No. 849,673. PATENTED APR. 9, 1907.

S. A. FRASER & F. S. KLINE.

MAIL BAG CATCHING AND DELIVERING APPARATUS.

APPLICATION FILED JAN. 28, 1907. 4 SHEETS—SHEET 1.

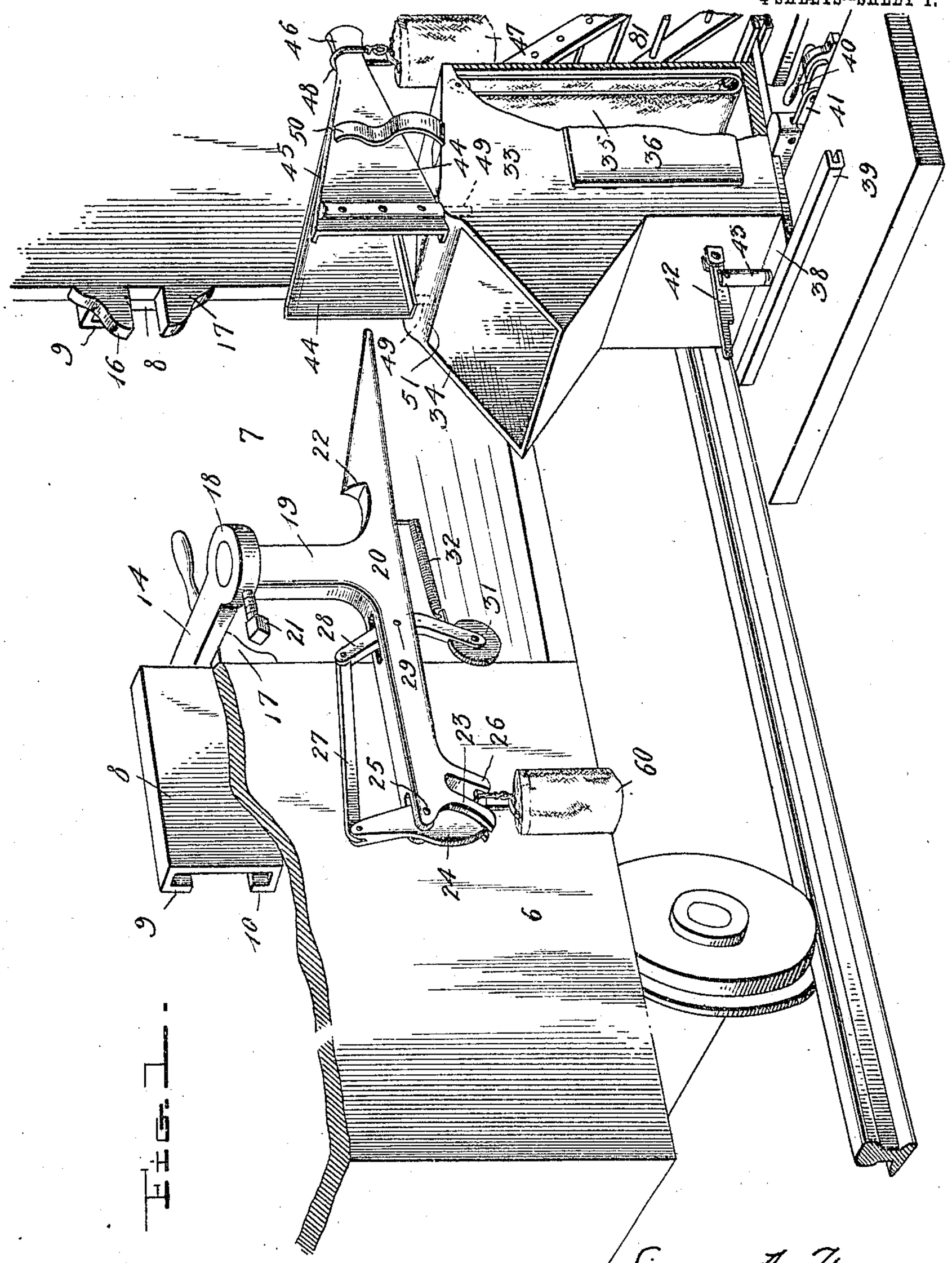

FIG. 1.

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THE NORRIS PETERS CO., WASHINGTON, D. C.

