M. L. EMERSON.

PNEUMATIC CARRIER.

APPLICATION FILED AUG. 18, 1913.

1,185,489. Patented May 30, 1916.

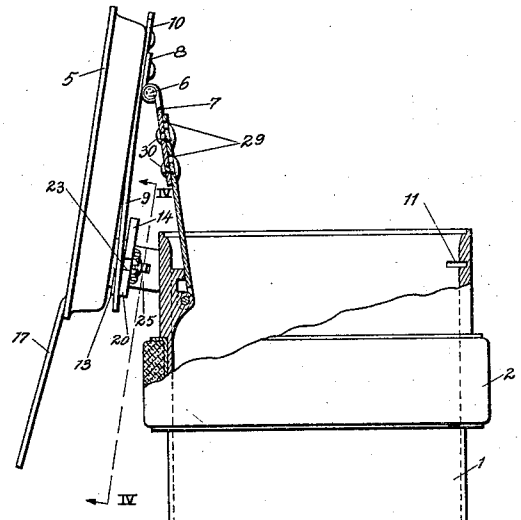

Fig. 3

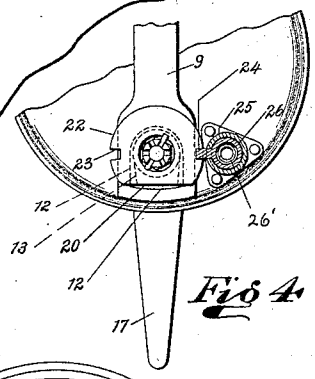

Fig. 4

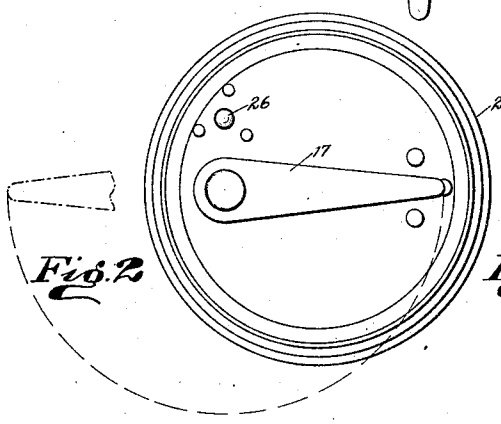

Fig. 2

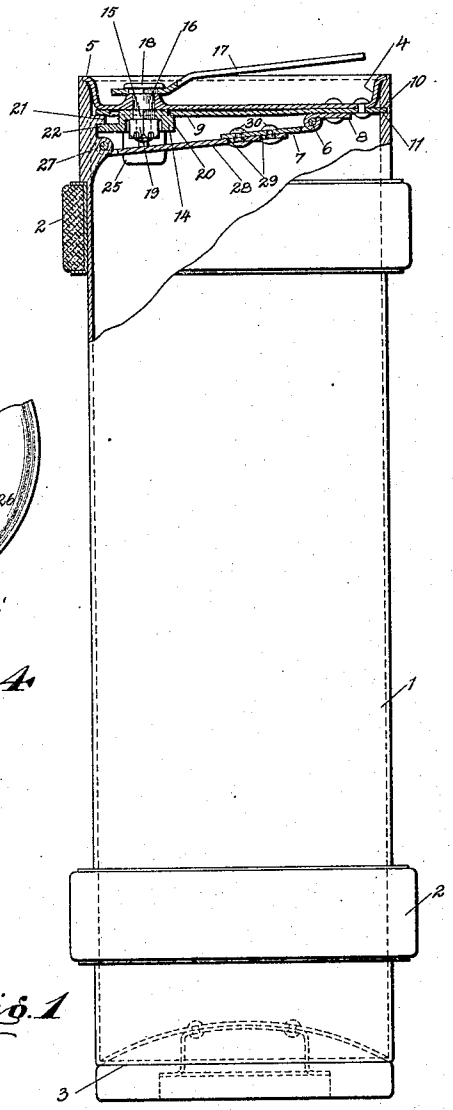

Fig. 1

WITNESSES.

Harry M. Godden.

Otto M. Galus.

INVENTOR.

Merton L. Emerson

BY Chas. P. Hidden

HIS ATTORNEY.

UNITED STATES PATENT OFFICE.

MERTON L. EMERSON, OF BRAINTREE, MASSACHUSETTS, ASSIGNOR TO AMERICAN PNEUMATIC SERVICE COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF DELAWARE.

PNEUMATIC CARRIER.

