S. C. HENDRICKS & G. E. BOWLES.

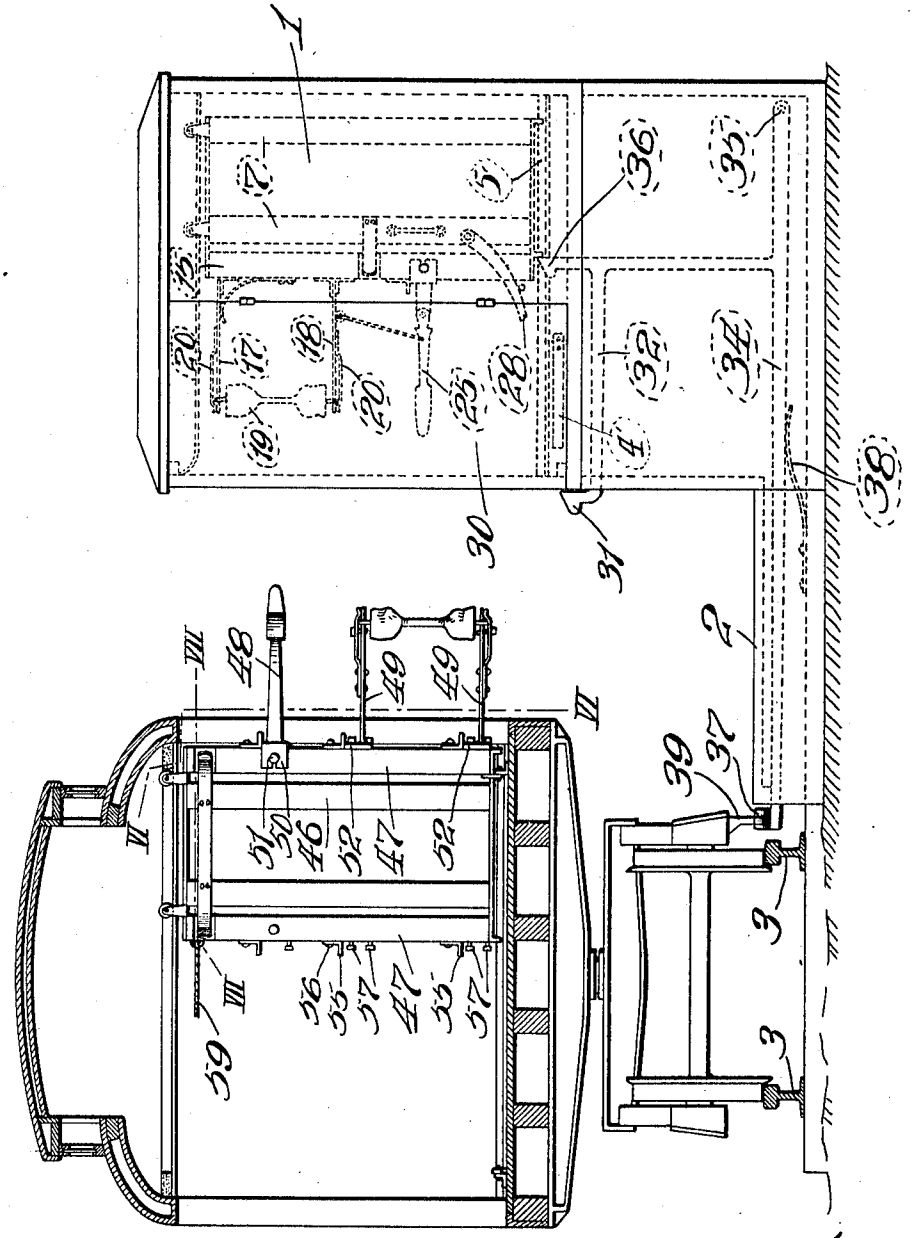
MAIL RECEIVING AND DELIVERING APPARATUS.

APPLICATION FILED SEPT. 21, 1911.

1,020,201. Patented Mar. 12, 1912.

4 SHEETS—SHEET 1.

Fig. 1.



