W. P. ARNTZ.

MAIL BAG CATCHER AND DELIVERER.

APPLICATION FILED AUG. 29, 1911.

1,011,709.

Patented Dec. 12, 1911.

3 SHEETS—SHEET 1.

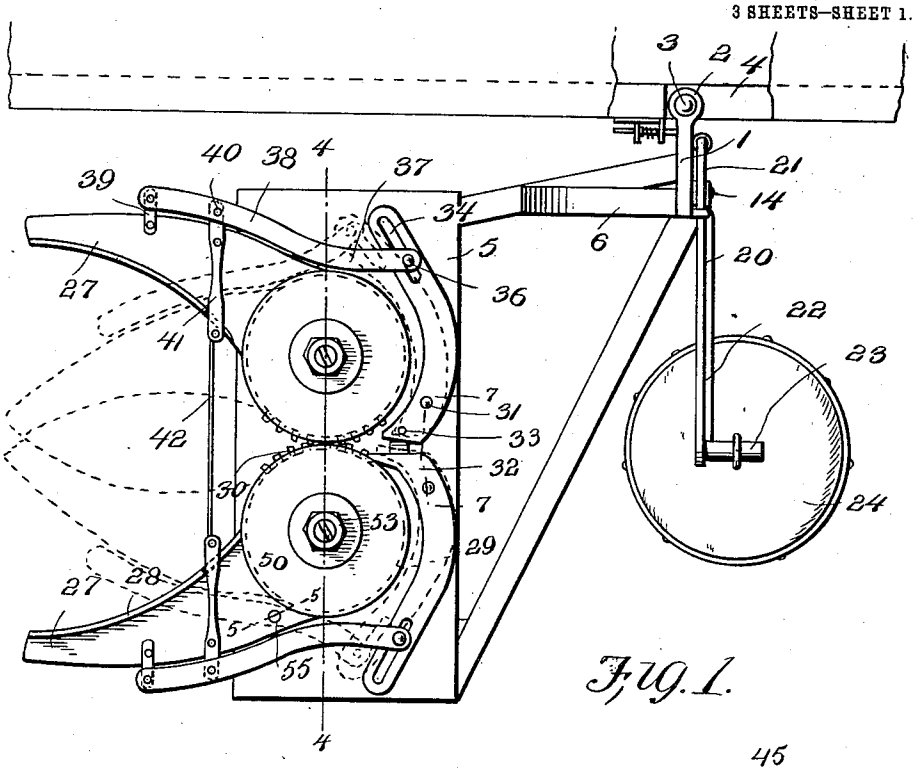

Fig. 1.

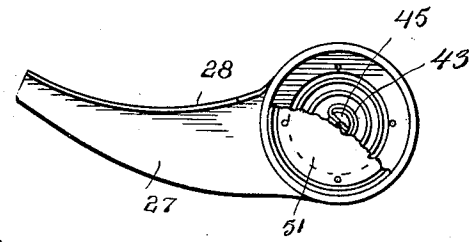

Fig. 6.

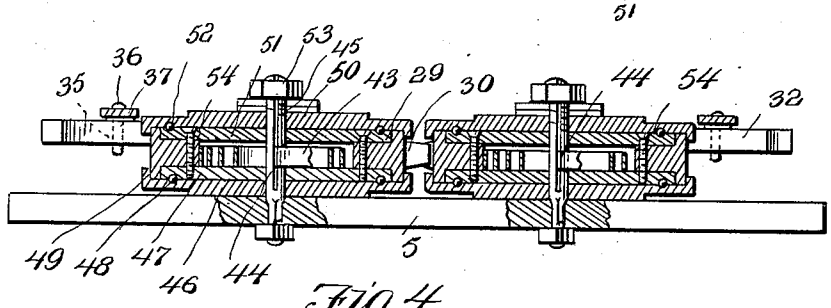

Fig. 4.

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3 SHEETS—SHEET 2.

