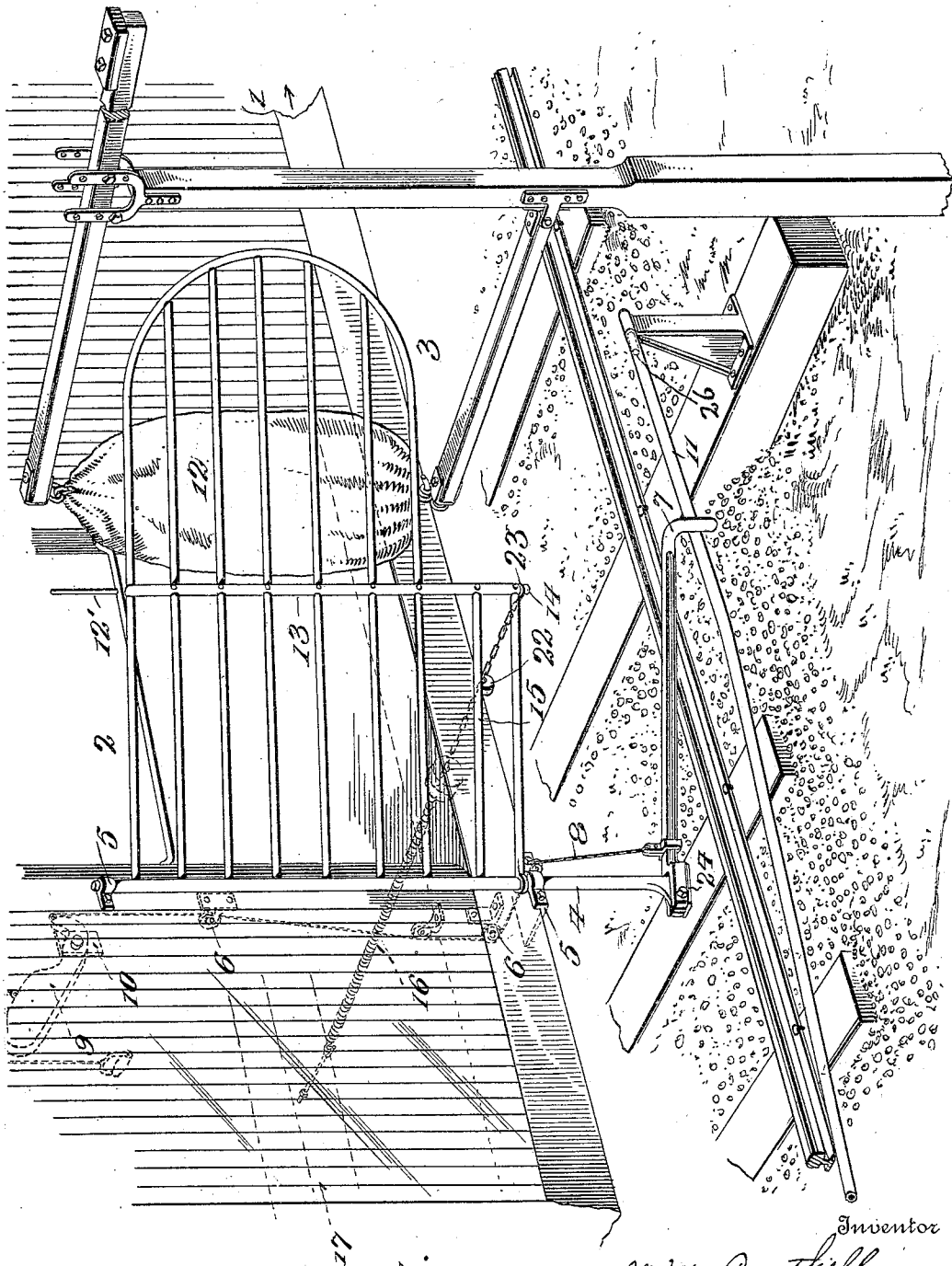


W. M. CORTHELL.
MAIL COLLECTING DEVICE.
APPLICATION FILED OCT. 6, 1909.

959,467.

Patented May 31, 1910.

2 SHEETS—SHEET 1.



Witnesses
Helge Ott Murray
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Fig. 1.

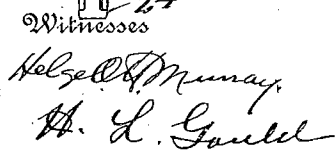
By

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

WILLIAM M. CORTHELL, OF CHICAGO, ILLINOIS, ASSIGNOR TO RAILWAY AUTOMATIC MAIL DEVICE CO., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

MAIL-COLLECTING DEVICE.

959,467.

Specification of Letters Patent.

Patented May 31, 1910.

Application filed October 6, 1909. Serial No. 521,303.

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 certain new and useful Improvements in Mail-Collecting 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 the art to which it pertains to make and use the same.