1,185,489. Specification of Letters Patent. Patented May 30, 1916.

Application filed August 18, 1913. Serial No. 785,196.

To all whom it may concern:

Be it known that I, MERTON L. EMERSON, a citizen of the United States, residing at Braintree, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Pneumatic Carriers, of which the following is a specification.

This invention relates to carriers for tubular and other despatch systems and has for its principal object the provision of an improved closure for such carriers.

I have further aimed to effect a closer fitting engagement between the body of the carrier and its cover, when such parts are linked together, than has been customary heretofore, when said cover is closed.

These and other objects of my invention will be hereinafter referred to, and the novel combinations, whereby said objects may be attained will be more particularly pointed out in the claims appended hereto.

In the drawing which forms a part hereof and in which like reference characters designate like parts throughout the several views, I have exemplified a preferred form of my device; but I am aware that various changes and modifications may be made herein without departing from the spirit of my invention and I hence desire to be limited only by the scope of said claims.

Referring to the drawings: Figure 1 is an elevation of a carrier adapted for use in a pneumatic despatch system for the conveyance of mail and other bulky matter; the top of the carrier and its cover being broken away to illustrate certain details of construction. Fig. 2 is a top view of said carrier. Fig. 3 is a fragmentary detail, showing the cover in its open position. Fig. 4 is a similar detail showing the cover-lock and associated parts; said parts being viewed from the underside of the cover.

The carrier casing 1 in the present case is provided with contact-rings or guiding-parts 2, adapted for engagement with the walls of the tube or way along or upon which the carrier travels.

The bottom of the carrier may be closed as at 3 in any suitable manner; this portion of the device forming no part of the present invention other than that the casing 1, and its bottom provide in general a receptacle adapted for the purpose in question.

The improved closure comprises a cover 4 which is preferably of dished sheet metal, flanged or beaded slightly as at 5, and the head of the casing is suitably recessed for the reception of this cover and its bead so that the entire cover is well protected laterally against injury when closed.

The cover is hinged to a bar or plate 7; the bracket 8 which carries the hinge pin 6 being preferably riveted to the cover with, however, a resilient plate 9 interposed therebetween. This plate performs a double function in that its rear end 10 projects out beyond the cover and is adapted to seat itself in a slot or groove 11 in the inner wall of the casing, while its forward and relatively free end is slotted, as at 12, to co-act with a lug 13 (see Figs. 3 and 4) upon the pivoted cover-lock 14, to hold the latter against inadvertent displacement, when in its open position, as hereinafter described.

The lock 14 is rigidly mounted upon the squared shank 15 of the cover-lock pin 16 which extends through a hub upon the cover; this pin being also squared at the enlarged upper end thereof to fit a corresponding aperture in a handle 17, the upper side of which bears against head 18 of said pin.

The lock 14 may, if desired, be recessed upon its under side for the reception of the nut 19 which holds it in place upon the pin 16; and it furthermore is cut away as at 20 to clear the ledge 21 which lies above its uncut or circular flange-like portion 22 when the lock is in its operative position. The said portion 22 is also notched, as at 23 for engagement with a spring-pressed tooth 24 which projects outwardly through a slot in a cap-like casing 25 the flange of which is riveted to the cover immediately adjacent to the cover-lock, as shown in Fig. 4.

The tooth 24 normally bears against the under surface of flange 22, save when it is pressed down by the finger of the operative upon the upper end of the pin 26 from the side of which it extends out through casing 25; or when, after handle 17 has been rotated to its locking position, the slot 23 permits said tooth to be snapped up thereinto by the spring 26′ within the hollow pin 26, which action obviously secures the lock in its operative position and prevents the cover from becoming unfastened while the carrier is in transit.

Pivoted at 27, directly beneath the ledge 21 and to the inner wall of the casing 1, is a plate or hinge-bar 28, which is yieldingly connected to the free end of hinge-bar 7, to complete the link which connects the cover and receptacle. This yielding connection is of importance since it materially facilitates the closure of the cover. It is preferably formed by simply slotting plate 28, for example, as at 29, so that the shouldered parts of the rivets 30, or other connecting elements may ride in these slots.