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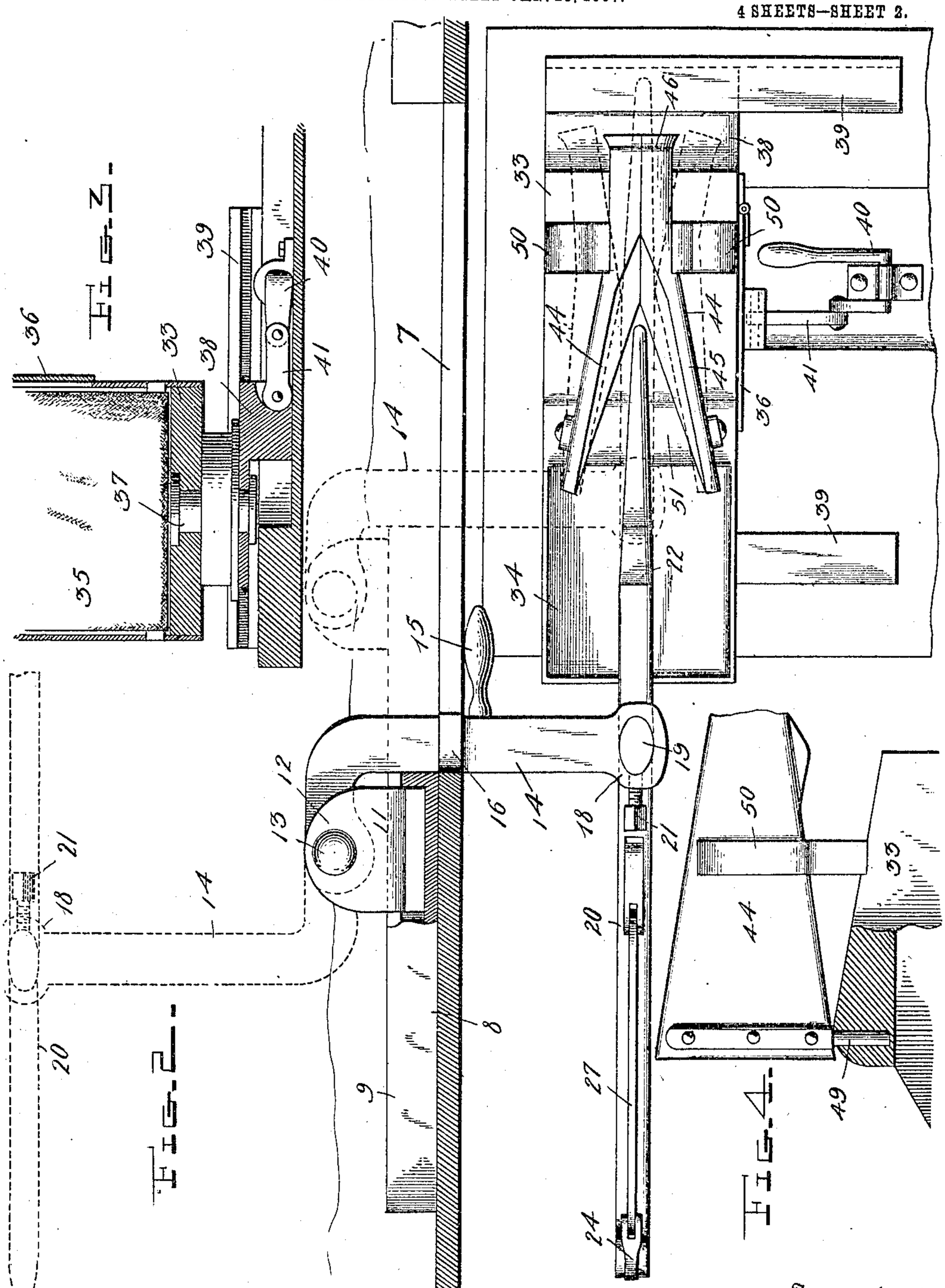

