

A. M. BRIDGEWATER.
MAIL CATCHER.

APPLICATION FILED APR. 28, 1909.

Patented Dec. 14, 1909.

3 SHEETS—SHEET 1.

943,336.

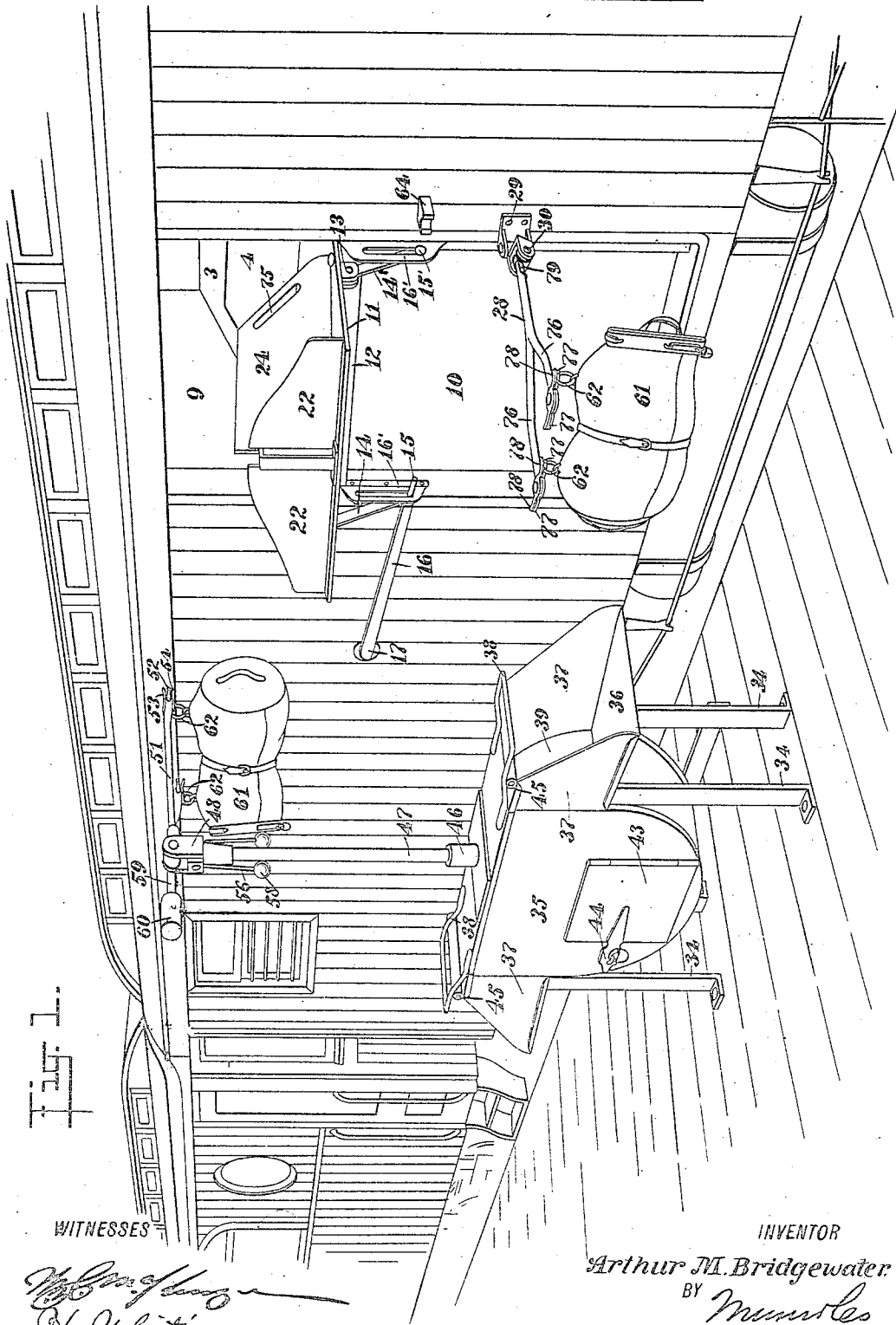


Fig. 1.

