

E. BAKER.
MAIL BAG DELIVERING AND RECEIVING APPARATUS.
APPLICATION FILED MAR. 29, 1913.

1,065,203.

Patented June 17, 1913.

4 SHEETS—SHEET 1.

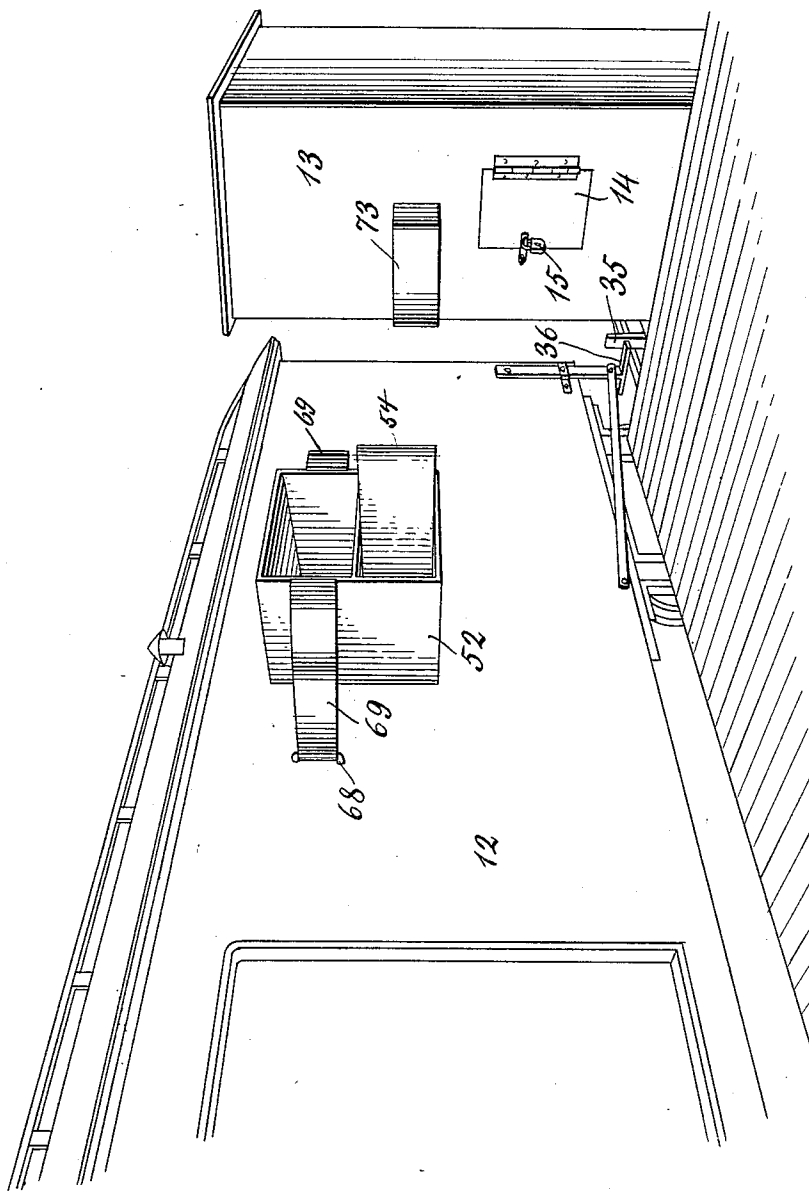


Fig. 1.

