No. 794,554. PATENTED JULY 11, 1905.

P. J. A. SCHNOOR.

MAIL BAG DELIVERY DEVICE.

APPLICATION FILED APR. 26, 1905.

2 SHEETS—SHEET 1.

FIG. 2.

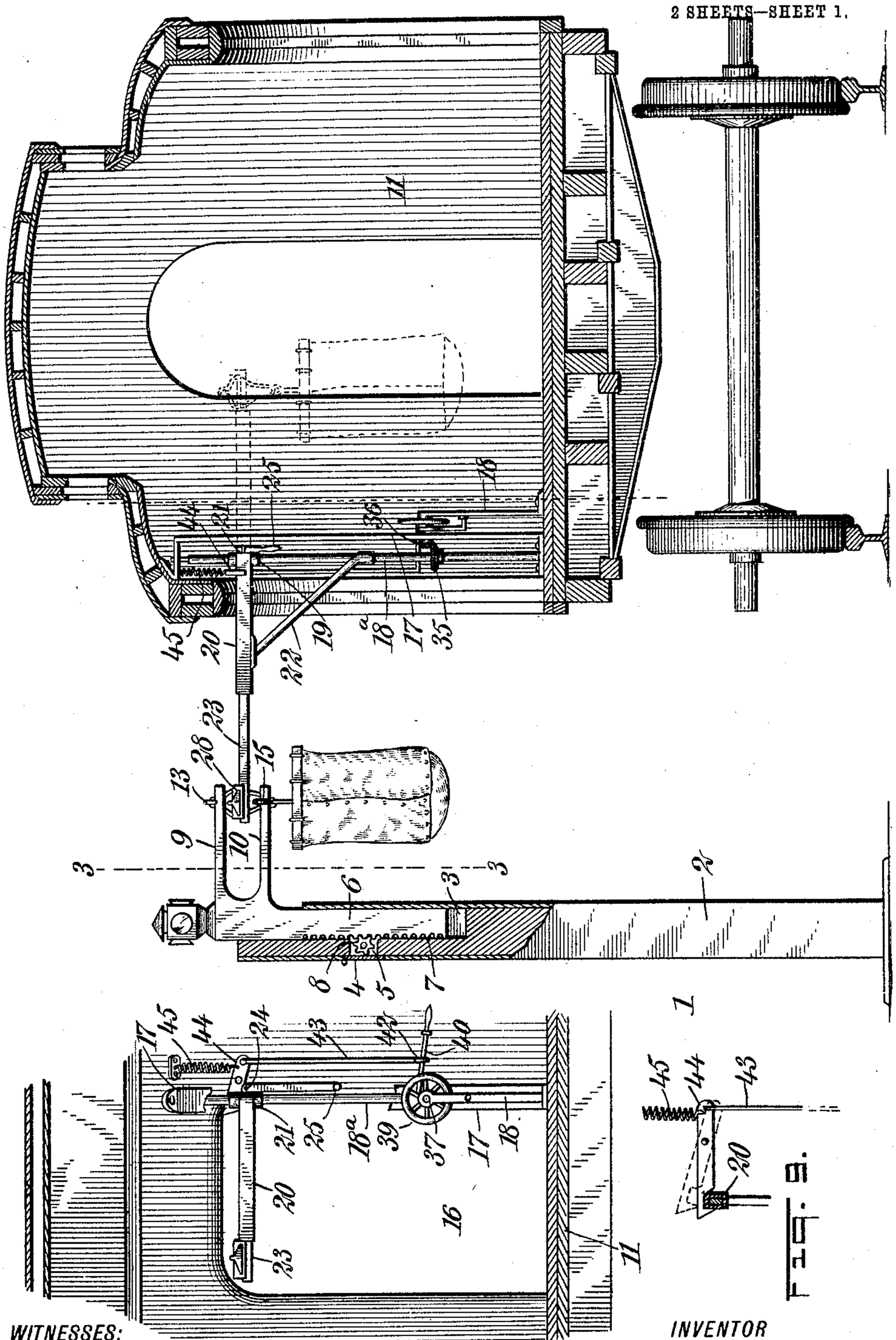

FIG. 3.