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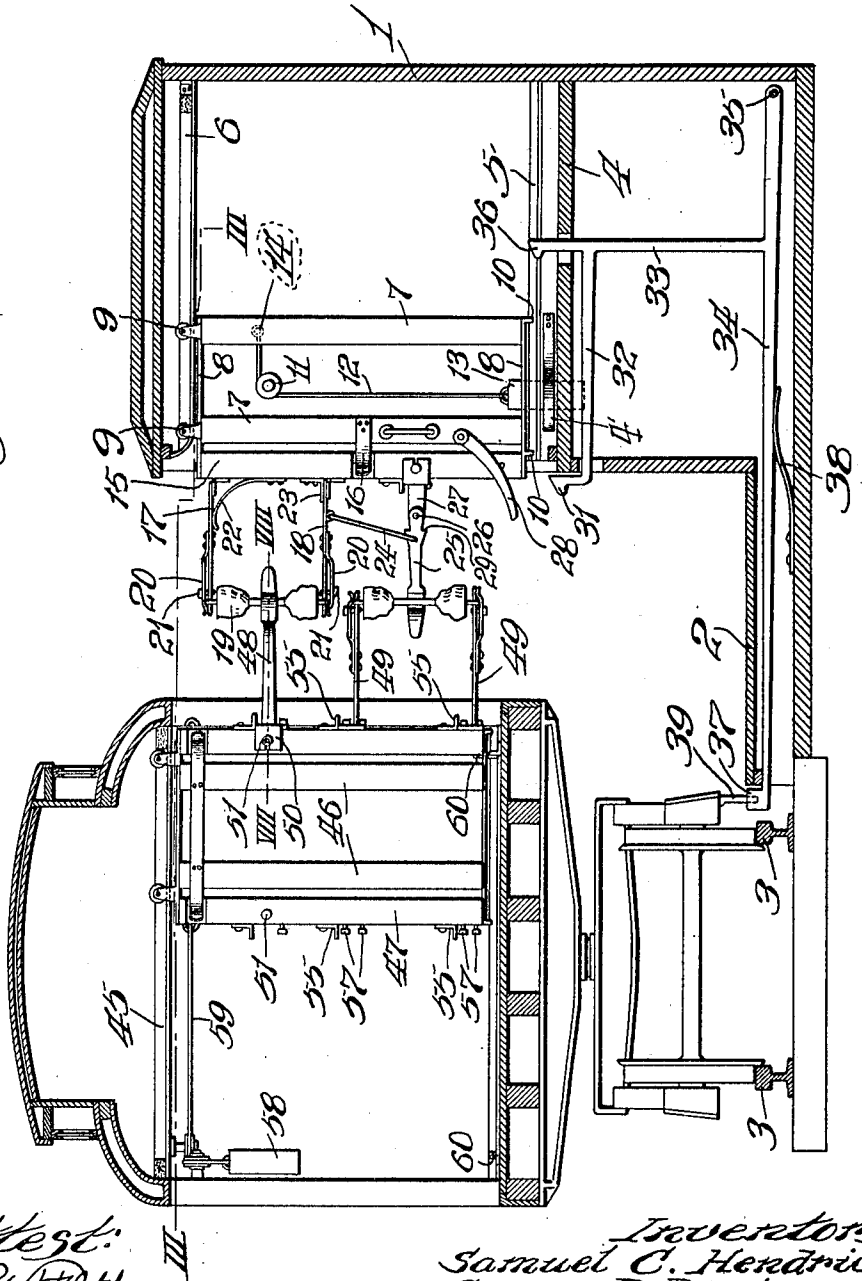
4 SHEETS—SHEET 2.

Fig. 2.



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4 SHEETS—SHEET 3.

Fig. 3.

