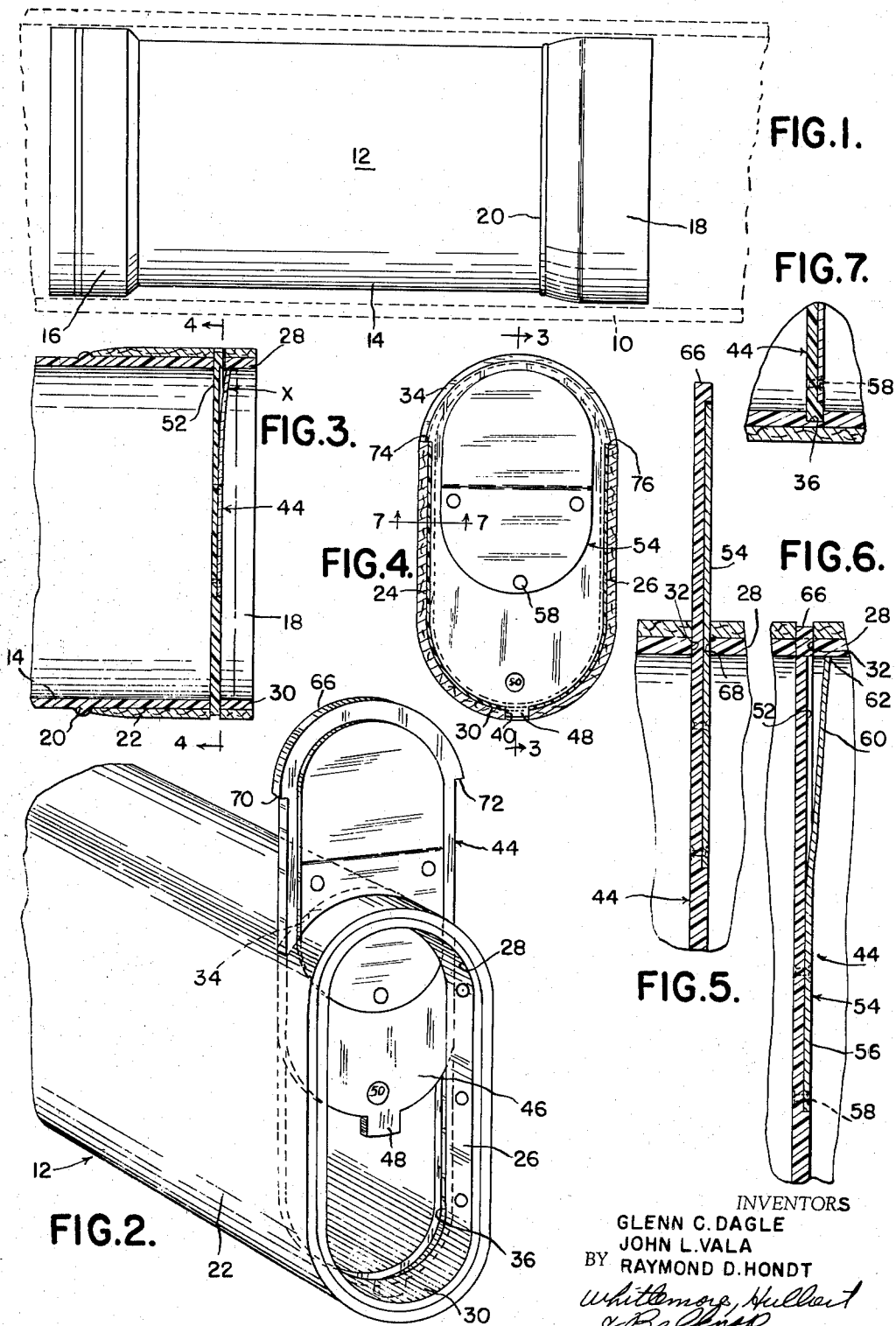
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MAIL CARRIER FOR A PNEUMATIC SYSTEM

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1

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MAIL CARRIER FOR A PNEUMATIC SYSTEM

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This invention relates to an improved mail carrier and more particularly to a mail carrier adapted for use in pneumatic delivery systems provided in commercial buildings such as stores, banks and the like.

Heretofore, a mail carrier has been provided with a tubular body having an externally mounted leather cover over the entrance thereto. The cover was held in place by leather straps. Such a construction was not successful due to the fact that the straps became unfastened when the carrier was moved through the delivery conduit. As a result thereof, the mail and other contents in the carrier escaped therefrom into the delivery conduit of the pneumatic system. This caused considerable inconvenience and maintenance problems since not only were valuable articles lost but the articles themselves on many occasions blocked the conduit. Thus, it became necessary to frequently clean the conduit of trapped articles.

