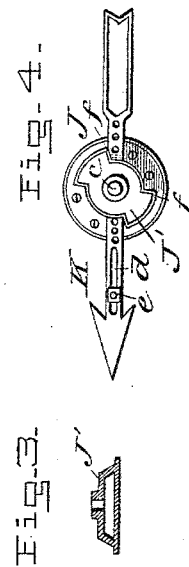
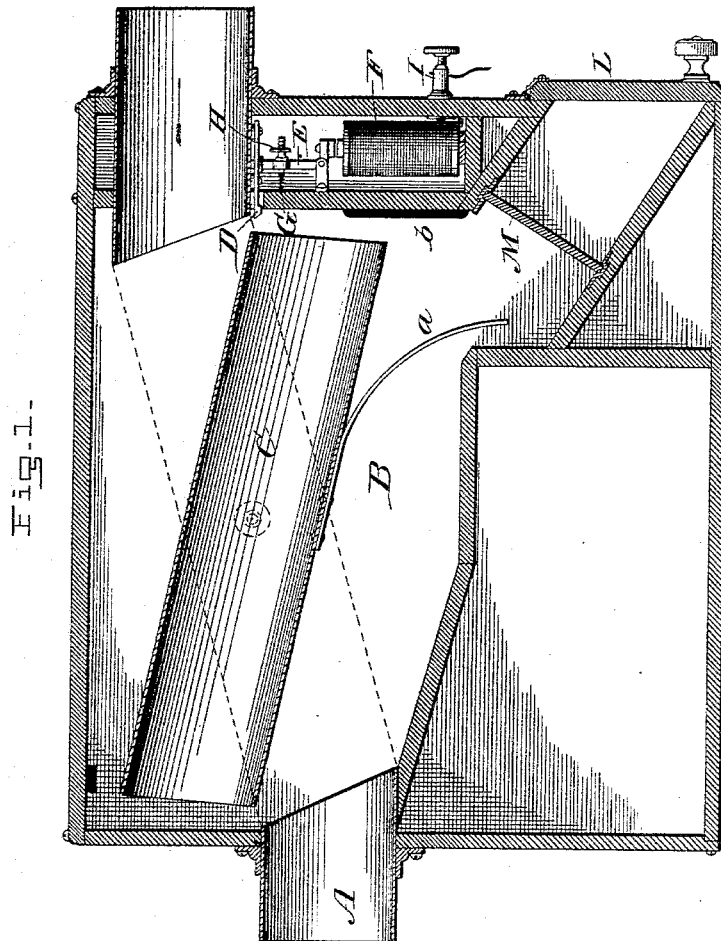
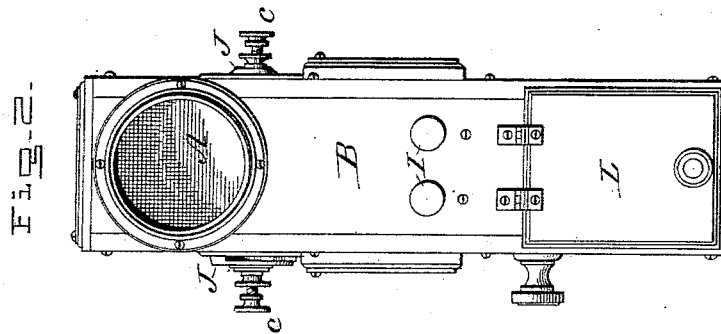


(No Model.)

R. GILLHAM.
PNEUMATIC CARRIER.

No. 303,835.

Patented Aug. 19, 1884.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ROBERT GILLHAM, OF KANSAS CITY, MISSOURI.

PNEUMATIC CARRIER.

SPECIFICATION forming part of Letters Patent No. 303,835, dated August 19, 1884.

Application filed October 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, ROBERT GILLHAM, of Kansas City, in the county of Jackson and State of Missouri, have invented certain Improvements in Pneumatic Carrier Systems, of which the following is a specification.

My invention relates to pneumatic carrier systems for conveying light parcels from one point to another.

10 The invention consists in a pivoted section introduced into the conductor and slightly overbalanced at one end to cause it to fall by gravity; an arm being attached to the under side of the pivoted section and extending downward therefrom, and a catch or fastening, susceptible of operation from a distance, being provided to sustain or release the pivoted section and cause the carrier or car to pass either through or beneath said section, as hereinafter explained, the arm serving to restore the section to its normal elevated position when the carrier passes beneath the section.

25 The invention further consists in a novel construction and arrangement of parts embodying the above and other features, as hereinafter more fully set forth.

30 The present invention is designed as a modification of or improvement upon that for which I filed application for patent on the 31st day of July, 1883, which application is designated by Serial No. 102, 411, and all matters claimed therein are disclaimed in this application.

35 The object of my invention is to permit a carrier to be delivered at any desired point on the line of a conductor, suitable stations being provided at proper points, as fully explained in the application of Albert Brisbane and myself on the 19th day of March, 1883, and designated by Serial No. 88,715.

40 In the accompanying drawings, Figure 1 represents a longitudinal vertical section through one of the receiving boxes or stations; Fig. 2, an end view of the same; Figs. 3 and 4, detail views of the indicator, bearing, and stop.

