Oct. 25, 1960 H. E. WALLS ET AL 2,957,723

RETRIEVER FOR PNEUMATIC DELIVERY TUBE CARRIERS

Filed Oct. 3, 1958

Fig. 1

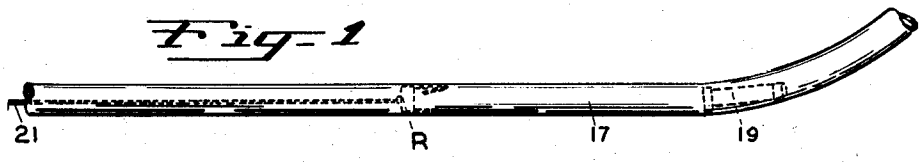


Fig. 2

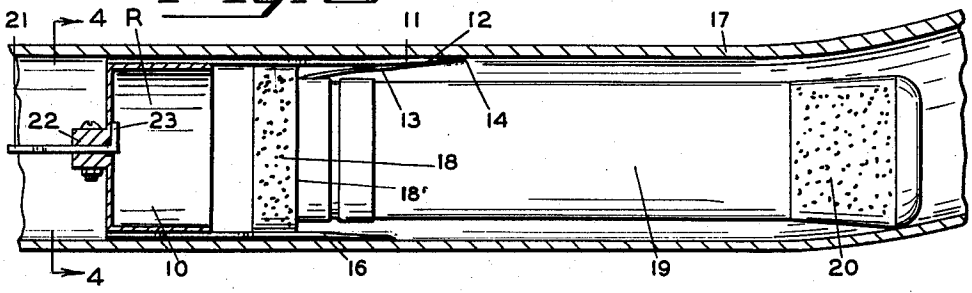


Fig. 3

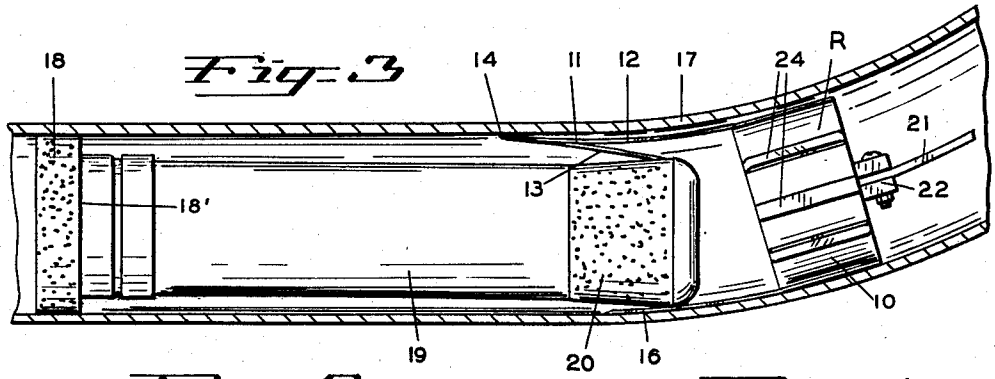


Fig. 5

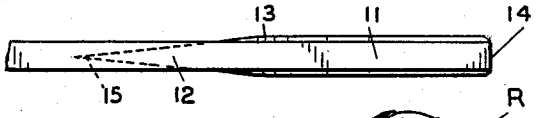


Fig. 4

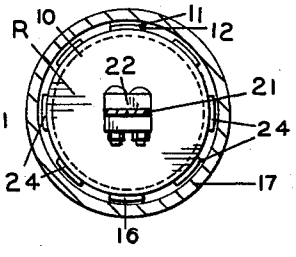
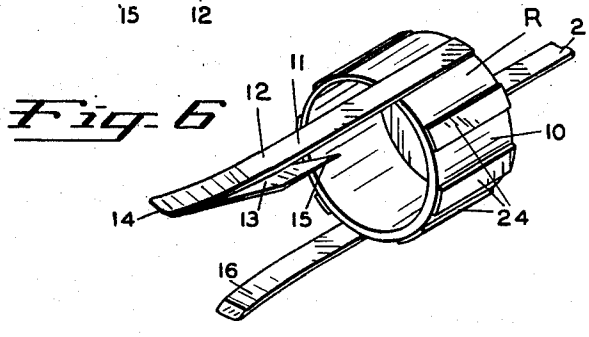


Fig. 6



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RETRIEVER FOR PNEUMATIC DELIVERY TUBE CARRIERS

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1 Claim. (Cl. 294—99)

The present invention relates to retrievers for pneumatic delivery tube carriers.

The primary object of the invention is to provide a retriever for recovering a pneumatic delivery tube carrier that has become lodged in the tube.

Another object of the invention is to provide a retriever of the class described above that will attach itself to the carrier with the least amount of resistance offered to its movement.

