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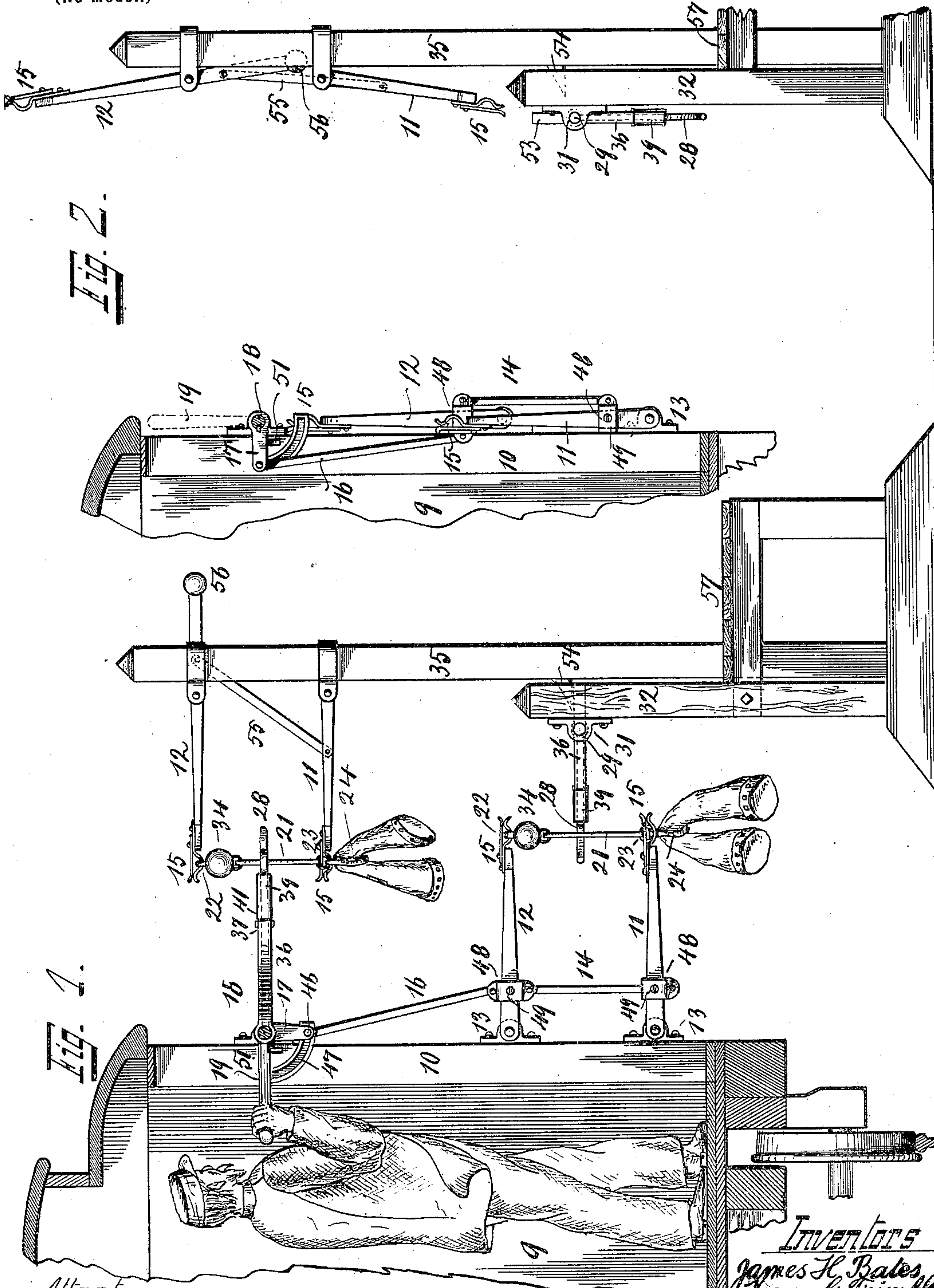
Patented June 26, 1900.

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MAIL CATCHER AND DELIVERER.

(Application filed Feb. 15, 1897.)

(No Model.)

