

No. 661,394.

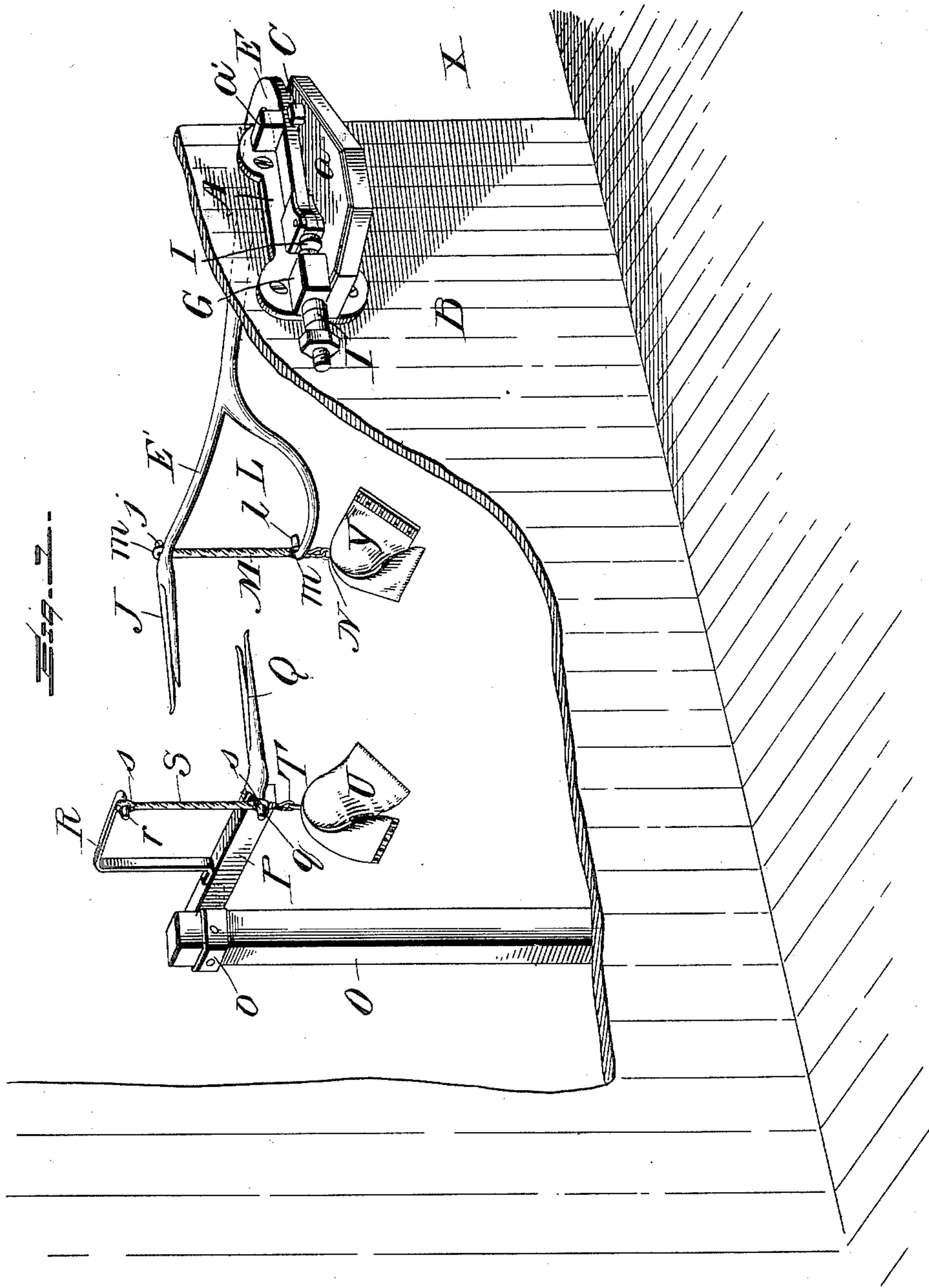
Patented Nov. 6, 1900.