It is an object of the present invention to provide a mail carrier for a pneumatic system comprising an elongated tubular body closed at one end thereof, a slot in a wall portion of the body at the other end thereof, said slot being located in a plane which is substantially perpendicular to the axis of the tubular body, and a door in the slot slidably carried by the body, said door being slidable through the slot from an opened position where it is located exteriorly of the body to a closed position where the door closes the other end of the body, and releasable means for latching the door in the closed position.

Another object of the present invention is to provide a mail carrier of the aforementioned type wherein the releasable means includes resilient means carried by the door engageable with the inner wall of the body for latching the door in the closed position.

Still another object of the present invention is to provide a mail carrier of the aforementioned type wherein a groove is provided in the interior of the body in the same plane as the slot, said groove extending around the inner periphery of the body with the ends thereof intersecting opposite ends of the slot, said door being slidable through the slot and groove from an opened position to a closed position where the door fills the slot and the groove and closes the other end of the body.

A further object of the present invention is to provide a mail carrier of the aforementioned type wherein a recess is provided in the door and a spring clip is located in the recess having the inner end thereof fixed to the door, the outer end of the spring clip being biased in a direction out of the recess, said door when in a closed position having the outer end of the spring clip in engagement with the inner surface of the body, the outer end of the spring clip being adapted to be moved into the recess to permit opening of the door, the wall of the slot directly opposite the spring clip holding the outer end thereof in the recess during movement of the door to the opened position.

Another object of the present invention is to provide a mail carrier of the aforementioned type wherein the elongated tubular body is made from a plastic material, both ends of the body being provided with a leather collar around the outer periphery thereof, the collar adjacent the other end of the body having a slot therein which overlies the first-mentioned slot to permit opening and closing of the door.

2

Still another object of the present invention is to provide a mail carrier of the aforementioned type wherein an opening is provided in the wall of the body opposite the slot at the bottom of the groove and the inner end of the door includes a tab which is received in the opening when the door is in the closed position.

A further object of the present invention is to provide a mail carrier of the aforementioned type wherein the outer end surface of the door is constructed and shaped like the outer surface of the aforesaid wall portion of the body such that when the door is in a closed position the end surface of the door and the outer surface of the wall portion are flush.

It is thus another object of this invention to provide a low cost structure of the aforementioned type having certain advantages contributing to efficiency, reliability and long life as well as ease of maintenance.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawing wherein a preferred form of the present invention is clearly shown.

FIGURE 1 is a fragmentary view illustrating the mail carrier in the tube of a pneumatic mail system.

FIGURE 2 is a fragmentary perspective view of the mail carrier, with the door provided therein illustrated in a partially open position.

FIGURE 3 is a fragmentary vertical sectional view through the mail carrier illustrating the door in a closed and latched position, said view being taken substantially on the line 3—3 of FIGURE 4.

FIGURE 4 is an end view, partially in section, taken on the line 4—4 of FIGURE 3.

FIGURE 5 is a fragmentary vertical sectional view taken substantially on the line 3—3 of FIGURE 4 and illustrating the door in a partially opened position.

FIGURE 6 is a vertical sectional view similar to FIGURE 3 but on a somewhat larger scale.

FIGURE 7 is a fragmentary sectional view taken on the line 7—7 of FIGURE 4.

Referring now to the drawing, the conduit of the pneumatic mail system is designated by the numeral 10 and has provided therein a novel mail carrier 12. The mail carrier 12 includes an elongated tubular body 14 made from a suitable transparent plastic material. One end 16 of the elongated tubular body 14 is permanently closed. The other end 18 can be opened to permit mail or other articles to be inserted into the tubular body 14 as will subsequently appear. Both ends 16 and 18 of the tubular body 14 are provided with a radially extending annular ridge 20. A collar 22 made from leather is interposed between the ridge 20 and the opposite end surface at both ends of the body 14. The elongated tubular body 14 is of substantially oval shape and includes a pair of side walls 24 and 26 which are interconnected by an arcuate or curved top wall 28 and by an arcuate or curved bottom wall 30. The oval shape extends throughout the entire length of the body 14 which may be, as an example, approximately 18 inches in length.

The present invention relates primarily to the manner in opening and closing the tubular body 14 to means for preventing the carrier from opening when it is in the delivery conduit.

The end 18 is provided with a slot 32 in the top wall 28 of the body 14. The slot 32 conforms in shape to the wall 28 and has an angular extent which is best illustrated in FIGURE 4. The collar 22 is also provided with an identically shaped slot 34 of the same size and which overlies the slot 32 provided in the plastic tubular body 14. Both slots 32 and 34 lie in a plane which is substantially perpendicular to the longitudinal axis of the body 14. Extending downwardly from the ends of the slot 32 along the sides 24 and 26 and bottom 30 of the body 14

is an elongated relatively shallow groove 36, the ends of which are connected to opposite ends of the slot 32 provided in the elongated tubular body 14.

