





# UNITED STATES PATENT OFFICE.

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## AUTOMATIC SWITCH FOR PNEUMATIC CARRIERS.

SPECIFICATION forming part of Letters Patent No. 701,522, dated June 3, 1902.

Application filed October 17, 1901. Serial No. 78,964. (No model.)

*To all whom it may concern:*

Be it known that I, FRED R. TAISEY, of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Automatic Switch for Pneumatic Carriers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like letters refer to like parts.

10 This invention is an improvement on the switch apparatus shown in Letters Patent of the United States granted to me July 3, 1900, No. 653,044.

15 The object of the improvement herein is to make the action of the trigger mechanism positive and prevent the accidental rebounding of the pawl in the trigger mechanism, so the switch-tongue will be actuated every time the pawl is actuated.

20 The nature of this improvement will be understood from the accompanying drawings and the following description and claims.

In the drawings, Figure 1 is a central vertical longitudinal section of a portion of the 25 despatch-tube, showing the trigger mechanism in side elevation. Fig. 2 is an elevation of the side of the trigger mechanism opposite to that shown in Fig. 1, showing the position of said mechanism in dotted lines while a carrier-box is passing through the tube under the trigger mechanism and which does not actuate the pawl of said mechanism. Fig. 3 is a 30 cross-section of the despatch-tube, showing the trigger mechanism in front elevation, a part being broken away. Fig. 4 shows the same as Fig. 2, with the pawl actuated and in dotted lines, the position of the trigger mechanism as the carrier-box is passing through and the switch-tongue is being actuated. Fig. 40 5 is a vertical section of what is shown in Fig. 4 on the line 5 5 of Fig. 3.

There is shown in the drawings a portion of a despatch-tube 10 with a branch tube 11 extending therefrom, that is closed by the 45 switch-tongue 12. The switch-tongue is actuated by a connection with the trigger mechanism, said connection not being here shown.

The trigger mechanism consists of a shaft 20, mounted transversely in an upward ex-

tension 32 from the despatch-tube. On the 50 shaft 20 there is mounted loosely a downwardly-extending forked trigger 24, so that the fingers of the fork extend on each side of the center of the despatch-tube. Said trigger has in it a small pin 26, which carries the 55 pawl 25, the lower end of said pawl extending centrally between the fingers at the lower end of the trigger. The upper end of the pawl engages the ratchet 27 rigidly on the shaft 20. The upper end of said pawl, how- 60 ever, is held out of engagement normally with said ratchet by the spring 28, said spring pressing against the pawl 25 above its pivotal point. The spring is mounted on the plate 29, that connects the two arms or parts 65 of the trigger 24 along the rear and upper part thereof, as appears in Fig. 4. The shaft 20 carries the crank 19, which is connected by a link 18 to means for actuating the switch, which means is not herein shown. The trig- 70 ger mechanism is brought to its normal position by the spring 31, the normal position being downward in the path of the carrier-box 46, that may be passing through the tube, and such return movement of the trigger is lim- 75 ited by the closing of the switch-tongue.

The foregoing mechanism is old and is shown and more fully described in my prior patent, heretofore referred to. The improve- 80 ment therein, which constitutes my present invention, consists of a catch 35, which is pivotally mounted on the pin 36 to one side of the trigger 24. At one end it has a tooth 37, adapted to catch on the pin 38 in the pawl 25, but only when said pawl has been actuated, as in Fig. 4. The normal position of 85 said catch is that shown in Fig. 2, where it is out of engagement with the pin 38 on the pawl 25, and is held in that position by the downwardly-turned end 39 of the catch en- 90 gaging the lug 40 on the side of the despatch-tube. When the pawl 25 is actuated into the position shown in Fig. 4, the spring 41 draws the catch into engagement with the pin on the pawl, as appears in Fig. 4. Said spring 95 41 is attached at one end to the catch and the other end to the trigger 24.

The operation is as follows: When a car-



rier-box goes through the despatch-tube without any pin on the end of it or with a pin too short to engage the pawl 25, the forward end of the box strikes the two fingers of the trigger 24, but does not engage the lower end of the pawl 25, as it is somewhat to the rear of the forward faces of the fingers of the trigger 24. This sort of box therefore does not actuate the pawl 25 or the shaft 20 or the switch-tongue, and the further progress of the box throws the whole trigger mechanism up into the position shown in dotted lines in Fig. 2, and the box passes on out of the way, whereupon the spring 31 throws the trigger mechanism down into the position shown in Fig. 2. When, however, a box with a central projection or pin on it passes through the carrier-tube and the pin engages the lower end of the pawl 25 before the end of the box comes into contact with the fingers of the trigger 24, it throws the pawl 25 into the position shown in Figs. 4 and 5—that is, with the upper end in engagement with the ratchet 27. The further movement of the carrier-box pushes the whole trigger mechanism up into position shown in dotted lines in Fig. 4, and in such movement the pawl 25 rotates the ratchet 27 and shaft 20, whereby the switch-tongue is thrown. After the box passes from under the trigger mechanism the spring 31 throws it back into its normal position, and in such backward movement the lower end 39 of the catch 35 engages the lug 40 on the tube and elevates the projection 37 of the catch out of engagement with the pin 38 on the pawl 25, as appears in Fig. 2.

Without this improvement the spring 28 tends to throw the upper end of the pawl 25 out of engagement with the ratchet immediately after the pawl is actuated, so that the switch-tongue would not always be thrown. With the pawl 35 this difficulty in operation is prevented, for as soon as the pawl is actuated the catch engages the pin 38 and holds the upper end of the pawl in the notch in the ratchet 27 and continues to hold it there until the carrier-box has passed through, and the spring 31 brings the trigger mechanism back to its normal position, and the lower end 39

of the catch engages the lug 40, and thereby the catch is disengaged from the pawl.

The effect of this invention is to make the action of the switch-tongue absolutely positive and certain.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a switch-actuating mechanism for pneumatic carriers, the combination with a shaft, a trigger loosely mounted thereon, a ratchet secured on said shaft, and a pawl pivoted to the trigger for engaging the ratchet when the pawl is actuated, of a catch for engaging the pawl and holding it in its actuated position.

2. In a switch-actuating mechanism for pneumatic carriers, the combination with a shaft, a trigger loosely mounted thereon, a ratchet secured on said shaft, a pawl pivoted to the trigger for engaging the ratchet when the pawl is actuated, and a spring for normally holding the pawl out of engagement with the ratchet, of a catch for engaging and holding the pawl after it has been actuated so that it will keep in engagement with the ratchet.

3. In a switch-actuating mechanism for pneumatic carriers, the combination with a shaft, a trigger loosely mounted thereon, a ratchet secured on said shaft, a pawl pivoted to the trigger for engaging the ratchet when the pawl is actuated and a spring for normally holding the pawl out of engagement with the ratchet, of a spring-controlled catch for engaging and holding the pawl after it has been actuated so that it will keep in engagement with the ratchet, means for returning the trigger mechanism after it has been actuated, and a stationary means for engaging the catch in its return movement to disengage it from the pawl.

In witness whereof I have hereunto affixed my signature in the presence of the witnesses herein named.

FRED R. TAISEY.

Witnesses:

FLORENCE E. BRYANT,  
V. H. LOCKWOOD.