This invention relates to mail or package collecting and delivering devices for moving cars.

The main object of the invention is to improve such devices of the general character set forth in my prior Patents, Numbers 923,336, June 1, 1909, and 929,659, Aug. 3, 1909, that is, comprising a mail-handling body which swings outward from a car doorway to deliver mail, and back to the same to collect mail.

Particularly the invention relates to the structure of the gate-like mail-handling body; to means for limiting outward movement of said body, and for returning said body to normal position in front of the doorway; and to controlling means for the operating arm.

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

In the accompanying drawings which illustrate the invention and form a part of the specification,—Figure 1 is a perspective view showing the apparatus as it would appear just before collecting the bag; Fig. 2 is a vertical section at right angles to the car and just to the right of the chain and spring shown in Fig. 1, the parts, however, being shown in normal, instead of operating, position. Fig. 3 is a broken side view of a cam-rail-joint; Fig. 4 is a perspective view showing the lower end of the vertical shaft and the connection of the operating arm thereto.

Numeral 1 denotes a car and 2 a side doorway.

3 denotes the gate-like body having a vertical shaft 4 with bearings 5 on the car to the rear of but near to the doorway, the shaft being supported by a collar fixed thereto and resting on the lower bearing. Said shaft extends below the car body, and pivoted thereto is an operating arm 7 free to

swing in a vertical plane but rigid with the shaft transversely.

To arm 7 is connected a cord or chain 8 passing by suitable pulleys 6 to an operating device, preferably a lever 9, pivoted in a bracket 10 at a convenient height on the inside of the car. As shown the longer arm of the lever is enlarged for weight, and the cord 8 is secured to the short end of the lever. Said short arm is preferably curved eccentrically to the lever pivot, as more fully set forth in my application No. 521,304 of even date herewith. When lever 9 is in position shown in Fig. 1 the operating arm 7 is down in position to contact with the long cam rail 11, which is mounted at a suitable horizontal angle with the track rail to operate on arm 7 to swing body 3 away from the doorway 25 to 35 degrees, but preferably not over 30 degrees. Except for the greater length of body 3 which would be required to enable the gate to pass outside a suspended bag beside the track it would be advantageous to keep the angle with the car side to which the gate swings considerably below 30 degrees in order to get a more perfect wedging action of the gate on the bag. All excess over 30 degrees in such angle is deleterious in that when the gate extends at a greater angle the bag strikes a more decided blow on the gate and which increases with such angle. The rail 11 terminates at such a point that arm 7 passes off its end after the gate 3 has passed outside of the crane-supported bag 12, and before or just as the gate strikes the bag.

If a bag were hung on pin 12', pivotally supported in the doorway, before reaching the cam rail it would be delivered by the outward swing of the gate without interfering with the operation of collecting.

If the car be moving at slow speed, say ten miles per hour or less, the return movement of gate 3, or the diagonal thrust given when the gate reaches the suspended bag beside the track and said return movement carries the bag into the doorway.

Owing to the smallness of the angle between the car and gate made by the outward swing of the latter, the action of the gate on the bag is a wedging action or thrust, rather than a direct blow, and the gate guides the bag into the doorway.

Sometimes it may be desired to collect sev-

eral bags in succession at high speed at a station, in which case it is only necessary to hold the gate open for the time required to reach the last of the bags suspended in line, one in advance of the other, and they would successively be guided into the car doorway. The cam rail is made long enough and is so arranged as to control arm 7 until the last bag in the series is reached.

10 The cam rail is preferably made of ordinary gas pipe in sections of ten feet length, and generally each cam rail will comprise five or six of such sections. The end supporting brackets for said rail are cast with a pin 26 onto which a pipe end fits and which strongly secures it to the bracket.

The brackets for supporting the rail at meeting places of the sections are cast with opposite pins 27, as shown in Fig. 3, for receiving proximate ends, and such ends may be suitably secured to their respective pins. Evidently the body of the bracket should not extend beyond the outer line of the pipe far enough to obstruct the contact-end of arm 7. This way of forming and supporting the cam rail is both simple and efficient.

The gate 3 is by preference made at least five feet long, and the main body thereof about twenty-five inches wide, and at about two feet from the shaft is placed a vertical cross bar or rod 13 which is securely fastened to each longitudinal rod, and which is extended below the main body of the gate to the plane of the bottom of the car, and terminates in a knob or head 14. Between the extension of the cross bar and the shaft are one or more bracing rods 15, the lower one of which is preferably rigid with the supporting collar on the shaft.