2 Sheets—Sheet 1.



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Thomas Lee
Arthur Skine

Inventors
James H. Bates
Henry G. Trimble
William T. Bates
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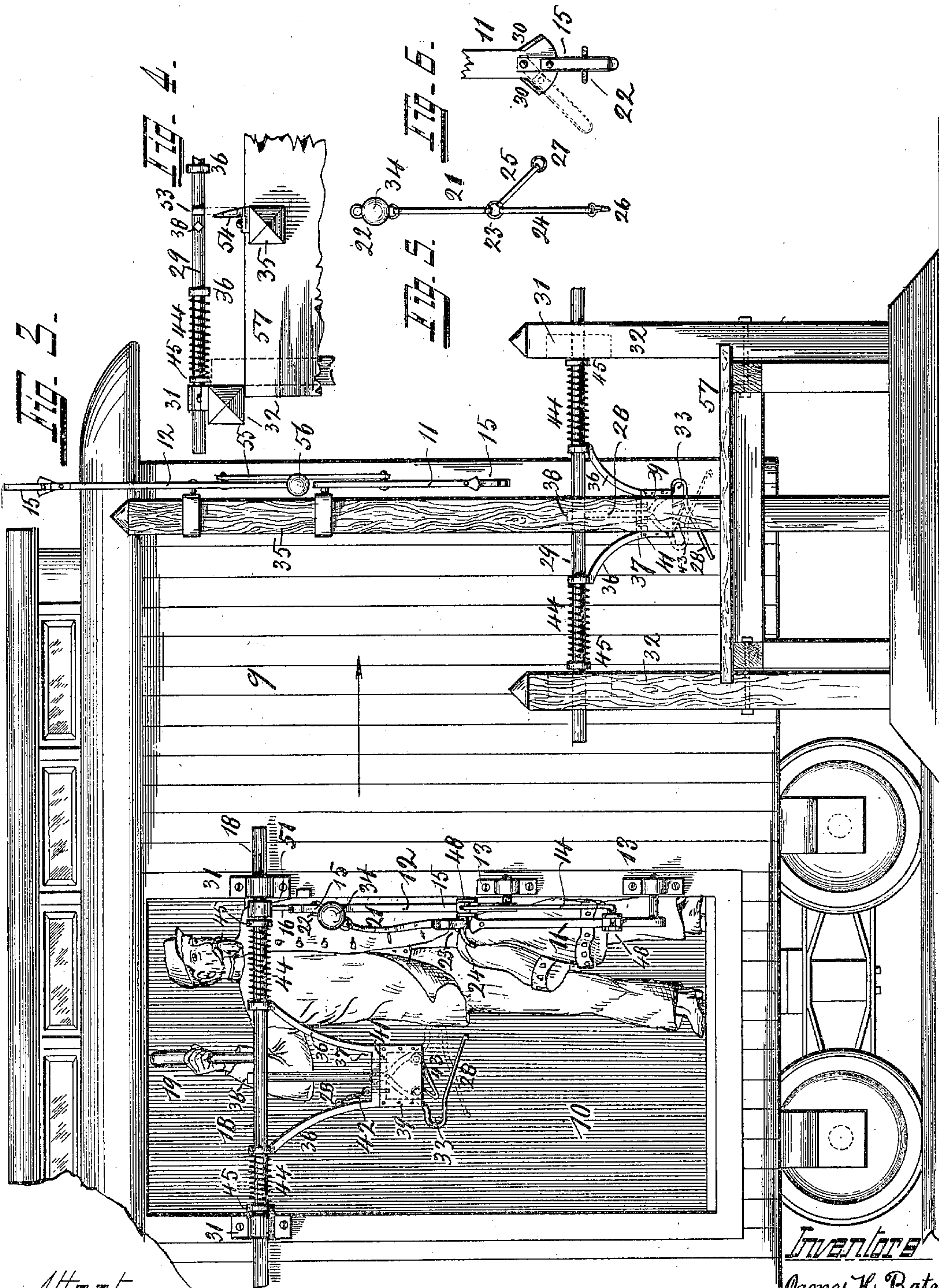
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Attest
Thomas Lee
Arthur Kline

Inventors
James H. Bates
Henry G. Trimble
William T. Bates
by C. Spengel Attys.

UNITED STATES PATENT OFFICE.

JAMES H. BATES, HENRY G. TRIMBLE, AND WILLIAM T. BATES, OF
SOMERSET, KENTUCKY.

MAIL CATCHER AND DELIVERER.

SPECIFICATION forming part of Letters Patent No. 652,585, dated June 26, 1900.

Application filed February 15, 1897. Serial No. 623,527. (No model.)

To all whom it may concern:

Be it known that we, JAMES H. BATES, HENRY G. TRIMBLE, and WILLIAM T. BATES, citizens of the United States, and residents of Somerset, Pulaski county, State of Kentucky, have invented a certain new and useful Mail Catcher and Deliverer; and we do declare the following to be a clear, full, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, attention being called to the accompanying two sheets of drawings, with the reference-numerals marked thereon, which form a part of this specification.

