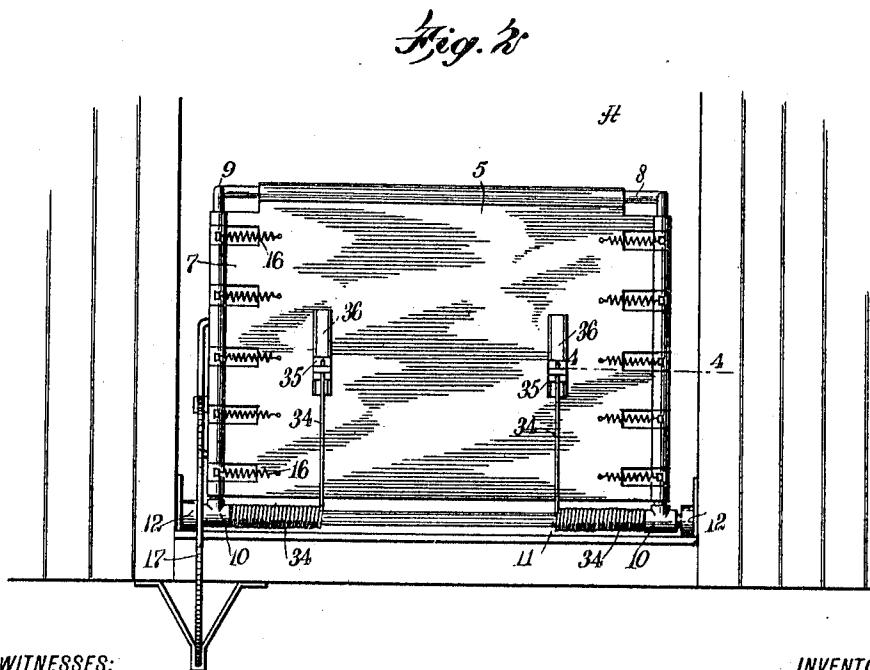
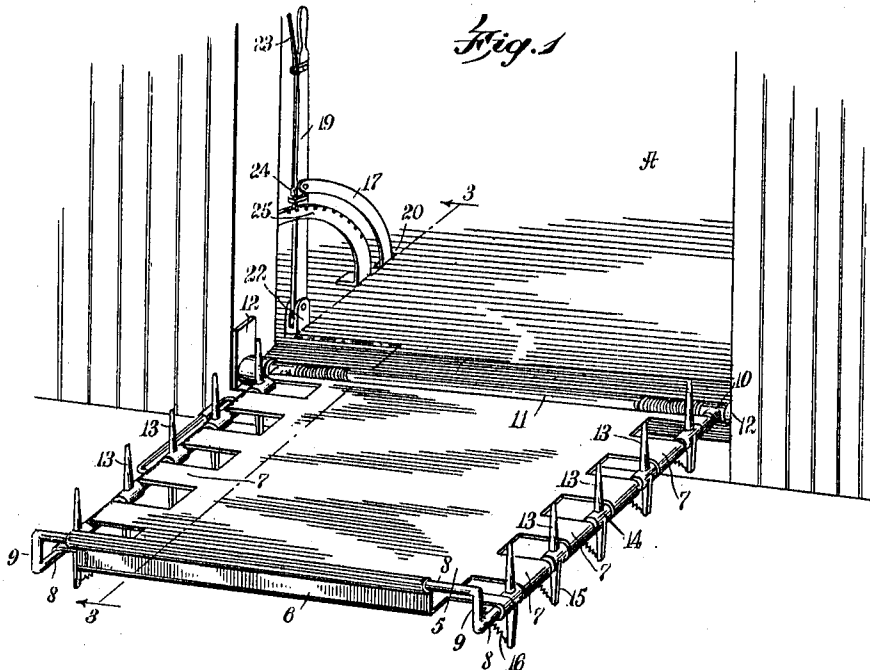


E. R. ROBINSON.
 DEVICE FOR DELIVERING MAIL FROM MOVING TRAINS.
 APPLICATION FILED SEPT. 23, 1910.

978,651.

