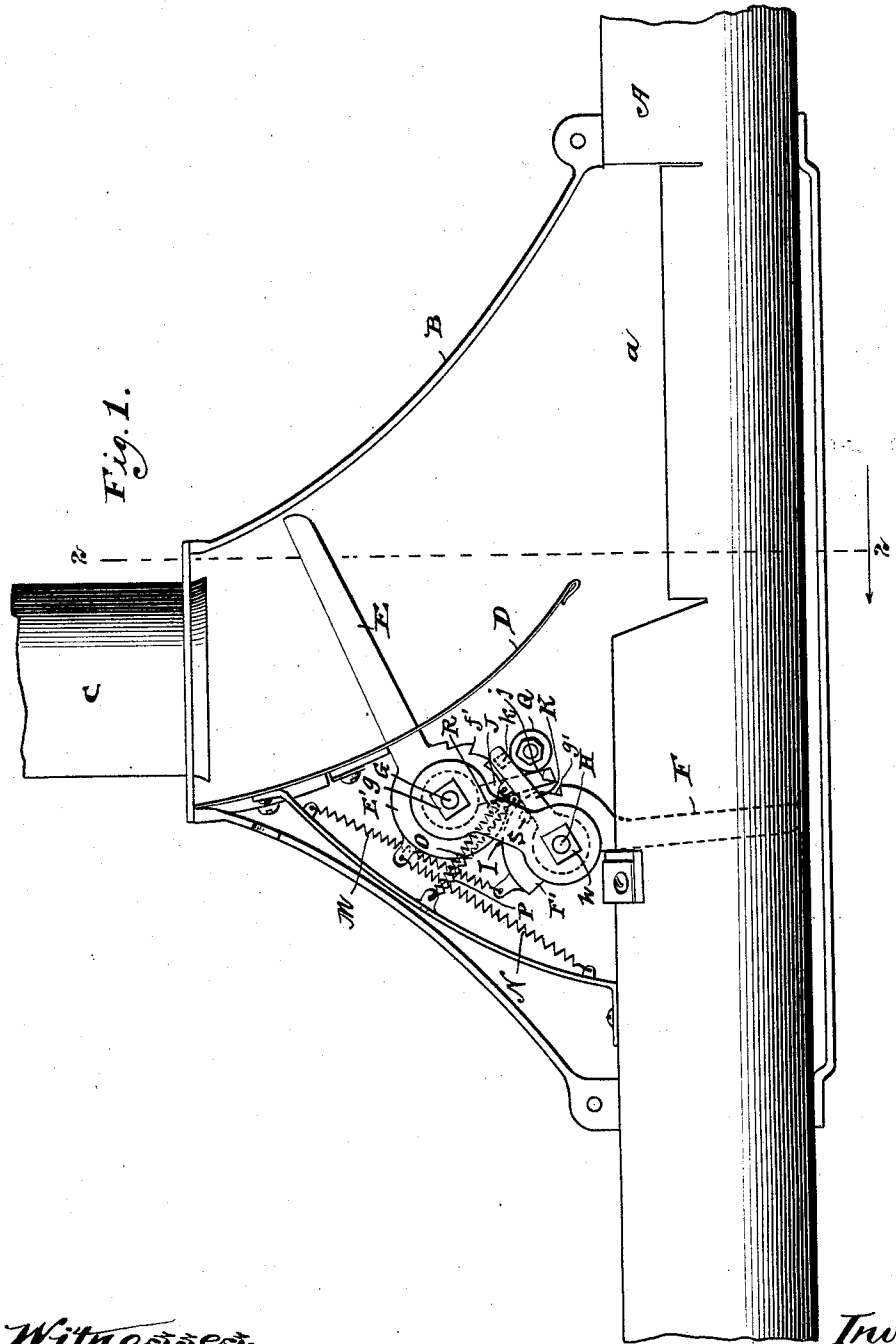
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E. A. FORDYCE.

SWITCH AND BACK STOP FOR PNEUMATIC TUBES.

No. 599,557. Patented Feb. 22, 1898.

Fig. 1.



Witnesses,
D. S. Mann
Frederick J. Goodwin

Inventor;
Edmund A. Fordyce
By Offield, Towle & Linthicum
Attys.

THE NOBRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

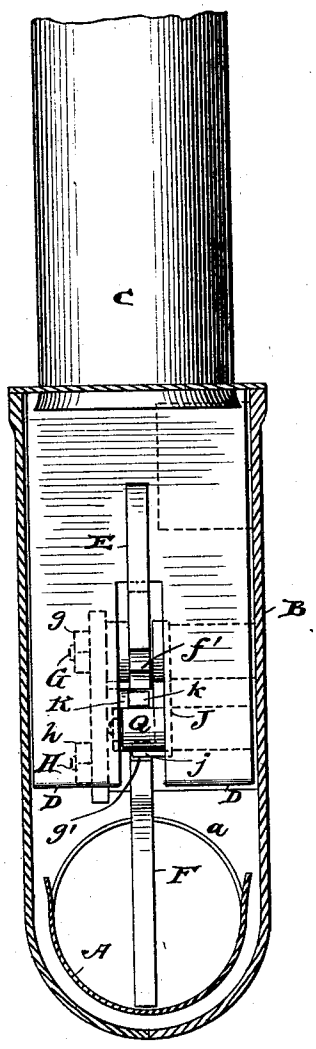
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E. A. FORDYCE.