This invention relates to mechanical devices and contrivances partly attached to a railway mail-car and partly stationary and in the latter case located adjacent to the track, all for the purpose of, first, discharging mail from the car in a manner that the same may be taken up by a stationary receiver, and, second, for the purpose of taking mail into the car, all while the train is in motion.

More specifically, this invention therefore comprises, first, a certain device attached to a railway mail-car and by which a mail-bag to be delivered may be put in a certain position and supported therein in a certain manner, which permits it to be taken off and received by a stationary catcher erected in convenient proximity to the track.

It comprises, secondly, a catcher traveling with the car and which when moved into proper position operates in a manner to receive the mail to be taken on board the car.

These two devices carried by the car are preferably so connected that they may be manipulated by one operation.

Our invention further consists of the requisite stationary devices working in conjunction with these traveling devices and comprise the stationary catcher above referred to and a stationary deliverer, all erected in proper position and distance with reference to the track.

The two sets of devices, which work in conjunction—that is, the traveling deliverer and the stationary catcher and the traveling catcher and the stationary deliverer—operate each on the same principle and are there-

fore alike as to general construction and operation, but differ in certain parts as to their specific mechanical construction.

The general object of the device for delivering mail from the train in the manner contemplated by our invention is to do away with the present primitive mode of tossing off the mail-bags, which precludes any determination in advance as to where the bag may land, and therefore often results in loss of mail, accidents to persons who may chance to be in the vicinity of the track, not to mention the wear and tear to mail-bags and possible injury to mail-matter on account of this rough usage as well as by reason of the fact that the mail-bags often drop into accumulations of snow and rain-water.

In its general object the stationary delivery device operating in conjunction with the traveling catcher on the car does not differ from present methods, but increases the efficiency of the latter by reason of improved mechanical means. This includes particularly also the location of the stationary parts, which is such as to preclude any possible injury to persons on the passing train while projecting their heads out, which in the case of the engineer is often a matter of necessity.

In the following specification and particularly pointed out in the claims is found a full description of the invention, its operation, parts, and construction, which latter is also illustrated in the accompanying two sheets of drawings, in which—

Figure 1 shows an elevation of all the parts of the invention, comprising the devices traveling with the car as well as the stationary ones, the view being taken in the direction of the passing train with the mail-car shown in section and its delivering and catching devices respectively discharging and receiving a mail-bag. Fig. 2 shows in a similar view the parts in inoperative position—that is, as they appear singly and with reference to each before and after put out for use. Fig. 3 shows the parts as they appear when viewing the moving train sidewise, they being in a condition as illustrated in the preceding figure, but ready to be presently put in operative position by the attendant. Fig. 4 is a detail top view of part of the stationary deliverer. Fig.

5 shows the strap by which the mail-bag is suspended. Fig. 6 is a detail top view of the outer end of one of the suspension-arms.

9 indicates the part shown of a mail-car, 10 being the opening in the side thereof through which the mail-bags pass in delivering and receiving. At one side of the latter, and preferably in the lower part, are two arms 11 and 12, pivotally supported in bearings 13 and so connected to each other by a link 14 that by moving one the other one is also moved. At the outer end of each of these arms are secured catches 15, consisting of two opposing members, one of which at least is of resilient material—like spring-steel, for instance—whereby they are caused to normally approach each other, but are capable of being forced apart. Normally these arms are raised up, as shown in Fig. 2, in which condition the mail-bag to be discharged is connected to the catches on them, flanges 30 on either side of the latter limiting their rotation and preventing premature disengagement. After this the arms are lowered to project out laterally from the car for the purpose of launching the mail-bag into ready position to be received by the stationary catcher. For so operating these arms the upper one connects by means of a link 16 to a crank 17, mounted upon a rock-shaft 18, which is operated accordingly by a handle 19, secured thereto.

The mail-bag is not directly connected to the ends of arms 11 and 12, such being done through the intervention of a pliable connection, shown in this case in form of a strap 21, having rings 22 and 23 at its ends, and the distance between them being such as to be equal to the distance between catches 15 without any slack. To the lower ring 23 are secured two tie straps or chains 24 and 25, the longer one of which has a snap-hook 26 at its lower end, which end after having been passed around the mail-bag about midway between its ends is secured to ring 23 by means of said hook. In case the size—that is, circumference—of the packed bag requires it by reason of an increase of its contents then this snap-hook is connected to the end of the other strap 25, which for such purpose is provided with a ring 27. Rings 22 and 23 are slipped in between the opposing members of the catches 15, the outer ends of which members are turned slightly apart to facilitate such insertion, the necessary space for occupancy by the rings between said members being provided by curving one of them, as shown. The condition of the parts when the mail-bag is so suspended is shown in Fig. 1, where it is about ready to be stripped off by the stationary catcher. This latter consists of an arm 28, projecting from a rock-shaft 29, which is supported in bearings 31, secured to posts 32. The outer end of this arm is shaped, as shown, in the form of a hook having the contracted portion 33 at its base. In due time as the train advances strap 21 passes into this hook and speedily enters the contracted portion 33

