Mar. 27, 1923. 1,449,996.

W. J. HEPPERLE.

SPACING DEVICE FOR PNEUMATIC DISPATCH CARRIERS.

FILED MAY 21, 1921.

Fig. 3.

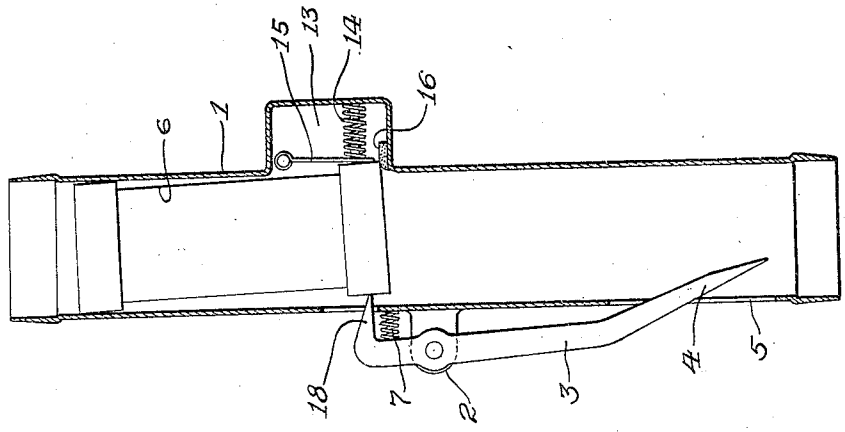


Fig. 2.

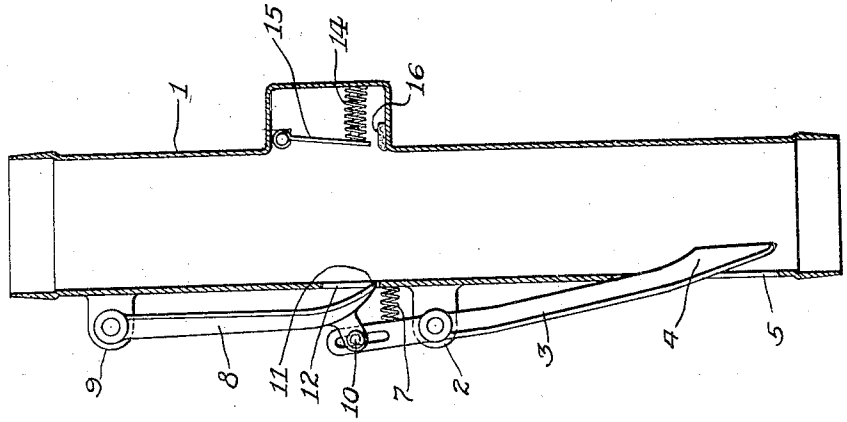
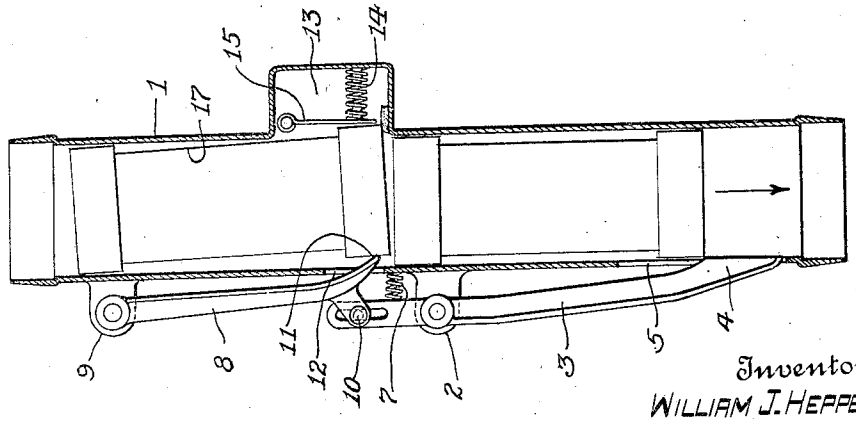


Fig. 1.



Inventor
WILLIAM J. HEPPERLE

By his Attorney
Abel L. Browning

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UNITED STATES PATENT OFFICE.

WILLIAM J. HEPPERLE, OF BLOOMFIELD, NEW JERSEY, ASSIGNOR TO THE STANDARD CARRIER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF CONNECTICUT.

SPACING DEVICE FOR PNEUMATIC-DISPATCH CARRIERS.

Application filed May 21, 1921. Serial No. 471,211.

To all whom it may concern:

Be it known that I, WILLIAM J. HEPPERLE, a citizen of the United States, residing at Bloomfield, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Spacing Devices for Pneumatic-Dispatch Carriers, of which the following is a specification.

This invention relates to carrier spacing devices for use in pneumatic dispatch tubes.

The principal object of this invention is to provide means for preventing a plurality of carriers traveling through a pneumatic dispatch tube from entering the distributing mechanism at the exit end of the tube in such close adjacency to each other as to interfere with the operation of the distributing mechanism.

