

W. M. CORTHELL.
MAIL COLLECTING AND DELIVERING DEVICE.
APPLICATION FILED NOV. 28, 1908.

929,659.

Patented Aug. 3, 1909.

3 SHEETS—SHEET 1.

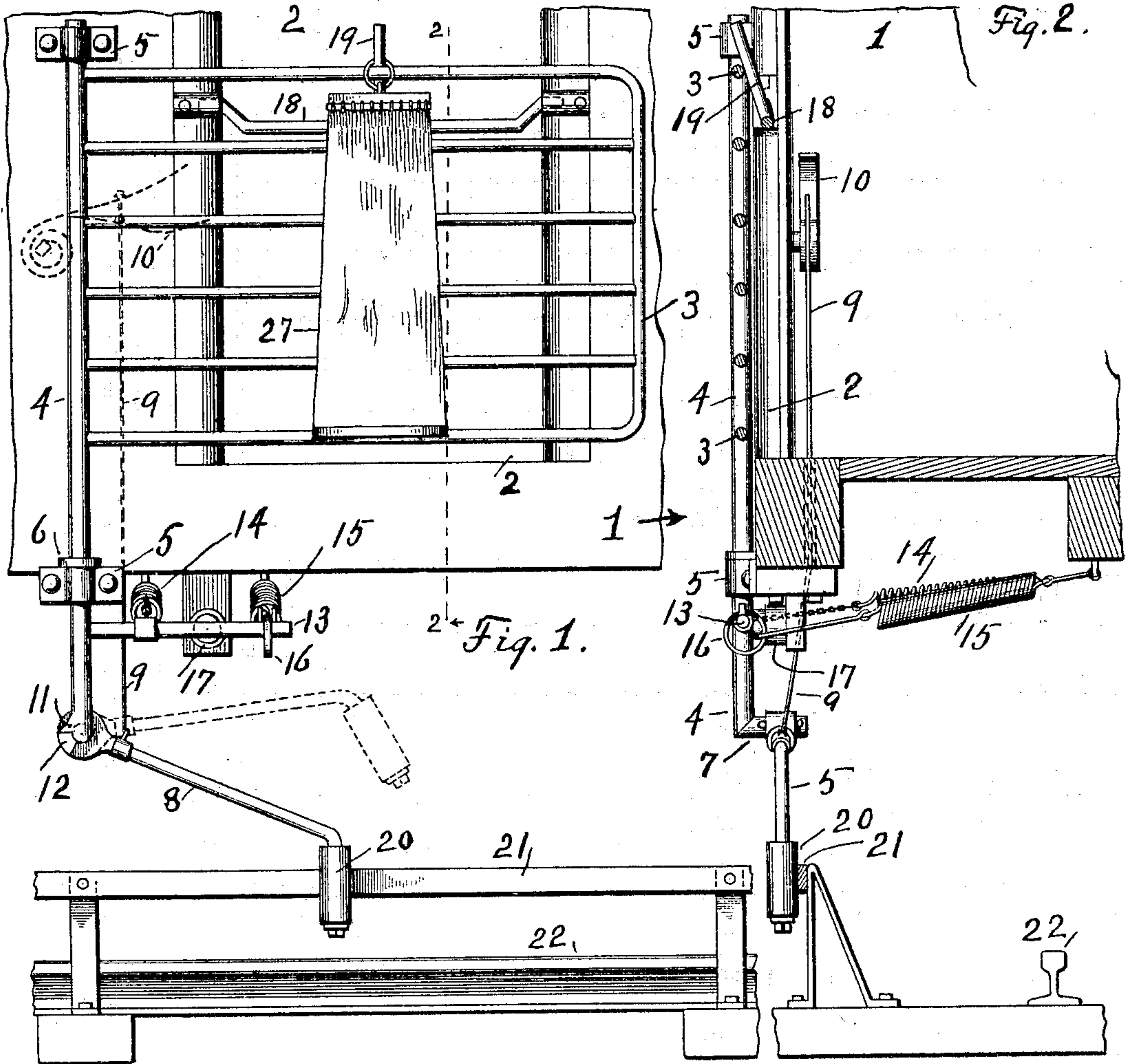


Fig. 3.