thereof. The immediate effect is upon catches 15, which, being pivotally secured to the ends of arms 11 and 12, are caused to turn with their outer separable ends rearwardly (see Fig. 6) to facilitate thereby the disengagement of rings 22 and 23 with strap 21 and the mail-bag supported by it. The disengaged parts are prevented from dropping to the ground, however, by a ball 34, which is of a size to prevent it from slipping through the contracted part 33 of the catcher, whereby the mail-bag remains suspended on the latter and may be taken off conveniently. This ball may be constructed in any particular manner, a preferred construction being wood covered by leather.

For receiving mail the car is provided with a catcher-arm 28, similar to the one described above for the stationary catcher, only, perhaps, of different size as to length, and which arm is also secured to a rock-shaft 18 in this case, which latter is supported in bearings 31, similar to those secured to posts 32, but secured to the side of the car. Similar arms 11 and 12 are pivotally secured to a post 35 and at such height that when projecting out horizontally, as shown in Fig. 1, the catcher-arm 28 when projected out from the car will pass between them. The bag to be taken on board the car is suspended in the same manner as before described in the case of the one to be disengaged from the car and is by means of a strap 21, for which purpose similar catches are provided at the ends of arms 11 and 12. The ball 34 prevents the mail-bag after being disengaged by the catcher from dropping off therefrom until swung inside of the car.

For trains traveling in opposite directions it is only necessary to reverse the respective catcher-arms, for which purpose they are supported in a manner to permit them to be turned, as shown in dotted lines in Fig. 3. Since a loose support of this kind should have more than one bearing, a frame is provided on each of the rock-shafts, consisting of two arms 36, projecting out from the latter, one on each side of arms 2 and parallel therewith. The extreme outer ends of these arms are connected by a member 37, and the outer part of arms 2 passes through this connection, which thus provides an additional bearing at 37 for the catcher-arm. A suitable projection in shape of a nut 38 at the inner end of the latter holds them in place, but permits turning for reversal.

To hold a catcher-arm in its adjusted position, a supplementary frame 39 is provided and connected in a manner so as to turn with the former. The parts are so arranged that when the base 41 of this frame is in line with member 37 of the other frame then this catcher-hook is in proper position for catching mail in a certain direction. To reverse it in order to take mail in the other direction, it is only necessary to turn it through half a revolution until members 41 and 37 of the frames come again opposite each other. When

in such position, holes provided in these members to either side of where arm 28 passes through them register, so that when a pin 42 is inserted in a set of these holes these members, with the adjusted catcher-arm, are readily held in position. The space between the outer frame on the catcher-arms may be inclosed by sheet metal and supports the pivot of a spring-actuated trigger 43, which, while yielding when strap 21 enters the contracted part 33 of the hook, prevents the strap from sliding out therefrom. A similar trigger is provided for the stationary catcher-arm.

Cushioning devices to soften the shock when the impact takes place between the catcher-arm and strap 21 are provided in form of buffer-springs 44 and rubber cushions 45, which devices are interposed between the bearings of the rock-shafts and shoulders formed at the points where arms 46 connect to them. When the impact takes place, it is taken up by one of these springs, the whole catcher device yielding, since the rock-shafts are only loosely supported in their bearings and capable of a sliding movement in them. After the engagement has taken place the expansion of the spring shifts the parts again to their normal position. Since crank 17 on the rock-shaft of the car cannot participate in this sliding movement of the latter, the connection between the two is by a sliding key and groove, which remain always in engagement and permit the movement of the shaft without interrupting its operative connection to the crank.

As is observed, the delivery and catch devices on the car are operated simultaneously by means of handle 19. In order to enable the attendant to determine when the parts have arrived in their proper position, pin 46, which connects link 16 to crank 17, is caused to project sidewise into a groove 47, the ends of which groove limit the movement of such pin and indicate the extreme positions of the device. In order to permit a chance for adjustment in fitting up the device, the connection of links 14 and 16 is not direct to arms 11 and 12, but to boxes 48, which may be shifted until the proper position has been obtained, which causes all the arms to move parallel. After adjustment these boxes are held in place by set-screws 49. The parts readily remain in their inoperative positions, as shown in Fig. 2, since arms 11 and 12 when raised up have no tendency to move outwardly and are hardly capable while in such position to overcome the weight of the catcher-arm, which would have to be necessarily raised. If desirable, however, a supporting-stop 51 may be provided, which projects into the path of the returning crank and is inclined on its under surface, so as to cause the crank to move slightly sidewise, being shifted with rock-shaft 18 against the action of one of the buffer-springs. After having passed above such stop the spring

shifts the parts back again, causing the crank to rest on top of stop 51, where it is held. A slight tap sidewise against handle 19 is sufficient to release it when the parts are to be used.