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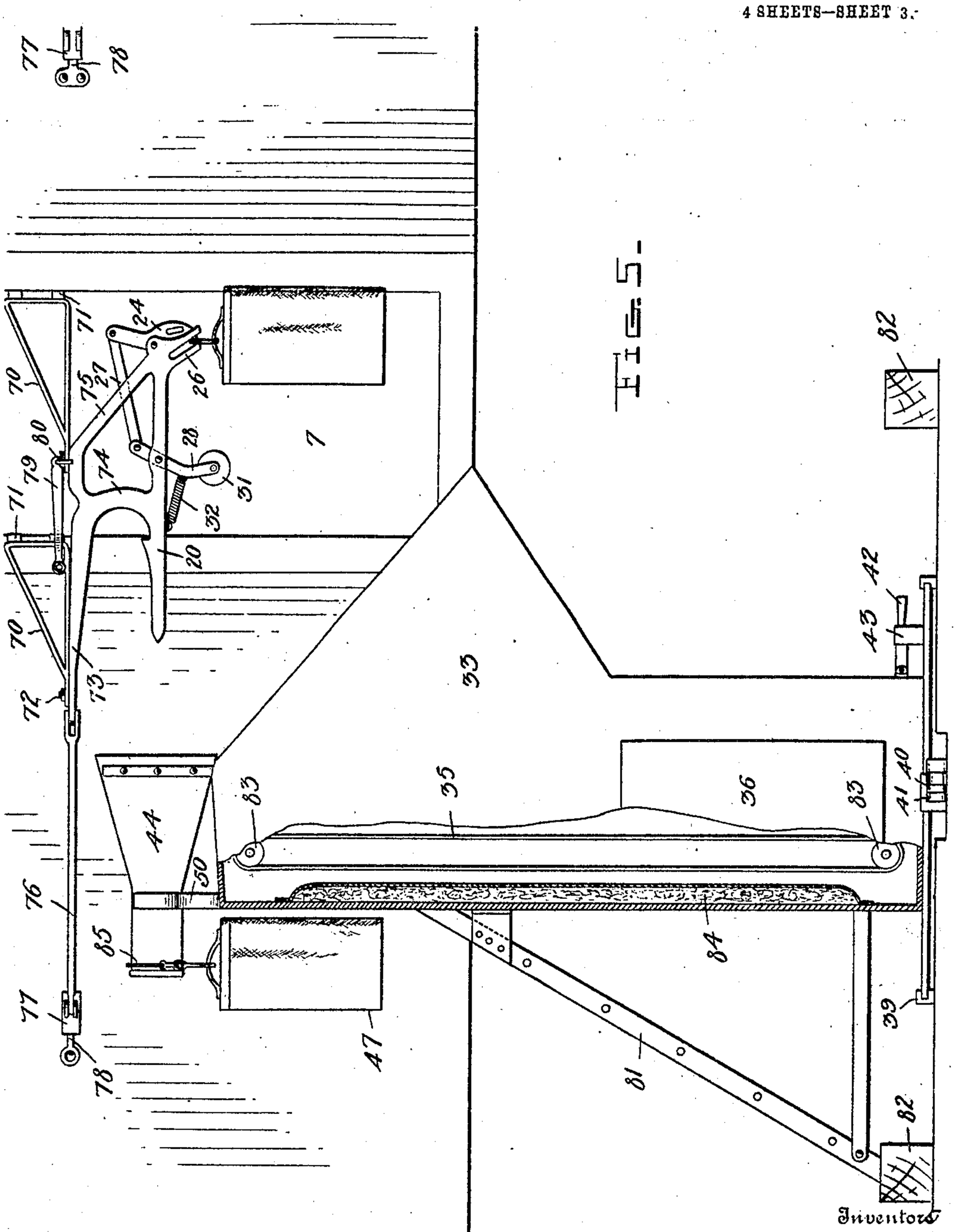

FIG. 5.

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4 SHEETS—SHEET 4.

