W. M. MOLONEY.

MAIL CHANGING DEVICE FOR RAILWAYS.

APPLICATION FILED FEB. 14, 1911.

1,006,586.

Patented Oct. 24, 1911.

2 SHEETS—SHEET 1.

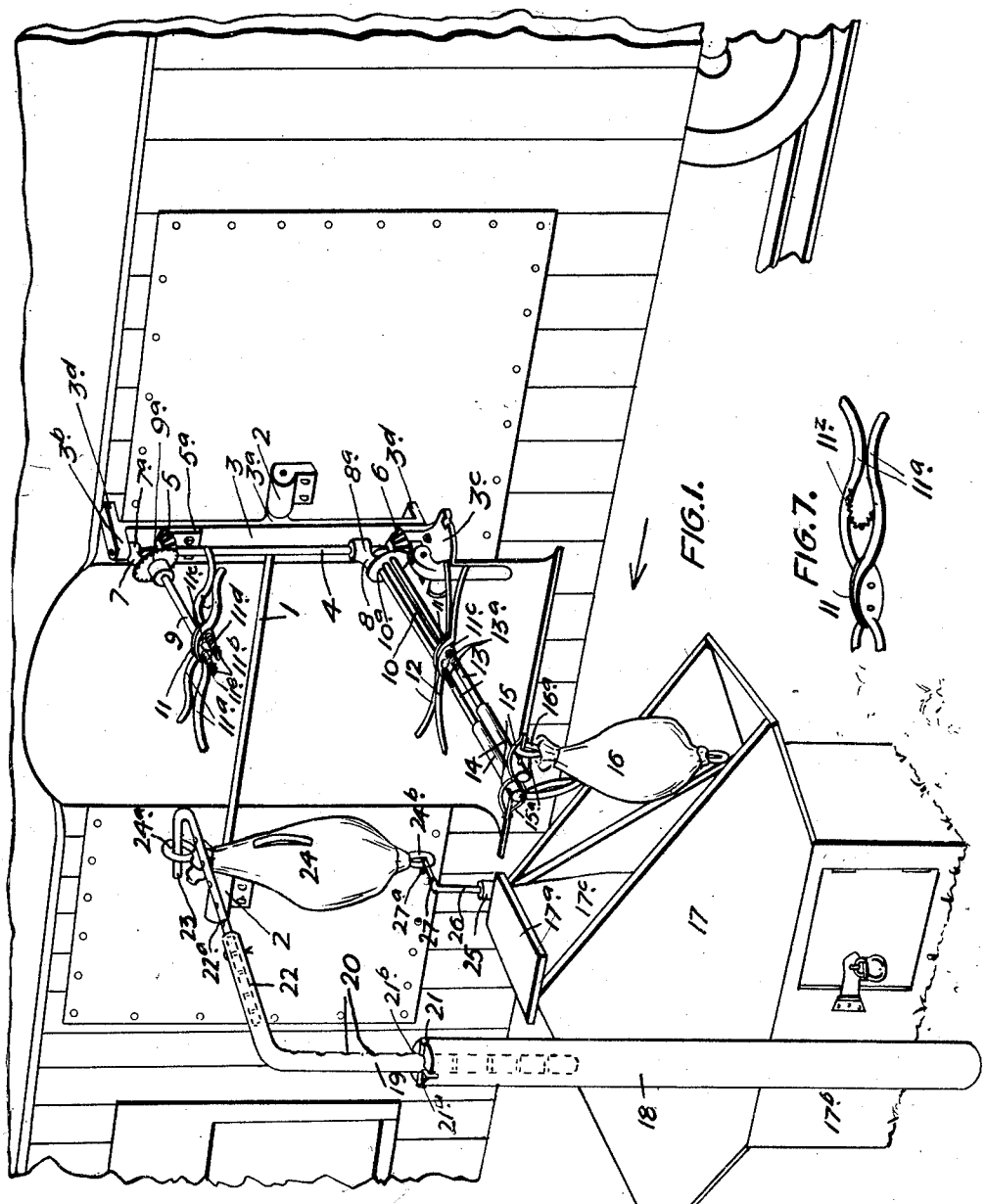

FIG. 1.

FIG. 7.

WITNESSES

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2 SHEETS—SHEET 2.

FIG.2.

