E. J. PATTON.

MEANS FOR DELIVERING MAIL BAGS FROM MOVING TRAINS.

APPLICATION FILED SEPT. 4, 1907.

899,894.

Patented Sept. 29, 1908

2 SHEETS—SHEET 1

Fig. 3.

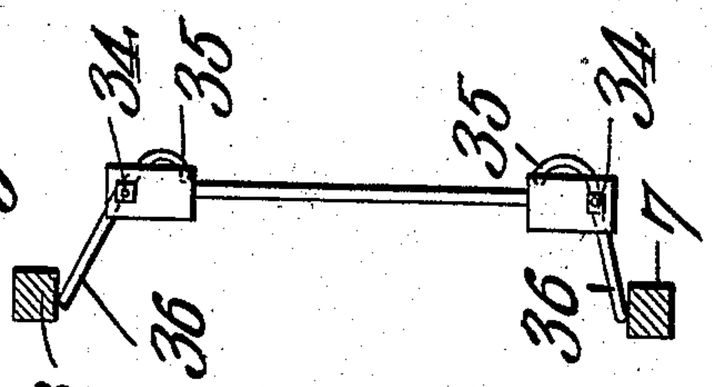


Fig. 2.

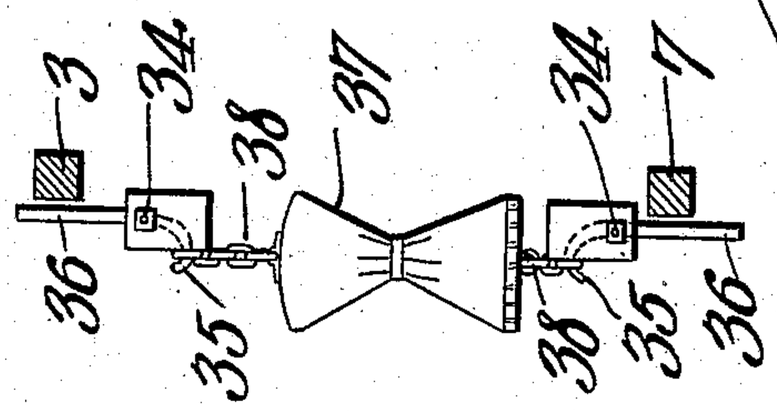


Fig. 4.

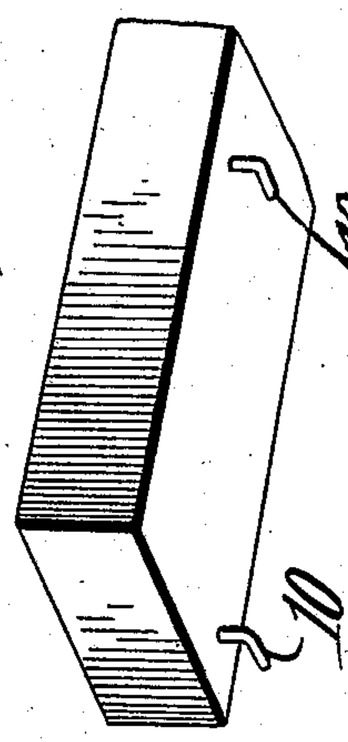


Fig. 5.

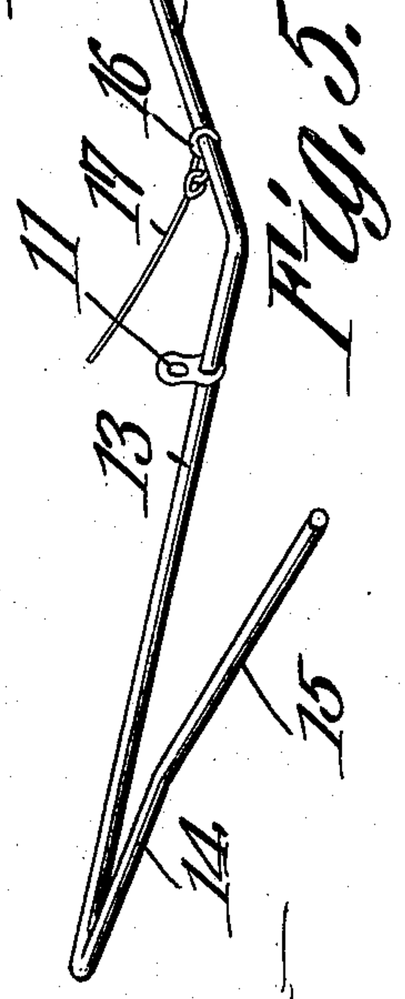


Fig. 1.




