(No Model.)

G. R. MOORE.

MAIL BAG CATCHING AND DELIVERING MECHANISM.

No. 544,900. Patented Aug. 20, 1895.

Fig. 5.

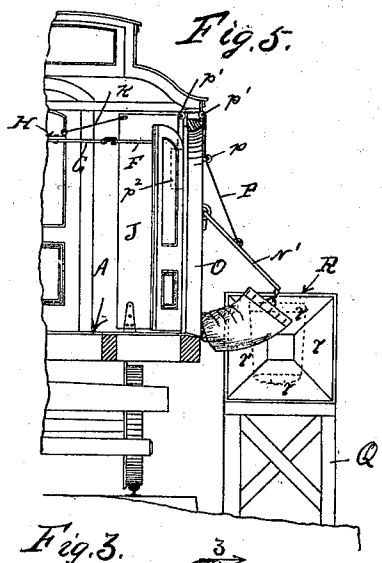


Fig. 1.

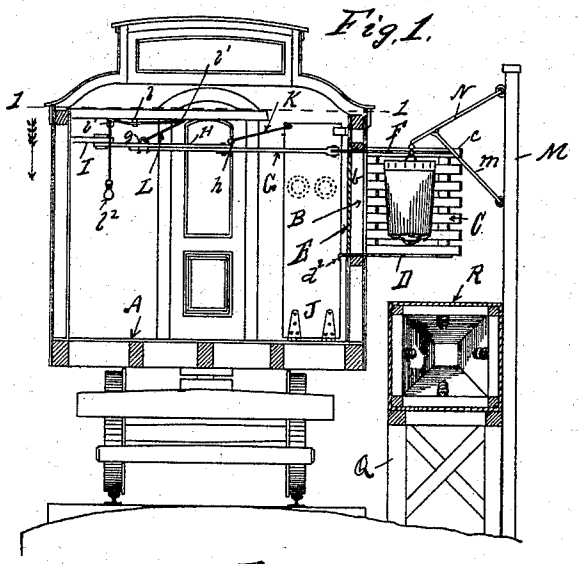


Fig. 3.

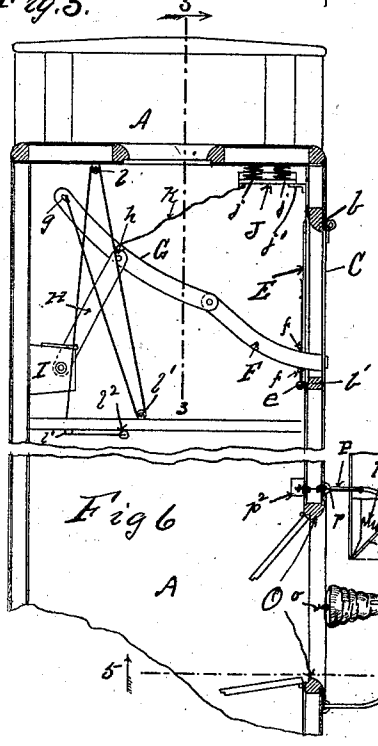


Fig. 2.

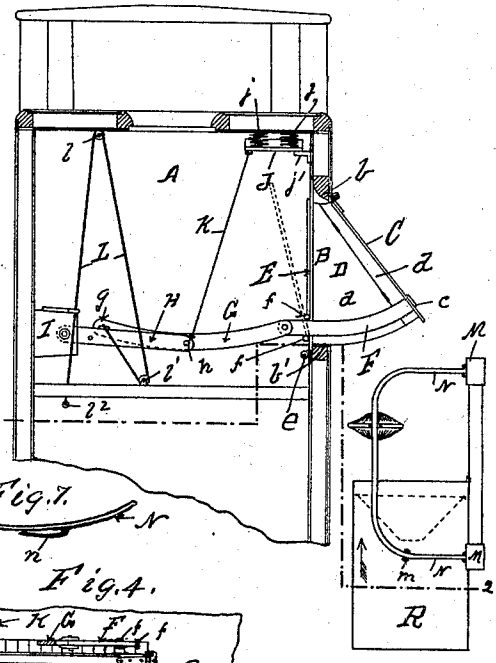
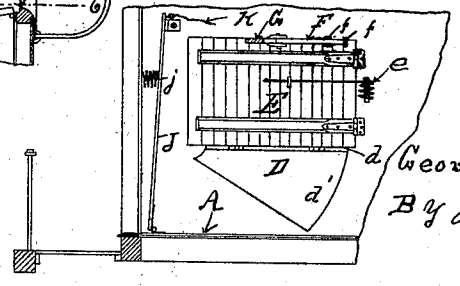


Fig. 6

Fig. 7.