WITNESSES

H. Whiting

INVENTOR

Arthur M. Bridgewater

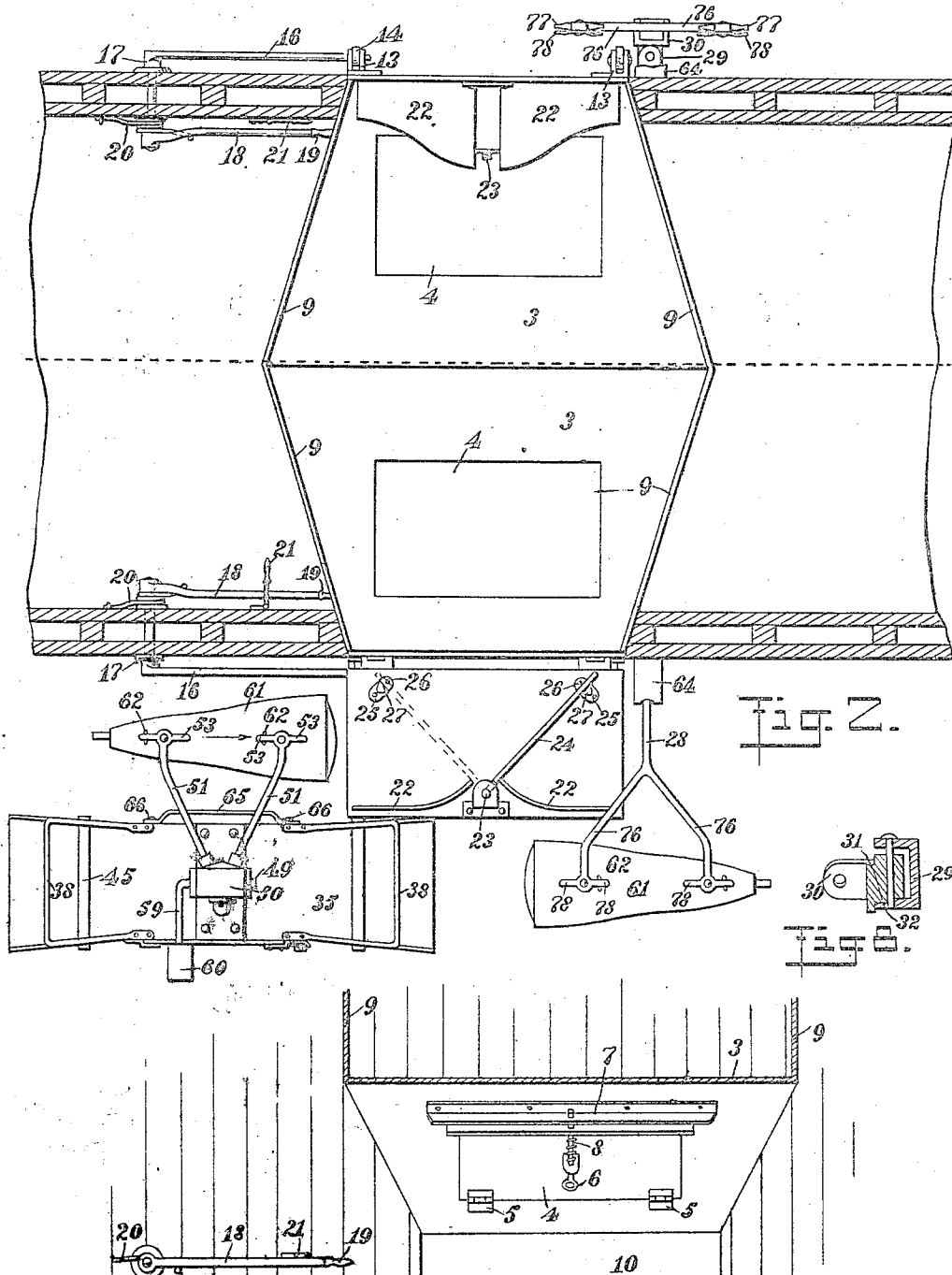
BY *Mumford*

ATTORNEYS

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WITNESSES

H. B. Whitely
H. H. Whitely

Fig. 3.

