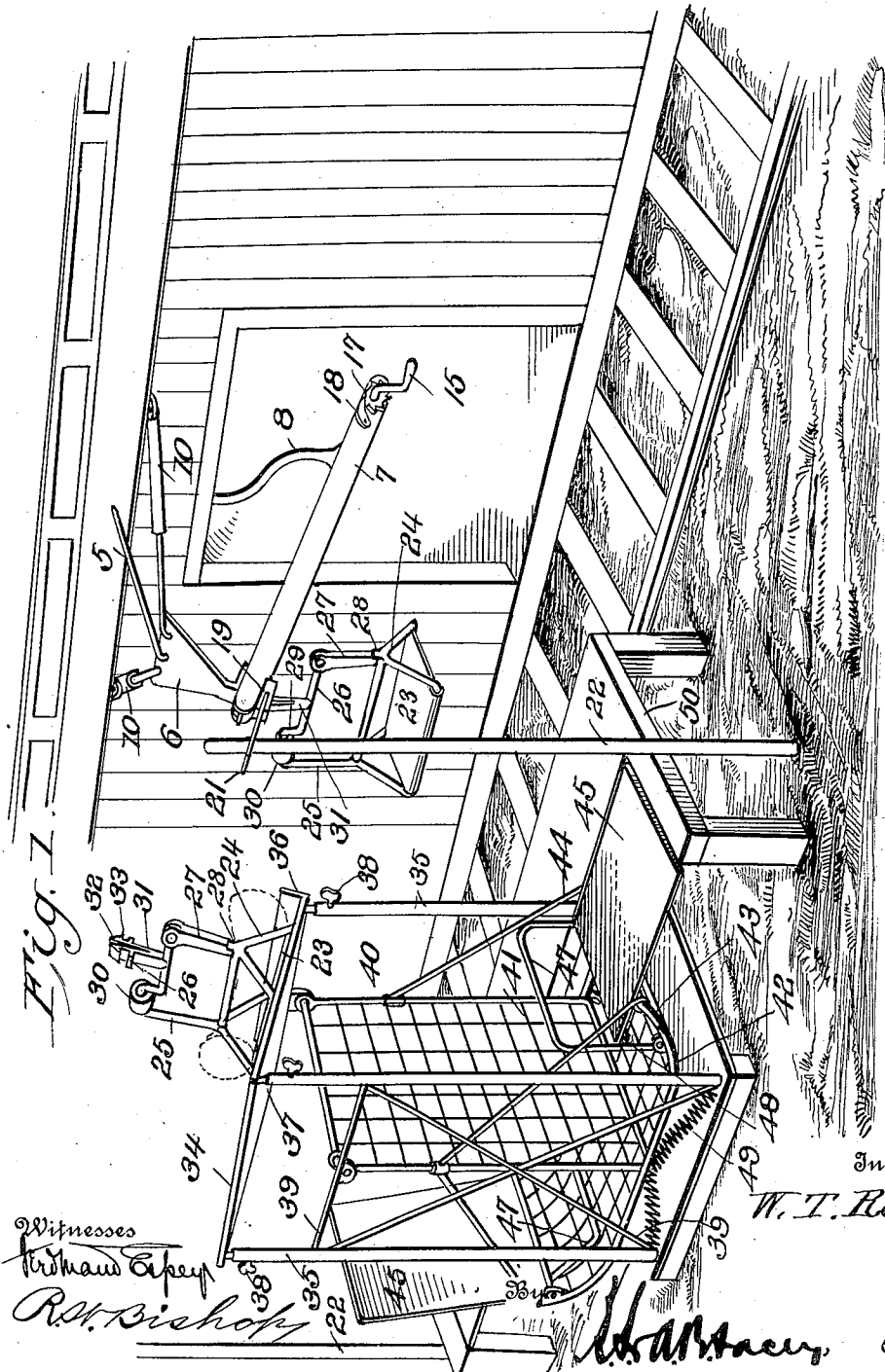


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MAIL BAG CATCHING AND DELIVERING MECHANISM.
APPLICATION FILED JUNE 18, 1912.

1,060,632.

Patented May 6, 1913.