The operation of the device is as follows: Assuming that the cover is in its open position, as shown in Fig. 3, and in which position, it will be noted, free access to the interior of the receptacle is afforded by virtue of the link connection between the receptacle and its cover; the hand of the operative grasps handle 17 and swings the cover down thereby into the mouth of the receptacle. Swiveling of the handle to any material extent until this operation is completed is normally impossible, since lug 13 is at such time well within slot 12; the free end of plate 9 being sprung away from the bottom of the cover, as shown in Fig. 3. Were it not for this provision there would be more or less tendency for the lock 14 to be moved to its locking position prematurely when closing the cover, which would involve possible loss of time in post offices and like places where it is of importance to eliminate unnecessary movements of the operatives whose duty it is to load the carriers.

As the cover seats itself the extension or end 10 of plate 9, is inserted into slot 11, and acts as a fulcrum, permitting the operative with but little effort to push down the side of the cover adjacent his hand, thereby forcing the free end of spring plate 9 back against the under side of the cover to release lug 13 of the cover lock.

It is frequently desirable to effect a tight closure of carrier receptacles, especially where used for the transmission of mail through tubes in which moisture may have collected, and were it not for the yielding connection (or some equivalent thereof) between the hinge pins 6 and 27, it is obvious that considerable difficulty would be experienced in tightly closing the cover if no play were allowed around the edges thereof; which latter for the reason above noted is objectionable.

Now in the patent to Stoddard, No. 962,796, dated June 28, 1910, a double-hinged connection or link is shown which is in some respects not dissimilar to that herein described; but precisely this trouble has been encountered in the practice of Stoddard's invention; which, it may be here stated, has come into extensive use.

The provision of a yielding connection of some suitable description overcomes the difficulty and permits of easy closure of the cover and moreover permits of a tight fit between the receptacle and its cover; practically no lateral play being allowed at the rim of the latter.

To conclude the description of the manner of effecting closure of the carrier, it need only be added that once the cover has been snugly seated, the handle 17 is rotated through substantially 180°, the flange 22 of the lock passing under the ledge 21 and the tooth 24 upon pin 26 finally shooting up into notch 23 to hold the lock securely in place until pin 26 is pressed inwardly and the handle reversely rotated to again unlock the cover. The cover may now be pulled open by the outwardly projecting handle and the spring plate 9 aids the reopening of said cover in an obvious manner.

In general, a yielding connection such as described, whether due to the provision of slots in the link, or elsewhere, or to other means or properties, *e. g.* resiliency, which may enable the connection to be properly characterized as a yielding one, are to be preferred to a rigid link connection which involves a particular and fixed disposition of the pivotal axes thereof; although it will be observed that certain of the claims are of sufficient breadth to comprehend even such latter construction.

Having thus described my invention, what I claim is:

1. In combination, a receptacle, a cover adapted to be inserted into the mouth of said receptacle to make a close fit therewith, a double-hinged connecting link between said cover and receptacle to permit of the cover being swung open clear of said mouth, said link being connected at one end to the inner side of said cover and having its other end connected to an inner wall of said receptacle, said link being protected by said receptacle and its cover when the latter is closed, and means to permit of movement of said cover when nearly closed, in the direction of the length of said link to allow of free insertion of said cover into said mouth and removal therefrom despite relatively rough workmanship in assembling the parts aforesaid.

2. A device of the class described which comprises a receptacle, a cover therefor, and a double-hinged connection between said cover and receptacle the respective pivotal axes of which are displaceable with respect to each other in the direction of the length of said connection, said connection having one end thereof pivotally attached to the inner side of said cover and having its other end attached to an inner wall of said receptacle, said connection lying within said receptacle and being protected by said cover when the latter is closed.

3. A device of the class described which comprises a receptacle, a cover therefor having a double-hinged connection to said receptacle in which is a yielding slotted joint which allows of lateral play only in the direction of the length of said direction between said receptacle and cover when the latter is nearly closed, said joint being laterally rigid to prevent sidewise movement of said cover with respect to the receptacle when said cover is thus nearly closed.

In testimony whereof I have affixed my signature, in the presence of two witnesses.

MERTON L. EMERSON.

Witnesses:
CHARLES O. LAURIN,
ETHEL M. JORDAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents Washington, D. C."

Correction in Letters Patent No. 1,185,489.

It is hereby certified that in Letters Patent No. 1,185,489, granted May 30, 1916, upon the application of Merton L. Emerson, of Braintree, Massachusetts, for an improvement in "Pneumatic Carriers," an error appears in the printed specification requiring correction as follows: Page 3, line 6, claim 3, for the word "direction," second occurrence, read *connection;* and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 20th day of June, A. D., 1916.

[SEAL.]

J. T. NEWTON,
Acting Commissioner of Patents.

Cl. 243—35.