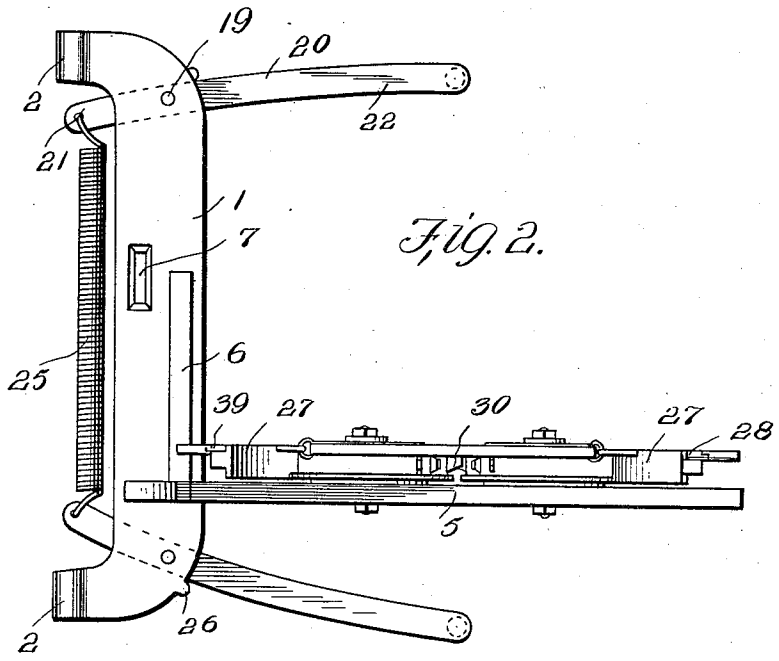
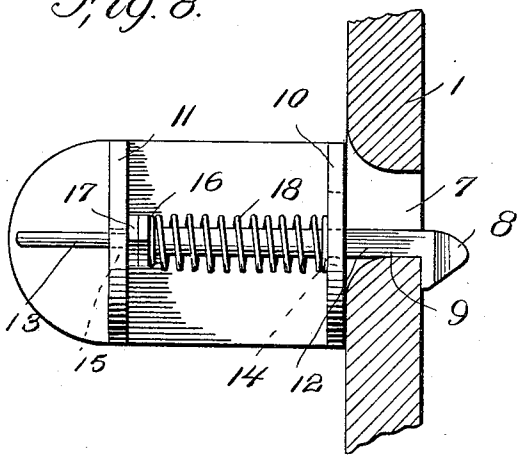


Fig. 2.

Fig. 8.



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3 SHEETS—SHEET 3.

Fig. 3.

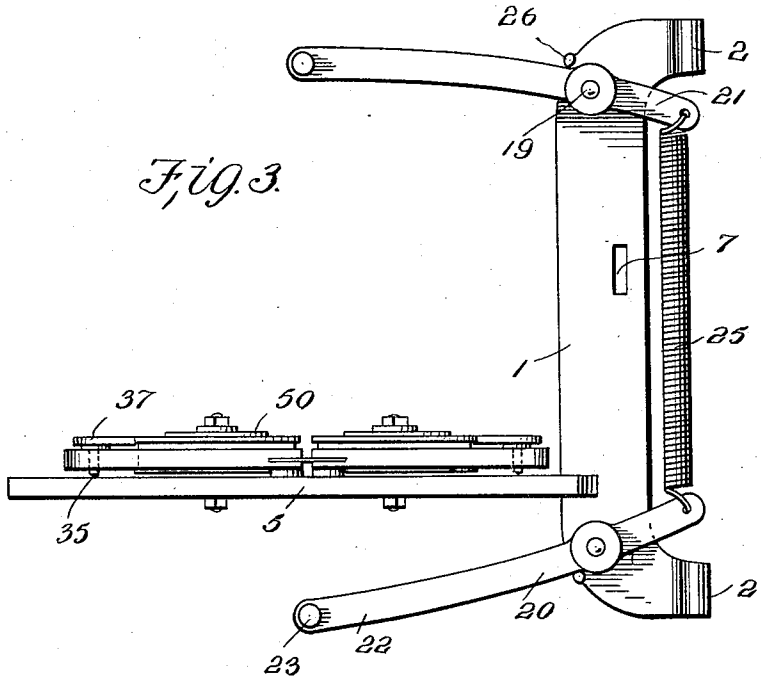


Fig. 5.

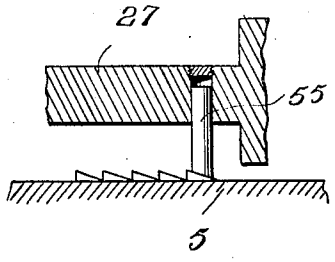
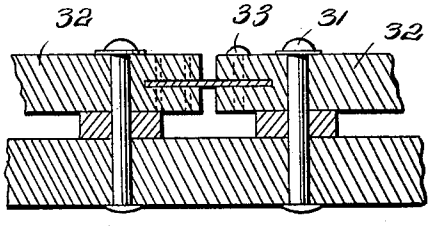


Fig. 7.



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UNITED STATES PATENT OFFICE.

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MAIL-BAG CATCHER AND DELIVERER.

1,011,709. Specification of Letters Patent. Patented Dec. 12, 1911.

Application filed August 29, 1911. Serial No. 646,626.

To all whom it may concern:

Be it known that I, WILLIAM P. ARNTZ, a citizen of the United States, residing at Youngstown, in the county of Mahoning and State of Ohio, have invented new and useful Improvements in Mail-Bag Catchers and Deliverers, of which the following is a specification.

