

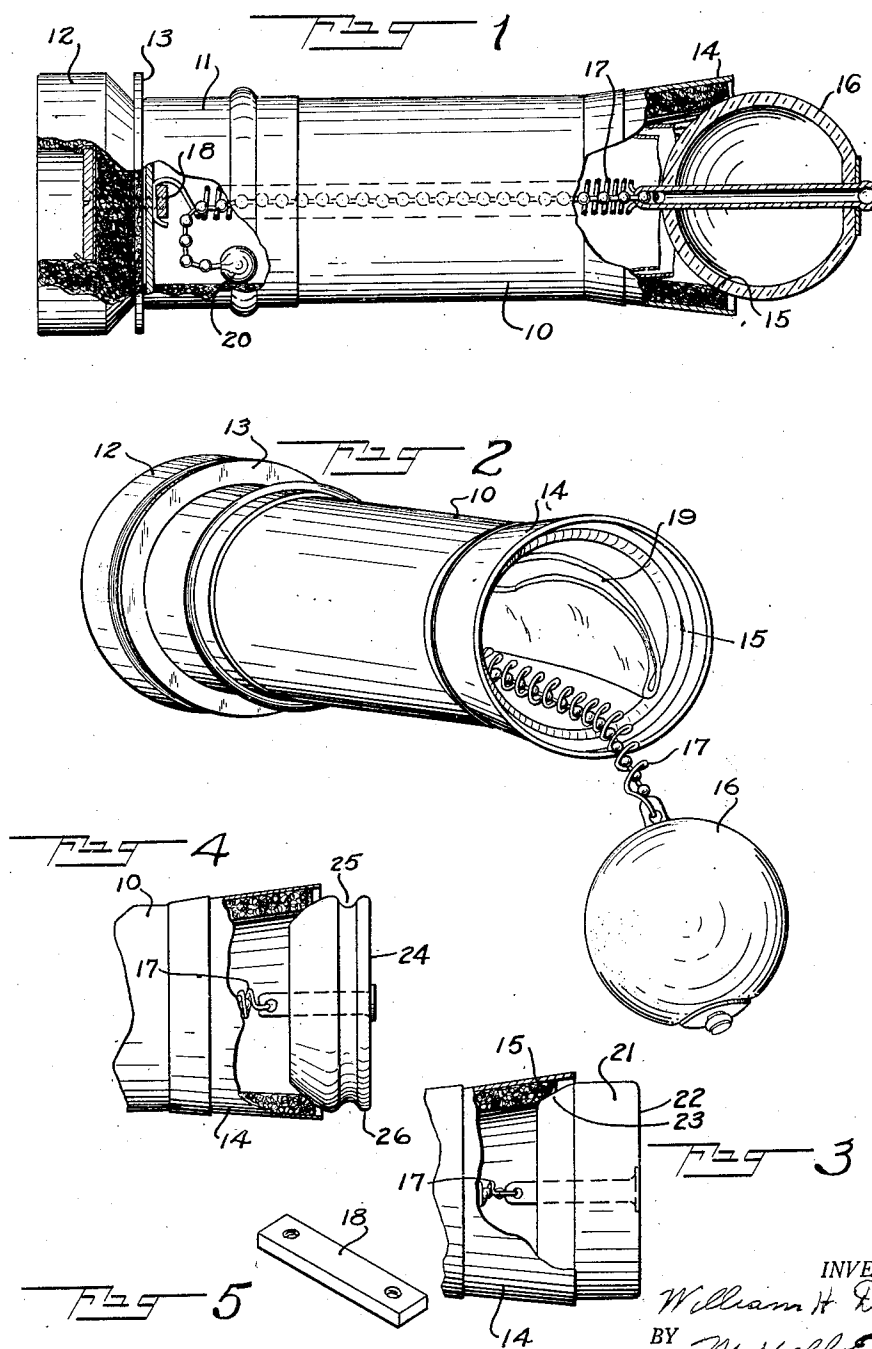
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CLOSURE DEVICE FOR PNEUMATIC DISPATCH CARRIERS

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CLOSURE DEVICE FOR PNEUMATIC DISPATCH CARRIERS.

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This invention relates generally to the construction of carriers of the type used in pneumatic dispatch installations.

