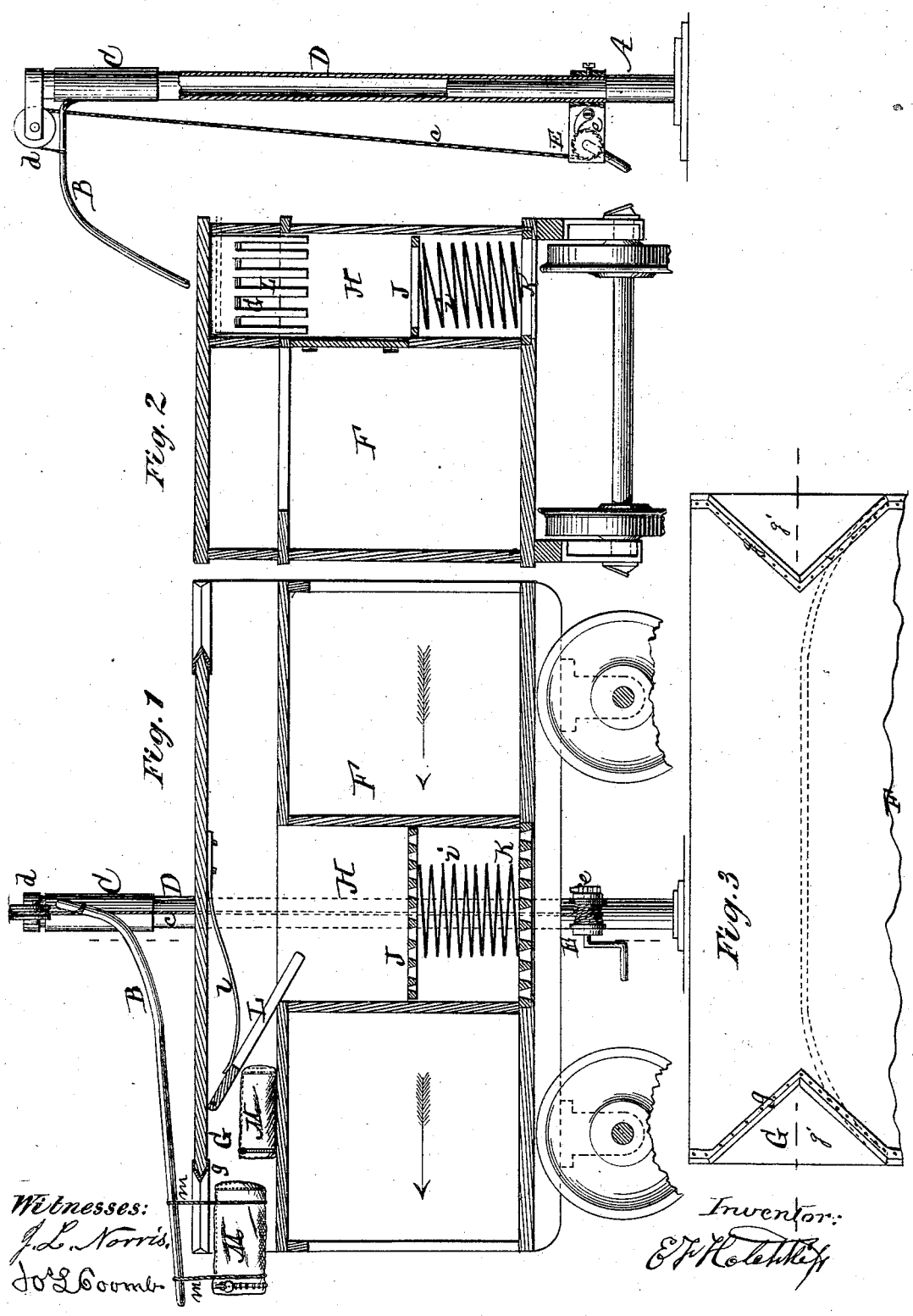
E. F. HOTCHKISS.

MAIL-BAG CATCHER.