WITNESSES:

E. C. Ellis

INVENTOR

Peter J. Adolp Schnoor

BY Munn & Co

ATTORNEYS

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2 SHEETS—SHEET 2.

FIG. 3.

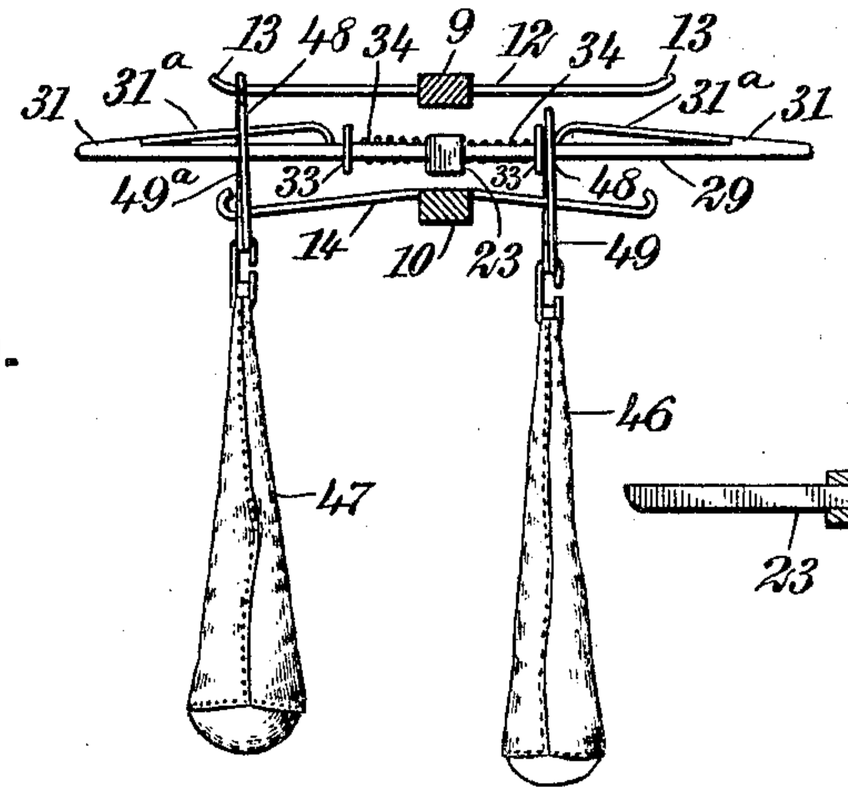


FIG. 8.

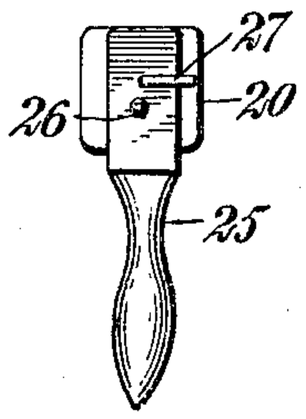


FIG. 7.

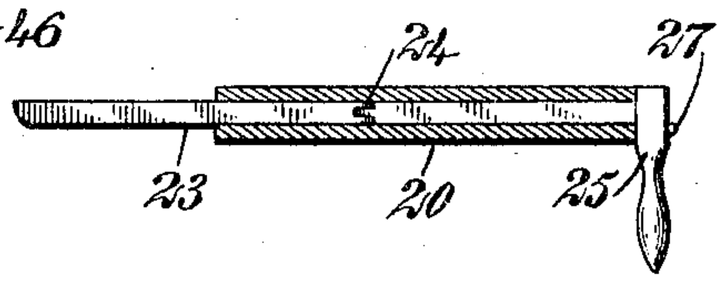


FIG. 4.