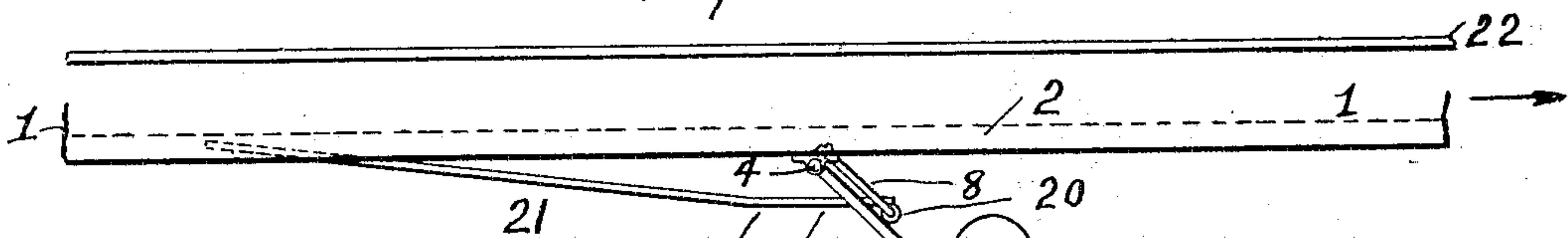
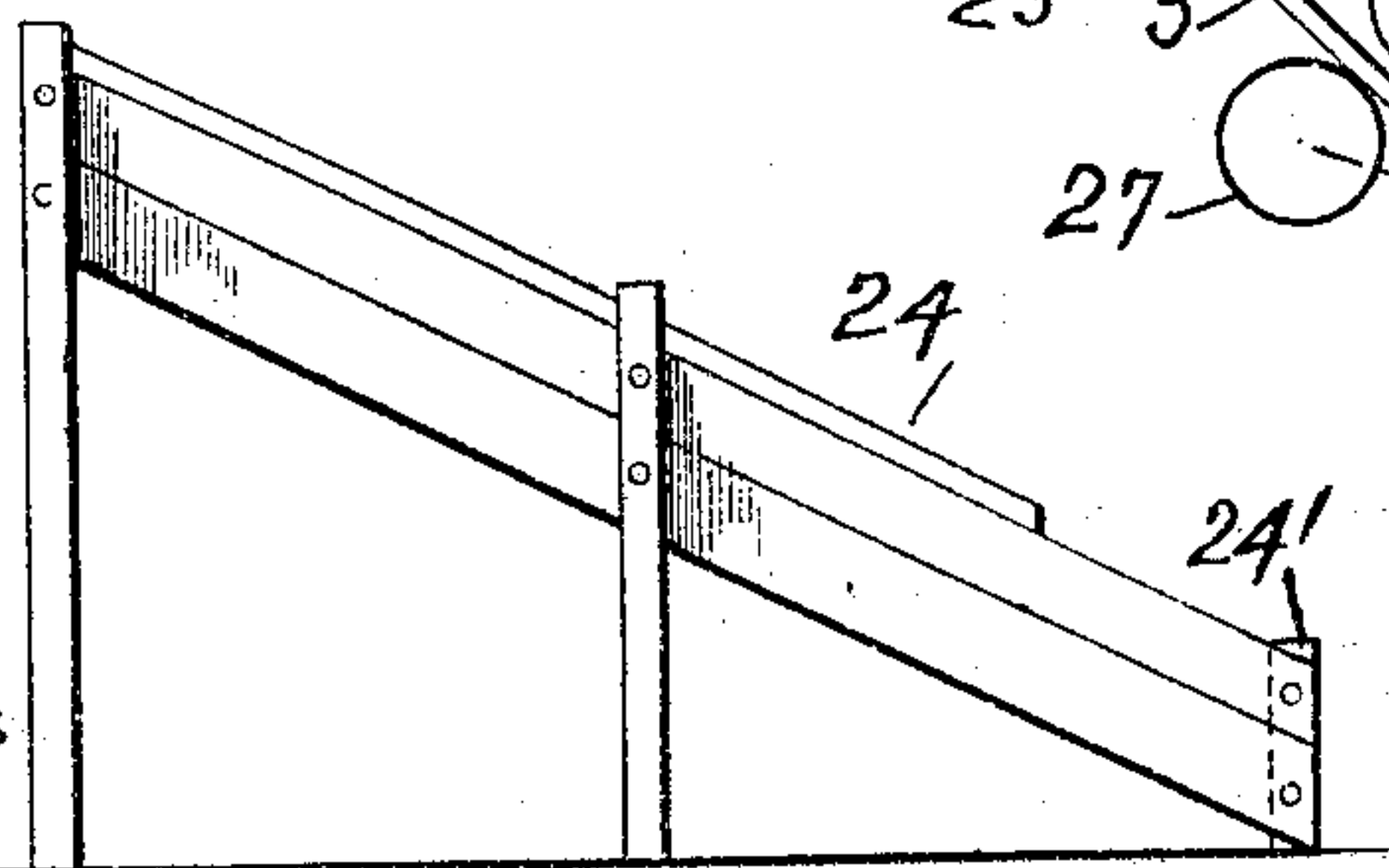