WITNESSES

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H. L. Heidman

INVENTOR

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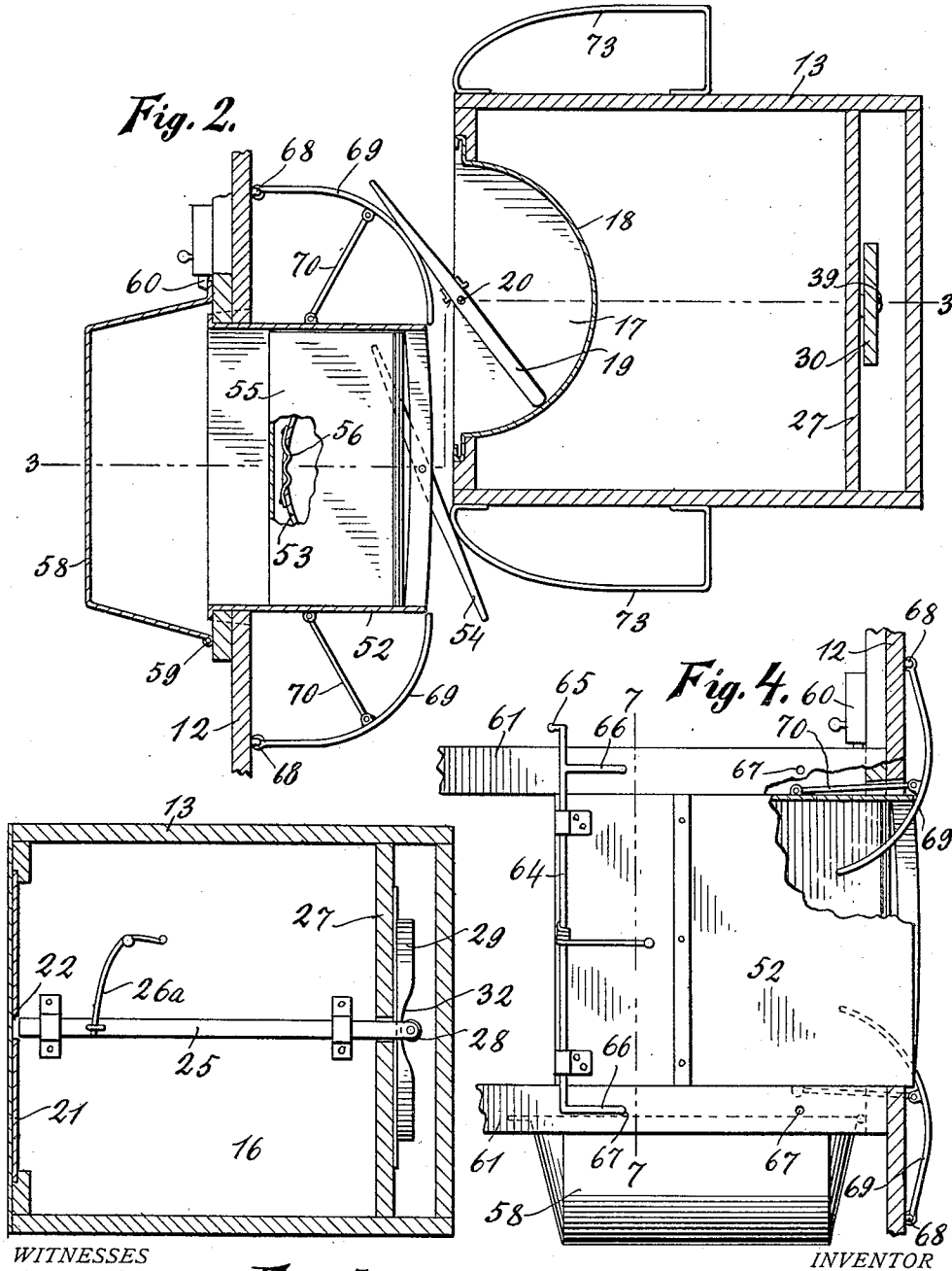
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4 SHEETS-SHEET 2.



WITNESSES
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Fig. 5.