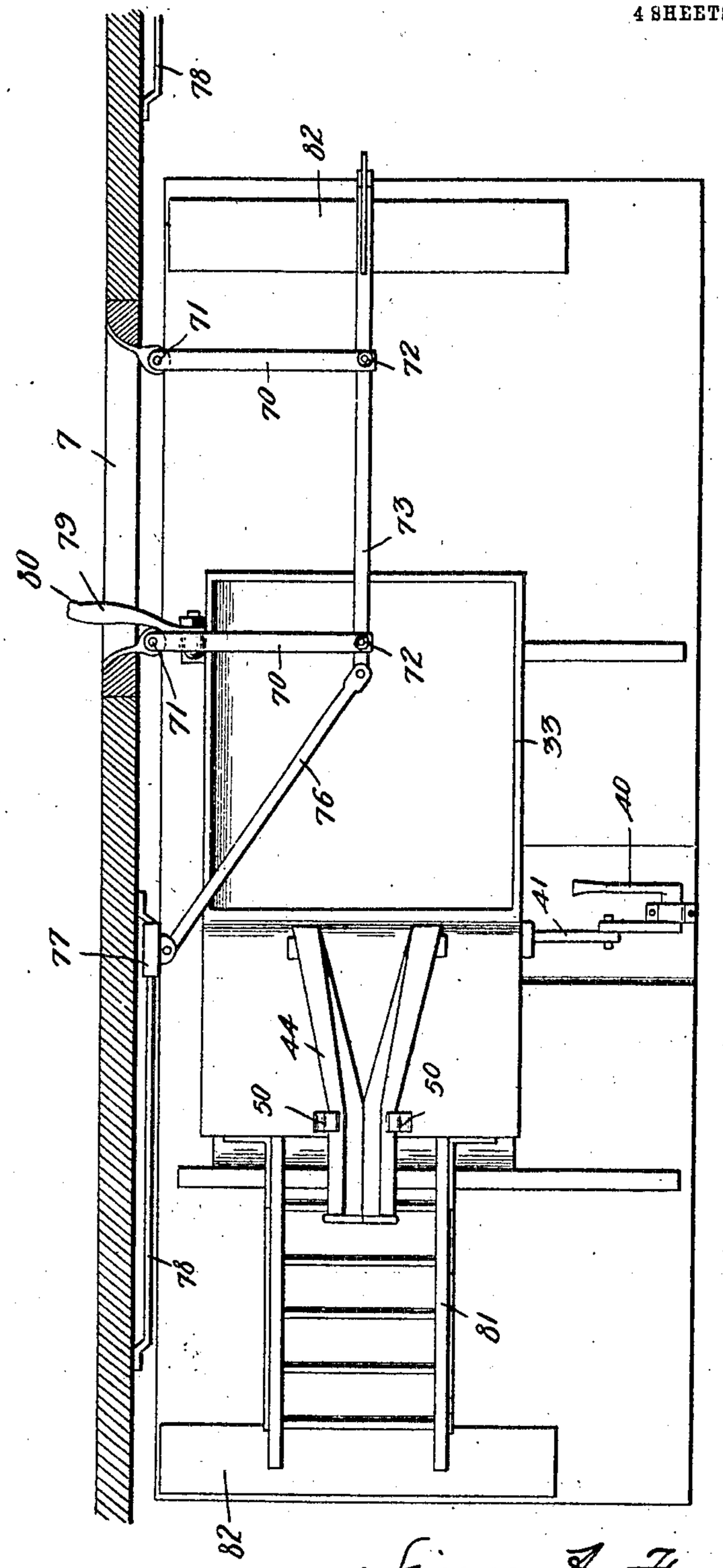

FIG. 6.

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UNITED STATES PATENT OFFICE.

SIMON A. FRASER AND FREDRICK S. KLINE, OF LORAIN, OHIO.

MAIL-BAG CATCHING AND DELIVERING APPARATUS.

No. 849,673. Specification of Letters Patent. Patented April 9, 1907.

Application filed January 28, 1907. Serial No. 354,433.

To all whom it may concern:

Be it known that we, SIMON A. FRASER and FREDRICK S. KLINE, citizens of the United States, residing at Lorain, in the county of Lorain and State of Ohio, have invented certain new and useful Improvements in Mail-Bag Catching and Delivering Apparatus, of which the following is a specification.

This invention is a mail-bag catching and delivering apparatus suitable for use on railways, and has for its main object to provide an improved device for collecting and delivering mail-bags by a moving train.

A further object of the invention is to provide a device capable of collecting and delivering a plurality of bags at the same time, being in this respect much superior to those devices which will only collect or deliver a single bag.

A further object of the invention is to provide improved devices carried by the car and capable of operation from either side or in either direction and which can readily be moved inside the car to permit the removal of the collected bag and also to permit the attachment of a bag to be next delivered. This is advantageous, since it does not call for exposure of the clerk at or through the door while removing or attaching a bag. Also the device can be slid back into the car when desired, so that it will form no obstruction to the doorway when not in use.