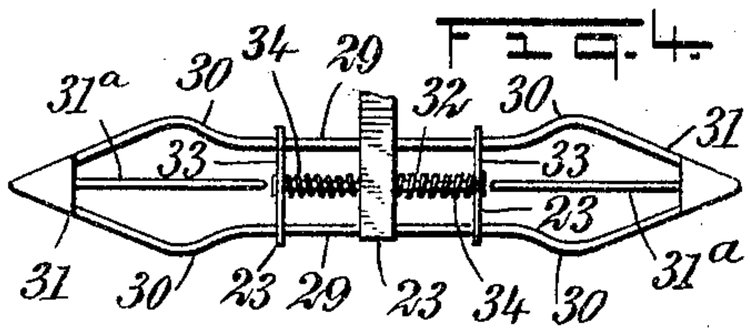


FIG. 5.

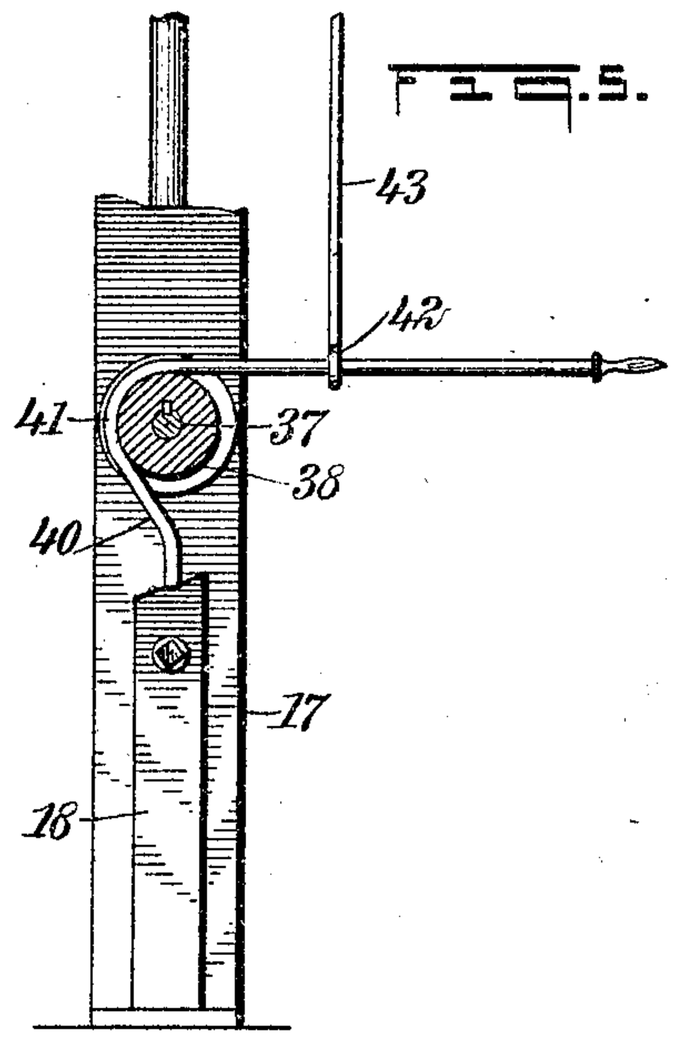
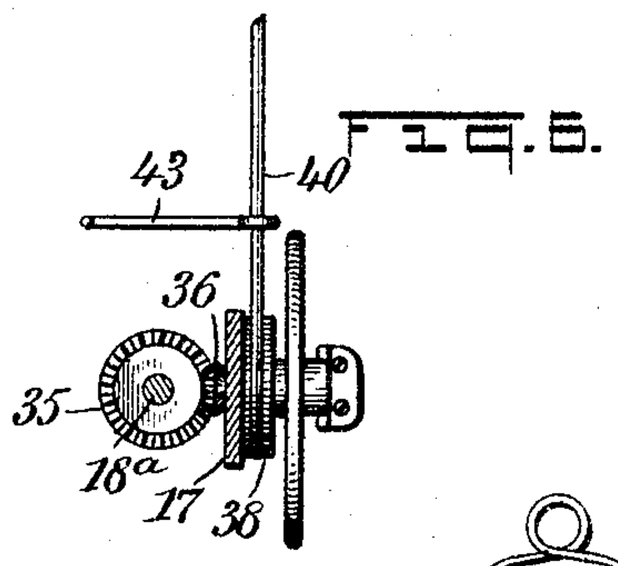


FIG. 6.