Witnesses

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2 SHEETS—SHEET 2.

Fig. 8.

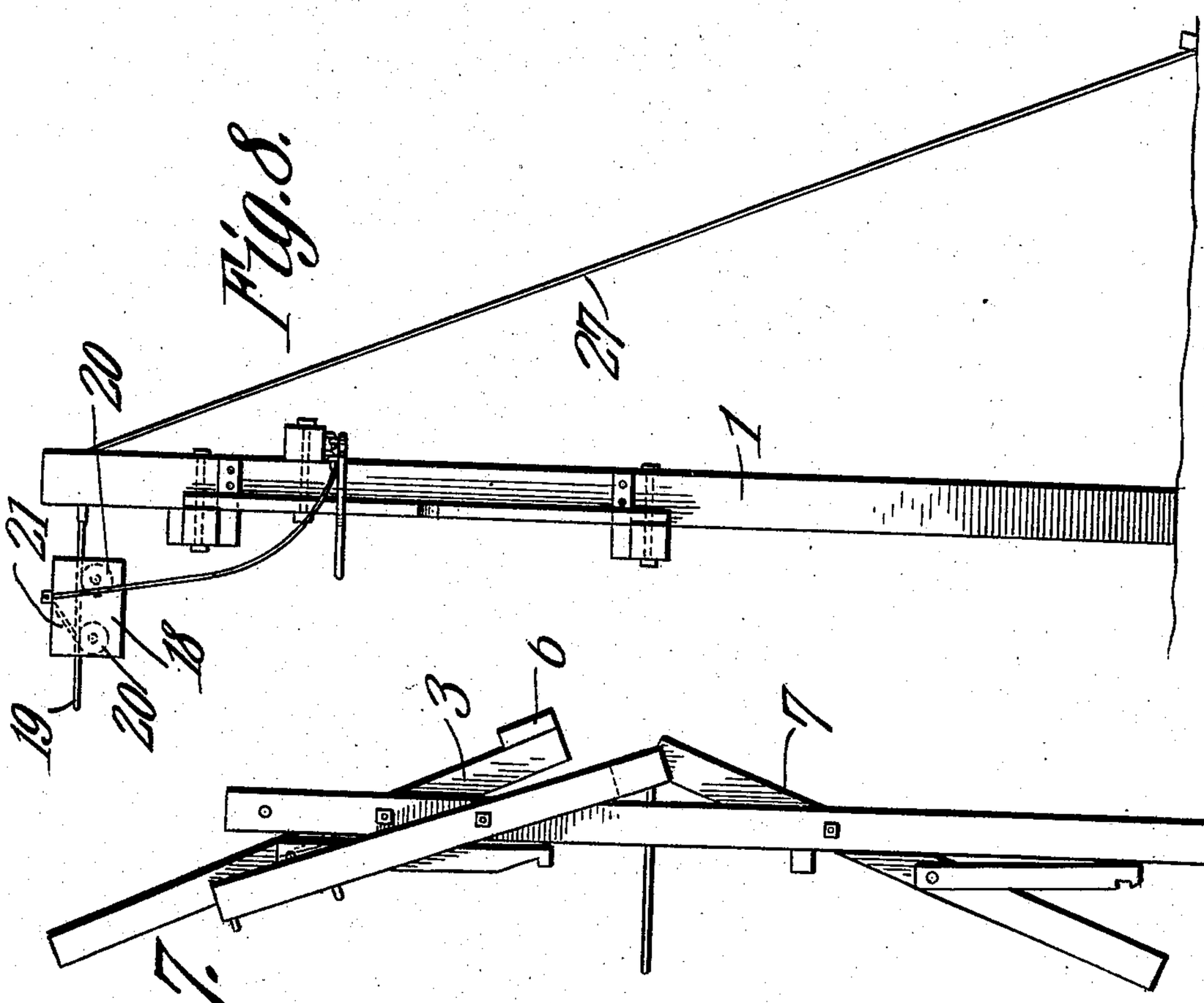
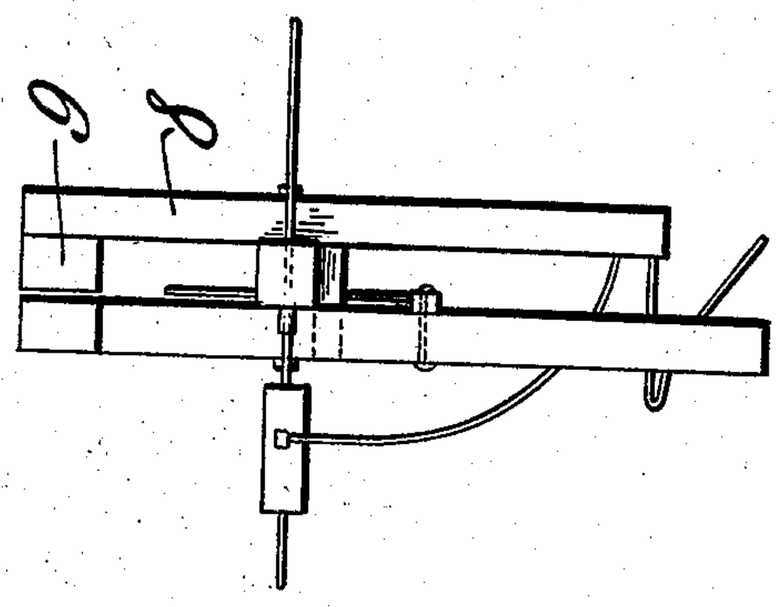