Fig. 4.

Witnesses
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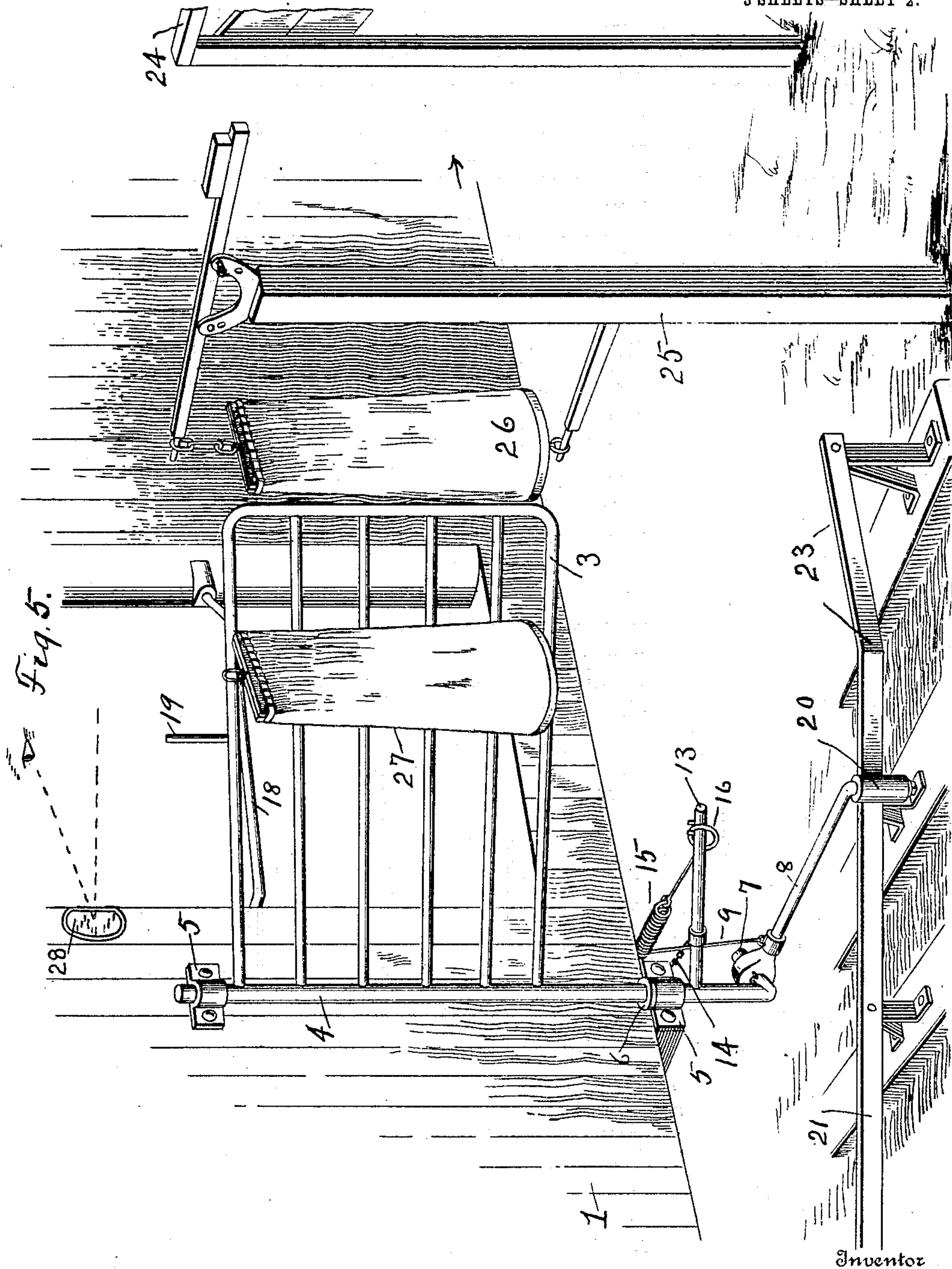
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3 SHEETS—SHEET 2.