INVENTOR
Arthur M. Bridgewater
BY *Mumler*
ATTORNEYS

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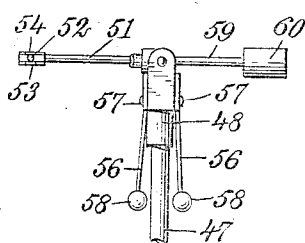
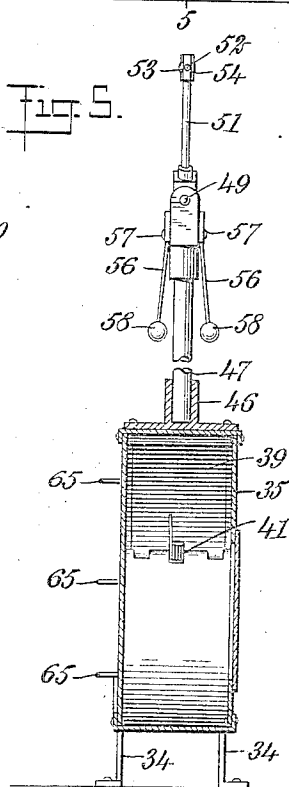
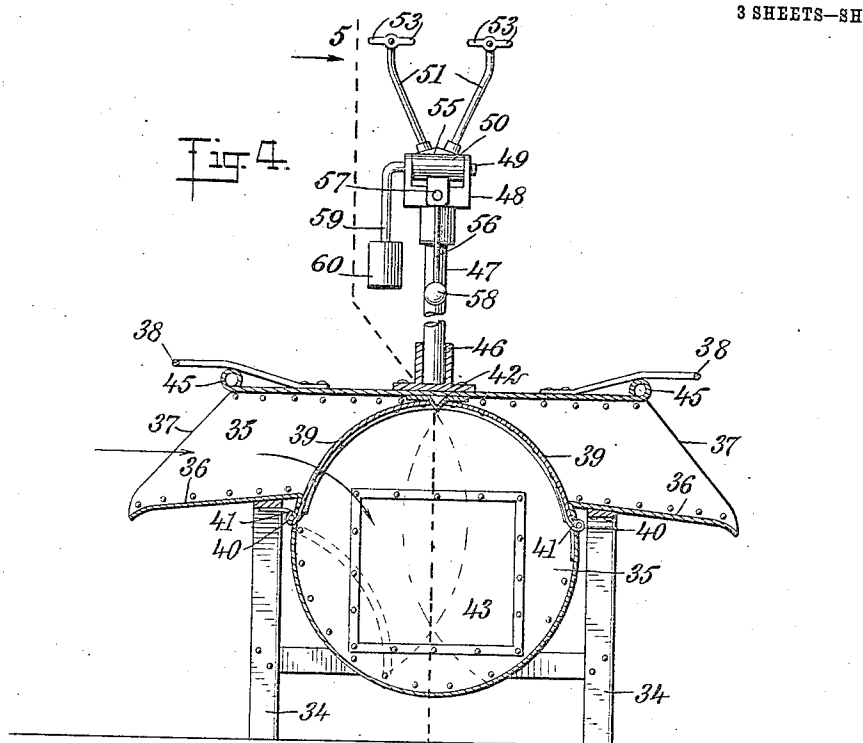


Fig. 6.

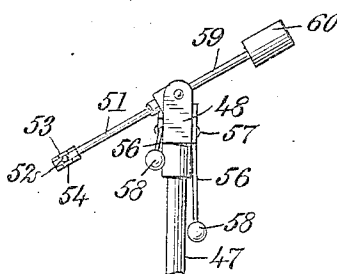


Fig. 7.

WITNESSES

[Signature]
A. Whiting

INVENTOR
Arthur M. Bridgewater
BY *[Signature]*
ATTORNEYS

UNITED STATES PATENT OFFICE.

ARTHUR MARSHALL BRIDGEWATER, OF DENVER, COLORADO, ASSIGNOR OF ONE-THIRD TO WILLIAM C. LYONS AND ONE-THIRD TO CHARLES E. SHUFFELBARGER, BOTH OF DENVER, COLORADO.

MAIL-CATCHER.

943,336.

Specification of Letters Patent.

