

F. R. TAISEY.
PNEUMATIC DESPATCH APPARATUS.
APPLICATION FILED MAY 10, 1906.

936,056.

Patented Oct. 5, 1909.
2 SHEETS—SHEET 1.

Fig. 1.

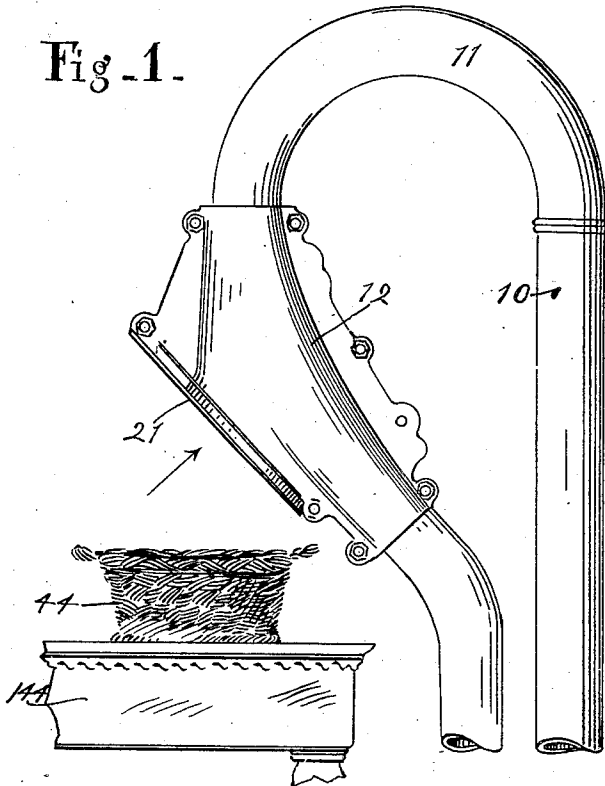


Fig. 2.

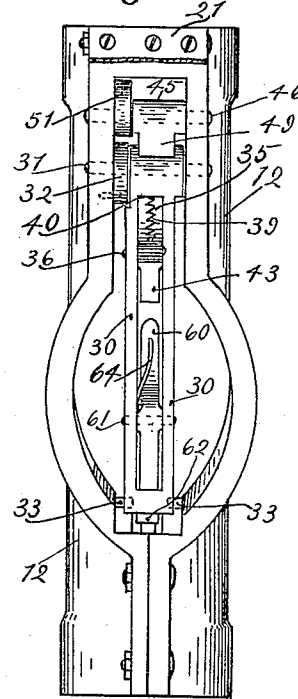


Fig. 3.

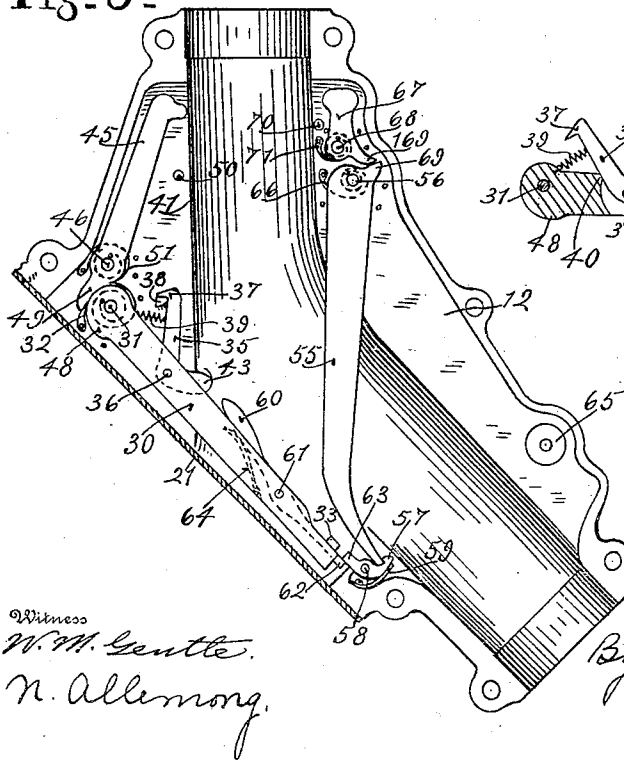
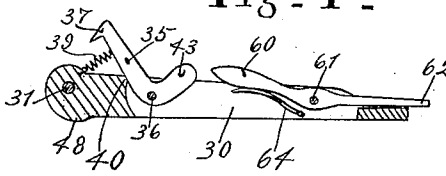


Fig. 4.