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Fig. 2.



Witnesses,
F. D. Mann,
Frederick P. Goodwin.

Inventor,
Edmund A. Fordyce
By Offield, Towle & Linthicum
Att'ys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDMOND A. FORDYCE, OF CHICAGO, ILLINOIS.

SWITCH AND BACK-STOP FOR PNEUMATIC TUBES.

SPECIFICATION forming part of Letters Patent No. 599,557, dated February 22, 1898.

Application filed September 11, 1896. Serial No. 605,490. (No model.)

To all whom it may concern:

Be it known that I, EDMOND A. FORDYCE, of Chicago, Illinois, have invented certain new and useful Improvements in Switches and Back-Stops for Pneumatic Tubes, of which the following is a specification.

This invention relates to a device for controlling the passage of carriers through a pneumatic tube; and the object of the invention is to provide a switch-box and back-stop whereby carriers traversing the main tube and carriers inserted through a branch or switch of the main tube are prevented from interference with each other.

In the drawings, Figure 1 is a side elevation, partly in section; Fig. 2, a transverse section on the line 2 2 of Fig. 1, looking in the direction of the arrow.

In the drawings, let A represent the main tube, and B a switch box or housing mounted over an aperture *a* in the body of the main tube and having a branch C delivering thereto. Within the switch box or housing is arranged a curved plate D, forming with the front wall of the switch-box a chute for the carriers coming through the branch C. The plate D preferably terminates above the plane of the tube A and above the opening therein. Protruding into the chute and into the main-tube spaces are triggers or back-stop levers E F. The bodies of these triggers project through slots in the plate D and in the wall of the tube A. At the outer ends these triggers have hubs E′ F′, which are pivoted upon shafts G and H, which may be secured to or formed with the box B. A link I connects these two shafts, and nuts *g h* confine the link upon the ends of the shafts. The link and nuts are simply used to increase the rigidity of the structure and support the outer ends of the shafts. Mounted upon the shafts G H are latches J K, having locking-lugs *j k* upon the sides of their outer ends. The triggers or back-stop arms are controlled by springs M N and the latches are controlled by springs O P. The front edges of the hubs are provided with ratchet-teeth *f′ g′*, with which the lugs on the latches engage.

Q represents a bumper against which the hubs of the stop-arms and the latches contact in certain positions. The hubs have pins R S, which contact with the latches in certain positions of the parts.

The operation of the device is as follows: Supposing it be desired to insert a carrier into the main tube through the branch, as the carrier descends through tube C it will strike the arm E, rocking it upon its pivot and tensioning its spring N, the arm E having a sufficient swing to permit the carrier to pass. This movement of the arm E will carry its latch down into engagement with one of the ratchet-teeth on the arm F, thus locking the latter and arresting any carriers which may be passing through the main tube toward the switch. During this movement latch K is held out of engagement with the ratchet-teeth on the hub of arm E by pin S on the hub F′. As soon as the carrier passes into the main tube from the branch the spring N will return the arm E to its normal position. A carrier passing through the main tube raises back-stop F, carrying its latch into engagement with a ratchet-tooth of arm E, thus locking said arm against movement, and as the arm F returns to its normal position by the pull of its spring M its pin S will disengage the latch K.

If carriers pass from the branch and through the main tube toward the point of the switch at the same time and strike the back-stops simultaneously, both back-stop arms will of course be actuated; but it will be seen that the arm F has a single ratchet-tooth on its hub, while the arm E has a series of ratchet-teeth on its hub. Hence when the arm F is struck and carried past the point of engagement with its latch it will yield and permit the passage of the carrier through the main tube, while the arm E under these circumstances will be locked by the engagement of its latch with the second ratchet-tooth thereof, thereby arresting said arm E and giving the right of way in all cases to the carrier in the main tube.

I claim—

1. In a pneumatic-tube system, a back-stop device located adjacent to a switch and comprising two back-stop arms for controlling the main tube and the branch, said arms being pivotally mounted and latching mechanisms one actuated by each of the respective arms, and that of each arm adapted to engage

with the other arm whereby when either of the arms is rocked upon its pivot by the passage of a carrier the other arm is locked in position to arrest a carrier, substantially as described.

2. A back-stop device comprising in combination with a main tube and a branch thereof, pivoted arms projected respectively into the main tube and the branch, springs normally holding said arms in position to close the passage, pivoted latches, springs for controlling said latches whereby said latches are engaged with the stop-arms to maintain the latter in locked position and projections on said arms whereby said latches are released as the arms are returned to their normal position, substantially as described.

3. A back-stop device for a pneumatic-tube system comprising in combination a main tube and a branch, pivoted arms projecting into the main tube and the branch respectively, the arm for the main tube having a locking-notch and the arm for the branch tube having a series of locking-notches, pivoted latches, springs whereby said latches are carried into operative engagement with the locking-notches and projections upon the arms whereby said latches are released as the arms return to their normal positions, substantially as described.

EDMOND A. FORDYCE.

Witnesses:
C. C. LINTHICUM,
FREDERICK C. GOODWIN.