A further object of the invention is to provide improved devices at the station for delivering the outgoing bag to the catcher-arm and for receiving the incoming bags, said devices being so arranged that they may be reversed to operate in either direction and are also capable of being shifted laterally away from the track to be entirely out of action. Furthermore, the said devices occupy but little floor-space, which is highly desirable in station-platforms.

With these and other objects in view the invention is hereinafter described and claimed and is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view illustrating the apparatus, parts being broken away to show other parts. Fig. 2 is a top plan view, the car being in horizontal section and showing in dotted lines the catcher swung into the car. Fig. 3 is a vertical central section illustrating the pivotal connections of the receiving-box. Fig. 4 is a detail, partly in section, showing particularly the pivot of one of the guides for the pointed shaft or bar of the catcher. Fig. 5 is a side elevation, and Fig. 6 is a top plan view of a modification.

Referring specifically to the drawings, the car is indicated at 6, and its doorway at 7. Fixed to the inside of the side wall of the car adjacent to the doorway is a supporting-guide 8, the front end of which is substantially flush with the door-jamb. There is one of these supports at each side of the door. Each support consists of a plate extending horizontally and having inturned flanges 9 at its upper and lower edges, forming an undercut channel 10.

Slidable in this channel is a plate 11, having projecting ears 12, to which are pivoted, as at 13, a horizontal swinging arm 14, bent to form an elbow, so that when swung out the outer end of the arm will project beyond the side of the car a sufficient distance to cooperate with other devices placed on the platform of the station and to be hereinafter described. The arm 14 has a handle 15, by which it may be swung in or out, and when swung out it bears or abuts against the door-jamb, as seen at 16, whereby the thrust or impact strain is supported. Furthermore, a bracket 17, secured to the door-jamb, assists in supporting the arm in such position.

The arm and the devices carried thereby may be swung out or in through the doorway, and when swung in is located entirely in the car, as indicated in dotted lines in Fig. 2, thus allowing all necessary preparations to be made by the clerks within the car and also allowing the door to be closed in bad weather.

The block 11 is slidable in the guides 9, and when located at the front end the arm is in operative position at the door, and when slid back the arm and parts carried thereby are back within the car, offering no obstruction to the doorway, and so permitting the same to be used for other purposes.

As stated, there is a support and guide 8 and 9 at each edge of the doorway, and the apparatus may be reversed by sliding the block 11 out of one guide and placing the same in the other, the arm 14 being inverted and the outer parts reversed.

At its outer end the arm is provided with an eye 18, in which fits the end of a limb 19, projecting from the shaft or main bar 20 of the catcher. The eye 18 is elliptic or non-circular and so set that the catcher cannot be turned, but will always be held in paral-

lelism with the side of the car. The arm is held in the eye by a set-screw 21, which may be removed to allow the parts to be inverted when reversed to the opposite side of the doorway, as referred to above.

The shaft 20 is a stout bar of metal, sharpened at its front end and provided with a barb 22. At its rear end it carries the delivery devices, being forked, as indicated at 23, and having a hooked latch 24, which is pivoted at 25 to the end of the shaft and which works at its lower end between the forks and stops at said end against a lip 26, depending from the bottom of the shaft. At its upper end the latch 24 is connected by a link 27 to a trip-lever 28, which is fulcrumed at 29 and works in a slot 30, formed in the shaft. The depending lower end of the trip-lever is provided with a roller 31 and also with a spring 32, which normally holds the latch 24 closed.

The devices at the station include a box 33 to receive the bag to be delivered. This box has a mouth 34 at one side and a cushion 35 on the opposite side and a door 36, through which the bag delivered may be removed from the box. The box is pivotally mounted, as indicated at 37, upon a sliding block 38, which slides at the edge in grooved guides 39, secured to the station-platform or to sills thereon. The guides are at right angles to the track, and consequently the box and devices carried thereby may when desired be shifted backwardly away from the track a sufficient distance to be entirely out of operation. The box is conveniently moved by means of a lever 40, connected by a link 41 to the block on which the box is mounted.

The box is pivotally mounted, as stated, so that it may be rotated to receive a bag or bags from trains going in either direction. It is conveniently turned by means of a lever 42, which is pivoted to the side thereof and which also acts as a latch by dropping into a notch in the top of the pin 43, projecting from the base-block, there being a similar pin on each side.