This invention relates to mail bag catchers and deliverers, the object of the invention being to provide a simple, reliable and efficient construction of device of this character whereby mail may be delivered between trains and mail stations while the train is running at high speed.

The invention consists of the features of construction, combination and arrangement of parts, hereinafter fully described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a top plan view of the device mounted upon the side of a mail car, showing in full lines the device swung outward for action and in dotted lines the device swung inward to an inoperative position. Fig. 2 is a side elevation of the device looking toward the receiving jaws. Fig. 3 is a side elevation of the device looking toward the delivery arm. Fig. 4 is a vertical section on the line 4—4 of Fig. 1 through the inner chambered ends of the jaws. Fig. 5 is a vertical section on the line 5—5 of Fig. 1. Fig. 6 is a plan view of one of the receiving jaws with parts omitted. Fig. 7 is a detail section on the line 7—7 of Fig. 1. Fig. 8 is a sectional view through the supporting bracket and latch, and showing the device held by the latch.

Referring to the drawings, 1 designates an upright bracket plate, provided at its inner edge with upper and lower knuckles 2 for pivotal connection with a pin or bolt 3 secured to the side 4 of a car, when the device is applied upon a mail car, or to a stationary post when the device is applied for use at a mail station. Projecting from this bracket plate is a horizontally disposed arm or platform 5, reinforced from said bracket plate by a brace 6.

The bracket plate 1 is provided with a keeper opening 7 having beveled walls for coaction with the hooked end 8 of a latch bolt 9 slidably mounted upon spaced bracket plates 10 and 11 secured to the side of the car or supporting post. The shank of this bolt has a forward portion 12 of angular form in cross section and a rear portion 13 of circular form in cross section, which portions of the shank are slidable respectively through an oblong rectangular opening 14 formed in the bracket 10 and a circular opening 15 formed in the bracket 13, whereby the bolt is permitted to have tilting as well as sliding motion to pass through the opening 7 and interlock with one of the walls thereof. Arranged upon the bolt are retaining and jam nuts 16 and 17, and surrounding the bolt between said ends and the bracket 10 is a coiled spring 18. When the device is swung outward to the operative position shown in full lines in Fig. 1, the hooked end of the bolt passes through the opening 7 and engages the rear side of the bracket plate 1, in the direction of swinging movement of the device. When the shock of impact comes during the catching and releasing operation, the bolt is permitted by the spring to slide outwardly and check the force of movement of the device before releasing the same, thus preventing liability of injury to the apparatus.

Pivotally supported, as at 19, upon the rear side of the bracket plate 1 are upper and lower delivery arms 20, having short inwardly projecting ends 21 and long outwardly projecting ends 22, the latter being provided with laterally extending hinged projections 23 to receive the loops or eyes upon the mail bag 24, whereby the bag may be suspended in position to be taken up by the catcher jaws of a coacting apparatus. A spring 25 connects the arms 21 to normally spread the pins 23 apart to maintain the desired tension on the bag 24, and stops 26 are provided for limiting the relative outward movement of the arms under the action of the springs.

Mounted upon the platform 5 is a pair of segmentally curved catcher jaws 27 having flanged faces 28 to securely engage and grip a mail bag. The inner ends of these jaws terminate in annular or ring-shaped heads 29, provided with gear segments or rack teeth 30 intermeshing with each other, whereby the jaws are adapted to open and close to equal degrees in unison.

Pivotally connected at their inner ends with the platform 5, as at 31, is a pair of segmentally curved retaining arms 32, pivotally connected at their inner ends for movement in unison, as at 33, the outer ends of said arms being provided with curved