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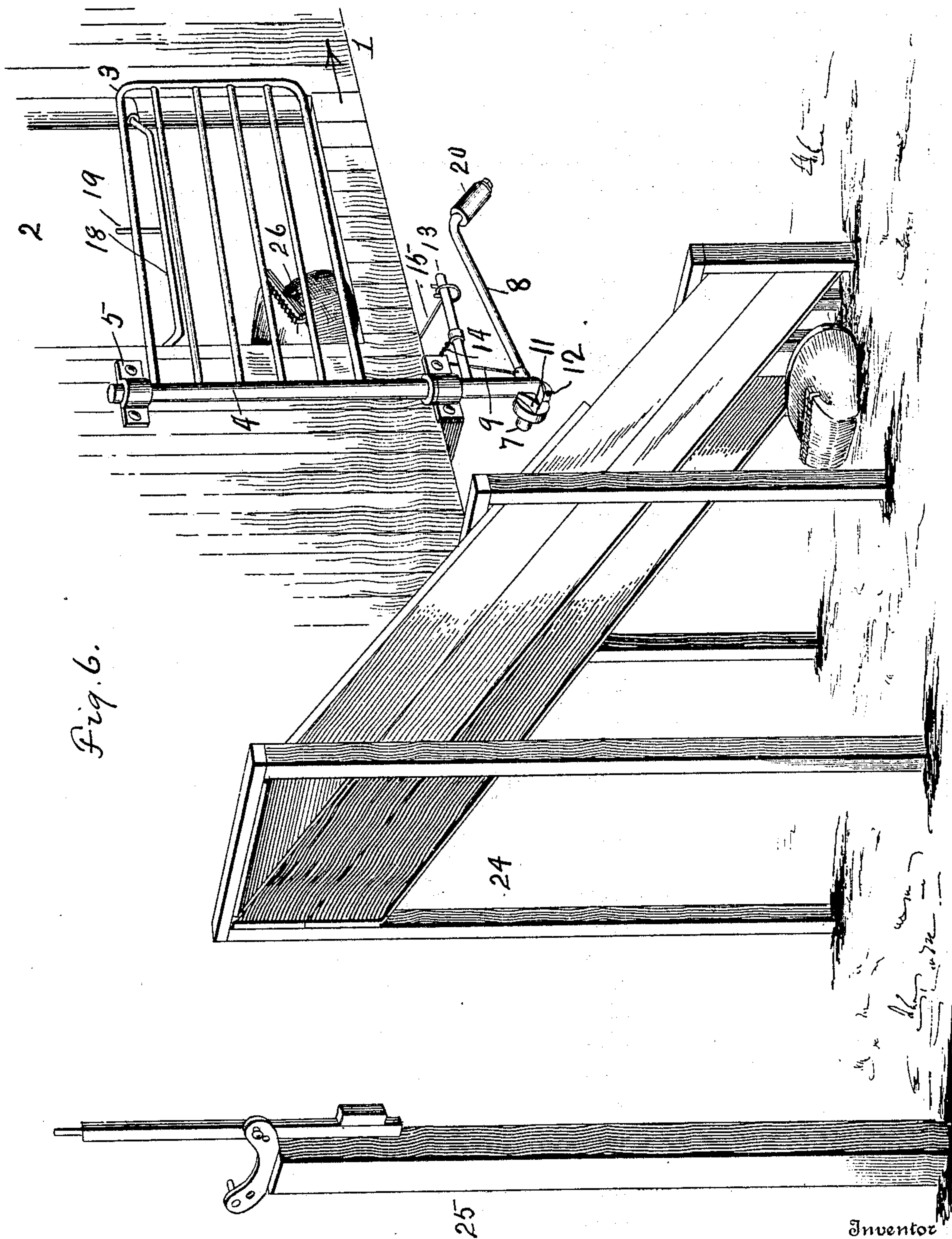
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