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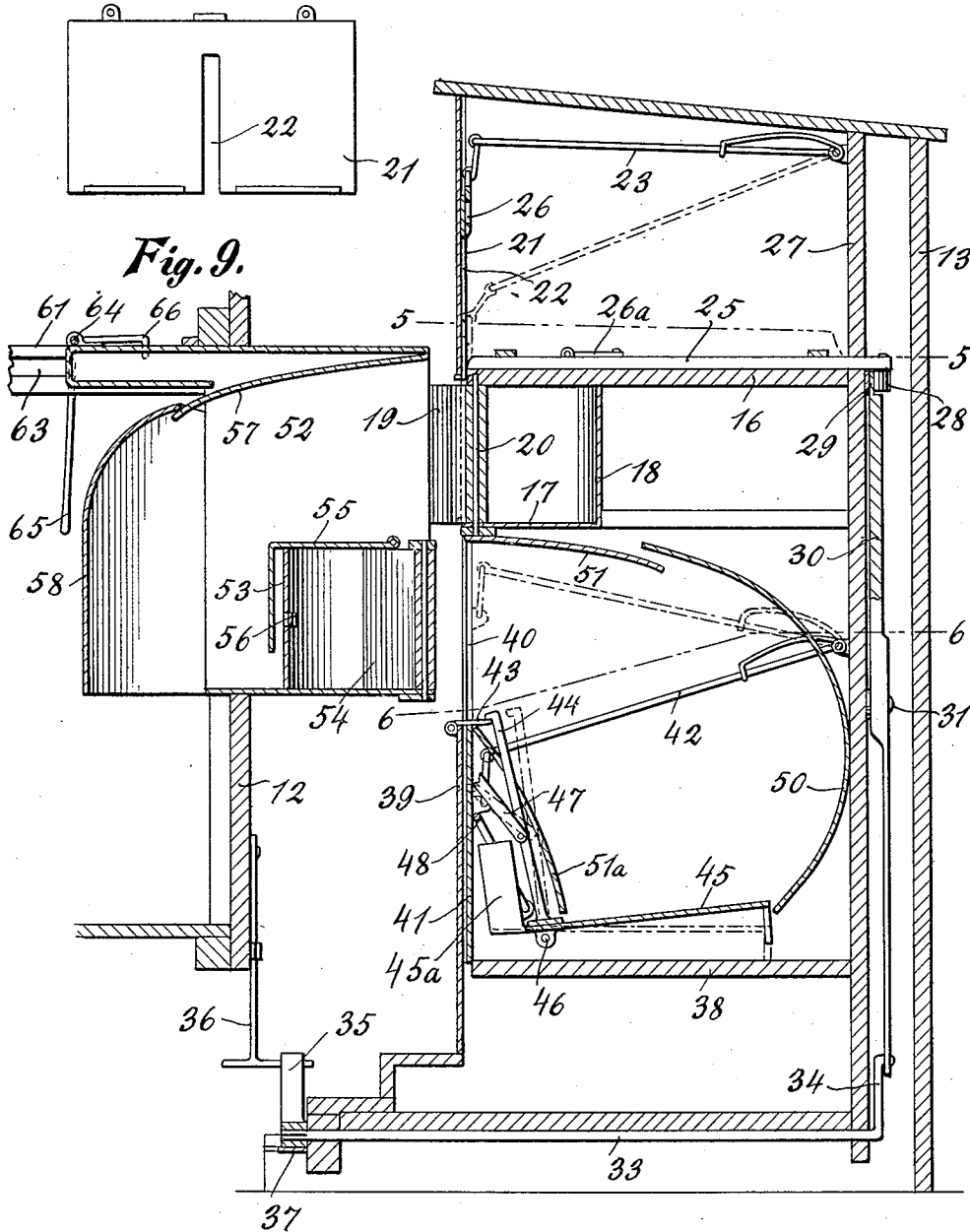


Fig. 9.

Fig. 3.

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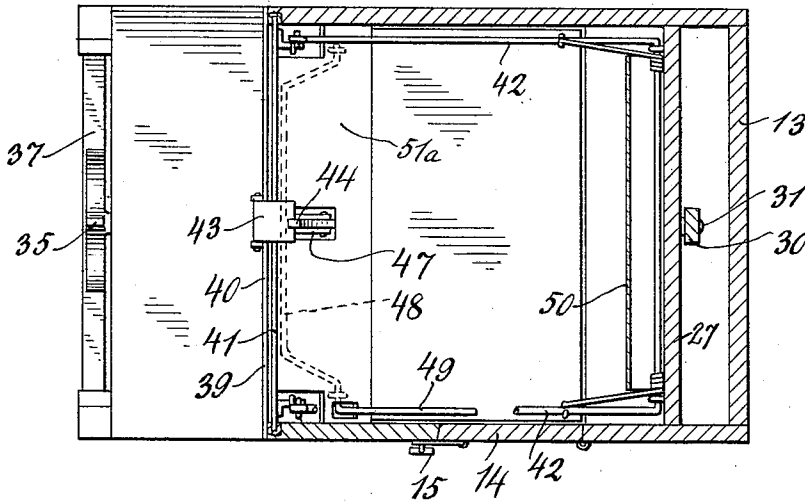


Fig. 6.

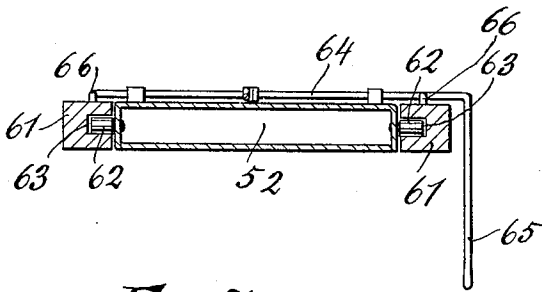


Fig. 7.