Mounted upon the top of the box is a pair of guides 44, placed opposite to each other and consisting of pieces of rather heavy sheet metal flanged at their upper and lower edges, as indicated at 45, and tapered to a narrow semicircular form at the end, as indicated at 46, which ends when closed together form a substantially circular neck, on which the bag 47 to be taken may be hung by its loop or handle 48. Each of the sides or guides is pivoted at 49 to the top of the box, near the front or forward edge thereof, and extends thence rearwardly beyond the rear edge thereof, and beside each of the plates is a flat spring 50, which is secured to the top of the box and bears against the side of the plate, tending to close the plates together, as shown in full lines in Figs. 1 and 2.

In operation the parts are so positioned that as the train passes the station the point of the catcher-shaft 20 will enter between the guides 44 and the guides will swing to a limited extent in either direction to accommodate themselves to the position of the shaft. This is highly important, because the swing of the car in rapid motion will often cause the position of the catcher to vary more of less, sometimes as much as several inches. Hence to insure operation under all circumstances the yieldingly-supported guides are provided. As the catcher-shaft passes through between the guides the latter so accommodate themselves to the position or direction of motion of the former that the point of the shaft passes through the throat at 46, carrying with it the bag 47. The pivotal mounting of the guides and the springs 50 then allow the guides to spread apart, as shown in dotted lines in Fig. 2, sufficient to allow the whole catcher-shaft and its connecting-limb 19 to slip through between the guides. At the same time the bag to be delivered, (indicated at 60,) carried by the latch 24, enters above the mouth 34 of the box, and at that instant the roller 31 of the trip strikes the ledge 51 at the top of the box, thereby tripping the lever and latch and allowing the bag 60 to drop from the latch and into the box. The forks 23 insure that the bag will be stripped or forced from the hook 24 as it swings back.

It is to be noticed that any ordinary number of bags may be hung upon either the neck 46 or the hook 24, since as the point of the shaft 20 passes through the former the handles or loops of the bags will slide up on the shaft and over the barb 22, which will retain them thereon until swung within the car and removed. Also a plurality of bags may be hung upon the latch 24, and when said latch is tripped they will all drop into the delivery-box.

In Figs. 5 and 6 a modification is shown which although constructed on the same general principle is more desirable for some reasons, one of which is that it does not take any room on the inside of the car, as with the construction above described. In the modified form the main bar or shaft 20 instead of being carried by a single arm which swings within the car is carried by a pair of swinging arms or brackets, (indicated at 70.) Each of these is hinged, as at 71, to one of the jambs of the car-door 7, and the main bar 20 is pivotally hung from the ends of both of these arms by means of pivot-bolts 72, which extend through the outer ends of the arms and connect the same to an upper bar or part 73, formed integral with the main catcher-bar 20 and connected thereto by limbs 74 and 75. The front end of the upper bar or part 73 is connected by a link 76 to a sleeve 77, which is slidable on a guide-rod 78, secured to the outer side of the car. There is one of

these rods and sleeves on each side of the doorway for use when the catcher is reversed. A handle 79 is connected to one of the arms 70 to swing the same in or out, and this handle has at the rear end a hook 80, which may be caught over the other arm, as shown in Fig. 5, to hold the catcher closed in or against the side of the car.

The arms 70 are, as stated, pivotally connected to the catcher and swing in parallelism in or out to place the catcher either close to the side of the car, and thus out of operation, or at a distance therefrom in proper position to enter the guide device at the station, as indicated in Fig. 6. By manipulating the handle 79 the arms and catcher may be swung around close to the side of the car, the sleeve 77 traveling up the rod 78 to the position shown in Fig. 5, which brings the catcher close to the side of the car. To hold it there, the hook 80 at the end of the handle 79 is caught over the arm 70. For operation the bar is swung out until the arms 70 stand at a right angle to the side of the car and the sleeve 77 is drawn back to the rear end of the rod 78. This holds the catcher in position to enter the guide at the station, as hereinbefore described.

To reverse the catcher, the front end of the link 76 is disconnected from the sleeve 77 and the catcher is detached from the swinging arms by removing the bolts 72. Then the catcher is reversed and the bolts replaced and the link 76 connected to the sleeve 77 on the other side of the car-door.

The box 33 is preferably provided with a ladder 81 at the rear, which enables the bag 47 to be hung on the guide and which also serves as a brace for the box. The foot of this ladder is not connected to the platform, but is preferably constructed to slide over the top thereof or upon a block 82, set upon the platform in proper position to receive it.