Patented Dec. 14, 1909.

Application filed April 28, 1909. Serial No. 492,636.

To all whom it may concern:

Be it known that I, ARTHUR MARSHALL BRIDGEWATER, a citizen of the United States, and a resident of Denver, in the county of Denver and State of Colorado, have invented a new and Improved Mail-Catcher, of which the following is a full, clear, and exact description.

This invention relates to apparatus adapted to deliver and receive from railway trains, mail-bags and the like. It is of that type of device in which the delivering means, both on the train and on the ground, is in the nature of a crane, and the receiving means is in the nature of a combined guide and receptacle.

The object of this invention is to provide a device which will be simple in operation and easily constructed, and with the least number of parts consistent with good workmanship.

The invention further consists in the construction and combination of parts to be more fully described hereinafter and particularly pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view showing the device attached to a mail train and to a station platform; Fig. 2 is a horizontal cross-section through the car, showing the device in the act of receiving and delivering mail-bags; Fig. 3 is a partial vertical section through the center of the car; Fig. 4 is a vertical longitudinal section through the mail-receiving receptacle on the platform; Fig. 5 is a transverse vertical section on the line 5-5 of Fig. 4; Fig. 6 is a detail view, showing the bag-supporting crane on the platform device in the position in which it is adapted to support the mail-bag; Fig. 7 shows the crane in another position where the latch has been tilted up in order to permit the crane to be swung down to receive the mail-bag; and Fig. 8 is a detail sectional view showing the means of locking the car crane against horizontal swinging.

Referring more particularly to the separate parts of the device, 1 indicates a railroad car to which the device is connected. Within the railroad car and extending from

side to side thereof, near the roof of the car, is a receptacle 2. The bottom of this receptacle 2 is in the form of two sections 3, meeting at about the middle of the car. These sections 3 slope downwardly toward the sides of the car, and have openings therein which permit access to the receptacle. These openings are closed by suitable doors 4, which are hinged to the bottom of the receptacle in any suitable manner, as by means of hinges 5. These doors 4 are adapted to be locked to the bottom of the receptacle by means of a locking-bolt 6, which engages in an opening in a cross-piece 7 on the under side of the bottom of the receptacle. This bolt 6 is adapted to be held locked by means of a spring 8. The sides 9 of the bottom sections 3 converge toward each other from the center of the car to the sides thereof.

The car 1 has a door opening 10 on each side thereof near the top of each of which is located an apron 11, which is pivoted in any well-known manner to a cross beam 12 secured to the door posts. Inasmuch as these aprons and their actions are exactly similar, only one will be described. On the under side of the apron 11 there are provided at the ends thereof brackets 13, to which are pivoted suitable links 14 and 14', which in turn are guided and supported by pins 15 and 15' sliding in suitable slotted brackets 16' secured in any well-known manner to the door posts. In order to raise and lower the apron 11, through the link 14, the pin 15 is secured to one arm 16 of a bell crank 17 which is pivoted through the side of the car and has another arm 18 inside the car extending in substantially the same direction as the arm 16. The arm 18 has a handle 19 formed at one end and is adapted to operate the arm 15 to raise and lower the apron 11 by means of the link 14.

Suitably secured to the side of the car and to the arm 18 is a spring 20 which is adapted to press up on the arm 18 so as to raise the apron 11 and force it into its closed position. Suitably secured within the car, to the side thereof, is a latch lever 21. This latch lever 21 is adapted to be swung over the arm 18 to hold it in its lowered position and thus hold the apron 11 in open position. When it is desired to raise the apron into its closed position, it is only necessary to swing the latch 21 back close to the side of