No. 169,545. Patented Nov. 2, 1875.



UNITED STATES PATENT OFFICE.

EDGAR F. HOTCHKISS, OF UNADILLA FORKS, NEW YORK.

IMPROVEMENT IN MAIL-BAG CATCHERS.

Specification forming part of Letters Patent No. **169,545**, dated November 2, 1875; application filed October 18, 1875.

To all whom it may concern:

Be it known that I, EDGAR F. HOTCHKISS, of Unadilla Forks, in the county of Otsego and State of New York, have invented certain new and useful Improvements in Devices for Receiving and Delivering Mail-Bags; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings forming part of this specification, in which—

Figure 1 is a longitudinal vertical section of the mail-car, showing the bags and their support in elevation; Fig. 2, a transverse vertical section of the car, showing the bag-support partly in elevation, and partly in section; and Fig. 3 is a plan, showing about one-half of the roof of a mail-car constructed with my improvements.

Similar letters of reference in the accompanying drawings denote the same parts.

This invention relates to that class of devices which are employed to receive mail-bags from, or deliver them to, railroad-cars when in motion; and its object is, first, to render the operation of such devices uniform and certain, however the cars may vary in height; and, secondly, to prevent any violent concussion of the bag, and consequent injury to it or its contents.

To these ends the invention consists, first, in inclining downward the adjustable oscillating arm of the bag-support, so that if the car is a little too high or low it will not break said arm, but will raise it, and cause it to present the bag properly to the receiving-orifice; secondly, in combining with said downwardly-inclined arm of the bag-support a peculiarly-formed car-roof, for the purpose of directing the bag toward the center of the receiving-orifice by the same movement that raises the arm to adjust it to the height of the car; thirdly, in a new mode of taking the bag from its support—to wit, by severing its supporting cord or cords, and allowing it to drop by its own gravity upon the receiving floor or surface—in contradistinction to the old mode of stripping or sliding the bag and its supporting-cords from the supporting-arm; and, lastly, in the various mechanical devices and combinations, not specially set forth above, which produce or contribute to the results to be accomplished, as I will now proceed to describe.

In the drawings, the bag-support appears at one side of the car, and consists of the arm B, with any suitable means of supporting, raising, lowering, and adjusting it; but I prefer to attach the arm B, by means of a sleeve-socket, C, to a piece of gas-pipe or tubular standard, D, supported on a post, A, and provided with a cord, *c*, pulley *d*, and adjustable windlass E *e*, substantially as shown, whereby the arm can be adjusted vertically or laterally in any desired position. The car F is constructed with an elongated horizontal passage or flue, G, immediately under its roof, said passage or flue having a smooth, flat, or inclined floor, on which the bag falls and slides toward the middle of the car. These passages may be one or more to a car, arranged at the sides or midway between the sides of the roof, or extending clear across from side to side, as may be preferred by different constructors. At a suitable point, preferably midway between the ends of the car, the continuity of the passage-floor is broken by a well or chamber, H, the function of which is to receive and hold the mails. The bottom of the well or chamber H is grated, as shown at K, to permit the escape of snow, water, dust, &c. A false bottom, J, similarly grated, may be arranged on a spring or springs, *i*, within the chamber, to prevent the concussion of the bags as they drop into the chamber. Where, for any reason, the distance is short from the end of the car to the mouth of the receiving-chamber H, a hinged brake, L, composed, preferably, of fingers, as shown in Fig. 2, and provided with a spring, *l*, to give it sufficient resistance, may be employed, to assist the floor in taking up the momentum of the bag. The ends of the car-roof are provided with cutting-edges *g g*, preferably of steel, for the purpose of severing the cords *m m*, which connect the bag M to its supporting-arm. These cutting-edges are, preferably, arranged obliquely to the direction of the movement of the car, so as to operate with a "drawing" cut on the strings; and the best mode of arranging them is to form at each side of the middle line of the car, at each end of the car, a deep notch

or recess, g', which may be of triangular or other suitable shape, and attaching the cutting-edge thereto or forming it thereon, one advantage of this construction being that the bag-strings will not be severed till the receiving-floor of passage G is directly under the bag, which, in that case, cannot fail to drop properly thereon.