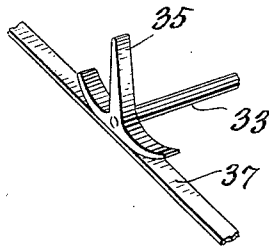


Fig. 8.

WITNESSES:

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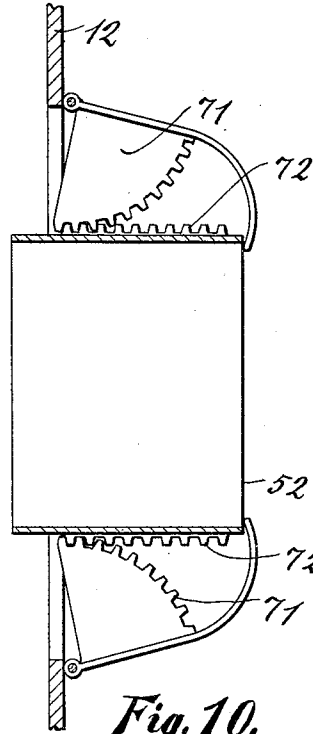


Fig. 10.
INVENTOR

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UNITED STATES PATENT OFFICE.

EDWARD BAKER, OF SIMS, ILLINOIS, ASSIGNOR OF ONE-THIRD TO CHARLES F. DEZOUCHÉ AND FIVE-EIGHTEENTHS TO JAMES A. GASTON, BOTH OF SIMS, ILLINOIS.

MAIL-BAG DELIVERING AND RECEIVING APPARATUS.

1,065,203.

Specification of Letters Patent.

Patented June 17, 1913.

Application filed March 29, 1913. Serial No. 757,548.

To all whom it may concern:

Be it known that I, EDWARD BAKER, a citizen of the United States, residing at Sims, in the county of Wayne and State of Illinois, have invented certain new and useful Improvements in Mail-Bag Delivering and Receiving Apparatus, of which the following is a specification.

This invention relates to mail bag delivery apparatus by which an exchange of mail bags is effected without stoppage of the train, a bag being delivered from the car to a receptacle at the station, and the latter having means for delivering a bag to the moving car.

It is the object of the present invention to provide an improved mechanism for effecting this exchange of mail bags, and also to provide the bag receptacle at the station with a closure to prevent exposure of the bag to be delivered to the car. The closure is automatically opened just prior to the delivery of the bag, the means for opening the closure being controlled by a tappet which is in the path of an actuating device on the car. The compartment which receives the bag delivered from the car also has a closure which automatically closes when the bag is thrown into the compartment.

The invention also has for its object to provide a structure by which the exchange of bags is effected without injury thereto.

Other objects and advantages of the invention will be pointed out in the detailed description hereinafter, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view showing the application of the invention. Fig. 2 is a horizontal section through the delivering and receiving apparatus. Fig. 3 is a vertical section on the line 3—3 of Fig. 2. Fig. 4 is a plan view of the car apparatus, partly in section. Fig. 5 is a horizontal section on the line 5—5 of Fig. 3. Fig. 6 is a horizontal section on the line 6—6 of Fig. 3. Fig. 7 is a cross section on the line 7—7 of Fig. 4. Fig. 8 is a perspective view of the tappet. Fig. 9 is an elevation of a door to be hereinafter described. Fig. 10 is a plan view of a modification of a part of the car apparatus.

Referring specifically to the drawings, 12 denotes a railway mail car equipped with

my improved delivery and receiving apparatus. The car is shown passing a station and about to deliver and receive mail. At the station is an apparatus for delivering a mail bag to the car and for receiving the bag delivered by the car apparatus. The station apparatus is inclosed in a suitable housing 13 having a door 14 so that access to the interior of the housing may be had, said door being provided with a lock 15. In the housing 13, near the top thereof, is a horizontal partition 16 below which is a compartment comprising a bottom 17, a top formed by the partition 16 and an arcuate side wall 18 extending inward from an opening in that side of the housing which faces the car. Thus the open end of the compartment faces the car. In the compartment operates a sweep 19 centrally pivoted in the open front thereof, the pivot being vertical and being a rod 20 extending between the top and bottom of the compartment and passing through the sweep midway between the ends thereof. The length of the sweep is such that, when it projects from the compartment, its inner end is close to the wall 18, and consequently, when the sweep is operated by its outer end being struck by an abutment on the car, it will force a bag lying on the floor 17, in front of the sweep, out of the compartment. The width of the compartment is such that the sweep may extend across and close the open front thereof.