Patented Dec. 13, 1910.

2 SHEETS—SHEET 1.



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UNITED STATES PATENT OFFICE.

ERNEST R. ROBINSON, OF NEW CASTLE, DELAWARE.

DEVICE FOR DELIVERING MAIL FROM MOVING TRAINS.

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Specification of Letters Patent. Patented Dec. 13, 1910.

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To all whom it may concern:

Be it known that I, ERNEST R. ROBINSON, a citizen of the United States, and a resident of New Castle, in the county of Newcastle and State of Delaware, have invented a new and Improved Device for Delivering Mail from Moving Trains, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to provide a receptacle for mail pouches which may be extended from the side of a car to support in position thereon the said pouches for delivery; to provide a suitable stationary engaging mechanism adapted to engage the pouches and to sweep the same from the said receptacle; to provide a yielding construction for the engaging and retaining members whereby the same are permitted to yield if struck by a non-yielding member; to provide a receiving cage disposed to receive and hold the pouches as delivered; and to provide a simple, efficient and durable operating device for extending and retracting the receptacle.

One embodiment of the present invention is disclosed in the structure illustrated in the accompanying drawings, in which like characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a perspective view of a delivery platform for holding the mail pouches in position extended from the side of a car, and in position to be removed therefrom; Fig. 2 is a side elevation of a car provided with a platform of the character specified, said platform being shown in closed or raised position; Fig. 3 is a cross section taken on the line 3—3 in Fig. 1, and in fragmentary form, of a car body, platform, and receiving station constructed and arranged in accordance with the present invention; and Fig. 4 is a cross section taken on the line 4—4 in Fig. 2, and on an enlarged scale, showing in detail the retaining pins for preventing the mail pouches from sliding from the said platform by reason of air pressure exerted thereon.

The invention illustrated in the accompanying drawings is designed more particularly for delivering mail pouches from fast moving trains during the passage of the same. For this purpose there is provided a platform 5, which, in the present case, is constructed of sheet metal, and is provided with an upturned end 6 and lateral exten-

sions 7, 7. The end 6 and extensions 7, 7 are curled over a rod 8, which forms a strengthening frame for the platform 5. The rod 8 is provided with short sections 9, 9, which accommodate the different levels of the upper edge of the end 6 and the ends of the extensions 7, 7. At the ends of the rod 8 are provided bearings 10, 10, which engage a shaft 11 extended between the sides of the door opening A of the mail car, and which is secured in the bracket bearings 12, 12 thereof. The pouches are prevented from being carried beyond the outer end of the platform 5 by the upturned end 6, and are prevented from being accidentally disposed therefrom in line with the movement of the car, by pivoted stakes 13, 13. The stakes 13, 13 are provided with central bearing sections 14, which are fitted to the rod 8, shown particularly in Fig. 4 of the drawings, and are further provided with a lower extension 15. The stakes 13 are maintained in vertical disposition by springs 16, 16. The springs 16, 16 are of the character generally known as spiral springs, and are arranged to normally hold the stakes 13 in position substantially as shown in the drawings. The said stakes will, however, yield when pressed against either from the outside of the platform or from the center thereof, in the former case avoiding breakage by striking any standing or stationary object, and in the latter permitting the delivery of the mail pouches from the edge of the platform 5. While I have herein shown the springs as spiral, adapted to arrest displacement by compression as well as expansion, it will be understood that I do not limit myself to the use of any particular kind of spring.

The platform 5 is pivotally connected to a circular arm 17. The arm 17 is pivotally connected at 18 to a hand lever 19. The arm 17 passes through a perforation 20 formed in the floor B of the mail car. The perforation 20 serves as a guide for the operation of the arm 17.

The lever 19 is pivoted at 21 in a standard 22, fixedly mounted upon the floor B of the mail car, and is further provided with a hand lever 23 connected to a bolt 24. The bolt 24 is adapted to strike within and be held by teeth formed in a quadrant 25. The quadrant 25 is fixedly secured to the structure of the car and disposed beside the door opening thereof.