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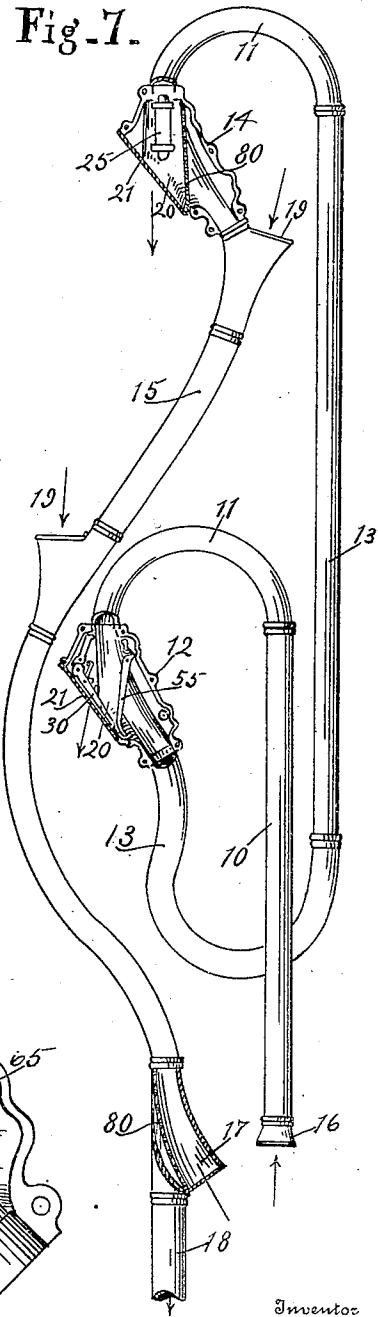
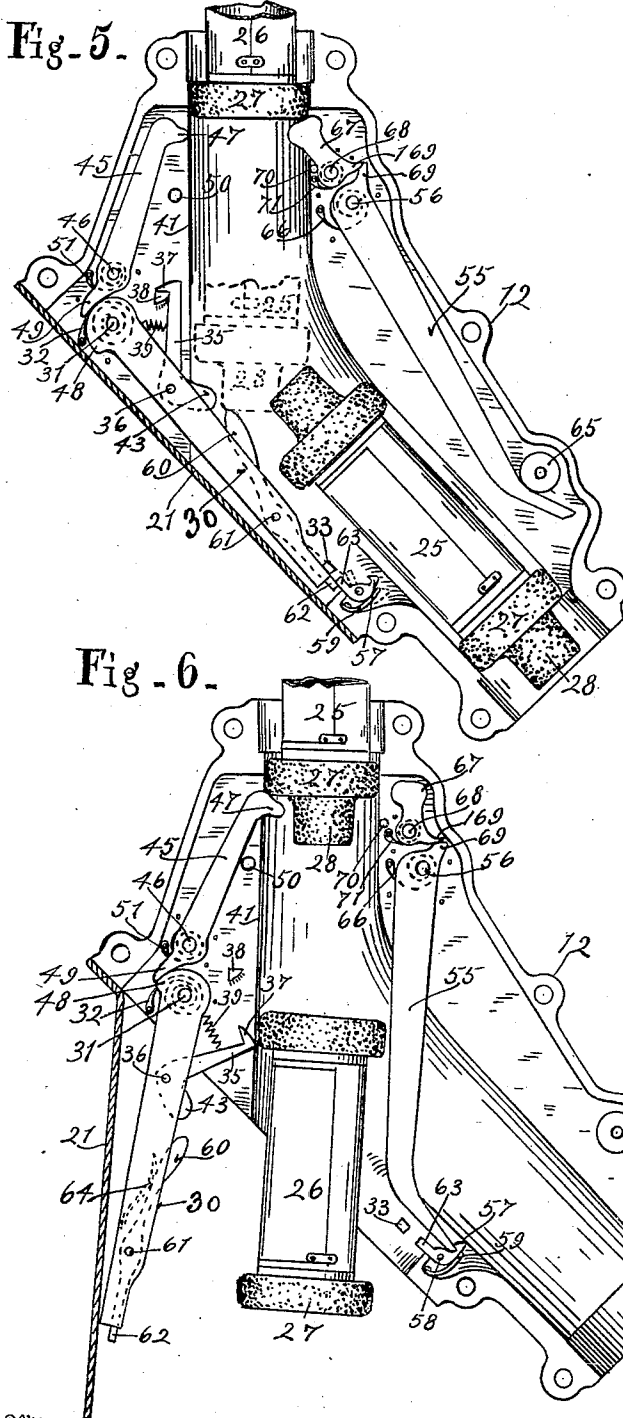
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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PNEUMATIC-DESPATCH APPARATUS.