slots 34. The slots 34 receive roller bearings 35 journaled on pins or bolts 36 carried by the angularly bent rear ends 37 of a pair of segmentally curved releasing levers 38 mounted on the outer sides of the jaws 27, each of said levers being connected at its free end with the adjacent jaw by a link 39. Pivoted to the jaws, as at 40, are transversely arranged actuating levers or links 41, which links or levers are connected at their inner ends by a strap or other flexible connection 42, forming a yielding trip member adapted to be engaged by the bag entering between the jaws, whereby the levers 41 will be operated to actuate the releasing levers 38, to interlock the jaws and permit them to close and grip the bag. The jaws are adapted to be closed by coiled springs 43 inclosed within the annular heads 29, each of said jaws being fixed at one end to a pivot post 44 and at its opposite end to the head, the arrangement being such that when the jaws are swung outwardly the springs will be tensioned for reaction to close said jaws. The bolts 45 project upward from the platform and head, and also through bearing members carried thereby. These bearing members consist of a boss or cone 46 formed upon the platform and coöperating with a bearing plate 47, the meeting faces of said boss and bearing plate being annularly grooved to form race-ways for antifriction bearing balls 48. The plate 47 fits against a shoulder 49 at the base of the head, which latter is closed at its top by a cap or cover plate 50, arranged above a bearing plate 51 seated in the upper portion of the annular head, said cap and bearing plate being annularly grooved to form a race-way for bearing balls 52. The cap is retained in position by a nut 53 applied to the upper threaded end of the pivot bolt, which is longitudinally slotted for a spring action to hold the nut against retrograde rotation and loss or displacement. The bearing members 48 and 52 permit the jaw to have free and easy swinging movements, while the bearing members coöperating therewith close the annular head and form a dust-proof casing to protect the parts from injury. Bolts 54 connect the plate 51 with the platform, allowing the members 47 and 50 to have rotary movement, as will be readily understood. The jaws are held in open or receiving position by spring actuated dogs 55 pivotally connected with the releasing levers 38 and adapted to be retracted by said levers when the latter are operated by the trip device. When the jaws are swung open, the roller bearings 35 at the inner ends of the levers 38 travel inwardly in the slots 32 of the retaining arms 31, and are thus adjusted to an eccentric position to coöperate with the dogs in holding the jaws open, the levers 38 being in such operation brought into close proximity to the jaws. When the mail bag to be caught strikes the strap or flexible trip connection, the levers 38 are moved inwardly and their rear ends travel in the slots and are simultaneously thrown outwardly, thereby retracting the dogs and releasing the jaws so that they will close with rapidity about and securely grip the bag.

In operation, it will be understood that the jaws are open and the device swung outwardly to operative position, with the bag to be delivered suspended from the delivery arms. In such position of the device, the bracket 1 is engaged by the latch, whereby the device is maintained in its adjusted position. It will be understood, of course, that the catcher jaws and delivery arms upon the coacting mail catcher and deliverer are arranged so as to coöperate with the jaws of the device in question for the interchange of mail bags, the jaws of the device upon the train catching bag supported by the delivery arms of the device at the station, while the jaws of the device at the station catch the bag supported by the delivery arms of the device upon the train. In the receiving and delivery operations, the device swings backward under the shock, which is to a great extent taken up by the spring of the latch before the device is disengaged from the latch, thus preventing liability of injury to the apparatus.

From the foregoing description, the construction and mode of operation of my improved mail catcher and deliverer will be readily understood, and it will be seen that the invention provides a device of this character which is simple of construction, efficient in operation, and adapted to permit of the ready and rapid transfer of mail bags, whereby provision is made for efficiently effecting the transfer of mail between mail stations and rapidly moving trains.

Having thus described the invention, what I claim as new is:

1. In a mail bag catcher and deliverer, the combination of a swinging support, pivoted delivery arms mounted upon one side of said support and having bag suspending projections, a spring associated with said arms for holding the same in bag supporting position, spring actuated catcher jaws at the opposite side of said support, means for holding said jaws open, and means operative to retract the jaws to adapt them to close about a bag.

2. In a mail catcher and deliverer, a vertically disposed bracket plate, a platform carried thereby, spring-held delivery arms mounted upon one side of said bracket plate, spring actuated catcher jaws mounted upon the platform, means for locking and releasing said jaws, a latch device to engage the bracket plate for holding the device in op-

erative position, said latch device having spring means for cushioning its releasing movement and the movement of the device as a whole in the operation thereof.

3. In a mail bag catcher, a swinging support, a pair of pivotally mounted, spring actuated catcher arms, a pair of pivotally mounted retaining devices, releasing levers controlled by said retaining devices, locking devices controlled by said releasing levers, and a trip device for moving the releasing levers to release said locking devices.

4. In a mail bag catcher, a pair of pivoted spring actuated jaws, in gear for movement in unison, pivotally mounted slotted retaining devices, releasing levers slidably and pivotally engaging the slots in the retaining devices and pivotally connected with the jaws, locking devices controlled by said releasing levers to hold the jaws open, and a trip device connected with the releasing levers to adjust the same in releasing position.

5. In a mail bag catcher, a swinging support, a pair of pivoted spring actuated jaws, a pair of pivoted retaining devices, releasing levers pivotally connected with the releasing devices, locking devices controlled by the releasing levers to hold the jaws open, levers pivotally mounted on the jaws and pivotally connected with the releasing levers, and a trip connection between said levers operative under the impact of a bag to adjust the releasing levers to releasing position to permit the jaws to close.

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

WILLIAM P. ARNTZ.

Witnesses:

GEORGE J. ECKERT,

EDW. WESTWOOD.