Fig. 7.

Fig. 6.

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# UNITED STATES PATENT OFFICE.

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## MEANS FOR DELIVERING MAIL-BAGS FROM MOVING TRAINS.

No. 899,894. Specification of Letters Patent. Patented Sept. 29, 1908.

Application filed September 4, 1907. Serial No. 391,295.

*To all whom it may concern:*

Be it known that I, ELIAS J. PATTON, a citizen of the United States, residing at Three Oaks, in the county of Berrien and State of Michigan, have invented a new and useful Means for Delivering Mail-Bags from Moving Trains, of which the following is a specification.

This invention has reference to improvements in means for delivering mail-bags from moving trains, and its object is to provide a structure whereby the transfer of a mail-bag from a moving train to the point of delivery may be made without danger to the mail-bag or its contents, and, when desired, the momentum of the moving mail-bag may be utilized to cause the same to travel to a near-by post office instead of having to be carried thereto after having been thrown from the train.

The invention comprises a suitable structure erected at the side of the railroad and so arranged that stop arms may be temporarily projected into the line of travel of a carrier mounted upon the car, on which carrier a mail-bag may be supported, so that when a moving train carrying a mail-bag in such manner approaches and comes in contact with the stop members the mail-bag is released from the car without shock and is transferred to a light truck mounted upon an elevated track which, running parallel with the railroad, may terminate at a suitable distanee sufficient to permit the momentum of the mail-bag to be slowly overcome, or the track may be led away to a near-by post office, so that the carrier under the impulse of the momentum imparted thereto by the mail-bag will travel to the post office and so deliver said mail-bag at the post office.

The invention will be fully understood from the following detailed description, taken in connection with the accompanying drawings forming part of this specification, in which,—

Figure 1 is an end view of the track structure and also of the structure mounted on the car, showing the two in coactive relation; Figs. 2 and 3 are detail views, showing the manner of releasing the mail-bag from the car; Fig. 4 is a detail perspective, showing the means for hanging the mail-bag catching hook located under the track; Fig. 5 is a detail perspective view of a mail-bag catching hook; Fig. 6 is a top plan view of the track structure in position to receive a mail-bag; Fig. 7 is a view showing the position of the parts after a mail-bag has been caught and has been carried away from the track structure; and Fig. 8 is an elevation of the track structure, taken at right angles to the showing of Fig. 1, with the car-supported parts omitted.