In the operation of the platform 5, when

the lever 19 is moved to the position illustrated in dotted lines in Fig. 3 of the drawings, the said platform, and parts connected therewith, are raised to partially fill the door opening A of the car, as shown in dotted lines in said figure, and in full lines as shown in Fig. 2. When, however, the platform is disposed for the delivery of mail pouches from the car, the lever 19 is raised to the position shown in full lines in Figs. 1 and 3, in which position of the lever the platform 5 is in an extended horizontal position, such as illustrated in Figs. 1 and 3. In this position the lever 19 is locked by the bolt 24 engaging the quadrant 25.

The platform 5 being disposed as above set forth, the mail pouches are singly, or in groups, placed upon the platform 5, the stakes 13, 13 serving to prevent the accidental removal by wind pressure, or otherwise, of the said pouches from the said platform until the same are engaged by a structure sufficiently rigid to sweep the said pouches from the said platform, forcing backward the stakes 13, 13 for that purpose.

At each of the several stations provided for receiving the mail while the train is in transit, there is erected a receiving pen 26, consisting substantially of a rail, circular in form and stationarily mounted on the platform of the railway station, or of a mail delivery station removed from the passenger station. Beside the said pen 26, and securely anchored to the platform, is a standard 27. Adjustably mounted within the hollow center of the standard 27 is a sliding shaft 28. The shaft 28 is provided at the upper end thereof with a hollow inverted laterally extended arm 29. The arm 29 is box-like in form, and provided to receive at each end thereof the journal ends of a shaft 30, and double spiral springs 31, 31, which are wrapped upon the said shaft 30. The springs 31, 31 are pitched in opposite directions, as seen in Fig. 3 of the drawings, whereby the said springs cooperate to return the rake arms 32, 32 to a vertical position after the same have been deflected in either horizontal direction. The shaft 28 is maintained at any set elevation by a set screw 33. The tension of the springs 31, 31 is varied to suit the duty to be performed thereby.

The operation of the device, when constructed and arranged as set forth in the above description and in the accompanying drawings, is as follows: The mail clerk within the car, on approach of a station to which mail is to be delivered while the train is in transit, lifts the lever 19 to the position shown in Figs. 1 and 3 of the drawings, thereby lowering the platform 5 from the position illustrated in Fig. 2 of the drawings to the position illustrated in Figs. 1 and 3. The mail pouches are then disposed on the

platform. When now the train passes the station where has been erected a standard 27, and rake arms 32, 32 connected therewith, the said rake arms are interposed in the path of the said pouches, which, striking upon the same, are held thereby and drawn backward over the platform 5, striking against the stakes 13, 13 with sufficient force to level the said stakes to permit the said pouches to pass the same. In doing so they are dropped from the platform 5 into the pen 26. Immediately the pouches are thus dropped from the platform, the stakes 13, 13, by reason of the springs 16, 16, resume their vertical position, and the rake arms 32, 32, by reason of the springs 31, 31, resume their vertical position, the arms having been deflected by the impact of the mail pouches.

The above described manner of handling the mail pouches for delivery from moving trains entails little or no trouble on the part of the mail clerk, has no limit to number or size of said pouches, and in every way responds to the requirements for the mail delivery service.

Immediately the delivery has been effected, the mail clerk lifts the platform 5 to the position shown in Fig. 2, by moving the lever 19 to the position shown in dotted lines in Fig. 3 of the drawings. It will be understood that care is exercised in the placement of the pen 26 that the same is not in line with the station platform. As a rule, the mail receiving stations are removed from the passenger platform and disposed on the opposite side of the track therefrom, which provides against the accidents which might be caused by the carelessness or oversight on the part of the clerk in failing to lift the platform 5.

While in the accompanying drawings the platform 5 is illustrated as being extended from the sill of the door A, it will be understood that the operation of the invention is not limited to this arrangement, as the platform may swing from the upper or middle section of the said door.

