Feb. 14, 1933. D. B. DODSON 1,897,552

MAIL BAG EJECTING DEVICE

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Fig. 1

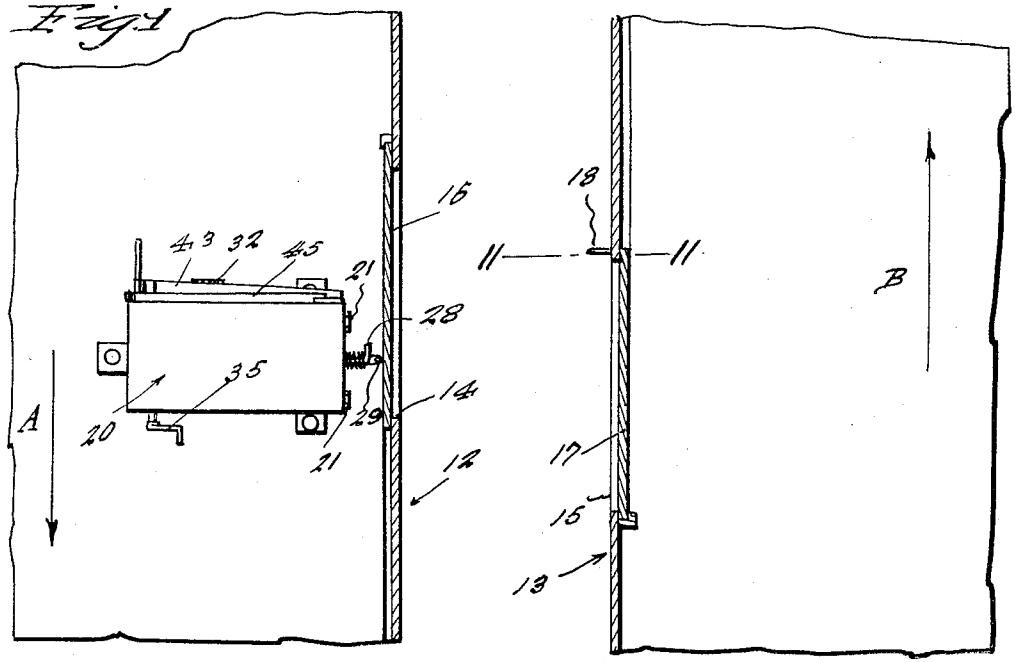
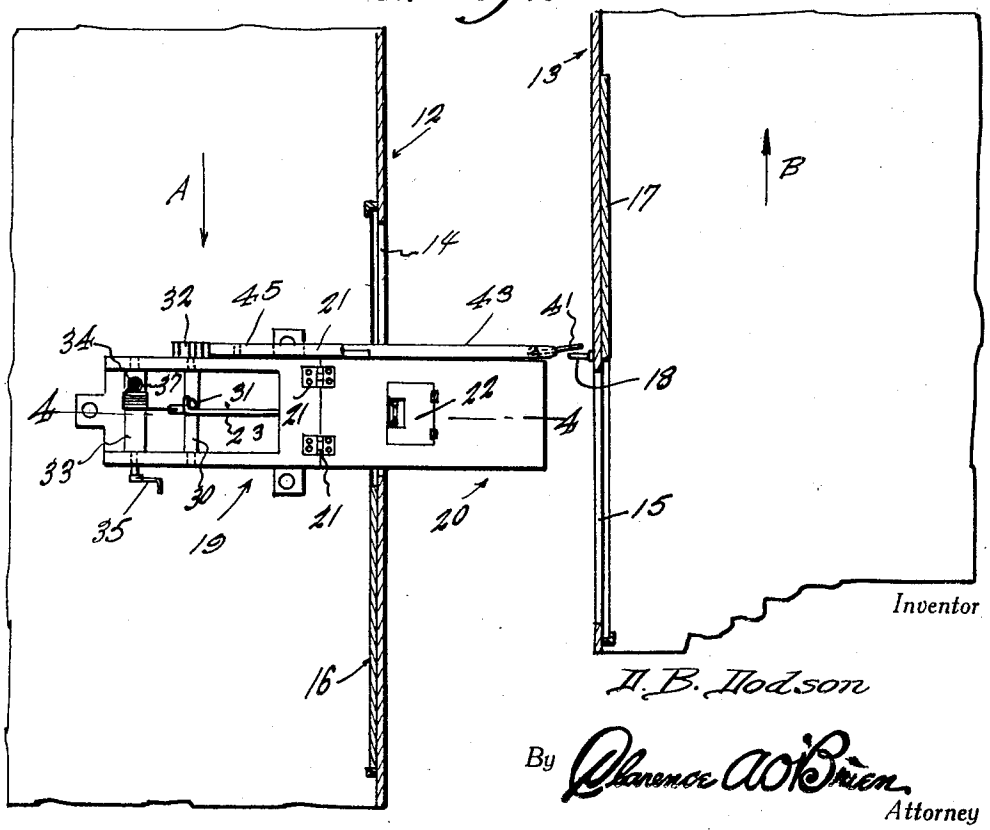