Fig. 4.



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MAIL-BAG CATCHING AND DELIVERING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 544,900, dated August 20, 1895.

Application filed March 13, 1895. Serial No. 541,534. (No model.)

To all whom it may concern:

Be it known that I, GEORGE R. MOORE, a citizen of the United States, residing at East Springfield, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Mail-Bag Catching and Delivering Mechanism for Railway-Cars; and I do hereby declare the following to be a full, clear, 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

My invention consists in the improvements in mail-bag catching and delivering mechanism for railway-cars, hereinafter set forth and explained, and illustrated in the accompanying drawings, in which—

Figure 1 is a vertical transverse section of a railroad-car embodying my device on the line 2 2 in Fig. 2, looking in the direction of the arrow. Fig. 2 is a horizontal section of the same on the line 1 1 in Fig. 1, looking in the direction of the arrow. Fig. 3 is a like horizontal section of the same, showing the mail-bag-catching mechanism closed up against the side of the car. Fig. 4 is a view of a section of the side of the car on the line 3 3 in Fig. 3, showing the door for automatically closing the opening through which the mail-bags are received into the car. Fig. 5 is a vertical section of a railroad-car, illustrating the operation of the mail-bag-delivery mechanism of my device. Fig. 6 is a horizontal section further illustrating the same. Fig. 7 is a detail view of a section of the crane-rod for suspending a mail-bag, illustrating the bag-hook thereon.

In the accompanying drawings, illustrating my invention, A is an ordinary railway mail-car. In the side of this car, preferably near the end thereof, I cut a rectangular opening B, and on the outside of the car, at one side *b* of this opening, I hinge a vertical plate or frame C, to the bottom of which is secured a triangular plate D, preferably made in two sections *d* and *d'* hinged together, so that when the plate or frame C is closed up against the side of the car, as illustrated in Fig. 3, the section *d'* thereof will fall down against the inside of the car, as illustrated in Fig. 4. On the under side of the inner edge of the section *d'* there is also a downwardly-projecting ledge d^2, adapted to engage the inside of the car when the plate or frame C is open, which limits the outward movement of said plate to, say, about an angle of forty-five degrees. On the inside of the car, on the side *b'* of the opening B, is hinged a door E, provided with a spring *e* for automatically closing said door, this feature being clearly shown in Fig. 4. To the upper edge of the outer end *c* of the plate or frame C is secured a bar F, formed into the segment of a circle, so that as the plate or frame C moves in or out the said bar will travel freely between friction-rollers *f f* on the inside of the car at the top of the opening B. To the inner end of this bar F is pivoted the end of a link G, and to the center of the link G is pivoted the end of a link H, the opposite end of which is pivoted to a support I at the opposite side of the car, all of which is clearly illustrated in Figs. 1, 2, and 3.

To the floor of the car, near the end thereof, is hinged an upright buffer-plate J, behind the upper part of which are buffer-springs *j j*. A stop *j'* is also secured to the side of the car to limit the outward movement of the plate J, and to the top of the buffer-plate J is secured a cord K, the other end of which is secured to the end *h* of the link H, so that when the plate C is moved outward and the curved bar F and the links G and H are in the position shown in Figs. 1 and 2 the cord K is rigid, as shown in Fig. 2; but when the upper end of the buffer-plate J is moved back by compressing the springs *j j* the cord K operates to draw the links G H out of alignment, as illustrated in Fig. 3, and close the plate or frame C up against the side of the car. To draw the links G H into alignment and throw the plate or frame C outward, as illustrated in Figs. 1 and 2, I provide a cord L, secured to the end *g* of the link G, and running preferably over pulleys *l l'* on the frame of the car, the end l^2 of which cord the operator pulls for said purpose.