Referring to the drawings, there is shown a post 1 which is assumed to be erected at a suitable distance from a railway track, of which one rail 2 only is shown. Near the top of the post 1 is pivotally supported a lever arm 3 by means of a bolt 4, and this lever arm is arrested in its movement about the pivot bolt 4 by a stop block 5 on the post, so that when the lever arm is brought into contact with the stop block it will project horizontally toward the track 2, as indicated in Fig. 1. A counterweight 6 tends to normally hold the lever arm 3 in inoperative position, as indicated in Fig. 7. At a distance below the arm 3 is another lever arm 7, also pivotally supported by a bolt 4 and having in its path a stop 5, so that this last-named arm 7 is stopped when moved to a horizontal position but is permitted to fall by gravity to the inoperative position shown in Fig. 7 under conditions to be hereinafter described. The two lever arms 3 and 7 are mounted upon the same side of the post 1, and on the other side at a point a short distance below the lever arm 3 is another arm 8 also provided with a counterweight 9 by means of which it is overbalanced. Near the end remote from the counterweight 9 the arm 8 carries on its under face two displaced L-shaped pins 10 designed to receive eyes 11 fast on a mail-bag catching device best shown in Fig. 5. This device may be made of a rod having one end 12 bent at right angles to the main portion 13, which latter has its free end 14 formed into a return bend and then further bent at an angle to form a section 15 diverging from the main part 13. The bend between the parts 13 and 14 is made quite acute for a purpose which will presently appear. One eye 11 is upon the part 12 of the catching device or hook and the other eye 11 is upon the main part 13 thereof. When the eyes are entered by the displaced hooks 10 and the parts 12 and 13 rest under the lower face of the arm 8 the catching hook is maintained in a practically horizontal position. Fast to another eye 16 on the arm 12 of the catching hook is a cord or strand 17 leading to a carrier 18 mounted upon an elevated track 19 fast at one end to the upper end of the post 1 and at

the other end fast at some distant point (not shown). The carrier 18 may have wheels 20 for guiding it along the track and one of these wheels may be engaged by a brake finger 21 to prevent its free movement. Pendently supported by the arm 3 is a link 22 terminating in a hooked end 23, and carried by the arm 7 is another link 24 terminating in a hooked end 25, these links being so disposed that when the arms 3 and 7 are in a horizontal position and parallel to each other the hooks 23 and 25 may be brought into engagement and so lock the arms in said horizontal position. Extending through the post 1 is a rod 26 so located that one end may be brought into engagement with the link 24 below its hooked end 25 and the other end of the rod is in the path of the weight 9 on the arm 8, so that when the weighted end 9 of the arm 8 swings downward it will ultimately engage the end of the rod 26 and move said rod longitudinally through the post so as to force the hooked end 25 of the link 24 away from the hooked end 23 of the link 22.

In order to brace the post 1 against the strain of the track 19 a guy wire 27 may be used, as indicated in Fig. 8.

Projecting from the side of a car, indicated at 28 in Fig. 1, are two brackets 29 joined by a rod 30, on which rod are carried two arms 31 and 32, each of which terminates in a U-shaped end 33. The two legs of each end 33 are joined by a bolt 34 constituting the pivot support of a hook 35 having an extension or arm 36 on the side of the pivot 34 remote from the hooked end 35, the structure being such that the hooked end 35 may project beyond the edges of the extension or end 33. The hooks are designed to receive links or eyes on the two ends of a mail-bag, indicated at 37, and these links or eyes may be in the form of chains 38 so that the hooks 35 will engage some one of the links of the chains. When the mail-bag is so supported the arms 36 project upwardly and downwardly respectively in approximately a vertical position, and when the mail-bag is so supported and the lever arms 3 and 7 are located in the horizontal position the free ends of these arms 3 and 7 are in the path of the extensions 36.