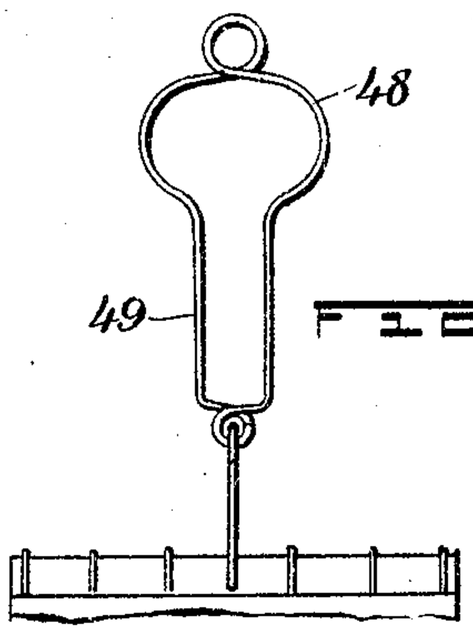


FIG. 10.

WITNESSES:

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No. 794,554. Patented July 11, 1905.

UNITED STATES PATENT OFFICE.

PETER J. ADOLP SCHNOOR, OF HOLSTEIN, IOWA.

MAIL-BAG-DELIVERY DEVICE.

SPECIFICATION forming part of Letters Patent No. 794,554, dated July 11, 1905.

Application filed April 26, 1905. Serial No. 257,447.

To all whom it may concern:

Be it known that I, PETER J. ADOLP SCHNOOR, a citizen of the United States, and a resident of Holstein, in the county of Ida and State of Iowa, have invented new and Improved Mail-Bag-Delivery Devices, of which the following is a full, clear, and exact description.

This invention relates to mail-bag-delivery devices for railway-cars; and it consists, substantially, in the construction, organization, and combinations of parts hereinafter particularly described, and pointed out in the claims.

One of the principal objects of the invention is to provide devices of this character which are simple in construction and organization, as well as effective and reliable in operation, and also possessing the capacity for long and repeated service.

A further object is to overcome numerous disadvantages and objections common to many devices of the kind hitherto devised and also to provide a strong and durable coöperative structure comprising comparatively few parts, not liable to get out of order, and which may be readily assembled for use and again dismantled, as occasion may require.

The above and additional objects are attained by means substantially such as are shown in the accompanying drawings, in which—

Figure 1 is a transverse sectional veiw of a railway mail-car and showing my improvement embodied in connection therewith. Fig. 2 is a detail view, in side elevation and part section, showing the retaining and operating devices for the swinging crane within the car, the crane being in released position and swung partly through the door-opening in the side of the car. Fig. 3 is a sectional view in detail on the line 3 3 of Fig. 1, indicating the manner in which the mail-bags are suspended both on the derrick at the station and the crane within the car to enable the bag at the station to be taken up by the crane and the one on the crane to be delivered upon the derrick. Fig. 4 is a plan view indicating more clearly the construction and organization of the elements constituting the head of the swinging crane within the mail-car. Fig. 5 is an enlarged part-sectional detail view of the brake devices for the swinging crane. Fig. 6 is a plan view of the brake devices, showing the upright member of the swinging crane in section. Fig. 7 is a sectional detail view of the horizontal member of the swinging crane. Fig. 8 is an enlarged end view of Fig. 7, showing more clearly the device for locking in extended position the extensible section of the horizontal member of the swinging crane. Fig. 9 is a detail view showing how the crane is engaged by the retaining device therefor, and Fig. 10 is a detail view to show the special form of suspensory for the mail-bags.

Before proceeding with a more detailed description it may be stated that in the form of my improvements herein shown I employ a specially-constructed derrick at each of the railway-stations or other places at which the mail-bags are to be delivered and taken up by the devices on the car, and within the car I employ a specially-constructed swinging crane, combined with retaining devices therefor, as well as operating devices and specially-constructed brake devices for preventing the motion of the car from causing the mail-bag to be carried too violently within the car as the crane is caused to be swung in an inward direction.