3 SHEETS—SHEET 1.



Witnesses

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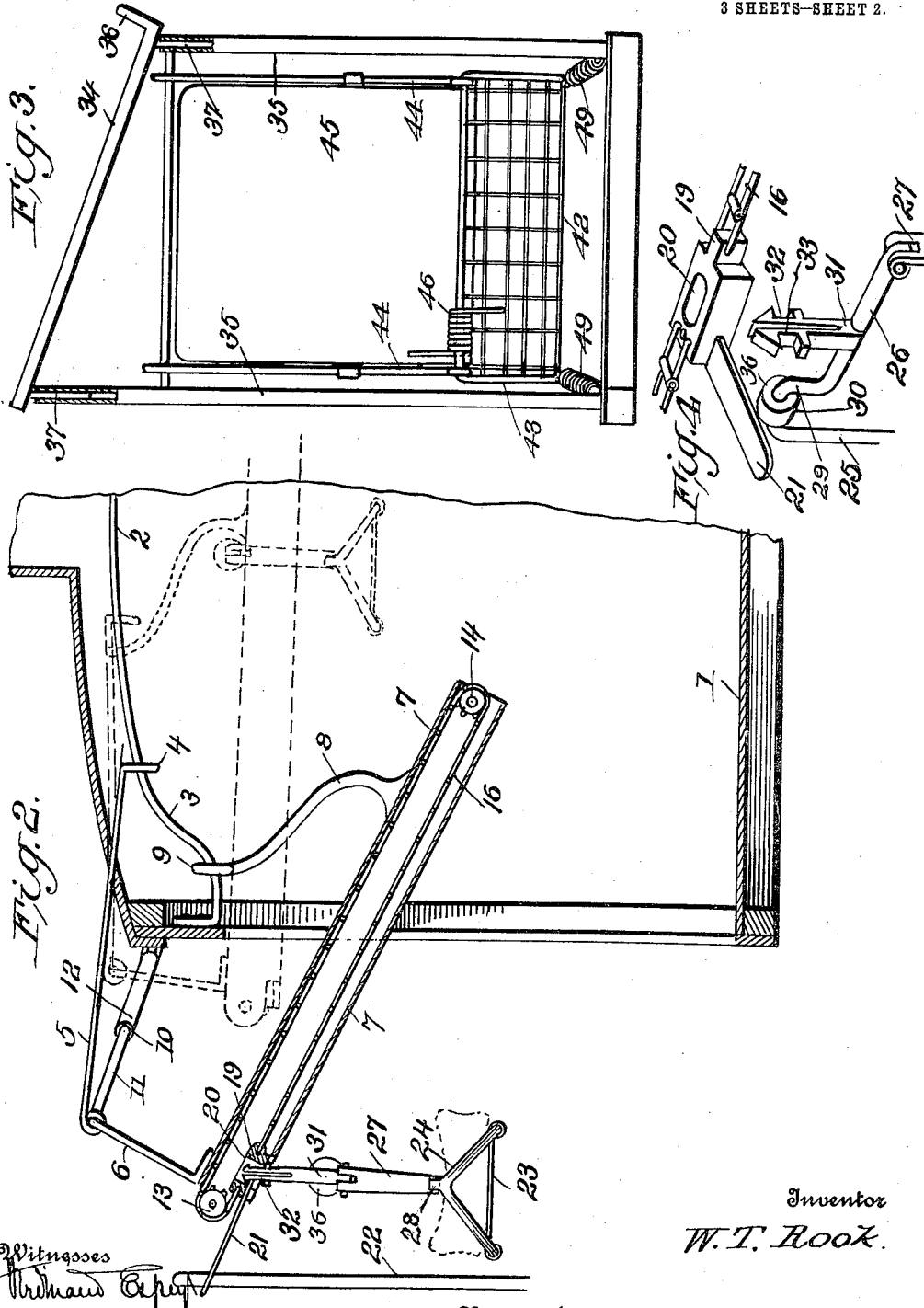
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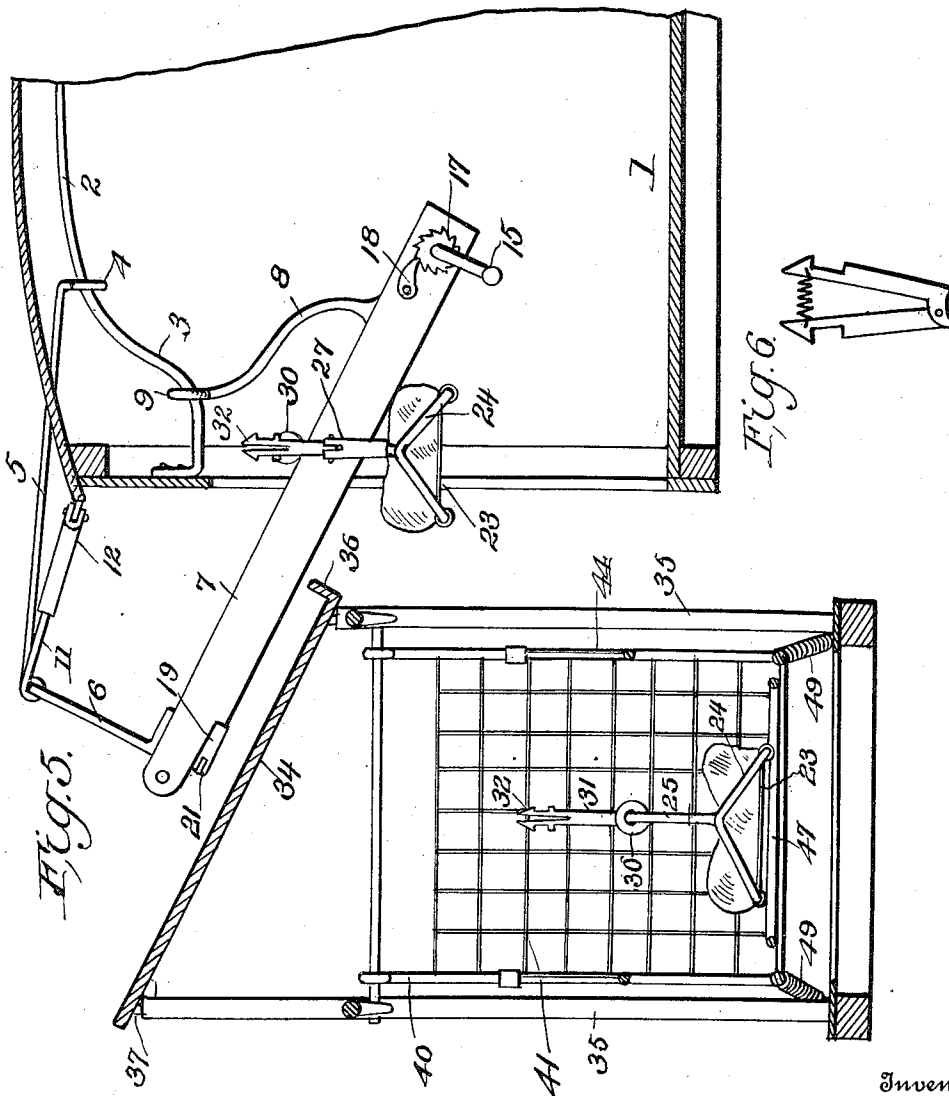
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