936,056.

Specification of Letters Patent.

Patented Oct. 5, 1909.

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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 Pneumatic-Despatch Apparatus; 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 numerals refer to like parts.

This invention relates to means for permitting the discharge of a pneumatic despatch carrier at any selected one of a plurality of terminals, the selection of such terminals being automatically made by the carriers.

One object of this invention is to provide a device extending across a discharge opening in a terminal section of pneumatic despatch apparatus and means for holding said device closed and preventing its being opened excepting by a carrier having a certain form and then permitting said device to be opened by the impact of the carrier. In other words, the construction is such as to prevent or permit said device to be opened as desired, according to the form or character of the carriers.

Another feature of the invention consists in providing means to prevent the interference of carriers while in transit through the apparatus and to prevent any carrier from discharging at the same terminal as another carrier or at the wrong terminal.

Another feature of the invention consists in providing means which will obstruct the passageway through a terminal and prevent a carrier from passing beyond said terminal, such means being so constructed as to be controlled and released by any carrier which should pass beyond said terminal; and also in combining therewith means for preventing one carrier from following another while said guiding means is operated.

The nature of the invention will be understood from the accompanying drawing and the following description and claims.

Figure 1 is a side elevation of a terminal section and associated portions of the despatch apparatus that lead to and from said terminal, and also a side elevation of a portion of a table and basket to receive carriers from said terminal, parts being broken away. Fig. 2 is a bottom view, in the direction of the arrow in Fig. 1, of a terminal with the

discharge valve broken away. Fig. 3 is a central vertical longitudinal section of the terminal, showing the inside elevation of one of the halves that go to make up the terminal section of the apparatus and showing the parts in their normal position. Fig. 4 is a longitudinal vertical section through the device that extends across the discharge opening of the terminal, one side thereof being broken away. Fig. 5 is the same as Fig. 3 showing, however, a carrier passing through and out of the terminal section and a portion of the succeeding carrier stopped while entering said terminal section, and the parts arranged to permit such operation, the stopped carrier being broken away and the advancing end of the foremost carrier being shown by dotted lines in position for actuating and opening the guide to permit said carrier to pass on through the despatch tube. Fig. 6 is the same with the order of the carriers reversed and with one carrier issuing through the discharge opening of the terminal section, and the parts of said terminal section being in their actuated position at such time. Fig. 7 is an elevation of a despatch tube with portions thereof in section, showing a plurality of terminal sections and carrier inlets.