Fig. 2.



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MAIL BAG EJECTING DEVICE

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Fig. 3.

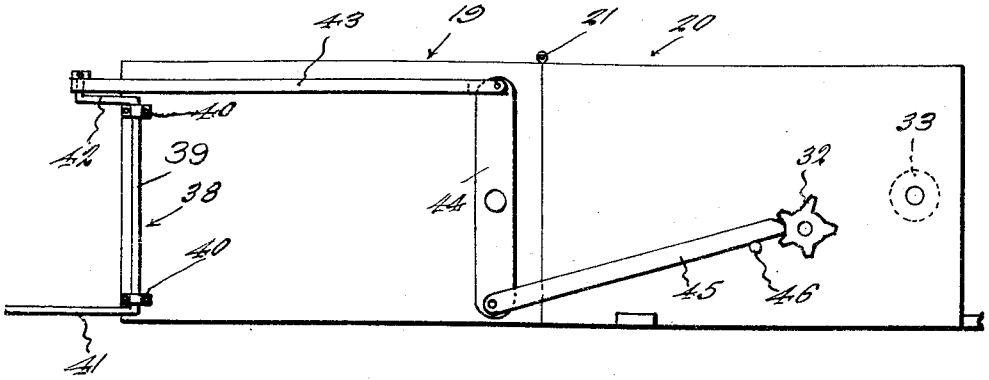


Fig. 8.

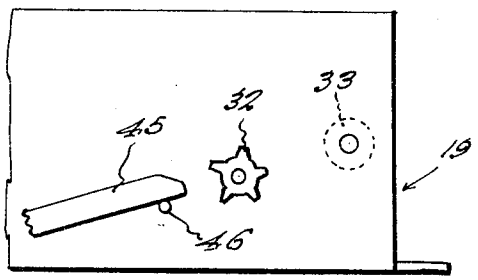


Fig. 9.

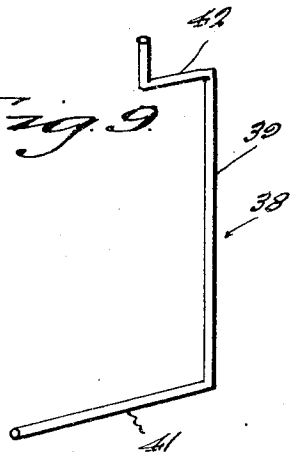


Fig. 10.

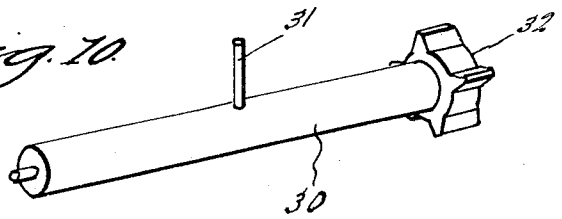
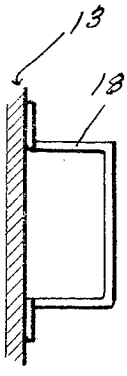


Fig. 11.



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MAIL BAG EJECTING DEVICE

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Fig. 4.