WILLIAM T. ROOK, OF LEEDEY, OKLAHOMA.

MAIL-BAG CATCHING AND DELIVERING MECHANISM.

1,060,632.

Specification of Letters Patent.

Patented May 6, 1913.

Application filed June 18, 1912. Serial No. 704,439.

To all whom it may concern:

Be it known that I, WILLIAM T. ROOK, citizen of the United States, residing at Leedeey, in the county of Dewey and State of Oklahoma, have invented certain new and useful Improvements in Mail-Bag Catching and Delivering Mechanisms, of which the following is a specification.

This invention relates to mechanism for catching and delivering mail-bags, and has for its object the provision of means whereby the bag to be delivered may be brought into the delivery position outside the car without any necessity of the operator approaching the door of the car or leaning therefrom.

A further object of the invention is to provide means whereby the mail-bag to be taken up by the car will be automatically brought into position within the same without any attention on the part of the operator.

A still further object of the invention is to provide improved means for receiving the delivered mail-bag whereby injury to the bag and its contents will be avoided, and the invention seeks, generally, to improve the construction and operation of mechanism for the stated purpose.

These stated objects, and such other objects as will incidentally appear from the following description, are attained in the use of mechanism of the type illustrated in the accompanying drawings, and the invention consists in certain novel features which will be particularly pointed out in the claims following the description.