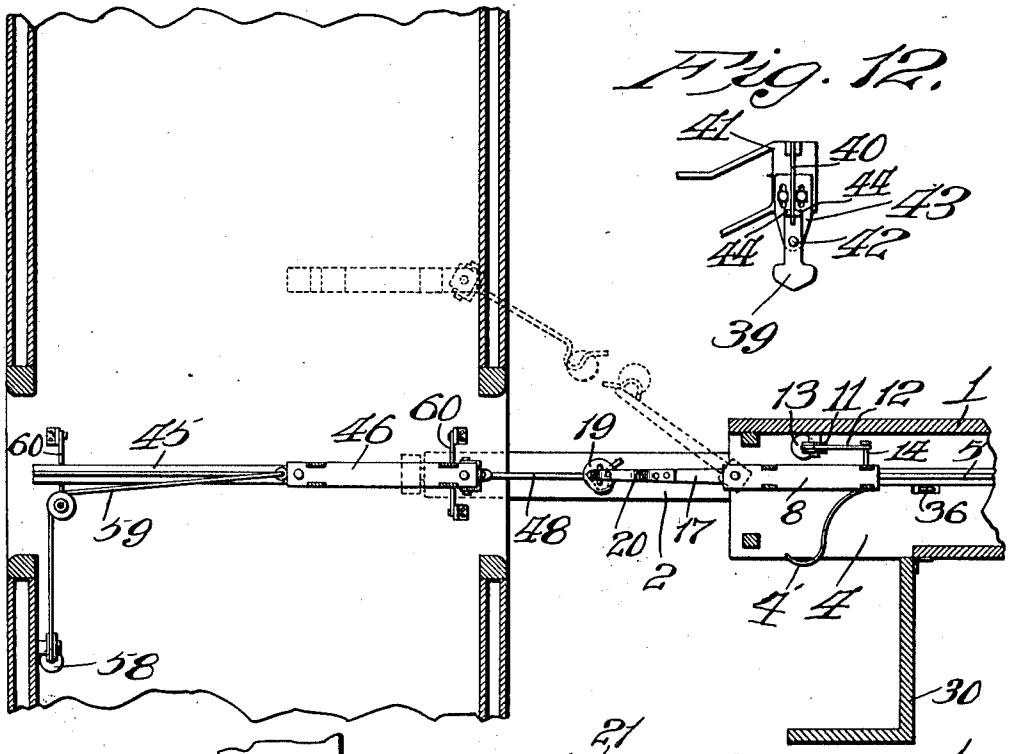
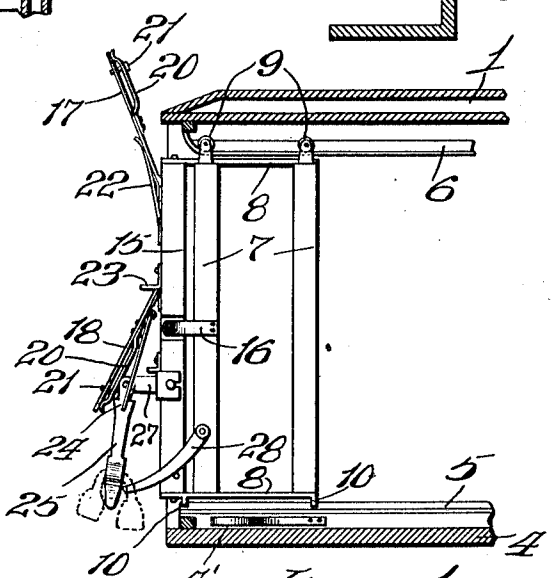


Fig. 12.

Fig. 4.



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4 SHEETS—SHEET 4.

Fig. 5.

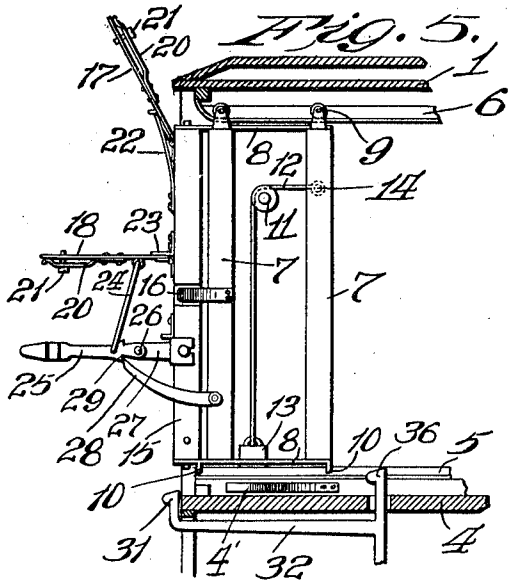


Fig. 6.