In Fig. 7 there is shown a pneumatic despatch apparatus through which it is customary to draw air for the propulsion of cash carriers and the like. As there shown the apparatus consists of a straight portion or section 10 of a despatch tube into the lower end of which air is drawn. The entrance to said tube is at the central station where carriers are introduced into the tube. At the upper end of said straight portion or section there is secured a semicircular portion 11, and to the latter a reversely curved portion or section 12 that is usually called a terminal. An outgoing portion 13 of the despatch tube leads from said terminal 12 to another portion 11 and terminal 14. An outgoing portion or section of the tube leads from said terminal 14 back to the central station. The inlet at the central station is marked 16 and the outlet thereof 17. The portion 18 of the despatch tube leads to a pneumatic apparatus. Near each terminal there is an inlet 19 for the insertion of a carrier. It is observed that the terminals 12 and 14 and their continuing tubes 13 and 15 are reversely curved or concavo-convex,

and each is provided with a discharge opening at 20 located upon the convex side thereof, said discharge opening being closed by the usual leather valve or clapper 21. The discharge openings are arranged so that the valve 21, which extends across said opening, lies at an obtuse angle to the direction of travel of a carrier at the point in said terminal immediately in advance of said opening and parallel to that portion of the passageway through the terminal opposite to which it is located. Referring now to the terminals 12 and 14, it is observed that they are provided internally with different mechanism, in fact the terminal 14 is devoid of mechanism, for that is a final terminal or the last terminal in a series, and as this apparatus is constructed, only one carrier, 25, reaches that terminal, and it engages the valve 21 directly and opens it and issues from the terminal. A differently formed carrier 26 is discharged at the first terminal 12 by the mechanism therein found, and the mechanism in such terminal is such as to prevent the discharge at that point of the other carrier 25. Hence, the first terminal 12 is provided with means for preventing the carrier 25 from discharging at that point and permitting it to pass on to the final terminal 14, and also with means controlled by the carrier 26 for permitting its discharge at the first terminal. Hence, the device is automatic and controlled by carriers differing in form or selecting devices.

The carrier 26 shown herein is of simple ordinary form with a plain flat head 27, while the carrier 25 has a central projection 28 from said head 27. However, I do not wish to be limited to any particular form or construction of carriers to provide selecting devices, but any form of selecting device may be provided in the construction of the carriers or any addition to the carriers, such as is well known to those skilled in the art.

The means, however, in the first terminal for regulating the passage of the carriers out of or through it, are in the drawings so formed as to be operated and controlled by carriers having the particular form shown and described herein.

To prevent the carrier 25 or any undesired carrier from discharging at the first terminal 12 there is a device 30 provided that extends across the discharge opening of said terminal. It not only prevents the escape of the carrier 25 but deflects it so that it may pass on through the despatch tube. This device 30 is herein shown to be independent of the valve or clapper 21 and just within it, and it is formed of two parallel bars secured together or integral with a space between them, and said device is pivoted to the wall of the terminal section by the pivot 31, and is held in a closed position normally by a spring 32. It is stopped in its closing move-

ment by the free end thereof engaging stops 33 on the terminal section. When closed this device 30 is substantially parallel to that portion of the passageway through the terminal opposite which it is located, and lies at an obtuse angle to that portion of the terminal immediately in advance thereof and at an obtuse angle to the direction of travel of the carrier, so that it deflects and occasions the passage of the carrier through the terminal and into the outgoing portion 13 of the despatch tube as it is engaged by said carrier. In order to enable said device 30 to deflect the carrier 25 through the terminal and into the outgoing portion 13 of the despatch tube there is provided a catch for holding said device closed until it is released by the carrier 26, or a carrier so formed as to release it, and then such carrier comes into direct and immediate engagement with said device and forces it and the valve 21 open and issues from the terminal, as shown in Fig. 6. But said catch must be so arranged and the carrier 25 so formed that said carrier cannot release said catch, and then the carrier will be deflected on through the terminal, as shown in Fig. 5.