In the drawings:—Figure 1 is a perspective view of a mail-bag catching and delivering mechanism showing the position of the same relative to the mail-car; Fig. 2 is a section taken transversely of the car, on a larger scale, showing the mechanism for delivering a bag, with a bag in position to be delivered; Fig. 3 is an enlarged end view of the bag-receiving mechanism; Fig. 4 is a detail perspective view of the means for suspending the carrier containing the bag to be delivered; Fig. 5 is a view similar to Fig. 2 and illustrating the manner in which a bag is received in the car; Fig. 6 is a detail view showing a modification of the bag suspending means.

The mail-car, 1, is of the usual construction and is equipped interiorly, adjacent the

roof, with a transverse support or rail 2 having a downturned portion 3 adjacent the side of the car. This rail 2 is engaged by an eye 4 at the inner end of a slidable brace 5 which extends through the roof of the car to project beyond the side of the same, as shown, the outer end of said brace being connected to the upper end of a standard or hanger 6 rising from the outer end of a tubular arm 7 which constitutes a rail or track for the incoming mail-bag carrier. A standard or support 8 rises from the said arm 7, near the inner or lower end thereof, and is provided at its upper end with an eye or guide 9 engaging the track 2 between the side of the car and the eye 4, as clearly shown. Between the upper end of the hanger 6 and the body of the car, at the top of the same, are telescopic braces 10, each consisting of a rod or male member 11 pivoted at its outer end to the said hanger 6 and a tubular member 12 receiving the said rod 11 and pivotally attached at its end to the car, a coiled spring being preferably located within the said tubular member to bear upon the rod 11 and thereby hold the same projected when the apparatus is moved from within the car to the delivery position, indicated in the drawings in full lines. These parts, thus far described, are substantially disclosed in Letters Patent No. 818,470, granted to me April 24, 1906, and detailed description of the operation thereof is deemed unnecessary at this time.

Within the tubular arm or track 7, at the outer end thereof, is journaled a roller 13 which may be a smooth rimmed idler or may be a sprocket pinion, as preferred, and at the inner or lower end of the said arm is journaled a sprocket wheel 14 having its shaft extended through the side of the arm and equipped with a crank handle 15 by which it may be operated. A sprocket chain 16 is trained around the said members 13 and 14, and a ratchet wheel 17 is provided on the shaft of the sprocket 14 against the outer surface of the arm 7 and is engaged by a pawl 18 mounted on said arm, whereby retrograde movement of the pinion and the sprocket chain engaged thereby will be prevented. Secured to the said sprocket chain, on the lower run thereof, is a clutch head or block 19 having a central recess or chamber 20 adapted to receive the clutch fingers rising from the mail-bag carrier to be delivered

ered, and pivoted in the outer end of the said block and adapted to engage the clutch fingers on the bag carrier is a latch 21 adapted to project beyond the end of the arm and be brought against a post or other tripping device 22 at the side of the car track.

The mail-bag carrier consists of a shelf 23 and a frame 24 secured to the corners of the said shelf and provided at one end with a short standard 25 rising therefrom and equipped at its upper end with a trolley arm 26 extending toward the opposite end of the frame. At the end of the said trolley arm 26 is pivoted a latch 27 which normally depends therefrom and engages a shoulder or stop 28 on the frame 24, and the said arm 26 is bent, adjacent the standard 25, to form an inverted U-shaped guide 29, upon the shoulder of which the trolley wheel or roller 30 is mounted.

Rising centrally from the arm 26 is a post 31 having its upper end split to form resilient clutch fingers 32 adapted to enter the recess or chamber 20 in the block 19 and provided on their outer faces with notches 33 adapted to receive the end of the latch or trip 21, as will be readily understood.

In Fig. 6, the clutch fingers are shown pivoted together and normally pressed apart by an interposed spring, the fingers in this form not being resilient in themselves.

The bag to be delivered is placed upon the shelf 23 and the fingers 32 are inserted in the opening or chamber 20 in the block 19 while the said block is at or near the lower end of the supporting arm 7. The mail-clerk then operates the crank handle 15 to cause the chain 16 to move the said block 19 to the outer end of the supporting arm, as shown in Fig. 2, the latch 21 then projecting beyond the end of the arm so that, as the car approaches the station, the said latch will be brought against the post or trip 22 and swung backward to release the bag carrier. The supporting arm 7 may be placed in its lower position before the mail-bag carrier is engaged in the clutch block 19, as the said block may be then more easily reached by the operator, but, if desired, the arm may be withdrawn into the car, as indicated in dotted lines in Fig. 2, and then projected after the bag carrier is attached.