WILLIAM M. CORTHELL, OF CHICAGO, ILLINOIS.

MAIL COLLECTING AND DELIVERING DEVICE.

No. 929,659.

Specification of Letters Patent.

Patented Aug. 3, 1909.

Application filed November 28, 1908. Serial No. 464,963.

To all whom it may concern:

Be it known that I, WILLIAM M. CORTHELL, a resident of Chicago, in the county of Cook and State of Illinois, have invented
5 certain new and useful Improvements in Mail Collecting and Delivering Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in
10 the art to which it pertains to make and use the same.

This invention relates to means for delivering mail or packages from moving cars or carriages, and for taking onto such cars
15 mail or other packages, and the main object of the invention is to provide efficient, economical and reliable devices for the purpose named.

The invention consists in the construction hereinafter described and particularly
20 pointed out.

In the accompanying drawing which illustrates the invention and forms a part of the specification;—Figure 1 is a partial side
25 view of the apparatus; Fig. 2 is a vertical section of the same on line 2, 2 of Fig. 1; Fig. 3 is a diagrammatic view indicating relative situations of different parts; Fig. 4 is a side view of a receptacle designed to
30 receive bags or the like thrown from a car; Figs. 5 and 6 are perspective views showing operation of the mail deliverer and catcher.

Numeral 1 indicates a car having a side doorway 2.

35 3 denotes a mail or package deliverer comprising, preferably, a rectangular gate-like body, including several cross rods, said body being pivotally mounted on the car near the side of the doorway toward the rear end of
40 the car by means of the vertical rotary shaft 4 supported in bearings 5. The collar 6 rigid with the shaft supports the latter. Said shaft extends a short distance below the bottom of the car, and terminates in an
45 end 7 bent inward at right angles. This end serves as a pivot bearing for an operating arm 8 suitably secured thereon, and in its normal situation standing about under the edge of the car, and elevated, as shown in
50 dotted lines in Fig. 1, being held up by a wire rope, chain, or the like, 9, which is secured within the car to a strong spring 10 secured to the inside of the car wall at proper height. The free end of the spring
55 is extended and serves as a handle which can be depressed by an attendant when desired

to move the arm to full line position. Near the bottom of the shaft 4 is formed an integral lug 11 which is adapted to cooperate with a similar lug 12 on the bearing sleeve
60 of arm 8 in such manner as to arrest the descent of the arm when it reaches its full line position.