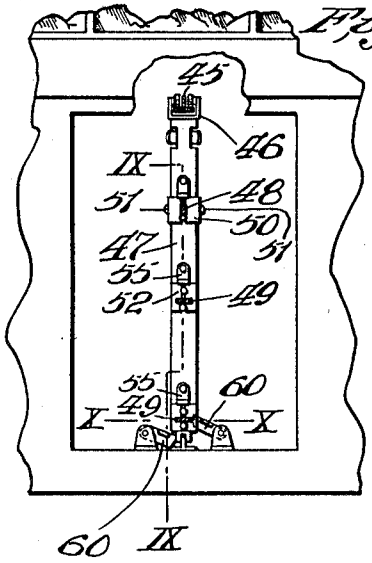


Fig. 7.

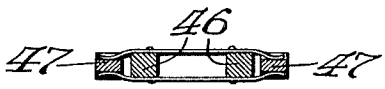


Fig. 8.

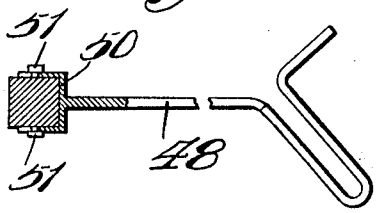


Fig. 9.

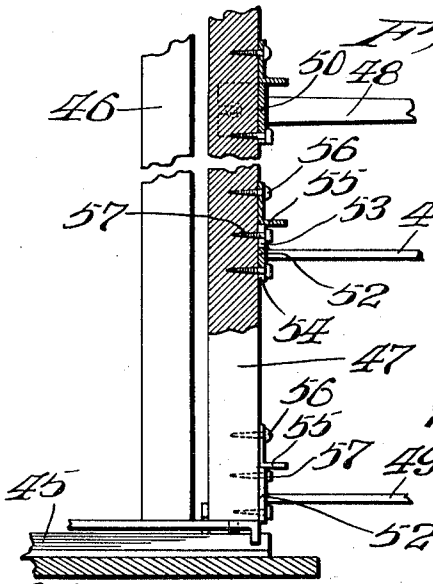


Fig. 10.

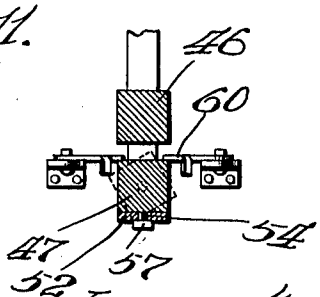
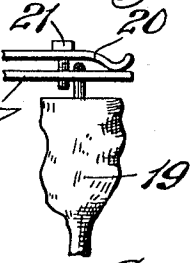


Fig. 11.



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UNITED STATES PATENT OFFICE.

SAMUEL C. HENDRICKS AND GEORGE E. BOWLES, OF HANNIBAL, MISSOURI.

MAIL RECEIVING AND DELIVERING APPARATUS.

1,020,201. Specification of Letters Patent. Patented Mar. 12, 1912.

Application filed September 21, 1911. Serial No. 650,600.

To all whom it may concern:

Be it known that we, SAMUEL C. HENDRICKS and GEORGE E. BOWLES, citizens of the United States of America, and residing at Hannibal, in the county of Marion and State of Missouri, have invented certain new and useful Improvments in Mail Receiving and Delivering Apparatus, of which the following is a specification.

This invention relates to apparatus for receiving and delivering mail in connection with swiftly moving railway trains and has for its primary object to provide an improved construction, combination, and arrangement of parts in devices of this character which can be simply and economically constructed, is efficient and durable in service, and is easily operated.

One of the objects of this invention is to provide an improved device of this character in which all liability of injury to the engineer from projecting crane parts and the like is removed.

Another object is to provide an improved mail crane which is movable into and out of operative position with respect to a similar device on a passing train.

A further object is to provide improved means for housing the mail cranes and bags until the proper moment, and improved means for throwing the crane into operative position.