It is to assist in raising the platform 5 that I use the springs 34, 34 which are wound about the shaft 11, and the free ends of which are secured to sliding blocks 35, 35. The sliding blocks 35, 35, are guided to track in the grooved plates 36, 36 which plates are bolted under the platform 5. The springs 34, 34, when thus introduced, relieve the lifting strain of the platform upon the lever 19 and materially assist the operator in raising the platform to the position shown in Fig. 2 of the drawings.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A device for delivering mail from moving trains, comprising an extensible shelf-

like member mounted in the door opening of a mail car to rest vertically therein; a plurality of yielding vertically disposed guard stakes pivotally mounted upon said shelf-like member and at the side thereof; means for maintaining the vertical adjustment of said guard stakes; and means operable from within the car for rotating the said shelf-like member to extend the same horizontally outward from the said car.

2. A device for delivering mail from moving trains, comprising an extensible shelf-like member pivotally mounted in the door opening of a mail car and adapted to normally rest vertically therein; a plurality of vertically disposed guard stakes pivotally mounted on the edge of said shelf-like member; a plurality of springs to maintain the normal upright position of said guard stakes; a lever pivoted within said car; and a curved connecting rod extended between the said lever and the outside of said shelf-like member to dispose and maintain the said shelf-like member in adjusted position.

3. A device for delivering mail from moving trains, comprising an extensible shelf-like member pivotally mounted in the door opening of a mail car and adapted to normally rest vertically therein; a plurality of vertically disposed guard stakes pivotally mounted on the edge of said shelf-like member; a plurality of springs to maintain the normal upright position of said guard stakes; a lever pivoted within said car; a curved connecting rod extended between the said lever and the outside of said shelf-like member to dispose and maintain the said shelf-like member in adjusted position; a toothed quadrant mounted concentrically with the pivot of said lever; and a latch bolt provided on said lever for engaging said quadrant to hold the said shelf-like member in set position.

4. In combination with a moving car having an extensible shelf-like member adapted to carry in extended position beyond the side of said car a mail pouch for delivery, of a plurality of extracting arms, each disposed at a delivery station in supported relation to the path of said car; and a plurality of yielding rake members mounted on said arms to sweep the upper surface of said shelf-like member.

5. In combination with a moving car hav-

ing an extensible shelf-like member adapted to carry in extended position beyond the side of said car a mail pouch for delivery, of a plurality of extracting arms each disposed at a mail receiving station; a rake-like member yieldingly mounted on each of said arms adapted to sweep the upper surface of said shelf-like member; and yielding means for maintaining the vertical disposition of said rake-like members.

6. In combination with a moving car having an extensible shelf-like member adapted to carry in extended position beyond the side of said car a mail pouch for delivery, of a plurality of extracting arms each disposed at a mail receiving station; a rake-like member yieldingly mounted on each of said arms adapted to sweep the upper surface of said shelf-like member; and a plurality of springs acting to maintain the vertical disposition of said rake-like members.

7. In combination with a moving car having an extensible shelf-like member adapted to carry in extended position beyond the side of said car a mail pouch for delivery, of a plurality of extracting mechanisms each disposed at a mail receiving station, and comprising a buffer member yieldingly mounted on each of said arms to sweep the upper surface of said shelf-like member; yielding means for maintaining the vertical disposition of said rake-like member; and means for adjusting said rake-like member carried vertically.

8. In combination with a moving car having an extensible shelf-like member adapted to carry in extended position beyond the side of said car a mail pouch for delivery, of a plurality of extracting arms each disposed at a mail receiving station; a rake-like member pivotally mounted on each of said arms adapted to sweep the upper surface of said shelf-like member; a plurality of springs acting to maintain the vertical disposition of said rake-like members; and means for adjusting said extracting arms and rake-like members carried thereby, vertically.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ERNEST R. ROBINSON.

Witnesses:

JOHN T. SHUSTER,

ELMER L. SHOEMAKER.