A still further object of this invention is to provide a retriever for the purpose described constructed of a very light strong material, offering very little resistance to the movement of the same through the pneumatic tube.

Another object of this invention is to provide a retriever that will automatically attach itself to either end of the lodged carrier for removing the same from the pneumatic tubes.

A further object of the invention is to provide a retriever structure to which a flexible steel tape is attached for easy movement through the tubes.

Other objects and advantages will become apparent in the following specification when considered in the light of the attached drawings, in which:

Figure 1 is a side view of a pneumatic tube illustrating in dotted lines a retriever travelling towards a lodged carrier;

Figure 2 is an enlarged fragmentary longitudinal sectional view of the pneumatic tubes illustrating the lodged carrier in side elevation with the retriever secured thereto;

Figure 3 is a view similar to Figure 2 which illustrates the retriever about to remove the carrier by its opposite end from that shown in Figure 2;

Figure 4 is a transverse sectional view, taken on line 4—4 of Figure 2, looking in the direction of the arrows;

Figure 5 is an enlarged fragmentary view of the retrieving hook element associated with the retriever; and

Figure 6 is a perspective view of the assembled retriever.

Referring now to the drawings in detail wherein like reference characters indicate like parts throughout the several figures, the reference character R indicates generally a retriever constructed in accordance with the invention.

The retriever R has a cup-like body **10** having a retrieving element **11** extending from one side thereof and forming part thereof. The element **11** includes a flat spring metal strip **12** having a reverted barb **13** extending rearwardly from its tip **14**, the rear of the barb **13** coming to a point **15**.

Oppositely disposed from the element **11** on the body **10** is a flexible finger **16**. Both the element **11** and finger **16** bear against the inner surface of the pneumatic tube **17** when being pushed through the tube **17**. This brings the tip **14** of the retrieving element **11** tightly against the tube **17** so that it will pass by the relatively tight seal **18** formed on one end of the carrier **19**, or past the enlarged end **20** of the carrier **19** when coming in from the opposite direction.

The body **10** of the retriever is forced through the tube **17** by means of a flexible steel tape **21**, which is clamped to the body **10** by a clamp **22**. The tape **21** is further secured to the clamp **22** by means of a right angle bend **23**, adding additional security to the connection in the event the clamp **22** would become loosened. The tape **21** is of a sufficiently strong flexible material that will force the retriever R through the tube **17**, and at the same time allow the same to make turns around bends in the tube **17**.

Spacers **24** are provided on the periphery of the body **10** for centering the body **10** within the tube **17** while pushing the same therethrough.

In the operation of this new and improved retriever R, when the carrier **19** becomes lodged within the tube **17** for any reason, the retriever R is forced through the tube by means of the tape **21**. The tip **14** of the retrieving element **11** passes between the sealing head **18** and the tube **17**, or past the end **20** of the carrier **19**, depending upon which direction the same is being brought into action.

On pulling backward on the tape **21**, the point **15** will grip the rear edge **18'** of the seal **18**, as illustrated in Figure 2. Figure 3 illustrates how the point **15** will also grip into the surface of the enlarged head **20** when engaging the carrier **19** from the opposite direction. The element **11** and the finger **16** are each spring biased towards the tube **17** with the finger **16** serving as a stabilizer for the retrieving element **11** in its operation.

With the retriever R for pneumatic delivery tube carriers, much time is saved and the carrier is much more easily retrieved than has heretofore been the case.

Having thus described the preferred embodiment of the invention, it should be understood that numerous structural modifications and adaptations may be resorted to without departing from the scope of the appended claim.

What is claimed is:

A retriever for a generally cylindrical pneumatic tube carrier lodged in a generally cylindrical tube of a pneumatic tube conveyor comprising, a relatively short generally cylindrical body, a flexible metal tape of sufficient strength to transmit thrust to said body secured to one end of said body for moving said body through the cylindrical tube, means comprising a plurality of longitudinally extending circumferentially spaced apart spacer bars on the periphery of said body for engagement with the inner surface of said cylindrical tube to maintain said body in axial alignment with said cylindrical tube, a relatively flat flexible spring metal strip having one end thereof rigidly secured to said body and the other end thereof extending longitudinally outwardly from said body oppositely of said tape, said strip normally lying parallel to the axis of said body, a barb integrally formed on the end of said strip opposite said body with said barb sloping inwardly with respect to the axis of said body toward said body, said barb being formed of flexible flat spring metal and having a pointed free end normally spaced inwardly from said strip, said strip and said barb being adapted to pass the end of said carrier on movement of said body toward said carrier with said barb engaging said carrier coupling said carrier to said body on movement of said body in the opposite direction, and a flexible guide finger on said body diametrically opposite said strip.

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