13 is an arm rigid with shaft 4 and extending parallel with the edge of the car.
65 To this arm is secured a spring 14 the rear end of which is secured to the car bottom. The tension of this spring is sufficient to normally hold the body 3 in place in front of the doorway, but will yield sufficiently to
70 allow the body to be swung back against the side of the car away from the doorway when desired. Numeral 15 denotes a stronger spring secured to said arm 13 near its free
75 end, preferably by a connection which permits ready detachment, for example, by means of a ring 16 resting between lugs or pins, as shown. The opposite end of this
spring is also connected to the car bottom. Spring 15 normally has little or no tension,
80 but receives tension from the outward swing of body 3. Springs 14 and 15 cooperate in returning said body after it has been swung outwardly to the position indicated in Figs.
3 and 5. In case of failure of either spring
85 the other would be sufficient to return the body and prevent failure of operation. Obviously the number and arrangement of the springs can be varied without departing
90 from the invention.

17 is a buffer preferably in the form of a dash pot, to receive the blow of the body on its return movement.

Supported in the doorway by a pivoted rod 18, is a pin 19 extending upward and
95 adapted to rest against the top of body 3, and is a support for the bag to be delivered from the car, the bag being pulled therefrom by its outward swing.

20 denotes a vertical roller on the free
100 end of arm 8, and in its lowered position is adapted to ride along the side of a cam rail 21 remote from the near track rail 22 adjacent to which it is supported.

Beside the track at points where mail is
105 to be delivered and collected, or either, are arranged supplemental rails or bars, 21, hereinafter referred to as cam rails, which are preferably supported about nine inches above the track rails. The near end of the
110 cam rail is near enough to the track rail to extend under the edge of a passing car and

inside of roller 20 in such manner that said roller will surely pass outside of the cam rail, and will contact therewith two or three feet from such near end, that is, at the point
 5 where the cam rail extends out from under the car. The cam rail inclines gradually and regularly away from the track, as indicated in Fig. 3, for a considerable distance, preferably 11 or 12 feet, with the arm 8 and
 10 other parts proportioned substantially as indicated in the drawing. At said point the cam rail is bent into a plane parallel with the track rail for about two feet at 23. The cam rail is shown supported by brackets on
 15 elongated ties. One advantage of having the operating roller act on the side of the cam rail remote from the track rails is that that side is much less liable to be covered with snow thrown from the track.

20 Numeral 24 in Figs. 3 and 4 denotes a receptacle for receiving mail thrown from the car. It is placed at an angle to the track and in advance of the crane for supporting mail to be taken on to the car. The recep-
 25 tacle is made of plank, the top having a downward inclination away from the track, and the sides being partly or wholly closed. At the small end is a strong post 24' and an opening for removal of the delivered pack-
 30 age or bag.

25 denotes a post at top of which is a pivoted crane-arm adapted to support a bag, 26, or the like, beside the track at the same elevation as body 3 on the car, and at such
 35 distance from the car that it will be brought behind the body 3 by the advance of the car when the body 3 is out in position indicated in Figs. 3 and 5. 27 denotes a bag being delivered, its path of movement being indi-
 40 cated by an arrow. In said Fig. 3 roller 20 is about to leave the cam rail when body 3 will be drawn back to the car by its springs, carrying the bag 26 into the doorway.

Operation; Before reaching a cam rail an attendant on the car places the bag or bags
 45 to be delivered on pin 19, the bag hanging against the outer side of body 3. He then depresses spring arm 10 carrying roller 20 into the horizontal plane of the cam rail, and
 50 holds it there until it travels along said rail, the effect being to swing arm 8 and body 3 out from the side of the car at an angle of about 45 degrees, as indicated in Figs. 3 and 5, the turning movement, owing to the length
 55 and arrangement of the cam rail, being prolonged to reduce the strain on operating parts below the danger line. Said swing of body 3 pushes bag 27, indicated in Fig. 1, and by a circle in Fig. 3, away from the car, draw-
 60 ing it from pin 19 and leaving it free for delivery. Fig. 3 shows the roller 20 about to leave the rail, and bag 27 starting in the direction of the arrow for receptacle 24, body 3 being advanced out of the way by move-
 65 ment of the car. The exact angle taken by