The manipulation of the stationary devices is somewhat different, since they do not require the immediate and precise attention, like those on the train, and they may be put in operative position some time before the passage of the latter, after which they take care of themselves. The catcher-arm on posts 32 is simply raised out, which causes a projection 53 on it to slip under an inclined bracket 54, located in the path of such projection and shifting the latter sidewise against the action of one of the buffer-springs on shaft 29. After having passed the bracket the expansion of the spring shifts the parts back again, causing said projection to move under the bracket, where as long as it remains it holds the catcher-arm elevated. The arms of the stationary delivery device on post 35 are so connected by a link 55 as to possess a tendency to swing apart, which causes them to remain readily in position when suspending a mail-bag, keeping also strap 21 on the latter stretched taut. After the mail-bag has been taken up from them by the traveling catcher they move without any aid into their inoperative position, as shown in Fig. 2, a weight 56 assisting this movement. 57 is a platform facilitating access to these elevated arms.

Having described our invention, we claim as new—

1. In means for handling mail-bags in connection with mail-cars the combination of the pivotally-supported suspension-arms 11 and 12 and a link 14 whereby they are connected to move together, the connection being by boxes 48 adjustable on said arms for the reasons explained.

2. A mail deliverer and catcher for mail-cars consisting of two pivotally-secured arms, one supported above the other and adapted to support a mail-bag when swung out and another arm also pivotally supported and hook-shaped at its outer end thereby becoming adapted to take up a mail-bag, all arms connected so as to move together, a rock-shaft 18, a handle 19 to manipulate it for the purpose of swinging the arms in or out, which latter are all operatively connected to said rock-shaft and a projection moving with the latter and occupying a groove 47 the ends of which groove form a limit to the movements of the parts and indicate their proper operative or inoperative position.

3. A mail deliverer and catcher for mail-cars consisting of two pivotally-secured arms, one supported above the other and adapted to support a mail-bag when swung out and another arm also pivotally supported and hook-shaped at its outer end thereby becoming adapted to take up a mail-bag, all arms

connected so as to move together, a rock-shaft 18, bearings 31 in which it is supported to have a sliding movement, interposed springs which restore and hold it to an intermediate normal position and a handle 19 on the rock-shaft for the purpose of operating all three arms which are operatively connected to said rock-shaft.

4. A mail deliverer and catcher for mail-cars consisting of two arms 11 and 12 pivotally connected and supported one above the other, their outer ends adapted to have a mail-bag detachably connected, a link 14 whereby they are connected so as to move together, a rock-shaft 18 having a sliding movement in its bearings and springs which hold it to a normal position, a catcher-arm 28 and a crank 17 mounted on the rock-shaft, a link 16 connecting the crank with arm 12, an operating-handle on the rock-shaft whereby all three arms are manipulated simultaneously and a stop 51 whereby when the crank has passed above it the parts are held in position before use.

5. In means for handling mail-bags in connection with mail-cars the combination of a rock-shaft, a frame projecting therefrom forming a bearing 37 at its outer end, a catcher-arm supported in the latter and in the rock-shaft in a manner to be reversible

in its bearings and means to hold the catcher-arm in either one of its positions.

6. In means for handling mail-bags in connection with mail-cars the combination of a rock-shaft, arms 36 projecting therefrom and connected at their outer ends to form a frame with a bearing 37, a catcher-arm reversibly supported in the latter and in the rock-shaft, a supplementary frame 39 fixedly secured at the outer end of the catcher-arm and means to lock it to the frame first mentioned to hold the catcher-arm in its adjusted position.

7. In means for handling mail-bags in connection with mail-cars, the combination of a rock-shaft, a frame projecting therefrom forming a bearing 37 at its outer end, a catcher-arm 20 supported in the latter and in the rock-shaft, a supplementary frame 39 fixedly secured at the outer end of the catcher-arm and a spring-actuated trigger 43 supported in the frame last mentioned.

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

JAMES H. BATES.
HENRY G. TRIMBLE.
WILLIAM T. BATES.

Witnesses:

JNO. M. HAIL,
E. PARSONS.