In operation a mail-bag is suspended from one of two specially-constructed supports on the derrick at the station or railway side, and a bag is also suspended from the head at the free or outer extremity of the extensible section of the member of the crane, after which the crane is swung or turned so as to carry the bag outwardly from the side of the car. As the car moves along the mail-bag on the one support on the derrick will be taken up by the head of the crane, and the mail-bag on the crane-head will be delivered to the other support on the derrick. During this action the horizontal member of the crane will be held rigidly in outward position by the retaining devices for the crane, but immediately the transfer of the mail-bags takes place the operator within the car releases the crane, whereupon the said horizontal member (to-

gether with the bag on the crane-head) will be caused to be swung or carried within the car by the powerful resistance of air which the bag encounters caused by the rapid motion of the car. By proper manipulation of the brake devices the bag may be arrested at a position within the car to be readily and quickly removed, as will hereinafter more fully appear. Accordingly as the motion of the car may be in one direction or the other—say east or west—the mail-bag to be taken up at the station is suspended from that portion of the support therefor on the derrick which extends or points in the direction of such motion, while the mail-bag to be delivered at the station from the car is suspended from that portion of the crane-head which extends or points in the reverse direction to that in which the car may be moving. The horizontal member of the crane is made extensible or telescopic to enable the bag to be held any desired distance outwardly from the car and also to enable the member to be shortened up to permit said member and its suspended bag to be readily swung through the door-opening in the side of the car. It should be added that a special suspensory device is employed on each mail-bag, and while I have herein represented my improvements in a certain preferred embodiment it will be understood, of course, that I am not limited thereto in precise detail, since immaterial changes therein may be resorted to coming within the scope of my invention.

Reference being had to the drawings by the designating characters marked thereon, 1 represents a derrick located at the station or other place at which the mail-bags are to be both taken up and delivered, the same comprising an upright 2, having a vertical recess 3 extending a suitable distance from the upper end thereof and also provided at one side with a small hinged door 4, which closes an opening 5, leading to said recess. Working vertically within this recess is a rack-bar 6, the teeth 7 of which are engaged by the teeth of a pinion 8, mounted to be turned within said opening 5, and extending at right angles from the upper end of said rack-bar are duplicate arms 9 and 10, (see Figs. 1 and 3,) which extend at right angles to the direction of motion of the mail-car 11. Fastened to the free end of the arm 9 is a mail-bag support 12, curved slightly upward at each end at 13, said support extending at right angles to arm 9, or in the direction of the motion of the car, with substantially equal portions thereof on either side of said arm 9. Fastened to the free end of the arm 10 is another mail-bag support 14, inclined slightly downward on either side of this arm and upturned or hooked at the ends 15, said support also extending in the direction of motion of the car and being located directly below the support 12.

Secured to the bottom of the car 11, close to one vertical edge of the opening 16 in the side of the car, is an upright frame 17, extending upwardly a suitable height and alongside of which is a short standard 18, also secured to the bottom of the car. (See Figs. 1 and 5.) Mounted to turn in the base and top of the frame 17 is the upright member 18^a of a crane 19, the other or horizontal member of which is constructed of a hollow section 20, rigid with the upright member 18^a at 21 and having a brace 22 connecting the same with said member. Slidable within the hollow section 20 is an extensible section 23, which is centrally jointed at 24 and provided at its inner end with a handle 25, which is capable of being turned on a pin 26, projecting from such end, thus to be carried within a catch 27, projecting from the corresponding end of the hollow section 20 to prevent the said section 23 from being accidentally forced inwardly from the position it occupies when the horizontal member is projected outwardly from the car with a mail-bag, the locked position of this section 23 being shown in Figs. 1, 7, and 8. Supported at the outer end of the extensible section 23 at right angles thereto is a crane-head 28, which extends for a suitable length beyond the section in either direction, said head being constructed of parallel rods 29, bent slightly outwardly from each other at 30 on either side of said section 23 and brought together at the ends substantially in the form of arrows 31. (See Fig. 4.) Located intermediate of the parallel rods 29 is a shorter rod 32, also supported at the outer end of the extensible section 23, said shorter rod having mounted on each of its ends a cross-head 33, which is slidable on the adjacent portions of said parallel rods 29. Working on each portion of the shorter rod 32 is a spring 34, one end of which has its bearing against one side of the extensible section 23 and the other end of which bears against the corresponding cross-head. Extending inwardly from each arm 31 is an upwardly-curved spring 31^a, the inner end of which is free.