In order to protect the bag to be delivered to the car by the sweep 19, the open front of the compartment in which said sweep works has a closure comprising a vertically slidable gate 21 working in suitable guides in the sides of the front portion of the compartment. The gate has a central vertical slot 22 so that it may clear the sweep, and it is slidable upward to open the compartment. The gate is operated by spring-actuated arms 23 mounted in the top portion of the housing 13 and connected to the gate. The gate is held closed by a suitable latch 25 adapted to enter a keeper recess 26 in the gate. The latch is advanced by a spring 26^a and is mounted on the partition 16 under suitable guides thereon. Near the rear wall of the housing, the latter contains a vertical partition 27 through

an aperture in which latter the latch passes. The projecting end of the latch carries a roller 28. Behind the roller is located a cross-bar 29 carried by the upper end of a lever 30 pivoted at 31 to the partition 27. The cross-bar has a central depression 32 in which the roller 28 normally seats, and which advances the latch so that it may enter the recess 26. When the lever 30 is rocked, the cross-bar 29 is moved sidewise and the inclined surface forming the recess 32 engages the roller, whereby the latch is withdrawn to release the gate 21.

The following means are provided for operating the lever 30: At the bottom of the housing 13 is mounted a rock-shaft 33 having at its rear end a crank 34 which is connected to the lower end of the lever 30. The front end of the rock-shaft is connected to a tappet 35 located outside the housing and in the path of a trip device 36 carried by the car 12. A flat spring 37 engageable with the base of the tappet 35 holds it normally in erect position, in which position the lever 30 is held to place the recess 32 opposite the roller 28. When the trip strikes the tappet, the shaft 33 is rocked, whereupon the lever swings to disengage the latch 24 through the connections hereinbefore described. The gate 21 is then slid upward by the spring-actuated arms 23, and it opens the compartment from which the bag is to be thrown by the sweep 19 into the car. The trip 36 must be so located that the gate is allowed to open just prior to the operation of the sweep. The spring 37 can be made strong enough to prevent manual operation of the tappet. Thus, the gate 21 cannot be opened and the bag tampered with. As the gate, when closed, straddles the sweep, the latter is held projecting from the compartment in position to be operated.

Below the bag-delivery compartment in which the sweep 19 operates, is a bag-receiving compartment into which the bag is thrown from the car by a sweep operating in the same manner as the sweep 19. The receiving compartment comprises a floor 38, a front wall 39 facing the car, and a rear wall formed by the partition 27. The front wall has an opening 40 through which the bag enters the compartment. A vertically slidable gate 41 is provided for this opening, said gate sliding upward to closed position. A spring-actuated arm 42 is connected to the gate for operating the same. A detent and a trigger mechanism are provided for holding the gate open. The detent 43 is pivoted to the wall 39 at the bottom of the gate opening so that it may be placed across the top edge of the gate when the latter is slid down to open position. A trigger 44 engages the detent, and the gate is thus held open. The trigger is carried by a tiltable platform 45 mounted in the compart-

ment below the gate opening and pivotally supported as indicated at 46. Thus, when a bag is thrown into the compartment and falls on the platform and tilts the same, the trigger releases the detent, and the gate is slid upward to closed position by the spring-actuated arms 42. To the trigger is pivoted a detent 47 which engages the bottom edge of the gate when it is closed, and prevents it from being opened from the outside of the housing. Thus, it will be seen that the bag receiving compartment is automatically closed after the bag has entered the same, and the bag can therefore not be tampered with or stolen. The bag can be removed from the compartment only upon opening the door 14, and as said door is provided with a lock, unauthorized persons cannot gain access to the compartment. The platform is counterweighted at one end as indicated at 45^a so that it is normally held in position to keep the trigger 44 in engagement with the detent 43. The detent 47 is disengageable by a rocking lever 48 mounted in the compartment and having a handle 49 extending close to the door 14 so that it may be reached upon opening the latter.