The means for holding the device 30 closed may be in various forms, but that herein shown consists of a catch 35 formed much like a bell-crank lever and lying with the elbow thereof between the bars or sides constituting the device 30 and pivoted to said device 30 by a pivot pin 36. The upper end of said catch 35 has a hook 37 that engages a lug 38 extending inward from the surface of the terminal 12. The lower side of the hook 37 is rectangular and flat, while the upper side is beveled so that after the catch has been disengaged from the lug 38 and while the device 30 is returned to its closed position, the beveled portion of the hook 37 will cause it to pass by and to a point above said lug 38, whereupon the spring 39 draws said catch into engagement with said lug 38. The spring 39 is connected with the catch 35 at one end and at the other end with the device 30 near its pivotal point. The action of the spring 39 and catch 35 is stopped by a stop 40, which is the wall at the end of the slot between the sides or portions of the device 30. The other end of the catch 35 has a projection 43 which extends into the path of the carrier 26 or any carrier which is not deflected by the device 30 before the catch is operated. That is, the projection 43 of the catch 35 extends beyond the line 41 or any continuation thereof. It also extends slightly above the surface of the device 30 so as to be engaged by a carrier having a flat head 27, as the carrier 26, before said carrier engages the device 30. Therefore, when a carrier, like 26, with a flat head enters the terminal 12, the lateral portion of the head 27

will engage the projection 43 of the catch and release said catch from the lug 38, and then the carrier head directly engages the device 30 and swings it open into the position shown in Fig. 6 and is discharged through the opening of the terminal into the basket 44 on the table 45, which appears in Fig. 1. After the discharge of the carrier, the spring 32 returns the device 30 to its closed position, and it is held in the closed position by the catch 35. When, however, a carrier is formed as shown in the carrier 25, with a projection 28, said projection 28 on the carrier will engage the device 30, or some part connected therewith, without engaging the projection 43 of the catch 35 and, therefore, without releasing said catch and the device 30. In that event the head of the carrier is deflected by said device, as appears in dotted lines and full lines in Fig. 5, and the carrier passes on to the next terminal.

To prevent a collision of carriers, or rather to prevent the wrong carrier 25 from discharging at the terminal 12, means is provided for stopping such carrier 25 if it enters the terminal while the device 30 is open, as shown in Fig. 6. This means consists of a stop-trip 45 in the form of a lever fulcrumed on a pin 46 in the wall of the terminal 12, and having a head 47 that projects into the path of the carrier when said trip is actuated by the device 30 while the latter is opening. The pivoted end of the device 30 has a cam projection 48 that engages an arm 49 from the trip 45 as the device 30 is being moved to its open position, and that throws the head of the stop-trip 45 into position to stop the carrier. A stop pin 50 in the wall of the carrier 12 limits the inward movement of the stop-trip 45. When the device 30 closes, a spring 51 returns the stop trip 45 to its normal position, as shown in Fig. 5.

To render the device perfectly successful in its operation so that on no occasion will the carrier 26 fail to be discharged from the terminal 12, I provide in said terminal a guide 55 consisting of a bar pivoted at its upper end on a pin 56 in the wall of the terminal 12 and with its lower end somewhat turned backward and the free end thereof made small so as to catch under the head of the small catch 57 that is pivoted at 58 to the terminal, and is held in engagement with the guide by a spring 59. This will prevent the advancing end of the carrier 26 from striking against the portion of the terminal 12 where the catch 57 is mounted, and will cause it to pass always out through the discharge opening. But mechanism must be provided for releasing the guide 57 when the other carrier 25 is in use, and such means must be controlled by said carrier 25. The means for accomplishing this consists of a trip lever 60 pivoted on

a pin 61 in the device 30, said trip lever lying in the slot or space between the sides of said device 30, and having one end 62 extending beyond the free end of the device 30 in position to engage and lie normally immediately under the portion 63 of the catch 57 when the device 30 is closed. The actuating end of the trip lever 60 is held by a spring 64 normally slightly above the upper surface of the device 30 so that the projection 28 on the head of the carrier 25 will engage it and actuate it before the head 27 can come into contact with the projection 43 on the catch 35. The prior actuation of the trip lever 60 disengages the catch 57 from the free end of the guide 55 so that it is thrown open upward against a rubber buffer 65, as seen in Fig. 5, and the carrier 25 passes on. As soon as it has passed, gravity and a spring 66 causes the return of the guide to its normal position, as shown in Fig. 3, where it moves under the head of the catch 57. Therefore, it is seen that the device 30 deflects the carrier 25, and the projection 28 on the head of the carrier releases the guide and permits the carrier to pass, and this is done without the carrier releasing the catch 35 and without releasing the device 30.