Pneumatic dispatch carriers in the form in which they are extensively used consist of cylindrical or other shaped shells having one end closed and provided with a buffer member formed of felt or the like. The other end of the shell is open and is equipped with a hinged door or closure member adapted to be held in place by overlapping strap sections provided with interengaging snap fasteners.

While, as has been indicated, this construction has gone into extensive use, it is nevertheless open to the objection that unless care is exercised in fastening the closure parts in closed condition the parts are likely to fly open in transit with a resulting occasional loss of the contents of the carrier or a jamming of the following carrier with the unfastened closure parts and the blocking of the transit tube.

A general object of the present invention is to provide a carrier structure which will be free from the objectionable features referred to and which will provide for the automatic closing of the carrier shell when the closure member is released following the opening of the same by an attendant.

The invention consists of a carrier structure in the form of a shell open at one end and provided with a closure member in the form of a stopper or plug adapted to fit within the edge of the open end of the carrier. A feature of the invention resides in the use of a resilient tension member attached at one end to the inner end of the stopper member and at the other end to the inner surface of the closed end of the carrier, the tension member serving to automatically draw the stopper member into closing relation to the open end of the carrier when the stopper is not being held in withdrawn position by the attendant.

Another feature of the invention resides in the preferred use of relatively soft and yielding material such as felt, rubber, or the like, in the construction of the stopper. The use of such material obviates injury to the hands of dispatchers and others whose duties call for frequent handling of the carriers.

Other features of the invention will be hereinafter referred to.

In the drawings, in which a number of

embodiments of the invention have been selected for illustration:—

Fig. 1 is a view in side elevation and partly in vertical section of a pneumatic dispatch carrier equipped with a closure device which includes an embodiment of the invention and showing the closure parts in closed position;

Fig. 2 is a view in perspective showing the device shown in Fig. 1 with the parts in open position;

Fig. 3 is a sectional view of a portion of a carrier device showing a modified form of closure means;

Fig. 4 is a view similar to Fig. 3 showing still another form of the invention;

Fig. 5 is a view in perspective of an anchoring member used in connection with the improved closure device.

Referring to the drawings for a more detailed description of the invention, in Figs. 1 and 2 there is shown a pneumatic dispatch carrier of a well known or standard type which includes a cylindrical shell 10 formed of leather or the like, the forward end of the shell being fitted with a sheet metal portion 11 which supports a terminal buffer member 12 formed of felt or similar yielding or cushioning material. Between the forward end of the cap 11 and the adjacent end of the buffer 12 is a flexible vane 13 which functions to fill the transit tube and to prevent leakage of air past the carrier in the travel thereof. The other end of the shell 10 has a flare conformation and is provided with a flexible skirt member 14 which functions in a manner similar to the functioning of the vane 13 already referred to. The flared open end of the carrier or shell also serves to provide a seat as at 15 for a closure member which in Fig. 1 is shown in the form of a hollow ball 16 formed in this instance of rubber.

The stopper or plug member 16, which forms the closure device proper, is attached to one end of a retractile spring member 17 which is attached at its other end to an anchoring member 18 attached to the inner surface of the forward end of the carrier. This construction provides a resilient pull on the stopper member 16 which tends to normally hold the stopper or closure member against the seat 15 in closing relation to the open end of the shell 10.

It will be seen that the yielding nature of

the coil spring 17 provides for the ready removal of the stopper 16 from its engagement with the seat 15 formed by the open end of the carrier 10 so that articles, such as papers or slips 19 may be placed within the carrier for transmission to a distant station in the building. Upon release of the stopper 16 following the insertion of slips 19 into the shell, the spring 17 acts to immediately pull the stopper 16 to closing relation to the open end of the shell.

Not only does the spring 17 act to move the stopper into closing relation to the shell but the tension of the spring is constantly exerted to maintain the stopper in its proper closing relation to the shell. This feature obviates the possibility of loss of the contents of the shell during transmission of the shell through the tubes and also eliminates the heretofore known tendency of following carriers to engage open closure parts of the carriers in advance to thereby produce a jamming or clogging action of the tube.

In order to prevent an excessive withdrawing action of the stopper 16 from the end of the shell 10, a check or limiting device is provided which takes the form of a flexible chain 19 extending through the bore of the coil spring 17 and terminating in a ball 20 or other enlargement which will engage the inner end of the spring and prevent further elongation thereof. It will be clear that instead of making use of the ball 20, the end of the chain 19 may be attached to a rigid part, such as the anchoring member 18, for the same purpose.