At the side of the railroad-track I erect a crane-frame M, to which is pivoted the ends of a curved crane-rod N, and below this curved

rod is a pivoted brace *m*, having a slightly-forked upper end, adapted to engage one of the sides of the rod N and hold it in an upraised position, preferably at an angle of about forty-five degrees, so that the bar F at the top of the plate or frame C will just pass under it as the car A passes the crane. Upon the central part of the under side of the curved crane-rod N there is an open hook *n*, as illustrated in Fig. 7, adapted to receive the handles of a mail-bag, which handles can, however, be easily pushed off of said hook in one direction.

In operation the mail-bag is hung upon the hook *n* on the crane mechanism M N, as illustrated in Figs. 1 and 2, and as the car is approaching the crane the mail agent in the car pulls the cord L, throwing the plate or frame C outward, as illustrated in Figs. 1 and 2, and as the curved bar F strikes the upper part of the mail-bag suspended upon the hook *n* of the crane the bag is pushed off of the hook, and the force of the contact carries it behind the plate or frame C until it strikes and opens the automatic door E, which yields to the impact of the bag and allows it to pass through the opening B, when it strikes against the upright buffer-plate J, which, in receiving the impact of the bag, is forced back, compressing the springs *j j* until the cord K, operating upon the links G and H, automatically closes the plate or frame C up against the side of the car.

In Figs. 1, 5, 6, and 7 I show the mail-bag-delivery mechanism of my device pivoted to the sides of the door-frame O. In the side of the car is a curved rod N′ of substantially the same shape as the crane-rod N of the crane mechanism hereinbefore described, and which is also provided with an open-sided hook *n*. (Clearly illustrated in Fig. 7.) This curved rod N′ is provided at one side of the door with a suspending-cord P, which passes under a pulley *p* on the upper part of the door-frame O and over pulleys *p′ p′* to the inside of the car, where it is provided with a weight p^2, which operates to automatically swing the crane-rod P up over the top of the door-frame O out of the way when not in use. At the side of the railroad-track, preferably at the base of the frame M, I construct a frame Q of suitable height, upon which I secure a rectangular box R, having an open end in the direction of the approaching car, the top of this box being of such height that the crane-rod N′ on the side of the car A will just pass over it, as illustrated in Fig. 5. This open end I preferably provide with spring-actuated doors *r r r r*, which are so shaped that when closed they form substantially the frustum of a pyramid pointing inward, and are adapted to yield to the impact of a mail-bag striking them, so that they will open back against the sides of the box and allow the bag to pass into the box, when the springs *r′* behind them automatically close them.

In operation the crane-rod N′ is let down, as illustrated in Figs. 5 and 6, and a mail-bag suspended on the hook *n* thereon, the bottom of the bag being preferably hooked or tied loosely to a hook *o* on the door-sill of the car A, and as the car passes the box R the upper edge of the open end of the box shoves the bag off of the hook *n* on the crane N′ and the hook *o* on the car, and it is thrown against the yielding doors *r*, which open and allow it to pass into the end of the box R.

It is obvious from the description hereinbefore given of my device that it is adapted to simultaneously receive and deliver mail-bags, operating automatically therefor and without further attention after having been properly set for the receipt and delivery of mail-bags.

In the description of my invention hereinbefore given I have described convenient mechanism for utilizing it, so as to enable others to construct and use the same; but I am aware that many modifications thereof will readily suggest themselves to others skilled in the art to which my invention appertains. Therefore I do not confine myself to the specific construction of my invention herein described, as

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination in a mail bag catching mechanism for railway cars, of an upright plate or frame hinged on the outside of a railway car at the rear side of an opening therein, bar and link mechanism connected with and adapted to move the free end of said plate or frame outward at an angle with the side of the car, and retain it in such position during the operation of catching a mail bag, and mechanism connected therewith actuated by the impact of the bag when it enters the car, and operating to close said plate or frame up against the side of the car, substantially as and for the purpose set forth.