The bag receiver comprises a platform or table 34 supported in an inclined position upon hollow posts 35 and provided with a ledge or flange 36 at its lower edge. The platform or table is provided with short projections 37 adapted to fit in the upper ends of the posts 35 and they may be secured at any desired height by means of set-screws 38 whereby the apparatus may be adjusted to the varying heights of cars, so that, a bag carrier placed upon the table or shelf will be in proper position to be taken up by the cars used upon the particular road equipped

with my improved apparatus. The posts 35 are connected by braces 39, and between the uppermost braces is suspended a swing 40 consisting of a central partition 41 and a bottom or basket 42 projecting to opposite sides of the said partition at the lower end of the same, the said basket and partition being preferably of a reticulated construction in order to obtain the necessary strength without undue weight, the ends of the basket 42 being upturned, as indicated at 43, and braces 44 connect the said upturned ends with the sides of the partition so as to reinforce the structure and prevent the ends of the basket being bent away from the partition through use.

Upon the ends of the basket are pivoted receiving and retaining plates 45, which are adapted to extend upwardly from the basket and have their lower ends arranged to project inwardly over the ends of the basket, as shown most clearly in Fig. 1, springs 46 coiled around the pivots of the said plates and bearing against the same and the basket tending to hold the plates in their upstanding positions. Trips in the form of bails 47 are pivoted upon the inner sides of the basket and are provided with shoulders or lugs 48 adapted to engage under the inner or lower ends of the adjacent plates 45 when the said plates are lowered into position to receive a bag carrier, as shown in Fig. 1. In this position, the tension of the springs 46 will hold the plate against the shoulders 48 with sufficient force to prevent the trip moving away from the plate, but when a carrier, with the mail-bag thereon, is delivered against the trip, the force of the impact will cause it to swing inward and downward upon its pivotal connections with the basket, whereupon the plate 45 will at once swing upward behind the carrier and the mail-bag to hold the same within the swing. As the swing is pivotally suspended within the supporting frame, consisting of the posts 35 and the braces connecting the same, it will yield to the impact of the carrier, and springs 49 are secured to the corners of the frame and to the sides of the swing, so as to promptly return the same to the normal position after the bag and its carrier have been delivered.

The bag to be delivered having been placed upon a carrier, and the said carrier arranged at the outer end of the supporting arm 7, as shown in Fig. 2 and as previously described, as the car approaches the station the latch 21 will be brought forcibly against the post or trip 22 and will be thereby swung backward, and consequently disengaged from the spring fingers 32. The carrier, being then unsupported, will drop from the arm 7 and the momentum imparted thereto by the car will carry it into the swing and against the bail 47, which will be thereupon released from the retaining plate 45, and the

said plate immediately resumes its upright position under the influence of the springs 46 so as to prevent the carrier and the bag rolling from the swing as the same oscillates under the impact of the bag and carrier.

To prevent the bag and its carrier falling upon the ground or rolling onto the car track, should the car be traveling at a slow speed and the momentum of the carrier be insufficient to take it into the swing, I provide the platform 50 around the swing, upon which the carrier will fall under these unusual conditions, as will be readily understood.

The bag to be taken up by the car is placed in a carrier which is supported upon the inclined shelf or table 34 against the ledge 36 thereof, the said carrier being thus arranged in the path of the supporting arm 7 in a plane between the hanger 6 and the side of the car. As the car moves forward, the arm 7, therefore, will strike the latch 27 of the carrier and cause the same to swing away from the stop 28 to admit the arm below the trolley arm 23 of the carrier. The said supporting arm 7 will then move to and against the standard 25, so as to sweep the said carrier off the table or platform 34, whereupon the trolley wheel 30 will drop into engagement with the upper side of the supporting arm and ride down the same, as shown in Fig. 5, the bag carrier being thereby carried to the standard 8 within the car. The latch 27, of course, gravitates to its original position after the arm 7 is cleared, so that the accidental detachment of the carrier from the supporting arm will be prevented. When the carrier reaches the standard 8, it will be entirely within the car and it may then be removed from the supporting arm, or the said arm with the carrier thereon may be fully withdrawn into the car, as indicated by the dotted lines in Fig. 2.