Other and further objects will appear in the specification and be specifically pointed out in the appended claims, reference being had to the accompanying drawings exemplifying the invention, and in which—

Figure 1 illustrates an embodiment of our improved railway mail catching and delivering device, showing a mail crane station in elevation, and a passing mail car in section, the parts being shown in their relative positions shortly before the mail is taken up and delivered. Fig. 2 is a transverse section through the mail car and mail-crane station, showing the relative positions of the parts at the moment of collection and delivery, parts being shown in elevation. Fig. 3 is a section on the line III—III, Fig. 2, the relative positions of the mail-cranes immediately after delivery and collection being indicated in dotted lines. Fig. 4 is an elevation showing the relative positions of the parts in the station mail-crane after collection and delivery, portions of the station housing being shown in section. Fig. 5 is an elevation of the station mail-crane, the dispositions and arrangement of parts being adapted to receive mail, only. Fig. 6 is a section on the line VI—VI, Fig. 1. Fig. 7 is a section on the line VII—VII, Fig. 1. Fig. 8 is an enlarged detail section on the line VIII—VIII, Fig. 2. Fig. 9 is a section on the line IX—IX, Fig. 6, parts being broken away, and parts being shown in section. Fig. 10 is an enlarged detail section on the line X—X, Fig. 6. Fig. 11 is an enlarged fragmentary detail view of the mail bag suspension. Fig. 12 is an enlarged fragmentary detail view of the latch operating device for controlling the movement of the station mail-crane.

Referring more particularly to the drawings, and more especially to the embodiment shown therein, the mail crane station comprises a housing 1 provided with a lateral gallery 2 extending from the lower portion of said housing to a point adjacent the rails 3 of the track. Above the flooring 4 of the housing is mounted, in any suitable manner, a bottom rail 5 which is oppositely disposed to an upper rail 6. A rigid frame comprising a pair of uprights 7 connected by cross rails 8 is adapted to reciprocate within the housing 1 by means of rollers 9 running upon the upper track 6. The lower cross rail 8 is provided with guides 10 which slidably engage the lower rail 5 to maintain the reciprocating frame in position. A roller 11 mounted on the inner wall of the housing 1 serves to guide a cable 12 from which is suspended a weight 13, the other end of the cable 12 being secured to the rear upright 7 at 14. The tendency of said weight is to throw the crane outwardly into the position shown in Fig. 2, whenever the several parts are released in the manner to be hereinafter pointed out.

Trunnioned within the overhanging ends of the rails 8, is a swinging post 15 which is normally maintained in alinement with the uprights 7 by means of leaf springs 16 carried by the forward upright 7. Projecting outwardly from the post 15, and hinged thereto, are a pair of arms 17 and 18 which coöperate in supporting a mail bag 19 in a position to be caught up by a mail-catch carried by a passing mail car and to be described hereinafter. The usual rings at the ends of said mail bag are clamped to the reciprocative arms 17 and 18 by leaf springs 20, the pressure of which in resisting the

removal of the mail bag is regulated by screws 21. A leaf spring 22 tends to throw the arm 17 upward, said arm being held in the position shown in Fig. 2 by the mail bag 19 which is, in turn, supported by the arm 18, which is maintained against movement above a horizontal position by means of a right-angle bracket 23. A link 24 connects a mail catch hook 25, which is pivoted at 26, to a support 27 which is removably mounted upon the post 15 to adapt it to be reversed for use with trains going in the opposite direction. In the event that mail is to be received at a station, but none delivered, a pawl lever 28, which is pivotally mounted on the forward upright 7, is adapted to engage a tooth or shoulder 29 on the catch arm 25, the swinging movement of the post 15 serving to disengage the pawl 28 when the mail bag strikes the hook 25, thus permitting the hook and pawl 28 to drop before the train arrives at the crane station.