The bottom wall of the body 14 and collar 22 is provided with a centrally located slot or opening 40 at the bottom of the groove 36 and which is used for a purpose to be subsequently described.

A door or slide 44 is slidably carried by the body 14 and is of a shape substantially identical to the transverse cross section of the tubular body 14. The inner end 46 of the door 44 is provided with a tab 48 which is adapted to be received in the opening 40 when the door 44 is in a closed position. The door 44, which is made from a suitable metal such as steel or aluminum, is provided with a substantially oval shaped recess 52 of uniform depth. A spring or spring clip 54 is located in said recess 52, with the lower half 56 thereof being secured to the door 44, as an example, by a plurality of rivets 58. The upper half 60 of the spring clip 54 is tensioned or biased in a direction away from the recess 52 as best illustrated in FIGURES 3 and 6.

FIGURES 3 and 4 illustrate the door 44 in a closed position with the upper edge 62 of the spring 54 in engagement with the inner surface of the tubular body 14 to hold or latch said door in the closed position. It should also be observed in the event the spring clip 54 is broken that when the mail carrier 12 is in the conduit 10, the outer end surface 66 of the door 44 is in close proximity to the inner surface of the conduit 10. Thus, even though the door 44 starts to open it is prevented from opening completely due to the fact that very little space or clearance is provided between the mail carrier 12 and the conduit 10.

After the mail carrier 12 has arrived at the proper station and the carrier 12 is removed from the conduit 10, a person by applying a force in the direction of the arrow X in FIGURE 3 urges the upper half 60 of the spring clip 54 into the recess 52. Thereafter, the door 44 is slid in a lateral direction out of the tubular body 14 so as to open the end 18 of the body 14. The upper half 60 of the spring clip 54 is held in the recess 52 by the opposite wall 68 of the slot 32 as best illustrated in FIGURE 5.

It should be noted that when the spring clip 54 is compressed the door 44 and clip 54 function as a slide or unit of uniform thickness.

The door 44 includes shoulders 70 and 72 engageable with the end surfaces or stop abutments 74 and 76 respectively of slots 32 and 34. When the door is in a closed position, the end surface 66 is substantially flush with the outer surface of the cover 22.

The door 44 and clip 54 are designed to be removed from the body 14 as a unit when the carrier 12 is opened. When it is required to close the carrier, a force is applied to the spring clip 54 to urge portion 60 into the recess 52. Thereafter the door is moved through slots 32 and 34 and groove 36 to the closed position shown in FIGURE 4, at which time the upper portion 60 of clip 54 is urged into latching position.

The drawing and the foregoing specification constitute a description of the improved mail carrier for a pneumatic system in such full, clear, concise and exact terms as to enable any person skilled in the art to practice the invention, the scope of which is indicated by the appended claims.

What we claim as our invention is:

1. A pneumatic tube carrier comprising an elongated tubular body closed at one end thereof, a transverse slot in a side wall portion of said body adjacent the other end thereof and terminating in a pair of stop abutments, a door located in said slot, said door having inner and outer ends and slidably carried by said tubular body, said door including a pair of shoulders adjacent the outer end thereof engageable with said stop abutments when

said door is in a position closing said other end of said body.

2. A pneumatic tube carrier comprising an elongated tubular body closed at one thereof, a transverse slot extending through a side wall portion of said body adjacent the other end of said body, a door located in said slot, said door having inner and outer ends and slidably carried by said tubular body, said door being slidable in opposite directions through said slot to open and close said tubular body, an opening in another side wall portion of said body directly opposite to said first-mentioned wall portion, and an inwardly extending locating tab on the inner end of said door engageable with the surfaces defining said opening when said door is in a closed position.

3. A pneumatic tube carrier comprising an elongated tubular body closed at one end thereof, a transverse slot in a side wall portion of said body adjacent the other end thereof and terminating in a pair of stop abutments, a door located in said slot, said door having inner and outer ends and slidably carried by said tubular body, said door including a pair of shoulders adjacent the outer end thereof engageable with said stop abutments when said door is in a position closing said other end of said body, an opening in another side wall portion of said body directly opposite to said first-mentioned wall portion, and an inwardly extending locating tab on the inner end of said door engageable with the surfaces defining said opening when said door is in a closed position.

4. A pneumatic tube carrier comprising an elongated tubular body closed at one end thereof, a transverse slot in a side wall portion of said body adjacent the other end thereof and terminating in a pair of stop abutments, a door located in said slot, said door having inner and outer ends and slidably carried by said tubular body, said door including a pair of shoulders adjacent the outer end thereof engageable with said stop abutments when said door is in a position closing said other end of said body, an opening in another side wall portion of said body directly opposite to said first-mentioned wall portion, an inwardly extending locating tab on the inner end of said door engageable with the surfaces defining said opening when said door is in a closed position, and releasable resilient means carried by said door engageable with the inner wall of said body for latching said door in the closed position.