The arm B is arranged at such a height and in such a position as to cause the bag M to come in line with the open end of passage G, its supporting-cords m hanging across the line of the cutting-edge $g\,g$. The bag should be hung low enough to properly enter the receiving-passage of the lowest or most heavily loaded car, and the inclination of the arm B should be such that the cutting-edge of the highest or lightest car will strike the inclined part of the arm. Whatever may be the height of the car, therefore, the edge of the car-roof will not strike the bag nor break the arm B, but will either strike the cords m, in the first instance, or will strike the arm B and slide along under it, gradually raising the bag till the cords come exactly in the proper position to be severed when reached. The notches g' will be observed to perform a peculiar function when thus coming in contact with the inclined arm B, since they deflect such arm laterally till it is exactly in line with the angle or deepest part of the notch, where the cords can be most easily severed, and when the bag is most certain to properly fall on the floor beneath it.

The major portion of the above description is applicable particularly to the construction of that form of apparatus which is to deliver mail matter to the cars, and it must be somewhat modified when employed to deliver such matter from the cars. In the latter case the bag-support will be attached to the car, and the receiving-passage G, with its roof and cutting-edges, will be arranged in a convenient building at the side of the track. Such other modifications as will be desirable in such case will readily suggest themselves to the mind of the constructor, as they involve merely mechanical skill and judgment, and not invention. The mail-bags, whether delivered to or from the cars, should preferably be suspended in a horizontal position, as shown in Fig. 1.

One great advantage of my new mode of severing the bag-strings instead of sweeping the bag along to the end of its supporting-arm is, that it reduces to a minimum the violence of the impact or shock when the bag comes in contact with the receiving apparatus. Heretofore the entire momentum of the car was instantly imparted to the bag, or the whole momentum of the bag was instantly arrested; but by my plan the momentum is not affected by the severing of the bag from its support, but is gradually taken up or imparted by the friction of the bag on the floor of the passage. Neither the bag nor its contents are thus liable to be injured.

It is evident that packages of almost any character, which can be supported from the arm B by suspending-cords, may be delivered to or received from railway-cars by my improved apparatus without liability to injury, and the floor of the receiving-flue may be adapted to the reception of such other articles than mail-bags, according to the character of the article to be received thereon.

Having thus described my invention, what I claim as new is—

1. In a bag-supporter for delivering mail-bags to or from railroad-cars in motion, a vertically and laterally adjustable bag-supporting arm, B, extending from the post outward to the line of the bag-receiver, and then inclining downward in a direction longitudinal with the railroad-track, substantially as and for the purpose described.

2. An apparatus for delivering bags and other packages to, or receiving them from, railway-cars in motion, having a support from which the bag is suspended by cords, and a cutting-edge operated by the power of the moving car for severing said suspending-cords at the proper moment, and allowing them to drop upon or into the receptacle prepared for them, substantially as described.

3. The combination of the inclined bag-supporting arm B and the flue-roof, having the notch or notches g, with edges adapted to sever the cords that support the bag or package, substantially as described.

4. In an apparatus for receiving and delivering bags and packages from and to railway-cars in motion, the flue G, combined with a spring-brake, L, substantially as and for the purpose described.

5. In an apparatus for receiving and delivering bags and packages from and to railway-cars in motion, the flue G and receiving-chamber H, having a grated bottom, combined and arranged substantially as described.

6. In an apparatus for receiving and delivering bags and packages from and to railway-cars in motion, the combination of the chamber H, having a grated bottom and a spring false bottom, with the flue G, substantially as described.

7. In an apparatus for receiving and delivering bags and packages from and to railway-cars in motion, the receiving flue or flues G, having their roof provided with a cutting edge or edges, and having the floor of the passage projecting beyond said cutting edge or edges, substantially as and for the purposes herein set forth.

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Witnesses:
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