From the partition 27 extends a curved plate 50 against which the bag is thrown. The bag is deflected by this plate downward in a curve and then drops on the platform 45. At the front end of the plate is a curved plate 51 which also acts as a deflector. Thus, the bag is not thrown directly on the platform but its course of travel is changed, thereby greatly lessening the impact and the liability of damage to the bag. A guard plate 51^a in front of the trigger 44 protects the same from the bag, said plate having a slot through which the upper end of the trigger projects.

In the side of the car 12 which faces the housing 13 is an opening in which is slidably mounted a housing 52 which is rectangular and comprises a top, a bottom and side walls, the ends of the housing being open. In this housing is mounted an arcuate wall 53 which latter, with the bottom of the housing, forms a compartment in which operates a sweep 54 similar to the sweep 19 and located on the same level as the gate opening 40. The compartment in which the sweep 54 operates has a hinged top 55 so that the mail bag may be placed in said compartment in front of said sweep, which latter throws it through the opening 40 into the receiving compartment in the housing 13 hereinbefore described. The wall 53 has a spring catch or other suitable device 56 for holding the sweep 54 projected. The space in the housing 52, above the compartment in which the sweep 54 operates, is on the same level as the sweep 19, and the latter throws the bag through said space into the car 12.

At the top of the space is a downward and rearwardly curved deflector plate 57, and behind this plate is a door 58 which extends across the inner open end of the housing 52 up to the plate 57, the top portion of the door being curved forward to meet the rear end of the plate 57. These parts deflect the bag downward into the car, and lessen the impact and thus reduce the liability of injury to the bag to a minimum.

The door is hinged to one side of the opening in which the housing 52 slides, as indicated at 59, and can be swung away from the rear end of the housing so that said housing may be drawn into the car. A latch 60 is provided for the door. The door is shaped so that it is spaced from the inner end of the housing 52, thus leaving an opening at the bottom of the door through which the bag drops into the car.

The walls of the car 12 carry spaced cross beams 61 between which the housing 52 is slidably mounted, the sides of the housing carrying rollers 62 which travel in grooves 63 in the inner edges of the cross beams.

The top of the housing 52 carries a rock-shaft 64 having an operating handle 65 and projecting hooks 66 adapted to enter apertures 67 in the top of the beams 61 to lock the housing. Two sets of apertures are provided, one for the projecting, and the other for the retracted position of the housing.

To the side of the car 12, on opposite sides of the housing 52, are pivoted, as indicated at 68 abutments 69 located to strike the sweep 19 and thus operate the same. The abutments are curved strips, so arranged that when the housing is projecting into operative position, said plates extend in a curve to the outer side edges of the housing, so that the latter does not strike the sweep 19. The strips are connected to the housing by links 70, so that they may fold out of the way when the housing is retracted, in which position the strips lie close to the side of the car and extend partly into the outer open end of the housing.

Fig. 10 shows a slight modification of the means for folding the abutments 69, said means comprising gear sectors 71 meshing with racks 72 on the housing.

The abutments for operating the sweeps 54 are curved strips 73 secured to the end walls of the housing 13 on the same level as said sweep, so as to be in the path thereof. Two abutments are provided for each sweep in order that the operation may be effected irrespective of the direction in which the car 12 may be traveling.

The car apparatus may be located near one end of the car, as shown in Fig. 1. If located at the center door of the car, the mechanism shown in Fig. 9 is employed.

The operation of the apparatus herein described may be summarized as follows: The

mail clerk in the car 12 opens the door 58, and upon swinging the top 55 open, deposits the bag on one side of the sweep 54 and adjusts the latter so that it projects from the open front end of the housing 52. The top 55 is then dropped down and the housing 52 and abutments 69 projected, and the door 58 closed. The gate 41 of the station apparatus being open, and the gate 21 closed, and a bag in the compartment of the sweep 19, the bags are exchanged in the following manner: As the car 12 arrives at the station apparatus and the strip 36 strikes the tappet 35, the gate 21 opens. As the train passes onward, one of the abutments 69 strikes the sweep 19, and at the same time one of the abutments 73 strikes the sweep 54, so that the bag behind the sweep 19 is thrown into the car and the bag behind the sweep 54 is thrown into the receiving compartment of the station apparatus, the gate 41 of the latter immediately closing as hereinbefore described. The mail clerk in the car now retracts the housing 52 and after placing another bag sets the apparatus for the next station.