Now, let it be supposed that the mail-bag is being carried toward the right as viewed in Fig. 2, then the extensions 36 ultimately come into contact with the arms 3 and 7. These arms being immovable in the direction of impact, the hooks 35 are moved about their pivots 34 and, the chains or eyes engaged by these hooks being caught by the legs of the U-shaped extensions 33, the hooks are withdrawn from the eyes or chain links as the mail-bag holder on the car passes by the arm 3 and 7. In the meantime, however, the upper chain or support 38 carrying the mail-bag has entered between the members 13 and 15 of the catching hook and ultimately reaches the space between the parts 13 and 14 of the said hook. These two parts are so close together that the chain links are caught thereby and the mail-bag cannot drop. However, the momentum of the mail-bag is sufficient to throw the eyes 11 off the hooks 10, these hooks being turned in a direction to permit this action, and then the weight of the mail-bag will cause the same to gravitate toward the ground and, because it is caught in the end of the member 13 remote from the member 12 to which the cord 17 is attached, the catching hook is caused to turn upon the longitudinal axis of the member 12 and so hang pendently from the cord 17. Now, since the mail-bag has the speed of the car, the momentum of the mail-bag will cause the carriage 18 to move rapidly along the track 19. Assuming that this track simply extends along the railroad parallel therewith for a suitable distance, the mail-bag will simply travel along the track 19 until the braking action of the finger 21 upon the roller 20 has overcome the momentum of the mail-bag and the carriage 18 with the mail-bag hanging therefrom comes to a standstill; or the momentum may be so greatly reduced that no injurious shock or jar will result should the mail-bag reach the end of the track 19 while still traveling at some speed. Let it be assumed, however, that, as is often the case, the post office is located quite close to the railroad. Under such conditions the track 19 will be carried directly to the post office and then the momentum of the mail-bag when released from the train will be sufficient to cause said bag to be automatically delivered to the post office itself, thus saving the handling of the mail-bag, as is the case when it must be carried from the point of delivery to the post office.

When the mail-bag has been caught and has passed beyond the post 1 the arm 8, relieved from the weigh tof the bag catching hook, will turn on its pivot until the weight 9 strikes the rod 26, thus disengaging the two links 22 and 24 and the arms 3 and 7 then gravitate to the positions shown in Fig. 7, so that said arms are out of the path of succeeding trains and are only again moved into and locked in operative position when it is desired to receive a mail-bag.

Since the usual devices for delivering mail-bags from points along the track to passing trains may be used in connection with the present invention, it is not deemed necessary to show these catching devices carried by the trains, but it will be understood that a railroad equipped with the present invention will have the ordinary devices for delivering mail-bags from points along the way to moving trains.

It is the usual custom to deliver mail-bags from moving trains by simply throwing them off the train at the desired points. The re-

sult is that many mail-bags rebound under the train and are destroyed with their contents; or the mail-bags are injured and oftentimes the contents partially destroyed; or the mail-bags strike against some obstruction along the track and so either the bags or their contents or both are injured or destroyed; or sometimes the mail-bags are landed in pools of water along the track and thus their contents become injured by being water-soaked. Again, persons along the track are often hit by the mail-bags thus thrown, and injured or killed. By the present invention these conditions are entirely avoided and no injury can result to either the mail-bag or its contents, and, in addition thereto, there is the added advantage that the mail-bag may be delivered directly to the post office where such office is located near enough to the railroad to utilize the momentum of the mail-bag to cause such delivery.

Instead of using the ordinary mail catchers upon the cars, I may use the catching devices shown in the drawings, upon the car and locate the arms 31 and hooks 35 upon posts along the line of way. By reversing the parts in this manner the mail-bag held by the hooks 35 at a point alongside the railroad track will be caught by a hook member 13 carried by an arm 8 on the car and other arms 3 and 7 on the car will release the bag from the hooks 35. Under these conditions the track 19 will be supported by the car and will extend lengthwise thereof, and the carrier 18 will travel on the track 19 so supported.

I claim:

1. In an apparatus of the class described, mail-bag supports carried upon a car, fixed members in the path of said supports for disengaging them from the mail-bag, an engaging member adjacent to the fixed members, a carrier attached to said engaging member, and a track for the carrier, engaging member and mail-bag when caught by said engaging member.