the car and allow the spring 20 to force the arm 18 up and thus raise the apron 11. On the inner or upper surface of the apron 11 are suitably secured a pair of guides 22. These guides are straight for a portion of their length and then curve inwardly toward the side of the car, so as to throw a mail-bag which comes in contact with them, toward the receptacle 2. Coacting with these guides and pivotally secured in any suitable manner to the apron 11, as at 23, is a deflector 24, which has a suitable hand hold 75 thereon, whereby it may more easily be manipulated. This deflector 24 may be swung so that it will form a continuation of either of the guides 22, as shown in the full and dotted lines in Fig. 2. In either of its positions it is adapted to be locked by latches 25. Each of these latches 25 has a small upwardly-projecting point 26 upon the surface thereof, which is adapted to hold the deflector 24 against a large projection 27. This projection 27 also acts in the nature of a brace to take up the shock of the mail-bag coming against the deflector. In order to shift the deflector from one position to another it is necessary to lift it slightly on its pivot so as to sweep over the projection 26. The deflector 24 is so placed that it forms a continuation of the guide 22 and acts to deflect the mail-bag into the receptacle 2, where the diverging side 9 of the receptacle acts as a further continuation and changes slightly the course of the mail-bag. The receptacle is sloped so as to gradually take up the force due to the momentum of the mail-bag.

The delivery apparatus on the car consists of a pair of cranes 28, which are pivoted to each side of the car in such a way as to be capable of swinging in a horizontal plane so as to be swung into and out of the doorways 10 and also so as to swing in vertical planes in order to automatically get out of the way when the mail-bag has been removed therefrom. In order to support each of the cranes 28 in this manner there is provided a bracket 29 secured in any well-known manner to each side of the car. Rotatably secured in bearings in the bracket 29, there is provided a vertical bracket 30 which has a V-shaped projection 31 which is adapted to engage a complementary notch 32 to hold it in a position corresponding to the extended position of the crane 28. The crane 28 is pivotally secured to the bracket 30 so as to swing in a vertical plane. Each of the cranes 28 has an outwardly-extending portion which divides into a pair of arms 76, each of which has at the end thereof a pair of fingers 77 extending in opposite directions. Coacting with the fingers 77 and adapted to secure a ring 62 on a bag 61 to the fingers are spring clamps 78 fastened in any well-known manner to the fingers 77.

When the mail-bag 61 is attached to the fingers 77, its weight holds the crane 28 in a substantially horizontal position against the action of a spring 79, which engages the bracket 30 and the under side of the crane 28 and is adapted to return the crane 28 to a substantially vertical position as soon as the mail-bag is removed. The shock of the return of the crane 28 is taken up by a suitable buffer 64 which may have a rubber face thereon, and is secured in any well-known manner to the side of the car.

Having described the delivering and receiving mechanism on the car, we next come to the receiving mechanism on the station platform. Supported on the platform in any suitable manner, as by means of the framework 34, is a receptacle 35. This receptacle is in the form of a hollow cylinder and has at opposite sides thereof, a pair of chutes 36 leading into the receptacle. These chutes 36 have flaring sides 37, which also slope downwardly toward the edge of the bottom of the chutes. This form is best adapted to receive a mail-bag and guide it directly to the receptacle. Extending over the top of each chute and fastened in any suitable manner to the receptacle are the mail-bag detachers 38, which may be of any suitable form, but are preferably of strong wire bent in substantially U-shape. These detachers are adapted to come in contact with the rings 62 on the mail-bag and remove them from the fingers 77 on the cranes 28.

Extending across the opening in the chutes and acting as closures to the receptacle are doors 39, which are hinged to the receptacle in any suitable manner, as at 40, preferably somewhat below the bottoms of the chutes 36; these doors act both as buffers and as deflectors. When the mail-bag comes in contact with the outside of the door, the latter serves to take up the momentum of the mail-bag. This is aided by means of a spring 41, which is adapted to normally hold the door 39 across the chute. When the mail-bag strikes the inner or under surface of the door 39, the curve thereof acts to guide and direct the mail-bag into the receptacle. At the top of the receptacle is a V-shaped flanged member 42, which acts as a stop or abutment for the doors 39. Access is gained to the receptacle 35 by means of a door 43 in the side thereof, which is adapted to be locked by any suitable means, such as that indicated at 44. The detachers 38 are supported in a slightly elevated position by means of the top of the receptacle 35, which is coiled back on itself, as shown at 45.