45 Referring to said drawings for illustration, A represents a conductor which is made in the form of a closed tube, through which a current of air is forced or drawn by fan or otherwise. At suitable points along the line of the conductor boxes B are provided, into which the

conductor enters, and from which it emerges at the opposite end, the pivoted section C being introduced between the entering and outgoing sections, as shown in Fig. 1. The outgoing end is advisably raised above the incoming end, as shown, in order that the carrier passing beneath the same may act to the greater advantage in restoring the section C, which is tipped down to allow the carrier to leave the conductor and pass into the box to its normal elevated position by pressing against a curved arm *a*, attached to the lower side of the pivoted section. The arm *a* is made of spring metal, in order that the carrier, the arm, and the section C may be relieved of the concussion and injury that would attend the use of a rigid and unyielding arm, and a rubber or other elastic buffer, *b*, is provided at the end of the box B to receive the force of the carrier in case it be not overcome by the spring-arm. As stated, one end of section C is slightly overbalanced, the end farthest from the inlet, so that if not held up by some device provided for the purpose the heavier end will fall as indicated in Fig. 1. I therefore provide a sliding catch or locking-bolt, D, to pass beneath the gravitating end of section C; and in order that said catch may be operated from a distance—as, for instance, from the cashier's desk or office in the case of a cash system for stores—the catch or bolt is perforated, and one arm of an elbow-lever, E, is passed through the perforation, the other arm being furnished with a soft-iron armature, which is arranged directly above and a short distance from the core or cores of an electro-magnet, F, in the manner shown, so that when the magnet is energized the armature will be attracted and the catch withdrawn through the movement of the lever E. A light spring, G, provided with an adjusting-nut, H, serves to restore the lever E and bolt D to their normal positions. Binding-screws I are provided for making the necessary electrical connections, which are the ordinary and well-known connections used in all such apparatus.

Instead of arranging the armature to move, the electro-magnet may be made to move and the armature made stationary; or the electro-magnet may be arranged to normally attract

the armature and to release it when, by interrupting the current the magnet is rendered inactive, the catch or fastening being of course arranged accordingly. The pivoted section C is hung or pivoted upon trunnions *c*, which are supported in plates J, secured to the side of the box B. One of the trunnions *c* projects through and beyond the side of the box and carries an indicator, K, which serves to show the position of the section C, the indicator being formed with a slot, *d*, and provided with a sliding weight, *e*, by which the overbalancing of the section may be effected. The plate J at that side of the box which is furnished with the indicator is formed with a raised portion, J', cut away, as shown, to form stop-shoulders *f*, to limit the movement of the indicator, and consequently of the section C. A gravitating door, L, and cut-off slide M are provided in the outlet-spout of the box B, and arranged to operate as explained in my former application above mentioned.

It is obvious that, instead of employing a sliding locking-bolt and a separate actuating-lever, the armature may itself be arranged to swing under the gravitating end of section C.

The operation of the apparatus is as follows: Supposing a current of air to be passing through the conductor in the direction indicated by arrow in Fig. 1, and the section C to be raised to connect with and complete the conductor, as shown in dotted lines, if it be desired to have the carrier N pass the box B, the section will be permitted to retain such position; but if it be desired to discharge the carrier into the box the operator switches the electro-magnet into circuit, and this, being energized, attracts its armature, withdrawing the locking-bolt and permitting the end of section C to fall, elevating its receiving end above the incoming end of the conductor A, and thereby causing the carrier to pass under section C and into the outlet-chute. In passing thus beneath the section C the carrier comes into contact with the spring-arm *a*, and, forcing the arm upward, closes or raises section C into line with the ends of the conductor, where it is caught and held by the locking-bolt.

Having thus described my invention, what I claim is—

1. In combination with a pneumatic conductor, A, a section forming part of said con-

ductor pivoted at a point between its ends, substantially as shown and described, a tight box B, inclosing said tipping section and connecting the ends of the conductor each side thereof, whereby said tipping section is adapted to tip and raise its receiving end above the main conductor at that end, thereby causing the carrier to pass beneath it, as explained, without permitting the escape of air.

2. In combination with conductor A and box B, section C, pivoted in the box, substantially as shown and described, and provided at its under side with an arm, *a*, whereby the carrier is caused to pass beneath the section C and to elevate the section in so doing.

3. In combination with conductor A, having its separated ends at different levels, tipping section C, extending upward from one section to the other in the direction of the travel of the carrier, and provided at its under side with arm *a*, substantially as described and shown.

4. In combination with pneumatic conductor A, gravitating section C, pivoted at a point between its ends and provided with arm *a* and bolt or locking device D, adapted to automatically lock the section C in an elevated position when the latter is raised thereto.

5. The combination, substantially as herein described and shown, of conductor A, closed box B, tipping section C, provided with arm *a*, locking-bolt D, lever E, provided with an iron armature, and an electro-magnet, F, opposite said armature.

6. In combination with conductor A and tipping section C, indicator K, provided with adjustable weight *e* and applied to the trunnion of section C, substantially as and for the purpose explained.

7. In combination with pneumatic conductor A, box B, and tipping section C, a spring-arm, *a*, applied to the lower side of said section, substantially as and for the purpose set forth.

8. In combination with conductor A, box B, and tipping section C, an elastic buffer, *b*, applied to the box, as and for the purpose explained.

ROBERT GILLHAM.

Witnesses:

CHAS. L. DOBSON,
JULIUS C. HUGHES.