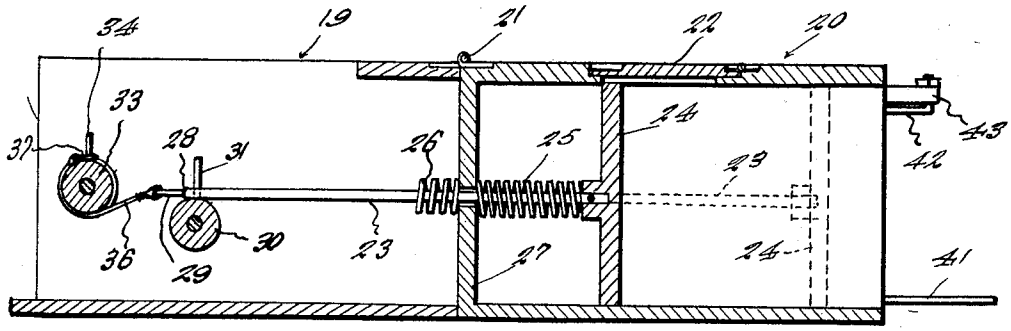


Fig. 5.

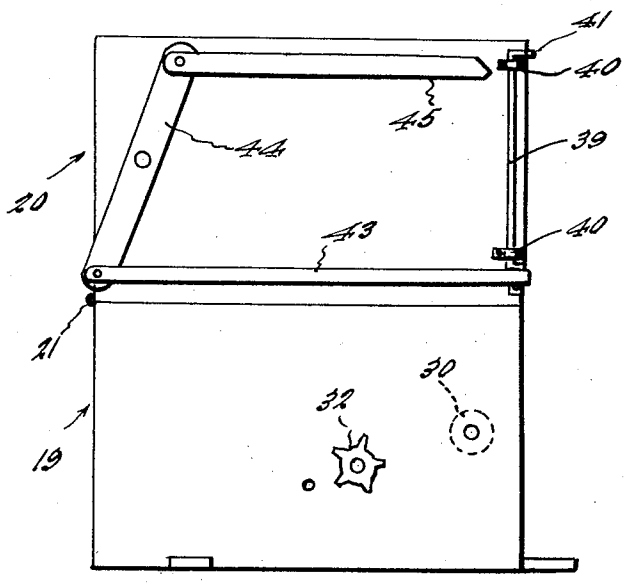


Fig. 6.

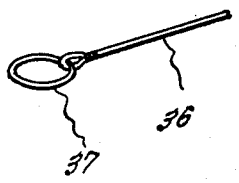
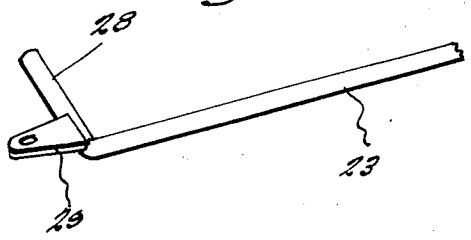


Fig. 7.



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Patented Feb. 14, 1933 1,897,552

UNITED STATES PATENT OFFICE

DANIEL B. DODSON, OF BENTON, ARKANSAS

MAIL BAG EJECTING DEVICE

Application filed April 21, 1931. Serial No. 531,783.

This invention relates to improved mail bag ejecting device, and to a device which is especially, but not necessarily, adapted to be used on mail trains and designed for projecting or casting a bag of mail from one car moving in one direction into an opposite parallel car moving in an opposite direction.

The inventive conception comprehends a structure which is somewhat in the nature of a catapult expressly designed for mechanically throwing a mail bag in a bodily manner from the open door of one car into and through the open door of the opposed oppositely moving car.

Briefly stated, the preferred embodiment of the invention comprises a mail pouch or bag holder designed to project through the open door of one car into close promity to the open door of the companion car, said holder being provided with an internal spring-projected bag ejecting plunger which will forcibly thrust the bag from the container and cast it through the air into and through the open door of the receiving car.

Novelty is predicated upon a catapult mail bag delivery structure of this general type which is made up of a pair of hingedly connected complimental parts and associated plunger retaining and releasing means, the parts being so constructed and hingedly connected together as to permit them to be folded in superposed relationship to provide for compactness and convenience of arrangement, and to faciliate storage in the delivering car when the device is not in use.

The specific details and their relative mechanical association and co-operation will become more readily apparent from the following description and drawings.

In the drawings:

Figure 1 is a diagrammatic sectional and elevational view showing the delivery and mail cars with the parts of the catapult folded into an out-of-the-way inactive position.

Figure 2 is a view like Figure 1, showing the mail bag holder projected through the doorway of the delivery car into close proximity to the open doorway of the receiving car.

Figure 3 is a side elevational view showing the trip mechanism set for use.