The upright member 18^a of the crane is provided at 35 with a beveled gear-wheel which is engaged by a beveled pinion 36, mounted on a shaft 37, supported by frame 17 and standard 18, said shaft also having mounted thereon a brake-drum 38 and an operating hand-wheel 39. Fastened to said standard 18 is the lower end of a brake-lever 40, which is curved at 41 to fit partly around said brake-drum, said lever having connected thereto at 42 the lower end of a rod 43, the upper end of which is connected to one arm of a retaining device 44, having in the other arm thereof a notch in which a portion of the horizontal member of the crane is received to hold the crane in outward position, the said device being normally held in horizontal po-

sition by means of a spring 45. (See Figs. 1, 2, and 9.)

The operation is as follows: A mail-bag 46 is hung upon that portion of the head of the crane extending in the reverse direction to the motion of the car, and another bag 47 is suspended upon that portion of the support 12 on the derrick which extends in the same direction as the motion of the car. The crane, with its bag, is swung outwardly by manipulating the beveled-gear connections for the upright member of the crane, and the said crane is engaged to be held in this position by the retaining devices already described. As the car passes the derrick the forward arrow of the crane-head passes through the loop 48 of the suspensory 49 of bag 46, and said loop rides said arrow until it passes behind the raised inner end of the adjacent spring 31^a, the bag in this way being caught by the crane-head and lifted from the derrick, and the corresponding cross-head and spring therefor affording a yielding resistance for the bag. Immediately following this action the rearward arrow 31 passes through the suspensory 49^a (same in form as 49) of bag 47, and in virtue of the obstruction afforded by the arms 9 and 10 of the derrick said bag 47 is caused to be dropped upon the rearwardly-extending portion of the mail-bag support 14 of the derrick. The operator then presses down on brake-lever 40, which releases the retaining device from engagement with the derrick, as is apparent, and then the crane and its bag will be caused to be swung within the car, as already explained. This pressure on lever 40 also produces the desired braking effect for the purpose also already explained, and it may be stated that before the lever 40 is operated the jointed extensible section is drawn inwardly, so as to shorten up the horizontal member of the crane for the purpose hereinbefore set forth, the inner portion of the section being then turned downwardly, so as not to be in the way of the operator.

By constructing the upper part of the derrick with the rack-bar it is apparent that the said upper part may be raised or lowered, as desired, through the medium of the operating-pinion for said rack-bar, thus enabling a ready conformability to variations of track and wayside levels.

It will of course be understood that the swinging crane and its auxiliaries may be supported at either side within the car, according to the direction in which it may be moving.

Having thus described the invention, I claim as new and desire to secure by Letters Patent—

1. In mail-bag-delivery devices for cars, a derrick at the station of delivery, having a support for a suspension-loop for a bag, and also a support for a similar loop for another bag, extending in the reverse direction, a swinging crane on the car having a horizontal member provided with a head extending from either side thereof at right angles, means for retaining the said horizontal member outwardly from the car at right angles to the side thereof, devices for operating said means to release the horizontal member to permit inward movement thereof, and a brake actuated from said devices for regulating such inward movement.

2. In mail-bag-delivery devices for cars, a derrick at the station of delivery, having a support for a suspension-loop for a bag, and also a support for a similar loop for another bag, extending in the reverse direction, a swinging crane on the car having a horizontal member provided with a head extending from either side thereof at right angles, means for retaining the said horizontal member outwardly from the car at right angles to the side thereof, devices for operating said means to release the horizontal member to permit inward movement thereof, a brake actuated from said devices for regulating such inward movement, said brake comprising a drum, and a hand-lever bent to partially embrace the drum on the application of pressure to the lever.

3. In mail-bag-delivery devices for cars, a derrick at the station of delivery, having a support for a suspension-loop for a bag, and also a support for a similar loop for another bag, extending in the reverse direction, a swinging crane on the car having a horizontal member provided with a head extending from either side thereof at right angles, means for retaining the said horizontal member outwardly from the car at right angles to the side thereof, devices for operating said means to release the horizontal member to permit inward movement thereof, a gear-wheel on the crane, and an independently-mounted similar wheel engaging the same for effecting such inward movement.