From the foregoing description, taken in connection with the accompanying drawings, it will be seen that I have provided a simple and efficient mechanism whereby a mail-bag may be delivered and another bag taken up without requiring stoppage of a mail-car or any reduction in the speed of the same. The delivery of the bag and the taking up of the second bag is entirely automatic, the only attention required of the operators being that necessary to place the bags in position and to remove the delivered bags. The bag to be delivered at a station will be effectually held against accidental release, as the latch 21 engaging the notch 33 in the side of the spring fingers 32 will engage under the shoulder presented by the end of the notch and will also tend to bind the fingers against the inner or rear wall of the chamber 20 within the clutch block 19. At the same time, this latch will be instantly disengaged from the fingers by its impact against the post 22, so

that when a car has reached the station the bag will be positively and automatically delivered.

Inasmuch as the bag carrier is placed in position at the lower end of the main supporting arm and then drawn to the outer upper end thereof by the operation of the sprocket chain 16, it is not necessary for the mail-clerk to expose any part of his person beyond the car, so that injury by blows from objects adjacent the track is positively prevented.

The table or shelf which supports the bag to be taken up by the car will positively support the same in position to be taken up, but will present such a large supporting surface that the necessity for nice adjustment in order to avoid failure of the supporting arm to properly engage the bag carrier as the car moves past the station is obviated.

What I claim is:—

1. In a mechanism for the stated purpose, a receiving device comprising a vertically oscillating swing, a retaining plate pivotally mounted on the swing and adapted to extend therefrom in the plane of movement of the same, and a trip mounted on the swing in position to engage said plate and adapted to be released therefrom under the impact of a delivered mail-bag.

2. In a mechanism for the stated purpose, a receiver comprising a swing, a retaining plate pivotally mounted upon the swing, a trip pivoted upon the swing adjacent the retaining plate and provided with offsets adapted to engage under the end of the said plate, whereby the retaining plate will be supported in an extended position, and springs bearing upon the said plate and upon the swing to turn the said plate into an upright position when the trip is released by a delivered bag.

3. In an apparatus for the purpose set forth, a platform constituting a rest for a bag carrier, a swing freely suspended at its upper end beneath said platform and adapted to receive a bag carrier, and means for delivering a carrier to the swing and taking up the carrier on the platform.

4. In a mechanism for the purpose set forth, a supporting arm, means on said arm for receiving a mail-bag carrier and releasably supporting the same, means on the arm for moving said carrier and said supporting means to the outer end of the said arm, and means for releasing said supporting means.

5. In a mechanism for the purpose set forth, the combination of a supporting arm, a conveyer housed within the said arm, means for actuating said conveyer, a clutch member upon said conveyer, a mail-bag carrier having means for engaging said clutch member, and means co-acting with said

clutch member to releasably support the mail-bag carrier.

6. In an apparatus for the purpose set forth, the combination of a tubular supporting arm, a conveyer housed therein, means for actuating said conveyer, a clutch member on said conveyer, a mail-bag carrier having resilient fingers adapted to engage said clutch member, and a latch pivotally mounted upon said member and adapted to engage said fingers.

7. Apparatus for the stated purpose comprising a receptacle, means for delivering a mail-bag to said receptacle, a retaining member normally extending upward at the side of the receptacle, and means on the receptacle to hold said retaining member in a lowered position, said means being arranged to be released by the delivery of a mail-bag into the receptacle.

8. Apparatus for the purpose set forth comprising a supporting arm, a conveyer

mounted on the arm, means for moving the conveyer along the arm, a carrier, means on the carrier to engage the conveyer, and a latch on the conveyer to releasably engage said conveyer-engaging means.

9. Apparatus for the purpose set forth comprising a supporting frame, a swing freely suspended in the frame, means for holding the swing normally at rest in an upright position, retaining plates mounted on the sides of the swing, means for holding said plates upright to retain in the swing a bag delivered thereto, and trips within the swing adapted to engage said plates and hold them extended to permit a bag to enter the swing.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM T. ROOK. [L. S.]

Witnesses:

FRED HEGHT,
C. E. BARTELS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."