5. A mail carrier for a pneumatic system comprising an elongated tubular body closed at one end thereof, a slot in a side wall portion of said body at the other end thereof, a groove on the interior of said body extending around the inner periphery thereof, the ends of said groove intersecting opposite ends of said slot, said groove and said slot forming an endless track, a door in said track slidably carried by said body, said door being slidable through said slot and groove from an opened position where it is located exteriorly of said body to a closed position where said door fills said slot and said groove and closes said other end of said body, and a spring clip having the inner end thereof fixed to said door, the outer end of said spring clip being biased in a direction away from said door, said door when in a closed position having said outer end of said spring clip in engagement with the inner surface of said body to retain said door in a latched position, the outer end of said spring clip being adapted to be moved towards said door to permit said door and said clip to be moved through said slot, the wall of said slot directly opposite said spring clip holding said outer end thereof against said door during movement of said door to the opened position.

6. The mail carrier defined in claim 5 wherein an opening is provided in another side wall portion of said body directly opposite to said first-mentioned wall portion, and an inwardly extending locating tab on the inner end of said door engageable with the surfaces defining said opening when said door is in a closed position.

7. The pneumatic tube carrier defined in claim 5 where-

5

in said slot terminates in a pair of stop abutments, said door including a pair of shoulders adjacent the outer end thereof engageable with said stop abutments when said door is in a position closing said other end of said body.

8. A mail carrier for a pneumatic system comprising an elongated tubular body closed at one end thereof, a slot in a wall portion of said body at the other end thereof, said slot being located in a plane which is substantially perpendicular to the axis of said tubular body, a groove on the interior of said body located in said plane and extending around the inner periphery of said body, the ends of said groove intersecting opposite ends of said slot, said groove and said slot forming an endless track, and a door in said track slidably carried by said body, said door being slidable through said slot and groove from an opened position where it is located exteriorly of said body to a closed position where said door fills said slot and said groove and closes said other end of said body, and manually operable releasable means for latching said door in the closed position.

9. A mail carrier for a pneumatic system comprising an elongated tubular body closed at one end thereof, a slot in a wall portion of said body at the other end thereof, said slot being located in a plane which is substantially perpendicular to the axis of said tubular body, a groove on the interior of said body located in said plane and extending around the inner periphery of said body, the ends of said groove intersecting opposite ends of said slot, said groove and said slot forming an endless track, and a door in said track slidably carried by said body, said door being slidable through said slot and groove from an opened position where it is located exteriorly of said body to a closed position where said door fills said slot and said groove and closes said other end of said body, and manually operable releasable resilient means carried by said door engageable with the inner wall of said body for latching said door in the closed position.

10. A mail carrier for a pneumatic system comprising an elongated tubular body closed at one end thereof, a slot in a wall portion of said body at the other end thereof, said slot being located in a plane which is substantially perpendicular to the axis of said tubular body, a groove on the interior of said body located in said plane and extending around the inner periphery thereof, the ends of said groove intersecting opposite ends of said slot, and a door slidably carried by said body, said door being slidable through said slot and groove from an opened position where it is located exteriorly of said body to a closed position where said door fills said slot and said groove and closes said other end of

6

said body, a recess in said door, and a spring clip in said recess having the inner end thereof fixed to said door, the outer end of said spring clip being biased in a direction out of said recess, said door when in a closed position having said outer end of said spring clip in engagement with the inner surface of said body, the outer end of said spring clip being adapted to be moved into said recess to permit opening of said door, the wall of said slot directly opposite said spring clip holding said outer end thereof in said recess during movement of said door to the opened position.

11. The mail carrier defined in claim 10 wherein said elongated tubular body is made from a plastic material.

12. The mail carrier defined in claim 11 wherein said plastic material is transparent.

13. The mail carrier defined in claim 10 wherein both ends of said elongated tubular body are provided with a leather collar around the outer periphery thereof, the collar adjacent said other end of said body having a slot therein which overlies said first-mentioned slot to permit opening and closing of said door.

14. The mail carrier defined in claim 10 wherein an opening is provided in said body at the bottom of said groove, and the inner end of said door includes a tab which is received in said opening when said door is in the closed position.

15. The mail carrier defined in claim 10 wherein said door and said clip are made from metal, said clip being riveted to said door.

16. The mail carrier defined in claim 10 wherein the outer end surface of said door is constructed and shaped like the outer surface of said wall portion such that when said door is in a closed position the end surface of said door and the outer surface of said wall portion are substantially flush.

17. The mail carrier defined in claim 10 wherein said body includes a pair of flat side walls which are connected by curved top and bottom walls.

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