Having described the stationary receiving mechanism, we now come to the stationary delivering mechanism. Suitably secured in a support 46, on the top of the receptacle

35, is a crane 47 which is adapted to rotate in the support 46. This crane 47 has a head 48 which is bifurcated and has bearings therein, and adapted to rotate in these bearings is a shaft 49, which has fixed thereon a member 50 which is adapted to rotate with the shaft. Extending upwardly and diverging slightly from each other are a pair of arms 51, suitably secured to the member 50. Each of these arms has at the top thereof, a pair of fingers 52 extending in opposite directions. Coacting with each of these fingers 52 is a pair of clamps 53 and 54; these clamps may be designated as upper and lower clamps when considering the arms in their horizontal position, as shown in Fig. 6. On the sides of the member 50 are surfaces 55, which are adapted to engage latches 56 which are pivotally secured at 57 to the head 48. These latches 56 have counterweights 58 on the ends thereof which are adapted to retain them normally in a vertical position. These latches are for the purpose of supporting the arms 51 in their horizontal position, as shown in Fig. 6, in which position they are adapted to support a mail-bag. Integral and extending at an angle with the shaft 49 is an arm 59, on the end of which is a counterweight 60. This counterweighted arm 59 serves to keep the arms 51 normally in a vertical position. Mail-bags, as indicated at 61, have a pair of rings 62 which are adapted to engage the fingers 77 and 52 to support the bag ready to be delivered.

On the stationary receptacle, on the side opposite to which the door 43 is formed, are a number of steps 63, suitably fastened to the receptacle as by means of rivets 66. These steps enable a person to climb up and more easily place the mail bag on the supporting fingers.

In the operation of the device, the mail-bags are supported, by means of the rings 62, on the fingers 77 and 52 of the supporting cranes. On the crane on the train they are supported on the fingers which extend in a direction opposite to which the train is moving, so that the bag will readily slide off the fingers and be deposited in the receptacle. On the stationary crane they are supported on the fingers extending in the direction in which the train is moving, for the same reason, so that the bag may be readily slipped off the fingers and into the moving receptacle. In order to place the mail-bag on the stationary crane it is tilted down to the position shown in Fig. 7 and the rings 62 slipped over the fingers between the fingers and the upper clamps; then the arms 51 are tilted up into a horizontal position and the latch 56 inserted so that it will engage the surface 55 and hold the crane in a horizontal position. The weight of the bag more than counterbalances the counter-

weight 60 so that it will be held firmly against the latch 56. The apron on the train is swung down and opened, and the deflector 24 is adjusted so that it will stand in a position to form a continuation of the guide which will first come in contact with the mail-bag. When the train comes in contact with the mail-bag, the deflector 24 hits the mail-bag and detaches it from the fingers and guides it into the receptacle 2, where it can be removed through the door 4 into the car below. The detacher 38 on the stationary receiver hits the rings 62 on the mail-bag and detaches the bag from the fingers 77. The bag slides into the chute 36 and is partially stopped by means of the spring-pressed buffer cover 39, and passes into the receptacle 35, sliding on the under surface of the other cover 39. The latch 21 on the inside of the car is moved from over the arm 18 so that the spring 20 automatically draws the apron 11 up into its closed position so as to prevent any accidents which might occur were it in its outwardly-extending position. The arm 51 is arranged so that it can swing to either side of the crane 47 in order to permit it to be used with either a double or a single track. The car has a pair of aprons and a pair of cranes on each side thereof so that it may receive and deliver mail from platforms situated on either side of the train, and the cranes are so pivoted that they may be swung into the doorway 10 of the car so as to adjust the mail-bags therein, and also so that they will swing vertically in order to be extended and retracted.

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

1. In a mail catcher, the combination with a car, of an apron, a pair of guides for said apron, a deflector for said guides, a receptacle connected to said apron, and a door on the under side of said receptacle.
2. In a mail catcher, the combination with a car, of an apron pivoted to said car, a pair of guides for said apron, a deflector for said guides, pivoted between said guides, and means adapted to lock said deflector in working relation with either of said guides.
3. In a mail catcher, the combination with a car, of an apron pivoted to said car, a pair of guides on said apron, a deflector pivoted to said apron between said guides, locking means on said apron adapted to hold said deflector in working relation with either of said guides, a receptacle on said car, and a door in the bottom of said receptacle.
4. In a mail catcher, the combination with a car, of an apron pivoted to said car, a link pivoted to said apron, having a sliding engagement with said car, and a lever pivoted to said car and connected to said link.
5. In a mail catcher, the combination with