Figure 4 is a central vertical longitudinal sectional view on the plane of the line 4—4 of Figure 2.

Figure 5 is a side elevational view showing the parts folded into non-usable position.

Figure 6 is a fragmentary perspective view of the windless cable.

Figure 7 is a fragmentary perspective view of the hooked extremity of the stem or rod of the plunger.

Figure 8 is an elevational view showing the trigger in released position with respect to the releasing cog.

Figure 9 is a perspective view of the oscillatory trip device.

Figure 10 is a perspective view of the cable winding drum of the windlass.

Figure 11 is a section on the line 11—11 of Figure 1.

Attention is first invited to Figures 1 and 2 wherein the reference character 12 designates the mail bag delivery car which may be said to be travelling south in the direction of the arrow A. Opposite and parallel to this is a mail bag receiving car 13 which may be referred to as travelling north in the direction of the arrow B.

In accordance with the inventive conception the mail bag delivery device is capable of shooting the mail from the car 12 into the car 13 by way of the door openings 14 and 15 respectively when these are in the relative aligned positions indicated in Figure 2. Incidently, the door on the car 12 is designated by the numeral 16 and the door on the companion car 13 is indicated by the numeral 17, these being sliding doors.

Just in advance of the door opening 15 is a releasing fixture 18 of the shape shown in detail in Figure 11.

As shown in Figure 2, where the device is ready for operation, the structure is composed primarily of two main parts 19 and 20, these being in the form of substantially rectangular box-like structures having their adjacent ends hingedly connected together as at 21 to permit these parts to be folded into

superposed out-of-the-way position as seen in Figure 5.

The part 20 may be designated as the catapult and mailbag holder. It is in the nature of a substantially oblong receptacle rectangular in cross section, the same being open at its outer end and provided at its top with a hinged door 22 to facilitate placement of the mail bag for ejection purposes. This mail bag holder is provided with an internal spring pressed plunger or follower for forcibly thrusting the bag of mail intact from the car 12 into the car 13.

This plunger embodies a stem 23, an ejecting head 24, a thrust spring 25, and a cushioning and shock absorbing spring 26. The spring 25 is mounted on one side of the end plate 27 and the spring 26 is located on the opposite side and is loosely supported in place. As detailed in Figure 7, the terminal or free end of the stem is formed with a retaining hook 28 and an apertured ear 29. This end portion of the stem extends into the channel-shaped part 19.

Mounted in this part is a rotatably mounted releasing shaft 30 having a keeper pin 31 with which the hook 28 is engaged when the plunger is retracted to the position shown in full lines in Figure 4. On the exterior of the part 19 and carried by this shaft 30 is a releasing cog 32.

Also mounted for rotation in this part 19 and in spaced parallelism inwardly of the releasing shaft 30 is a similar shaft which is distinguished as a windlass or drum 33. It is also formed with a keeper pin 34. Moreover, it is provided on the exterior with a winding crank 35 as shown in Figure 2.

Associated with these parts is a winding cable 36 having one end attached to the ear 29 as shown in Figure 4 and having the opposite end portion coiled on the drum 33 with the end ring 37 engaged over the keeper pin 34.

I now call attention to Figure 3 wherein the trip and trigger mechanism is shown set and ready for operation. The trip element is denoted by the reference character 38 and it comprises a rocker shaft 39 mounted for oscillation or limited rotation in the bracket 40. At one end is a finger 41 adapted to be located in the path of travel of the aforesaid trip actuating fixture 18. The upper laterally directed end portion 42 of this trip is pivotally connected with an actuating arm 43. This arm 43 is in turn connected with a trigger actuating link 44 pivotally mounted at a point intermediate its ends. The trigger 45 is connected to the opposite end of this link and rests on a guide pin 46 so that its free end is in position to engage with the teeth of the cog 32 for releasing purposes.

In practice, it is obvious that the spring projected plunger in the mail bag holder 20 is maintained in retracted position and it is drawn into this position by engaging the ring 37 over the pin 34 and winding the windlass drum 33 in a direction to coil the cable 36 on said drum. This pulls the stem 23 in a direction to assume the setting position represented in Figure 4 so as to permit the hook 28 to be engaged with the keeper pin 31 on the release shaft 30. The release shaft 30 is held against rotation by the trigger 45 as shown in Figure 3.