To prevent the carrier 26 or any other carrier improperly following the carrier 25 while the guide 55 is in its open position, a stop-trip 67 is pivoted on a pin 68 in the wall of the terminal 12, and the arm 69 on the end of the guide 55 engages an arm 169 on the stop-trip 67 and forces the upper end thereof into the path of the carrier 26 and against the stop pin 70, as appears in Fig. 5. When the guide 55 returns to its closed position, a spring 71 returns the stop-trip 67 to its normal position, as shown in Fig. 3.

A perforated fixed guiding wall 80 is provided in the tube at final carrier discharging points.

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

1. A pneumatic despatch apparatus having a discharge terminal, means for selectively controlling the discharge of carriers therefrom, a stop-trip pivoted between its end to the terminal, one end of said trip being actuated by the opening movement of said carrier discharge controlling means, whereby the other end of said trip will project into the path of the carriers for stopping the same, and a stop for limiting the inward movement of said trip.

2. A pneumatic despatch apparatus having a plurality of discharge terminals, means for selectively controlling the discharge of carriers therefrom that extends across the discharge opening in the first terminal for selectively controlling the discharge of carriers therefrom, means for holding said dis-

charge closing means normally closed, differently formed carriers, a guide pivotally mounted in the first terminal for directing one form of carriers through the discharge opening thereof, a catch that normally engages and holds said guide in its guiding position, a trip on said carrier discharge controlling means that is adapted to be engaged by another form of carrier for releasing said catch and guide so that said last-named carrier may pass on.

3. A pneumatic despatch apparatus having a plurality of discharge terminals, differently formed carriers, pivoted means for selectively controlling the discharge of carriers that extends across the opening in the first terminal for closing the same, means controlled by one form of said carriers for holding and releasing said carrier discharge controlling means, a movable guide for directing a carrier through the discharge opening of said first terminal, and means controlled by another form of carrier for holding and releasing said guide to permit said last-mentioned carrier to pass on.

4. A pneumatic despatch apparatus having a plurality of discharge terminals, means for selectively controlling the discharge of carriers therefrom that extends across the opening in the first terminal for normally closing said opening, differently formed carriers, means controlled by one form of said carriers for releasing said carrier discharge controlling means and permitting the exit of said carriers, a guide held normally stationary for directing said carrier in its exit, and means mounted on said carrier discharge controlling means that is controllable

by another form of carrier for releasing said guide to permit said last-mentioned carrier to pass on.

5. A pneumatic despatch apparatus having a terminal, differently formed carriers, a carrier controlled guide for directing the exit of one form of carrier, means for selectively controlling the discharge of carriers that releases said guide to permit another form of carrier to pass on, and means actuated by the opening movement of said guide for stopping the following carrier while said guide is in an open position.

6. A pneumatic despatch apparatus having a plurality of terminals, means for selectively controlling the discharge of carriers therefrom that extends across the opening in the first terminal for normally closing the same, differently formed carriers, means releasable by one form of said carriers for holding said carrier discharge controlling means closed, a pivoted guide for directing the exit of said first-mentioned carrier, means actuated on said carrier discharge controlling means that is controlled by another form of carrier for releasing said guide to permit said last-mentioned carrier to pass on, and means actuated by said guide while opening for stopping the following carrier.

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

FRED R. TAISEY.

Witnesses:

HELEN B. McCORD,
N. ALLEMONG.