the bag will depend on the proportions of the arm, body, etc., but being once determined remains substantially the same whatever the speed of the car. The bag will enter the open end of the receptacle and
 70 will be safely brought to rest therein by the inclined top, as above explained. As soon as roller 20 leaves the rail it, together with body 3, is carried back to normal po-
 75 sition by springs 14, 15, or otherwise. If a bag 26 had been hung on crane 25, the described return movement of body 3 pushes it from its support on the crane, carrying it toward the car. The bag will move in such manner as to bank against the
 80 rear door jamb, and if the car door is closed, as it may be, the bag will be held there until the door is opened, otherwise it will drop to the floor. In case no bag is to be delivered from the car, the attendant watches to see
 85 if there is a bag on the crane to be collected, either by looking forward directly, or preferably by looking into a mirror 28 supported on the rear door jamb and facing forward, as indicated in Fig. 5. Or if it is dark or
 90 stormy he may lower roller 20 before reaching the cam rail, and if there is a bag it will be caught, otherwise the apparatus will be operated idly.

Having thus described the invention what
 I claim is;—

1. The combination of a car, a pivoted deliverer for mail or the like, a cam rail, a connecting device between the deliverer and said cam rail to pivotally move the deliverer,
 100 and automatic means for returning the deliverer to normal position.

2. The combination of a car, a movable deliverer for mail or the like, a cam rail, a connecting device between the deliverer and
 105 said cam rail to move the deliverer, means for returning the deliverer to normal position, and means to support a bag or package to be taken onto the car in position to be carried into the car doorway by such return
 110 movement.

3. The combination with a car having a doorway, of a mail-handling body hinged to the car and adapted to stand across the door-
 115 way, a cam rail at an angle to the car track, a body-swinging lever operated by said rail, and means supporting mail in position to be moved by said body.

4. The combination with a car, of a mail-handling body pivotally supported on the
 120 car, said body comprising a vertical shaft a part of which extends below the car, an operating arm secured thereto below the car, and an arm-operating cam rail supported at an angle to the car track.
 125

5. The combination with a car, of a mail-handling body pivoted on the car, a body-operating pivoted arm, a cam rail, and means for raising and lowering said arm from or into operative position.
 130

6. The combination with a car, of a mail-handling body pivoted on the car, a body-operating pivoted arm, a cam rail, and a spring normally holding said arm out of the path of the cam rail.

7. The combination of a car, a swinging mail-handling body, an operating arm, and a cam rail supported between the plane of the bottom of a car and the plane of the top of the track rails, said arm and cam rail being relatively so situated that the arm shall contact with the cam rail on its side most remote from the track rails.

8. The combination of a car, a swinging mail-handling body, an operating arm, and a cam rail at an angle to movement of the car and crossing the path of movement of the operating arm, said arm and cam rail being relatively so situated that the arm shall contact with the cam rail on its side most remote from the track rails.

9. The combination of a car, a swinging-mail handling body, an operating arm, and a cam rail having an inclined part to swing said arm and body, and a part parallel with the track at its far end to hold the body out until a bag to be caught is brought behind said body.

10. The combination of a car, a mail-handling body comprising a vertical shaft extending below the car, said shaft having a right angle extension at its lower end, an operating arm pivotally supported on the extension, and means for operating the arm.

11. In a device of the character described,

the vertical shaft, an operating arm, a second arm fixed to the shaft, and one or more springs between the second arm and a car on which the device is carried.

12. For use on a car, a mail-handling body comprising a shaft extending below such car, and an operating arm movable up and down independently, and movable horizontally with said shaft, and means for moving the arm in both directions.

13. A car, a mail-handling means including operating devices, means for supporting mail beside the track, and a mirror on the car in position to show the mail support in time for an attendant to actuate the device if there is mail on the support.

14. A mail-handling body having a shaft, an operating arm pivotally connected to said shaft by a horizontal bearing, a cam rail, and means for limiting the descent of said arm.

15. A car, a mail-handling body pivotally mounted near the car door, means for supporting mail beside the car track, and automatic means for swinging said body out from the car and back to the same to collect said mail whether the car door is open or closed.

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

WILLIAM M. CORTHELL.

Witnesses:

W. N. WOODSON,

EVELYN R. MILLS.