The reciprocating mail-crane is housed, as shown in Fig. 1, the swinging door 30 of the shed or housing being retained in its closed position by a detent 31 at the outer extremity of the horizontal arm 32 projecting from an upright 33 which is carried by a latch lever 34 pivoted at 35. When the door 30 is in closed position, a constant tendency to throw it open is imparted by a leaf spring 4′ mounted on the stringer 5′ which supports the lower rail 5 (see Figs. 1, 2, 3, 4 and 5). The upper end of the upright 33 is also provided with a detent 36 which normally holds the sliding frame in housed position. Said latch lever 34 extends outwardly through the gallery 2, and is provided on its outer end with a shoe 37 which is adapted to be displaced against the resistance of a leaf spring 38 by means of a pivotally mounted striking arm 39. The displacement of the striking arm 39 is resisted by any suitable resilient member, such as a leaf spring 40 secured to the bottom of the tender 41, or some other portion of the train in the rear of the engineer. The striking arm 39 oscillates about a pin 42 carried by an adjustable plate 43, the upper end of the striking arm 39 being provided with lugs 44, between which the spring 40 depends. It will be seen from this description that the station crane is made operative after the engineer has passed, so that all danger of injury is obviated.

Referring more particularly to Figs. 1, 2, 3, 6 and 9, the mail car is provided with top and bottom rails 45, on which a crane 46 substantially similar to that already described at the station slides. The crane 46 is provided with a swinging post 47 on each side to adapt the device to be used from either side of the car, thus making it unnecessary to reverse the ends of a mail car on a single track line. For this purpose, the mail receiving hook lever 48 and the crane arms 49 for suspending the bag to be delivered are made detachable from the swinging post 47. For this purpose the hook 48 is provided with a substantially U-shaped socket 50, the legs of which are slotted to receive the shanks of screws 51 on either swinging post 47. The crane arms 49, on the other hand, are provided with base plates 52 which are provided with a long slot 53 and a short slot 54. A detent 55 which swings about a pivot 56 serves to hold the base plates 52 in the position shown in Fig. 9. When, however, these detents 55 are swung around out of engagement with the base plate 52, said base plates can be shifted upwardly until the slot 54 is raised above the screw extending therethrough, when the arm 49 can be rotated and moved out of engagement with the screws 57. This manipulation of the hook 48 and arms 49 may be carried out on either side of the car.

A counterweight 58, secured to the end of a cable 59, serves to normally hold the car crane away from the door through which it is to be operated. When the mail car is approaching the station, the crane is shoved into the position shown in Fig. 2, and the pivotally mounted detent 60 is lifted so as to engage the rear face of the swinging post 47 (see Figs. 6 and 10). When the impact has taken place, the swinging post 47 is moved into position, shown in dotted lines Fig. 10, with the result that the detent 60 drops and releases the slidable crane to return to its normal position away from the door, in which position the caught-up mail bag is readily accessible, and the parts for suspending the next mail bag also.

What we claim is:

1. In a device of the character described, the combination with a mail crane housing, of a closure therefor, means tending to open said closure, a latch for retaining said closure shut, and means carried by the mail train for operating said latch.

2. In a device of the character described, the combination with a mail crane housing, of a closure therefor, means tending to open said closure, a latch for retaining said closure shut, and means carried by the mail train for operating said latch; the last said means being disposed between the engine and the mail car.

3. In a device of the character described, the combination with a housing provided with a closure under normal tendency to open a mail crane movably mounted in said housing under normal tendency to move into operative position with respect to a passing mail train, means for holding said closure shut and said mail crane in inoperative position, and means carried by the mail train for operating the first said means.

4. In a device of the character described, the combination with a mail crane slidable transversely of the track, of a latch normally holding said crane in position away from said track, said latch being provided with a tread shoe disposed adjacent the track, and a striker carried by the train for depressing said tread shoe to release said crane for movement toward the track.

5. In a device of the character described, the combination with a reciprocatable frame, of a pivotally mounted post carried by said frame, means carried by the post for supporting a mail bag, and means for automatically timing the movement of said frame with respect to a passing carrier.

6. A mail crane comprising hinged mail bag supporting arms, means for holding the upper arm upright under a resilient pressure, the lower arm being adapted to fall under its own weight, and means for moving all of said parts bodily.

7. In a mail car provided with openings in opposite walls thereof, the combination with a frame reciprocatable between said openings, of a crane post oscillatably mounted on opposite edges of said frame, and mail supporting arms detachably mounted on one of said posts, each of said posts being adapted to support said arms.

8. The combination with a mail car provided with an opening in its lateral wall, of a crane movable to and from said opening, said crane having an oscillatable post, and means engaging said post to hold said crane against movement away from said opening, said means being released when the post is oscillated.

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