4. In mail-bag-delivery devices for cars, a derrick at the station of delivery, having a support for a suspension-loop for a bag, and also a support for a similar loop for another bag, extending in the reverse direction, a swinging crane on the car having a horizontal member provided with a head extending from either side thereof at right angles, means for retaining the said horizontal member outwardly from the car at right angles to the side thereof, and devices for operating said means to release the horizontal member to permit inward movement thereof, said derrick comprising parallel arms from which the aforesaid supports extend at right angles in either direction.

5. In mail-bag-delivery devices for cars, a derrick at the station of delivery, having a support for a suspension-loop for a bag, and also a support for a similar loop for another

bag, extending in the reverse direction, a swinging crane on the car having a horizontal member provided with a head extending from either side thereof at right angles, means for retaining the said horizontal member outwardly from the car at right angles to the side thereof, devices for operating said means to release the horizontal member to permit inward movement thereof, said head comprising parallel rods extending to either side of the horizontal member and bent together at the ends to form arrows, an intermediate shorter rod also extending to either side of said horizontal member, cross-heads movable thereon and on said parallel rods, upwardly-inclined springs extending inwardly from the ends of the head, and cushioning-springs for the cross-heads carried by said intermediate rod.

6. In mail-bag-delivery devices for cars, a derrick at the station of delivery, having a support for a suspension-loop for a bag, and also a support for a similar loop for another bag, extending in the reverse direction, a swinging crane on the car having a horizontal member provided with a head extending from either side thereof at right angles, means for retaining the said horizontal member outwardly from the car at right angles to the side thereof, and devices for operating said means to release the horizontal member to permit inward movement thereof, said derrick comprising an upright having a vertical recess in its upper part, a vertically-adjustable member having a rack-bar working in said recess, and a pinion located in the opening in the side of the upright and engaging said rack-bar.

7. In mail-bag-delivery devices for cars, a derrick at the station of delivery, having a support for a suspension-loop for a bag, and also a support for a similar loop for another bag, extending in the reverse direction, a swinging crane on the car having a horizontal member provided with a head extending from either side thereof at right angles, means for retaining the said horizontal member outwardly from the car at right angles to the side thereof, and devices for operating said means to release the horizontal member to permit inward movement thereof, said horizontal member being hollow and provided with an extensible section.

8. In mail-bag-delivery devices for cars, a derrick at the station of delivery, having a support for a suspension-loop for a bag, and also a support for a similar loop for another bag, extending in the reverse direction, a swinging crane on the car having a horizontal member provided with a head extending from either side thereof at right angles, means for retaining the said horizontal member outwardly from the car at right angles to the side thereof, and devices for operating said means to release the horizontal member to permit inward movement thereof, said horizontal member being hollow and provided with a jointed extensible section.

9. In mail-bag-delivery devices for cars, a derrick at the station of delivery, having a support for a suspension-loop for a bag, and also a support for a similar loop for another bag, extending in the reverse direction, a swinging crane on the car having a horizontal member provided with a head extending from either side thereof at right angles, means for retaining the said horizontal member outwardly from the car at right angles to the side thereof, and devices for operating said means to release the horizontal member to permit inward movement thereof, said horizontal member being hollow and provided at its inner end with a catch, and being also provided with a jointed extensible section having at the inner end thereof a rotatable handle adapted to be engaged by said catch.

10. In mail-bag-delivery devices for cars, a derrick at the station of delivery, having a support for a suspension-loop for a bag, and also a support for a similar loop for another bag, extending in the reverse direction, a swinging crane on the car having a horizontal member provided with a head extending from either side thereof at right angles, means for retaining the said horizontal member outwardly from the car at right angles to the side thereof, and devices for operating said means to release the horizontal member to permit inward movement thereof, said means being spring-controlled.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PETER J. ADOLP SCHNOOR.

Witnesses:
CORNELIUS H. LOOP,
ALBERT G. MERKLEY.