The cushion 35 is formed of double web of canvas or the like, which is drawn tightly over rollers 83, placed at top and bottom of the box near the back wall thereof. This forms a cheap and effective cushion, which will tend to prevent injury to the contents of the bag when it strikes. In addition to the double web an ordinary stuffed cushion 84, attached to the back wall of the box, may be used, if desired. The bags are preferably suspended by means of a rope-loop 85, provided with a snap-hook and passed through the ordinary handle of the mail-bag.

Various changes, modifications, or equivalents may be made or used within the scope of the following claims.

We claim—

1. In a mail-bag catcher and deliverer for cars, in combination, a pair of horizontally-swinging arms hinged to the opposite jambs of the car-door, a device for transferring bags, pivotally connected to the outer ends of the arms, and means for holding the arms swung either in or out.

2. In a mail-bag catcher and deliverer, in combination, a supporting-arm, and a pointed bar carried at the outer end thereof substantially parallel to the side of the car and having a bag-holding latch at its rear end, and a trip-lever carried by the bar and connected to the latch, and arranged to strike an obstacle beside the track, to release the bag.

3. In a mail-bag deliverer, in combination, a horizontal bar carried by the car substantially parallel to the side of the car and having a fork at the rear end, a latch pivoted between the branches of the fork and arranged to hold a bag, and a tripping device connected to the latch and projecting from the bar, and arranged to strike an obstacle beside the track and release the bag.

4. In a mail-bag catcher and deliverer, in combination, a horizontally-swinging arm pivotally supported on the car beside the doorway thereof, and a bar having catching devices at its front end and delivering devices at its rear end, said bar being detachably suspended from the end of the arm and reversible with respect thereto.

5. In a mail-bag catcher, in combination, a catcher-bar carried by the car, and a split tapered guide supported at the station and having yielding sides and means to hold a bag at the small end thereof, the guide being arranged so that the bar will enter at the large end thereof and pass through the same.

6. In a mail-bag catcher, in combination, a catcher-bar carried by the car, and a tapered guide at the station, formed of opposite spring-supported sides, having means at the small end thereof to support a bag, and arranged so that the bar will pass between said sides.

7. In a mail-bag catcher, in combination, a catcher-bar carried by the car, and a guide at the station, formed of opposite spring-supported side plates tapered to form a neck at the small end, adapted to receive a loop on a mail-bag, and pivotally mounted at their large ends.

8. A mail-bag catching and delivering apparatus for a station, comprising a box having a mouth adapted to receive a bag dropped by the car, a support on top of the box for the outgoing bag, and a guide on the box leading to said support, the box being pivotally mounted to turn its mouth and said guide in opposite directions.

9. A mail-bag catching and delivering apparatus for a station, comprising a receiving-box for the incoming bag, and a delivery device mounted on the box, for the outgoing bag, the box being shiftable laterally to bring the apparatus into or out of position to coöperate with devices carried by the car.

10. In a mail-bag catching and delivering

apparatus in combination, a catcher-bar carried by the car and having a latch and trip at its rear end, a receiving-box at the station having a projection in the path of the trip and arranged to release the latch and drop a bag held thereby into the box, and a support upon the box for an outgoing bag, located in the path of the catcher-bar.

11. In a mail-bag catching and delivery apparatus, in combination, an arm projecting from the car, a longitudinally-extending catcher-bar carried by the arm beside the car, and having a pointed front end adapted to enter a loop on a mail-bag, and a trip-actuated bag-holder at the rear end, a box at the station having a mouth at the side, and a ledge at the top adapted to strike the trip and release the holder as the bar passes over the box, and a tapered yielding guide mounted upon the top of the box in line with the bar and having means at its small end to hold a loop on a bag in position to be engaged by the front end of the catcher-bar as it passes through the guide.

12. In a mail-bag catcher and deliverer for cars, in combination, a pair of horizontally-swinging arms hinged to the jambs of the car-door, a bar having bag-transferring devices, pivotally connected to the outer ends of the arms, a guide-rod secured to the outside of the car, beside the doorway, a sleeve slidable on the rod, and a link connecting the sleeve and bar.

In testimony whereof we affix our signatures in presence of two witnesses.

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Witnesses:
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