This object is achieved by the provision of means operated by the advance or leading carrier of a group of carriers for diverting the carrier immediately following the leading carrier from its normal path of travel and into abutting engagement with a stationary part of the pneumatic tube. The next to the leading carrier having been temporarily checked in its course, is restored to its normal path of travel by means brought into operation when the leading carrier has advanced a sufficient distance to produce the desired space between it and the following carrier. Preferably the means operated by the leading carrier takes the form of a simple lever or set of levers having a portion extending into the tube in position to be engaged by the foremost portion of the leading carrier and thereby bring another portion of the device into engagement with the forward end of the next adjacent following carrier. This has the effect of forcing the forward end of the following carrier laterally a slight extent and partially into a recess or pocket formed in the wall of the tube for the purpose. The result is that the following carrier is checked in its descent and rests on the edge of the alcove until the leading carrier has passed and released the lever device whereupon spring means, which have been placed under compression by the projection of the carrier in the pocket, become effective to push the following carrier back into its normal path in alinement with the bore of the tube and permit it to resume its travel.

In the drawing,

Figure 1 is a vertical section of a device embodying a preferred form of the invention and showing the parts in normal inoperative position.

Figure 2 is a view similar to Figure 1 showing the parts in operative position.

Figure 3 is a view similar to Figure 1, showing a modified form of the invention.

In the drawing a section of tube 1, which is designed to be inserted in a length of pneumatic dispatch tube, forms a supporting shell and framework for the carrier spacing mechanism. Pivoted in brackets 2 on the side of the tube section 1 is an elongated lever 3 having a tail portion 4 normally extended through an opening 5 into the interior of the tube section and in the path of a descending carrier 6. The lever 3 is held in the position described by the action of a spring 7 engaging the upper portion thereof. In one form of the invention a second lever 8 pivoted in brackets 9, has a pin and slot connection at 10 with the upper end of the lever 3. The upper lever 8 also has a portion, as at 11, capable of being projected into the tube section 1 through an opening in the wall thereof as at 12.

Formed in the wall of the tube 1 at a point opposite the opening 12 is a pocket or chamber 13 in which is mounted a spring 14 loosely held between the outer wall of the pocket and a hinged plate 15 suspended near the point where the pocket 13 opens into the tube section 1. A buffer or cushion member 16 is preferably provided on the floor of the pocket 13 as shown.

In the operation of the device, a leading descending carrier 6 will engage the tail portion 4 of the lever 3 and, through the pin and slot connection 10 with the lever 8, cause the end 11 of the lever 8 to engage the forward end of the following carrier 17 and force the end of the carrier laterally and partially into the recess or pocket 13 in the side wall of the tube section. It will be seen that the edge of the carrier end is thus brought into abutting engagement with the inner edge of the floor of the recess at the point where the buffer 16 is provided and that the descending movement of the carrier 17 is checked.

At the same time the forward end of the carrier 17 has engaged and pushed the

hinged plate 15 inwardly into the pocket 13 thereby compressing the spring 14. Meanwhile the leading carrier 6 has been continuing its descent and having passed beyond the position of the tail portion 4 of the lever 3, the spring 14 is released and pushes the forward end of the tube 17 back into position in the tube 1 where it resumes its downward travel at a suitable distance to the rear of the leading carrier 6.

In the modified form of the invention shown in Figure 3 of the drawing, the second lever 8 of Figures 1 and 2 is dispensed with, the lever 3 being equipped with a carrier diverting member 18 for direct engagement with the carrier whose travel is to be checked. In other particulars the mechanism and the operation is the same as that already described.

What I claim is:

1. In a pneumatic dispatch system, a device for spacing apart carriers traveling in a pneumatic tube comprising means operated by the leading carrier for moving a portion of the following carrier laterally out of the path of travel, means arranged to be engaged by the following carrier in its diverted position to stop the travel of said carrier, and means for moving the following carrier back into its normal path of travel when the leading carrier has passed out of operating relation to the carrier diverting means.

2. In a pneumatic dispatch system, a device for spacing apart carriers traveling in a pneumatic tube comprising a lever mounted on the tube and having a part projecting into the tube in position to be engaged by the leading carrier, means operated by said lever for diverting the following carrier from its path of travel, means for checking the movement of the carrier in its diverted position, and means operating when the leading carrier has passed out of engagement with said lever for moving said following carrier back into its normal path of travel.

3. A device for checking the advance of the rearmost of two objects traveling in series comprising means operated by the passage of the leading object to divert the following object from its path of travel, means for checking the movement of the following object when thus diverted, and means operating to restore the following object to its path of travel when the directing means has become in operative by reason of the continued travel of the leading object.

4. In a pneumatic dispatch system, a device for spacing apart a pair of carriers traveling in close adjacency in a pneumatic tube comprising a tube section having a recess in the side wall thereof, means having a member extending into the tube section for engagement by the leading carrier, said means operating when said member is engaged by said leading carrier to push the forward end of the following carrier into said recess and thereby check the movement thereof, and means for restoring said carrier to its normal path of travel when the leading carrier has moved out of engaging position with said member.

5. In a pneumatic dispatch system, a device for spacing apart carriers traveling in a pneumatic tube comprising: a lever mounted on the tube and having a part projecting into the tube in position to be engaged by the leading carrier, a recess in the wall of said tube, and means operated by said lever for diverting the forward end of the following carrier laterally from its normal path of travel and into said recess to thereby check the travel of said following carrier.

6. In a pneumatic dispatch system, a device for spacing apart carriers traveling in a pneumatic tube comprising: a lever mounted on the tube and having a part projecting into the tube in position to be engaged by the leading carrier, a recess in the wall of said tube, means operated by said lever for diverting the forward end of the following carrier laterally from its normal path of travel and into said recess to thereby check the travel of the carrier, and spring means mounted in said recess, said spring means being compressed by the presence of said carrier in said recess, said spring acting to return said carrier to its normal path of travel when the leading carrier has passed out of engagement with said lever.

WILLIAM J. HEPPERLE.