2. The combination in a mail bag catching mechanism for railway cars, of crane mechanism at the side of a railroad track for suspending a mail bag adjacent to cars passing on such track, an opening in the side of a railroad car having a spring actuated door so hinged to the front side thereof as to open inward, a vertical plate or frame hinged to the outside of said car at the rear side of said opening, so as to open outward, bar and link mechanism adapted to swing said plate or frame outward at an angle with the side of the car and retain it in such position until a mail bag is caught from the crane thereby, and mechanism connected with said bar and link mechanism, adapted to receive the bag when caught, and be operated by the impact thereof to close said plate or frame up against the side of the car, substantially as and for the purpose set forth.

3. The combination in a mail bag catching mechanism for railway cars, of a vertical plate or frame hinged to the outside of a railway car at the rear side of an opening therein,

and adapted to swing outward from the side of the car at an angle therewith, a horizontal plate secured to the lower edge of said vertical plate or frame, a curved bar secured to the outer end of the top of said vertical plate or frame, link mechanism connecting said bar with the car frame, whereby said vertical plate or frame may be moved outward and inward, a spring actuated door hinged to the inside of the car at the side of the opening in the side of the car, and adapted to close the same and be opened inward by the impact of a mail bag being caught, so as to allow the bag to pass into the car, and an upright spring supported buffer plate adapted to receive impact of the mail bag, when in the car, and stop it, substantially as and for the purpose set forth.

4. The combination in a mail bag catching mechanism for railway cars, of a vertical plate or frame hinged to the outside of a railway car at the rear side of an opening therein, and adapted to be swung outward at an angle with the side of the car, a horizontal plate secured to the lower edge of said vertical plate or frame formed of sections hinged together, a buffer plate to sustain the impact of the bag when caught and received into the car, and cord mechanism connecting said buffer plate with said link mechanism, whereby the impact of the mail bag on said buffer plate operates to close said vertical plate or frame up against the side of the car, substantially as set forth.

5. The combination in a mail bag catching mechanism for railway cars, of a vertical plate or frame C hinged to the outside of a railway car at the rear side b of an opening B in the side of said car, a horizontal plate D, composed of the section d secured to the lower edge of the vertical plate or frame C, and the section d' hinged thereto, a curved bar F secured to the top of the outer end of the plate or frame C, a link G pivoted to the end of said bar F, a link H pivoted at one end to the central part of the link G, and at the other to a support I on the side of the car, a cord L secured to the end g of the link G and passing over pulleys on the car, a spring actuated door E hinged to the inside of the car at the front side of the opening B therein, a spring supported buffer plate J adapted to sustain the impact of a mail bag received into the car, a cord connecting said buffer plate with the end h of the link H, and a crane mechanism M N at the side of the railway track for suspending a mail bag to be caught, substantially as and for the purpose set forth.

6. The combination in a mail bag delivering mechanism for railway cars, of a crane rod pivoted to the sides of the door frame in the side of a railway car, a cord and weight for suspending said crane rod with a mail bag thereon, and for raising it up when not in use, and a box at the side of the railway track adapted to catch and receive mail bags from said crane rod as the car passes said box, substantially as and for the purpose set forth.

7. The combination in a mail bag delivering mechanism for railway cars, of a crane rod N′ pivoted to the sides of the door frame O in the side of a railway car, a suspending rope P connected with said crane rod N′ and passing over pulleys p, p' p', a weight p^2 on the end of said rope, a box R at the side of the railway track adapted to receive mail bags from said crane rod, and spring actuated automatic doors r r r r in the bag receiving end of said box, substantially as and for the purpose set forth.

8. The combination in a railway mail car, of an upright plate or frame hinged to the outside of such car at the rear side of an opening therein, bar and link mechanism connected with and adapted to move the free end of said plate or frame outward at an angle with the side of the car, and retain it in such position during the operation of catching a mail bag, and afterward close said plate or frame up against the side of the car, substantially as and for the purpose set forth.

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

GEORGE R. MOORE.

Witnesses:
FRED EINFELDT,
L. D. HANFORD.