- a car, of an apron pivoted to the car, a lever adapted to operate said apron, a spring adapted to operate said lever, and means for locking said lever to the car.
- 5 6. In a mail catcher, the combination with a car, of an apron pivoted to said car, a bracket on said car, having a slot therein, a link pivoted to said apron, a bell-crank lever pivoted to said car, having sliding engagement with said bracket and adapted to operate said link, a spring coacting with said bell-crank lever, and means adapted to lock said bell-crank lever relatively to the car.
- 10 7. In a mail catcher, the combination with a car, of an apron for said car, guides on said apron, a deflector adapted to coact with said guides, a receptacle on the car adapted to coact with said apron, a lever adapted to swing said apron, and means connected to said lever, adapted to operate said lever.
- 15 8. In a mail catcher, the combination with a car, of an apron hinged to said car, a pair of guides on said apron, a deflector pivoted to said apron between said guides, latches for locking said deflector in working relation with either of said guides, a link pivoted to said apron, a bell-crank lever pivoted to said link, a bracket on said car adapted to guide said bell-crank lever, a spring adapted to operate said bell-crank lever, a lock pivoted to the car, adapted to hold said bell-crank lever relatively to the car, a receptacle in said car adapted to coact with said apron, and a bottom door for said receptacle.
- 20 9. In a mail catcher, the combination with a car, of a receptacle in said car, a plurality of aprons coacting with said receptacle, guides on said aprons, deflectors on said aprons, adapted to be adjusted into working relation with said guides, levers adapted to swing said aprons, and means other than the aprons for permitting access to said receptacle.
- 25 10. In a mail catcher, the combination with a car, of a receptacle having a bottom high near the middle and sloped toward its ends, and aprons for said car adapted to coact with said receptacle.
- 30 11. In a mail catcher, the combination with a car, of a receptacle in said car, sides on said receptacle, said sides converging from the middle toward the ends.
- 35 12. In a mail catcher, the combination with a car, of a receptacle having a bottom sloping from about its middle toward its ends, and sides on said receptacle, said sides converging from the middle toward the ends of the bottom.
- 40 13. In a mail catcher, the combination with a car, of a receptacle having a bottom sloping from about its middle toward its ends, sides on said receptacle, said sides converging from the middle toward the ends thereof, aprons for said car adapted to coact with said receptacle, and means adapted to permit access through the bottom of said receptacle.
- 45 14. In a mail catcher, the combination with a car, of a crane pivoted to said car, adapted to swing away from said car, and means adapted to automatically return the crane in a vertical plane toward the car.
- 50 15. In a mail catcher, the combination with a car, of a crane pivoted to said car and adapted to swing away from said car in the direction of its width, means on said crane adapted to support a mail-bag, means adapted to automatically swing said crane toward said car, and a buffer on said car adapted to engage said crane.
- 55 16. In a mail catcher, the combination with a car, of a crane pivoted to said car and adapted to swing in a plane at right-angles to the length of said car, diverging arms on said crane, a pair of clamps on each arm, a spring adapted to coact with said crane to automatically swing it toward the car, and a buffer on said car adapted to engage said crane.
- 60 17. In a mail catcher, the combination with a car, of a crane pivoted to said car and adapted to swing in a plane at right-angles to the length of said car, diverging arms on said crane, a pair of fingers on each of said arms, a pair of clamps adapted to coact with said fingers, a spring adapted to coact with said crane to automatically swing it toward the car, and a buffer on said car adapted to engage said crane.
- 65 18. In a mail catcher, the combination with a support, of a crane, a bag holding arm pivoted to said crane and adapted to swing in a vertical plane on both sides of the crane, and a counter-weight for said arm, adapted to hold said arm normally in a vertical position.
- 70 19. In a mail catcher, the combination with a support, of a crane, a bag holding arm pivoted to said crane and adapted to swing in a vertical plane on both sides of the crane, a counterweight for said arm adapted to hold said arm normally in a vertical position, means on said arm adapted to support a mail-bag, and a latch on said crane adapted to engage said arm.
- 75 20. In a mail catcher, the combination with a support, of a crane, an arm adapted to swing on both sides of said crane, a pair of fingers on said arm, and an upper and lower clamp for each of said fingers.
- 80 21. In a mail catcher, the combination with a support, of a rotatable crane connected to said support, a bifurcated head for said crane, having bearings therein, a member rotatably supported in said bearings, arms on said member, oppositely-extending fingers on each of said arms, upper and lower
- 85 90 95 100 105 110 115 120 125

clamps for each of said fingers, and a counterweight for said arms, adapted to retain them normally in a vertical position.