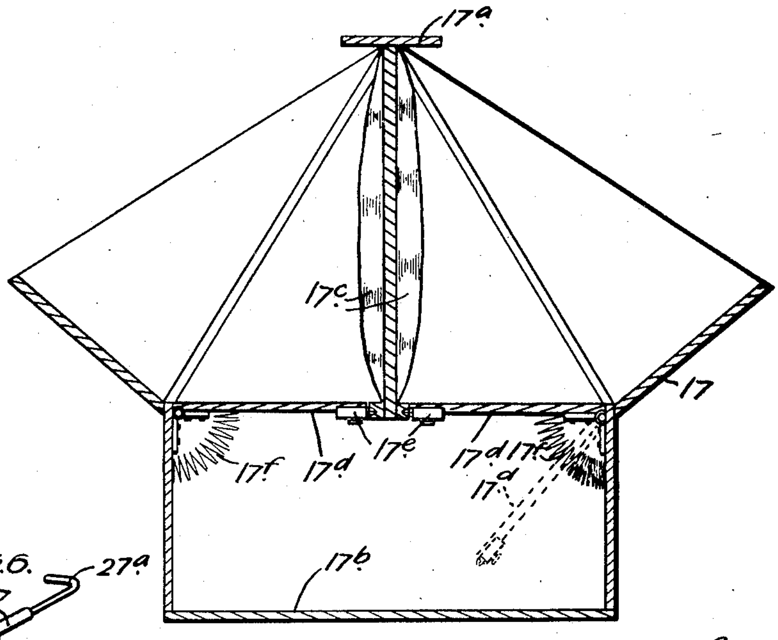

FIG.6.

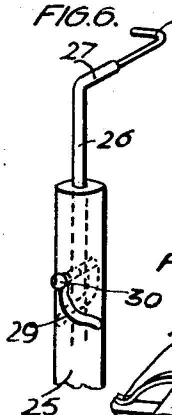

FIG.3.

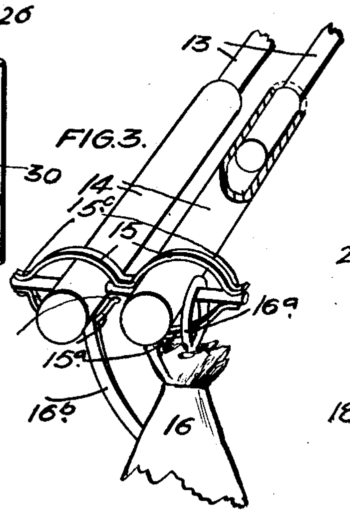

FIG.4.

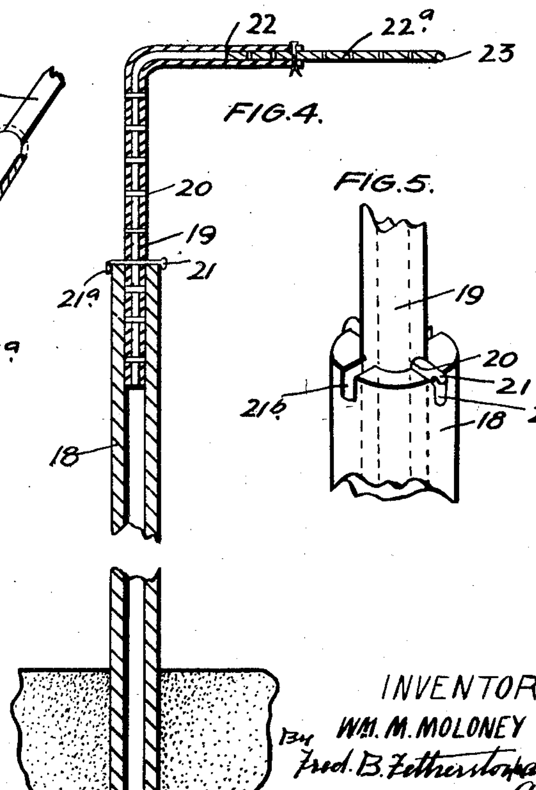

FIG.5.

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UNITED STATES PATENT OFFICE.

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MAIL-CHANGING DEVICE FOR RAILWAYS.

1,006,586. Specification of Letters Patent. **Patented Oct. 24, 1911.**

Application filed February 14, 1911. Serial No. 608,568.

To all whom it may concern:

Be it known that I, WILLIAM MICHAEL MOLONEY, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Mail-Changing Devices for Railways, of which the following is a specification.