To return the gate to normal position after it has been moved outwardly by the cam rail a long spring 16 is used, one end being fastened to a central beam 17 of the floor, and the other end to an enlarged link 18, which is connected through a strong disk or washer 19 to a chain 20. The main purpose of link 18 and disk 19 is to form a positive connection between the inner end of the chain and the car at the moment when the mail-handling gate or body reaches the predetermined limit of its outward movement whereby the chain will be in condition to stop the gate or body, but evidently it is not essential that the rear end of the chain have such detachable connection instead of a permanent connection with the car, it only being necessary that the chain or stop device be in condition to act at the proper moment. At the lower corners of the side beam are fixed brackets 21, 22 through which the chain passes. The outer end of the chain has a link 23 too large to pass through the hole in the bracket, but adapted to be detachably secured to the end of cross bar

13, as by being slipped over the knob 14. When link 23 is disconnected from the head, the gate can be swung away from the doorway and back against the side of the car during loading the car, etc., and link 23 will prevent the chain dropping down.

The parts are so proportioned that the disk 19 strikes the face of the bracket 21 when the gate reaches the limit of its outward swing under operation of the cam rail, and thus forms a positive stop to prevent the gate being carried too far.

The spring 16 when in contracted position, as shown in Fig. 2, is strong enough to maintain the chain under tension and hold the gate firmly against the car in front of the doorway, and the outward movement of the gate gives additional tension to the spring for the return movement.

It will be seen that the lower end of shaft 4 is extended rearwardly (preferably five or six inches) and terminates in an inclined flange 24. The pivot passing through the forked end of arm 7 passes through said shaft extension. This construction largely reduces the strain and wear on the pivot connection and increases the life of the apparatus. The flange 24 forms a positive stop limiting downward movement of arm 7.

The invention is not limited to just the proportions of parts hereinbefore mentioned, nor to details of construction, except as pointed out in the claims. Evidently if desired an additional returning spring for the gate may be used.

Having thus described the invention what I claim is,—

1. A mail handling gate or body comprising a vertical shaft and a transverse body comprising longitudinal rods, a cross bar secured to the longitudinal rods at a distance from the shaft, said cross rod extending below the main part of the gate, and a gate-returning spring connected to the lower end of said cross-rod, as set forth.

2. A mail collecting device adapted to swing out from and back to a car doorway to collect mail, an arm extending downward therefrom to the level of the bottom of the car body, and a stop connected to said arm.

3. A mail collecting device adapted to swing out from and back to a car doorway to collect mail, combined with a stop to limit the outward swing of said device, and automatic means for swinging said device in both directions.

4. A mail catching device adapted to swing out from and back to a car doorway to collect mail, and automatic means for swinging said device in both directions combined with a stop to limit outward swing of said device, and a returning spring.

5. A mail-handling device for a moving car adapted to swing so as to project out from the car at a predetermined angle, com-

bined with means for arresting said device when it reaches the predetermined limit, and automatic means for swinging said device both out as stated and reversely.

5 6. A mail collecting device adapted to swing out from and back to a car doorway to collect mail, combined with a stop to limit the outward swing of said device, said stop comprising a flexible inelastic connection
10 having an enlarged part adapted to bear against a fixed part to arrest the collecting device.

7. The combination with a cam-rail-operated mail collecting device adapted to be
15 used on a car and comprising an operating arm movable to and from position to contact with said rail, of a lever pivotally mounted inside such car, and a flexible connection between said operating arm and
20 lever.

8. A gate like mail-handling body for cars, comprising a vertical shaft and a plurality of main longitudinal rods, and a cross rod at a distance from the shaft and
25 connected to the longitudinal rods, said cross rod being extended below the body, and a longitudinal rod between the extension and shaft.

9. In a mail-handling device for a moving car, a vertical shaft mounted on such car and having a side extension at its end, and an operating arm pivoted to said extension.
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10. In a mail-handling device for a moving car, a vertical shaft mounted on such
35 car and having a side extension at its lower end, an operating arm having a forked end

embracing such extension and pivoted thereto.

11. In a mail-handling device for a moving car, a vertical shaft mounted on such car and having a side extension at its lower end, an operating arm pivoted to such extension, and a stop to limit descent of the operating arm. 40

12. In a device of the character described, 45 a vertical shaft having a side extension at its end, an operating arm pivoted to such extension, and an inclined stop-flange to limit the descent of the operating arm.

13. In a device of the character described, 50 the combination with a mail-handling body, and an operating arm therefor, of a cam rail comprising a pipe, combined with supporting brackets having pins to receive and hold pipe ends, as set forth. 55

14. A mail handling body adapted to be mounted in front of the doorway of a car, automatic means for swinging said body out from the doorway at an angle of about 30 degrees, said body being long to give the
60 necessary width of opening at such small angle to pass outside of crane-supported bags and guide them into the doorway, and means for returning said body.

In testimony whereof, I have signed this 65 specification in the presence of two subscribing witnesses.

WILLIAM M. CORTHELL.

Witnesses:

C. IRENE CLOCKER,
H. L. FRANC.