While I have referred to the stopper 16 as having the formation of a hollow ball formed of rubber, I contemplate also the use of felt as a material from which to construct the stopper, as is indicated in Fig. 3 of the drawing. The stopper 21 shown in this figure may have a relatively flat outer face, as at 22, and provided with a beveled portion 23 for engagement with the correspondingly beveled face of the seat 15. In this form of the invention, the yielding nature of the felt stopper not only obviates injury to the fingers of the dispatchers but, in addition, the nature of the felt provides a frictional surface which facilitates seizing and moving the stopper to open position.

Still another form of the stopper is shown in Fig. 4 of the drawings. The stopper 24 shown in this figure is formed of wood, hard rubber, celluloid, or other similar material, and preferably has a grooved formation 25 in its side which forms in turn a flange or rib to facilitate seizure of the stopper member for manipulating the same. It will be seen that in all the forms of the invention described, the feature of automatic replacement of the stopper in a seat when released by the attendant is shown. It will also be seen that the improved closure device described

facilitates the handling of the carriers and generally expedites the work since the operation of simple withdrawal of the stopper from its position in order to insert articles into the carrier is capable of more rapid accomplishment than the corresponding operation of opening fastener members, then opening a hinged closure member, and then replacing the closure member and re-engaging the fastener members in the order named which is characteristic of prior constructions such as have been already referred to.

The terms and expressions which I have employed are used as terms of description and not of limitation, and I have no intention, in the use of such terms and expressions, of excluding any mechanical equivalents of the features shown and described, or portions thereof, but recognize that various structural modifications are possible within the scope of the invention claimed.

What I claim is:

1. In a pneumatic dispatch carrier construction, a hollow shell having an open end, closure means for the shell consisting of a stopper member adapted to fit within the open end of the shell, and resilient means attached to the inner end of the stopper member and to the interior surface of the shell for normally holding the stopper in closing relation to the open end of the shell.

2. In a pneumatic dispatch carrier construction, a hollow shell having an open end, closure means for the shell consisting of a stopper member adapted to fit within the open end of the shell, and an elongated spring member attached at one end to the inner end of the stopper and at the other end to the interior surface of the shell for normally holding the stopper in closing relation to the open end of the shell.

3. In a pneumatic dispatch carrier construction, a hollow shell having an open end, closure means for the shell consisting of a stopper member adapted to fit within the open end of the shell, and an elongated resilient member attached at one end to the inner end of the stopper member and at the other end to the inner surface of the closed end of the shell, whereby to normally hold the stopper in closing relation to the open end of the shell.

4. In a pneumatic dispatch carrier construction, a hollow shell having an open end, closure means for the shell consisting of a stopper member adapted to fit within the open end of the shell, and a spiral spring of the contractile type attached at one end to a central point of the inner end of the stopper member and at the other end to a central point of the inner surface of the closed end of the shell.

5. In a pneumatic dispatch carrier construction, a hollow shell having an open

end, closure means for the shell consisting of a stopper member adapted to fit within the open end of the shell, resilient means attached to the inner end of the stopper member and to the inner surface of the shell for normally holding the stopper in closing relation to the open end of the shell but permitting the removal of the stopper in order to insert articles in the shell, and a tensile member arranged to prevent excessive withdrawal of the stopper from the open end of the shell.

6. In a pneumatic dispatch carrier construction, a hollow shell having an open end, closure means for the shell consisting of a stopper member adapted to fit within the open end of the shell, a spiral spring of the contractile type attached at one end to the inner end of the stopper member and at the other end to the inner surface of the closed end of the shell, a tensile member

attached at one end to the stopper member and extending through the bore of the spiral spring, said tensile member having a greater length than the length of the spiral spring when contracted and provided with an anchorage for its inner end whereby to prevent excessive elongation of the spring.

7. In a pneumatic dispatch carrier construction, a hollow shell having an open end, closure means for the shell consisting of a stopper member adapted to fit within the open end of the shell, and resilient means attached to the inner end of the stopper member and to the inner surface of the shell for normally holding the stopper in closing relation to the open end of the shell, and said stopper member being formed of yielding material such as felt.

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