I claim:

1. In a mail bag delivery apparatus, a bag-containing receptacle, a sweep working in the receptacle to throw the bag therefrom, a slidable gate straddling the sweep, gate opening means, a latch for holding the gate closed, means for retracting the latch, a tappet for actuating said latch retracting means, and a car-carried trip into the path of which the tappet extends.

2. In a mail bag delivery apparatus, a bag-containing receptacle, means for throwing the bag therefrom, a gate closing the receptacle, gate opening means, a slidable latch for holding the gate closed, a roller carried by the latch, a lever carrying a cross-bar having a depression in which the aforesaid roller seats when the latch is in holding position, a tappet operatively connected to the lever, and a car-carried trip into the path of which the tappet extends.

3. In a mail bag delivery apparatus, a bag-containing receptacle, means for throwing the bag therefrom, a gate closing the receptacle, gate opening means, a slidable latch for holding the gate closed, a roller carried by the latch, a lever carrying a cross-bar having a depression in which the aforesaid roller seats when the latch is in holding position, a rock-shaft operatively connected to the lever, a tappet connected to the rock-shaft, and a car-carried trip into the path of which the tappet extends.

4. In a mail bag delivery apparatus, a bag-containing receptacle, means for throwing the bag therefrom, a gate closing the receptacle, gate opening means, a latch for holding the gate closed, means for retracting the latch, a tappet for actuating said

latch retracting means, and a car-carried trip into the path of which the tappet extends.

5 5. In a mail bag receiving apparatus, a receptacle, a gate for closing the receptacle, gate opening means, a tiltable platform in the receptacle, a detent engageable with the gate when the same is open, and a trigger carried by the platform and engageable with the detent.

10 6. In a mail bag receiving apparatus, a receptacle, a gate for closing the receptacle, gate opening means, a tiltable platform in the receptacle, a detent engageable with the gate when the same is open, a trigger carried by the platform and engageable with the detent, and a detent in the receptacle and engageable with the gate when the same is closed.

20 7. In a mail bag receiving apparatus, a receptacle, a gate for closing the receptacle, gate opening means, a tiltable platform in the receptacle, a detent engageable with the gate when the same is open, a trigger carried by the platform and engageable with the detent, and a detent pivoted to the trigger, and engageable with the gate when the same is closed.

30 8. In a mail bag receiving apparatus, a receptacle, a gate for closing the receptacle, gate opening means, a tiltable platform in the receptacle, a detent engageable with the gate when the same is open, a trigger carried by the platform and engageable with the detent, a detent in the receptacle and engageable with the gate when the same is closed, and a rocking lever engageable with the last-mentioned detent for releasing the same from the gate.

40 9. In a mail bag delivery apparatus, a bag containing receptacle open in front, and comprising a bottom and a side wall, a sweep working in the receptacle across the bottom thereof to throw the bag therefrom through the open front of the receptacle, and a hinged top for the receptacle.

45 10. In a mail bag delivery apparatus, a bag containing receptacle, a sweep working

in the receptacle to throw the bag therefrom, a slidable housing carrying the receptacle, a support for the housing, and a foldable abutment hinged to the support and connected to the housing.

11. In a mail bag delivery apparatus, a bag containing receptacle, a sweep working in the receptacle to throw the bag therefrom, a slidable housing carrying the receptacle, a support for the housing, and an abutment hinged to the support and connected to the housing to fold alongside the support when the housing is retracted.

12. In a mail bag delivery apparatus, a bag containing receptacle, a sweep working in the receptacle to throw the bag therefrom, a support, a housing carrying the receptacle and slidable to project from the support, an abutment hinged to the support and extending to the outer end of the housing when the same is projected, and a connection between the abutment and the housing for folding the abutment when the housing is retracted.

13. In a mail bag delivery apparatus, a bag containing receptacle, a sweep working in the receptacle to throw the bag therefrom, a housing carrying the receptacle, a support for the housing including spaced beams having grooved inner sides, and rollers carried by the housing and working in the grooves.

14. In a mail bag delivery apparatus, a bag containing receptacle, means for throwing the bag therefrom, a gate closing the receptacle, gate opening means, a latch for holding the gate closed, means for retracting the latch, a tappet for actuating said latch retracting means, and a car-carried trip into the path of which the tappet extends.

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

EDWARD BAKER.

Witnesses:

CHARLES F. DEZAUCHE,
JAMES ALFRED GASTON.