In the last named figure the releasing and trip mechanism is shown set ready for use and at this time the plunger is retracted and the spring 25 compressed. The mail bag is then placed in the holder 20 by way of the door 22. When the cars 12 and 13 pass one another in the parallel relationship represented in Figure 2, the finger 41 being in the path of travel of the disengaging fixture 18 causes the trip 38 to be actuated. This releases the trigger and the associated mechanism so that the force of the spring 25 comes into play to forcibly eject the mail bag bodily from the holder 20 into and through the open door 15 of the car 13.

It is obvious that the gist of the inventive conception is the provision of a foldable compact and convenient mechanism or device for transferring mail while in transit from one car travelling in a direction opposite to that of another car on spaced parallel tracks. In accomplishing this important result I have found it practical and expedient to utilize a container in which a spring-pressed plunger is located for reciprocation, said container being adapted to accommodate the mail bag so that when the plunger is released it will forcibly project or literally throw the mail-bag bodily from the delivery car to the receiving car.

A simple and effective manner of accomplishing these results is obtained by utilizing the two part foldable arrangement wherein the one part is in the nature of a housing for the releasing shaft, and windlass structure, and wherein both parts are constructed to accommodate the external trip mechanism, said trip mechanism being practical, durable and positive in operation.

Whereas the invention has been described as adapted for co-relative use in conjunction with relatively moving vehicles or cars, it is obvious that the device as a whole may be stationed along the track on a standard or a stationary support so that mail may be delivered from the stationary holder into a moving vehicle.

While the preferred embodiment of the invention has been shown and described, it is to be understood that minor changes coming within the field of invention claimed may be resorted to if desired.

I claim:

1. In a mail bag transferring device of the class described, in combination, a car pro-

vided with a door opening and a door for closing said opening, a relatively stationary member mounted within the interior of said car opposite the car door opening, a relatively movable mail bag holding member hinged to the first named member and adapted to assume a superposed position when not in use and an extended position when in use, said extended position permitting said mail bag holding member to be projected through and beyond the doorway, and delivery means for ejecting the bag from the mail bag holding member.

2. In a mail bag holder and ejector, a stationary part, an adjustable part hingedly connected thereto, said parts being adapted to be folded into superposed relationship when not in use and into longitudinal alinement when in use, said adjustable part being in the form of a mailbag holder, a spring pressed plunger mounted for reciprocation in said holder and retaining and releasing means arranged in the stationary part to hold said plunger in a retracted inactive state, and means for actuating said releasing means to permit said plunger to be actuated.

3. In a mail bag holder and catapult device of the class described, a substantially channel-shaped relatively fixed part, a release shaft mounted for rotation therein and provided with a keeper pin, a drum shaft mounted for rotation in said part, said release shaft being provided with a retaining cog, trip mechanism including a trigger engageable with said cog, a relatively movable mail bag holder hingedly mounted on said fixed part comprising an open-ended container, a spring pressed plunger in said mail bag holder including a stem projecting into said fixed part and releasably engageable with said keeper pin, and a winding cable attached to said stem and adapted to be wound on said drum.

4. In a mail bag delivery device of the class described, a relatively stationary part, a relatively movable adjustable part comprising a mail bag holder, a spring pressed plunger in said holder, a windlass device mounted in said stationary part, a retaining shaft also mounted for rotation in said stationary part having keeper means thereon, said plunger including a stem having a hook releasably engageable with the keeper means on said shaft, and a cable attached to the inner end of said stem and adapted to be wound on said windlass, said windlass having a keeper pin, and said cable having on its free end a ring releasably engageable with said keeper pin.

5. In a mail bag delivery device of the class described, a relatively stationary part, a relatively movable adjustable part comprising a mail bag holder, a spring pressed plunger in said holder, a windlass device mounted in said stationary part, a releasing shaft also mounted for rotation in said stationary part and having keeper means thereon, said plunger including a stem having a hook releasably engageable with the keeper means on said shaft, and a cable attached to the inner end of said stem and adapted to be wound on said windlass, said windlass having a keeper pin, and said cable having on its free end a ring releasably engageable with said keeper pin, a cog mounted on said releasing shaft, a trigger engageable with said cog, an oscillatory trip device, and an operating connection between said trip device and trigger.

In testimony whereof I affix my signature.

DANIEL B. DODSON.