My invention relates to improvements in mail changing devices for railways patented to me in the United States on the 16th day of November 1909 under No. 940,180 and the object of the present invention is to devise an apparatus of this class in which the mail bags are delivered to and automatically locked in a box, and at the same time a mail bag taken up; another object is to make the apparatus operable, no matter in which direction the train may be moving or at what speed; a further object is to provide means for holding the mail previous to its being taken up; a still further object is to provide a means for supporting the bag prior to delivery which will insure it instantaneous release.

My invention consists of an upright arm carrying a vertical spindle and bevel pinions and mounted on a rod extending across the mail car door, outwardly projecting horizontally disposed spindles having bearings secured on vertical spindles and each having a bevel gear at the inner end meshing with the bevel gear on the aforesaid vertical spindles and a double gripping spring jaw located on the horizontally disposed spindles, said jaws being designed to hold both ends of the bag which is to be taken up by the train, a horizontally disposed rod mounted on each side of the aforesaid horizontally disposed spindle and provided with telescopic outer end portions having suitable spring jaws designed to hold the bag which is to be delivered, a locked box designed to receive the incoming mail bag from the train and having a lateral portion designed to release the bag from the spring catches, an adjustable post having an adjustable arm extending at right angles to the same and designed to hold the upper part of the bag to be received by the train and a second adjustable post having an arm similar to the first post but designed to hold the lower end of the bag, both posts being designed to swing into a position parallel to the track of the train when the bag has been removed therefrom.

To more particularly describe my invention I will refer to the accompanying drawings in which:—

Figure 1 represents a perspective view of a device constructed according to my invention. Fig. 2, is a vertical longitudinal section of the box. Fig. 3, is an enlarged perspective view of the telescopic ends and spring catches on each of the rods on each side of the lower horizontally disposed spindle. Fig. 4, is a vertical section of the post holding the upper portion of the bag to be received by the train. Fig. 5, is an enlarged perspective view showing the method of mounting the arm in the post. Fig. 6, is a perspective view of the top portion of the post and arm holding the lower end of the bag to be received by the train. Fig. 7, is a detail of the gripping fingers showing a spring between them.

Like letters of reference indicate corresponding parts in each figure.

1 is a rod extending across the doorway of the mail car being mounted on suitable brackets 2.

3 is an upright bar having a suitably disposed boss 3^a through which the rod 1 extends.

3^b is an upper bearing and 3^c is a quadrant plate secured to the front of the bottom of the bar 3.

3^d are inwardly extending projections at the top and bottom of the bar 3.

4 is a vertical spindle journaled at the bearing 3^b and the plate 3^c.

5 is a segmental bevel gear having a depending portion 5^a by which it is secured to the bar 3.

6 is a segmental gear attached to or forming part of the quadrant 3^c. The spindle 4 extends freely through the segmental gears 5 and 6.

7 is a bearing having a portion 7^a which is swung on the spindle 4 above the gear 5.

8 is a bearing having a vertical portion 8^a swung on the spindle 4 above the gear 6.

9 and 10 are upper and lower spindles respectively journaled at their inner ends in the bearings 7 and 8 and provided with bevel pinions 9^a and 10^a respectively.

11 is a plate having outwardly curved fingers 11^a provided with outwardly extending pins 11^b extending through a second plate 11^c, said pins being provided with springs 11^d held on the pins by the nuts 11^e

for the purpose of holding the plate 11^c into engagement with the plate 11. The above spring jaws formed by the fingers 11^a are designed to receive the upper ends of the bags which are to be received by train.

11^z are semi-circular springs inserted between the fingers 11^a to reduce the shock of the mail bag striking the plates 11 and 11^c.

12 are double spring jaws located on the outer end of the spindle 10 to receive the lower ends of the last mentioned bag and 13 are horizontally disposed rods on each side of the spindle 10 extending through the plates 11 and 11^c and provided with suitable springs 13^a to hold the plate 11^c into engagement with the plate 11, the outer ends of the rods 13 being provided with telescopic portions 14 and spring catches 15, 15^a designed to hold the delivery bag 16.

17 is a receiving box for the delivery bag 16 having a portion 17^a which is struck by the delivery bag 16 as the train is passing, the delivery bag being thus released from the spring catches 15 and deposited into the upper portion of the box 17.

17^b is a retaining portion of the box for the delivery bag and 17^c is a padded portion adapted to reduce the shock of contact of the delivery bag when it strikes the portion 17^a.

17^d are trap doors fitted with suitable latches 17^e and springs 17^f designed to hold traps in a horizontal position.