22. In a mail catcher, the combination
5 with a support, of a rotatable crane on said support, a bifurcated head for said crane having bearings therein, a member rotatably supported in said bearings, arms on said member, oppositely-extending fingers on each
10 of said arms, upper and lower clamps for each of said fingers, a counterweight for said arms, adapted to retain them normally in a vertical position, and latches on said crane adapted to hold said arms in a substantially
15 horizontal position on either side of the crane.

23. In a mail catcher, the combination with a receptacle, of a chute for said receptacle, a cover for said receptacle, pivoted across
20 said chute, a spring for holding said cover in its position across said chute, and a detacher for said chute.

24. In a mail catcher, the combination with a stationary crane, of a movable apron
25 adapted to be attached to a side of the car, a plurality of guides on said apron, a deflector adapted to coact with said guides, and means on the car adapted to coact with said apron.

25. In a mail catcher, the combination
30 with a crane adapted to be pivoted to a car, bifurcated arms on said crane, oppositely-extending fingers on said arms, clamps adapted to coact with said fingers, a spring adapted to swing said crane, a stationary
35 receptacle adapted to coact with said crane, a flaring chute for said receptacle, a detacher for said receptacle, and a hinged cover adapted to extend across said chute.

26. In a mail catcher, the combination
40 with a stationary crane comprising a pair of pivoted arms, a counterweight for said arms, oppositely-extending fingers on each of said arms, and a pair of clamps adapted to coact with each of said fingers to retain a mail-
45 bag, of a receiver adapted to be attached to a car, coacting with said crane, said receiver comprising an apron, a plurality of guides on said apron, a deflector adapted to coact with either of said guides, and a receptacle
50 adapted to coact with said apron.

27. In a mail catcher, the combination with a crane comprising a support, an upright rotatably mounted in said support, a head on said support having bifurcated arms,

a member adapted to be rotatably supported 55
in said arms, a pair of arms extending from said rotatable member, a counterweight attached to said rotatable member and adapted to counterbalance said arms, a pair of oppositely-extending fingers on each of said arms 60
and a pair of clamps adapted to coact with each of said fingers to hold the mail-bag to said fingers, of a receiver adapted to coact with said crane, said receiver comprising an apron adapted to be pivoted to a car, a pair 65
of guides on said apron, a deflector adapted to coact with either of said guides, means for locking said deflector in working relation with either of said guides, a receiver adapted to coact with said apron, said receiver having 70
an upwardly-sloping bottom and inwardly-converging sides, a link pivoted to said apron, a bell-crank lever connected to said link, adapted to swing said apron, and means for locking said bell-crank lever. 75

28. In a mail catcher, the combination with a car, having a doorway, of a crane pivoted to said car so as to swing into and out of said doorway, said crane being also adapted to swing in a vertical direction and 80
a bag attaching member on said frame.

29. In a mail catcher, the combination with a car, of a crane on said car, means on said crane adapted to suspend a mail-bag, and a universal connection between said 85
crane and said car.

30. In a mail catcher, the combination with a car, of a crane pivoted to said car so as to swing in either a horizontal or vertical plane, a lock for holding said crane against 90
horizontal swinging, and means adapted to normally hold said crane in a substantially erect position and a bag attaching member on said crane.

31. In a mail catcher, the combination 95
with a support, of a reversible arm having bag-supporting means thereon, adapted to extend said bag-supporting means horizontally to either side of said support, and means for normally holding said arm in a 100
vertical position.

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

ARTHUR MARSHALL BRIDGEWATER.

Witnesses:

WILLIAM CHARLES LYONS,
MAY HAYS.