2. In an apparatus of the class described, a post located alongside of a railroad track, pivoted arms carried thereby and movable to horizontal positions at right angles to the length of the track, means for holding said arms in horizontal positions, a detachable catcher for a mail-bag, a track extending from the post along the line of railroad, a carrier on said track, connections between the carrier and the mail-bag catcher, a support for the mail-bag on the car, and detachable connections between the mail-bag and said support arranged to be engaged by the arms on the post when in operative position.

3. In an apparatus of the class described, supports projecting from a mail-car, pivoted hooks carried thereby and having extensions projecting from the pivots of the hooks in a direction opposite that of the hooks, means on the mail-bag for engaging said hooks to hold the extensions in operative position, fixed engaging members along the line of way in the path of the hook extensions, a mail-bag catching member detachably mounted adjacent to the engaging members, a carrier capable of traveling away from said engaging members, and connections between said carrier and the catching members.

4. In a device of the class described, a car structure for carrying a mail-bag, comprising arms projecting from the car and terminating in members extending one toward the other with parallel spaced legs, and hooks pivotally supported between the spaced legs and having extensions projecting beyond said legs.

5. In a device of the class described, a car structure for carrying a mail-bag, comprising arms projecting from the car and terminating in members extending one toward the other with parallel spaced legs, hooks pivotally supported between the spaced legs and having extensions projecting beyond said legs, and link carriers adapted to be engaged by the hooks and extending from a mail-bag.

6. In a device of the class described, a structure located along the line of way and consisting of a post, pivotally-supported overbalanced arms carried thereby, latch connections between the arms for holding them in operative position, a sliding member arranged to engage the latch members to disconnect them, another pivotally-supported overbalanced arm having one end movable into engagement with the sliding member, a mail-bag catching hook detachably carried by the last-named arm, and means for supporting said hook when detached.

7. In a device of the class described, a structure located along the line of way and consisting of a post, pivotally-supported overbalanced arms carried thereby, latch connections between the arms for holding them in operative position, a sliding member arranged to engage the latch members to disconnect them, another pivotally-supported overbalanced arm having one end movable into engagement with the sliding member, a mail-bag catching hook detachably carried by the last-named arm, and means for supporting said hook when detached, comprising an elevated track, a carrier movable thereon, and connections between said carrier and catching hook.

8. In a device of the character described, a mail-bag catching hook having an angle extension, eyes on the main stem of the hook and on the angle extension, a supporting bar, and hooks on said supporting bar adapted to engage the eyes on the catching hook, said hooks on the supporting bar being shaped to permit the eyes to move off the hooks when the catching hook is moved in a horizontal plane.

9. In a device of the class described, piv-

otally-supported overbalanced arms, latch connections between said arms for holding them in operative position, a sliding member arranged to engage the latch members to disconnect them, another pivotally-supported overbalanced arm having one end movable into engagement with the sliding member, a mail-bag catching hook detachably carried by the last-named arm, and means for supporting said hook when detached.

10. In a device of the class described, pivotally-supported overbalanced arms, latch connections between said arms for holding them in operative position, a sliding member arranged to engage the latch members to disconnect them, another pivotally-supported overbalanced arm having one end movable into engagement with the sliding member, a mail-bag catching hook detachably carried by the last-named arm, and means for supporting said hook when detached, comprising a track, a carrier movable thereon and connections between said carrier and catching hook.

11. In an apparatus of the class described, suitable supports, pivoted hooks carried thereby, each hook having extensions in a direction away from the hook, means on a mail-bag for engaging said hooks to hold the extensions in operative position, engaging members arranged to strike the hook extensions and so disengage the hooks from the mail-bag, a mail-bag catching member detachably mounted adjacent to the engaging members, a carrier capable of traveling away from said engaging members, and connections between said carrier and the catching member.

12. In exchange mechanism of the character set forth, the combination with a support, of a sack-receiving device detachably mounted thereon, and a flexible cable connected to the receiving device between its ends, for holding it when detached from the first-mentioned support.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ELIAS J. PATTON.

Witnesses:
THERON D. CHILDS,
HARRY E. SNYDER.