18 is an adjustable post having a vertical arm 19 telescoping therein, provided with a series of lateral holes 20 through which a pin 21 with a depending lip 21^a is designed to be inserted in order that the said arm may be raised or lowered to any extent. The pin 21 also fits into slots 21^b, the slots extending around the head of the post in order that when the arm is swung the pin will fit into a corresponding slot.

22 is a portion of the arm 19 formed at right angles thereto and having a portion 22^a telescoping therein and an L-shaped portion 23 designed to hold the upper ring 24^a of the bag 24.

25 is a second post having a vertical telescopic arm 26 provided with an L-shaped portion 27 at right angles to the portion 26 and having an L-shaped end 27^a designed to receive the lower ring 24^b of the bag 24.

29 are two curved slots in the post into which pins 30 secured to the portion 26 are designed to slide.

It will be seen that when the bag 24 is caught by the spring jaws 11^a and 12 the portion 26 of the post 25 will be swung parallel to the tracks, and likewise the portion 19 of the post 18 will be swung into a similar position.

The mode of operation of my invention is as follows:—The train is presumed to be moving in the direction indicated by the arrow (Fig. 1.). The portions 19 and 26 of the posts 18 and 25 respectively are swung into a position at right angles to the direction of the train and the mail bag to be taken up by the train is mounted thereon, the top ring 24^a being placed on the portion 23 of the post 18 and bottom ring 24^b on the portion 27 of the post 25. As the train approaches the station the upper and lower horizontally disposed spindles are swung out and the bag to be delivered at the station is hung by the ring 16^a from the spring catch 15^a. As the train passes the posts and box the spring jaws 11^a and 12 grasp the bag 24 at top and bottom respectively, and the bag 16 is released from the spring catches 15 by coming into contact with the cross bar 17^a at the top of the locked box.

It will be observed that the portion of the spring catches 15 above the telescopic ends 14 open outwardly as shown at 15^c (Fig. 3) and that the lower portions open inwardly as at 15^d. The loop 16^b of the bag 16 is inserted on the forward lower portion of the spring catch 15 in order to prevent the bag being blown off by the wind.

The bag 16 after striking the cross bar 17^a is thrown down into the retaining portion of the box 17^b and the trap doors will then spring closed effectually locking the box and preventing anyone having access to the same. It is to be understood that the trap doors 17^d are set by the mail collector before the train arrives, the bolts of the locks are not in the keeper slots but slightly below said slots so that the bag 16 dropping on the trap 17^d will depress same and allow the bag to drop into the retaining chamber. The doors will then spring upward and the bolts of the locks will be shot into the keep slots.

Many modifications may be made in the invention without departing from the spirit or scope of the claims and the form shown is to be taken in an illustrative and not in a limiting sense.

What I claim as my invention is:

1. In a device of the character described, rods extending outward from the side of the car and suitably secured thereto, telescoping end portions on the rods, and rods on the outer sides of the telescopic end portions at right angles thereto, upper spring loop catches, the inner ends being secured between the telescoping portions and the outer ends bearing against the rods on the telescoping portions, lower spring loop catches, the outer ends being secured to the rods on the telescoping portions and the inner ends bearing against the telescoping portions as and for the purpose specified.

2. A mail changing device for railways comprising a rod extending across the mail car door and suitably supported at each side thereof, and a bar provided with an outwardly extending grip and a boss through

which the rod extends, a bevel quadrant secured to the bar, a spindle extending through the bevel quadrant, a shaft journaled in suitable bearings, and swung on the vertical spindle, a pinion on the shaft meshing with the aforesaid quadrant, a suitable grip on the outer end of the shaft, rods on each side of the shaft parallel therewith and extending outward through the grip and provided with telescoping ends, and a suitable grip on the telescoping ends for holding the bag to be delivered at the station as and for the purpose specified.

3. A mail changing device for railways comprising a rod extending across the mail car door and suitably supported at each side thereof, and a bar provided with an outwardly extending grip and a boss through which the rod extends, a bevel quadrant secured to the bar, a spindle extending through the bevel quadrant, a shaft journaled in suitable bearings, and swung on the vertical spindle, a pinion on the shaft meshing with the aforesaid quadrant, a suitable grip on the outer end of the shaft, rods on each side of the shaft parallel therewith and extending outward through the grip and provided with telescoping ends, and rods on the outer sides of the telescoping ends at right angles thereto, upper spring loop catches, the inner ends being secured between the telescopic ends of the rods and the outer ends bearing against the rods on the sides of the telescoping ends, lower spring loop catches, the outer ends being secured to the outer ends of the rods on the sides of the telescoping end portions, and the inner ends bearing against the telescoping portions as and for the purpose specified.

4. In a device of the character described, a post having an adjustable upper portion bent horizontally, a pin having a hinged depending lip designed to be inserted into one of a series of holes in the upper portion, and to register with grooves on the top of the post proper when the upper portion is swung into different positions, and an L-shaped adjustable horizontal portion secured to the upper portion, substantially as described.

5. In a device of the character described, a post having an adjustable upper portion, pins on the said portion sliding in curved slots in the post proper whereby the upper portion is held in different positions, an L-shaped adjustable horizontal portion secured to the upper portion substantially as described.

6. A mail changing device for railways comprising a rod extending across the mail car door and suitably supported at each side thereof, and a bar provided with an outwardly extending grip and a boss through which the rod extends, a bevel quadrant secured to the bar, a spindle extending through the bevel quadrant, a shaft journaled in suitable bearings, and swung on the vertical spindle, a pinion on the shaft meshing with the aforesaid quadrant, a suitable grip on the outer end of the shaft, rods on each side of the shaft parallel therewith and extending outward through the grip and provided with telescoping ends, a suitable grip on the telescoping ends for holding the bag to be delivered at the station, a post located at the side of the track having a top portion holding one end of the bag to be taken up by the train and designed to be moved into an operative position at right angles to the track and to be swung into an inoperative position parallel to the same when the bag is released from the post, and a second post having an upper portion holding the bottom end of the aforesaid bag and designed to be moved into positions identical to the positions of the first mentioned post as and for the purpose specified.

7. A mail handling device for railways comprising a rod extending across the mail car door and suitably supported at each side thereof, and a bar provided with an outwardly extending grip and a boss through which the rod extends, a bevel quadrant secured to the bar, a spindle extending through the bevel quadrant, a shaft journaled in suitable bearings, and swung on the vertical spindle, a pinion on the shaft meshing with the aforesaid quadrant, a suitable grip on the outer end of the shaft, rods on each side of the shaft parallel therewith and extending outward through the grip and provided with telescoping ends, a suitable grip on the telescoping ends for holding the bag to be delivered at the station, a post having an adjustable upper portion bent horizontally, and a horizontal portion having an L-shaped end adjustably secured to the adjustable upper portion and having a series of holes therein, a pin having a hinged end designed to be inserted in one of the holes, and to register with grooves in the top of the post proper when the upper portion is swung into different positions, and a second post having an upper portion bent horizontally and a horizontal portion having an L-shaped end portion being provided with two outwardly extending pins designed to slide in curved slots in the post proper as and for the purpose specified.

8. A mail changing device for railways comprising a bar on the car for supporting the bag holding the bag deposited therein from the train, a lateral bar designed to free the bag from the bar on the train, buffers below the bar, a containing compartment for the bag, trap doors in the top thereof, springs holding the doors in a closed position and locks for locking the same in this position as and for the purpose specified.

9. A mail changing device for railways

comprising a rod extending across the mail car door and suitably supported at each side thereof, and a bar provided with an outwardly extending grip and a boss through which the rod extends, a bevel quadrant secured to the bar, a spindle extending through the bevel quadrant, a shaft journaled in suitable bearings, and swung on the verticle spindle, a pinion on the shaft meshing with the aforesaid quadrant, a suitable grip on the outer end of the shaft, rods on each side of the shaft, rods parallel therewith and extending outward through the grip and provided with telescoping ends, a suitable grip on the telescoping ends for holding the bag to be delivered at the station, for holding the bag and a box deposited therein from the train, a lateral bar at the top designed to strike the bag to be delivered, buffers below the lateral bar, a lower or containing compartment, trap doors in the top thereof, springs holding the doors in a horizontal position, and locks for locking the same in a closed position as and for the purpose specified.

10. In a device of the character described, the combination with the vertical bar and horizontal rod connected thereto, carrying jaws adapted to hold the necks of the mail bag to be taken up by the train, of spring catches for holding the bag to be delivered at the station, posts for holding upper and lower ends of the bag to be taken up by the train, and designed to move into an operative position at right angles to the direction of the train and into an inoperative position parallel to the direction of the train, and a locked box designed to have the mail bag automatically delivered to it and locked therein irrespective of the direction of the train substantially as described.

11. In a device of the character described, outwardly extending grips for receiving the mail bag to be taken up by the train, the grips consisting of plates held against each other, fingers of semi-circular shape connected to the plates and springs interposed between the adjacent fingers as and for the purpose specified.

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Witnesses:
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