A. O. CRAVENER.  
MEANS FOR HANDLING MAIL BAGS UPON MOVING TRAINS.

(Application filed May 9, 1900.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:  
*L. C. Hill*  
*Chas. L. Wallace*

INVENTOR  
*Atmos O. Cravener*  
BY *L. Deane & Son*  
Attorneys

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Fig. 2.

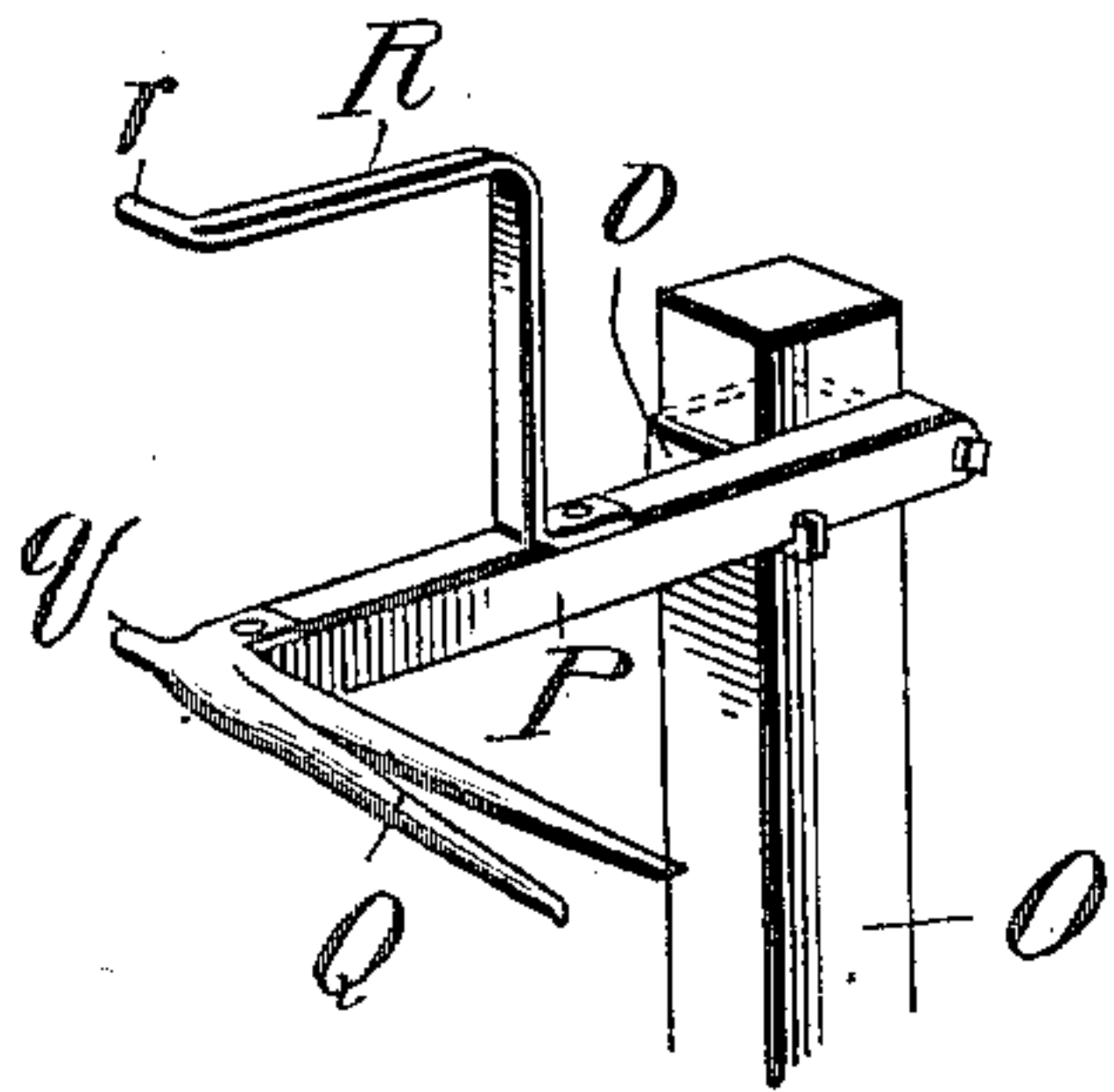


Fig. 3.

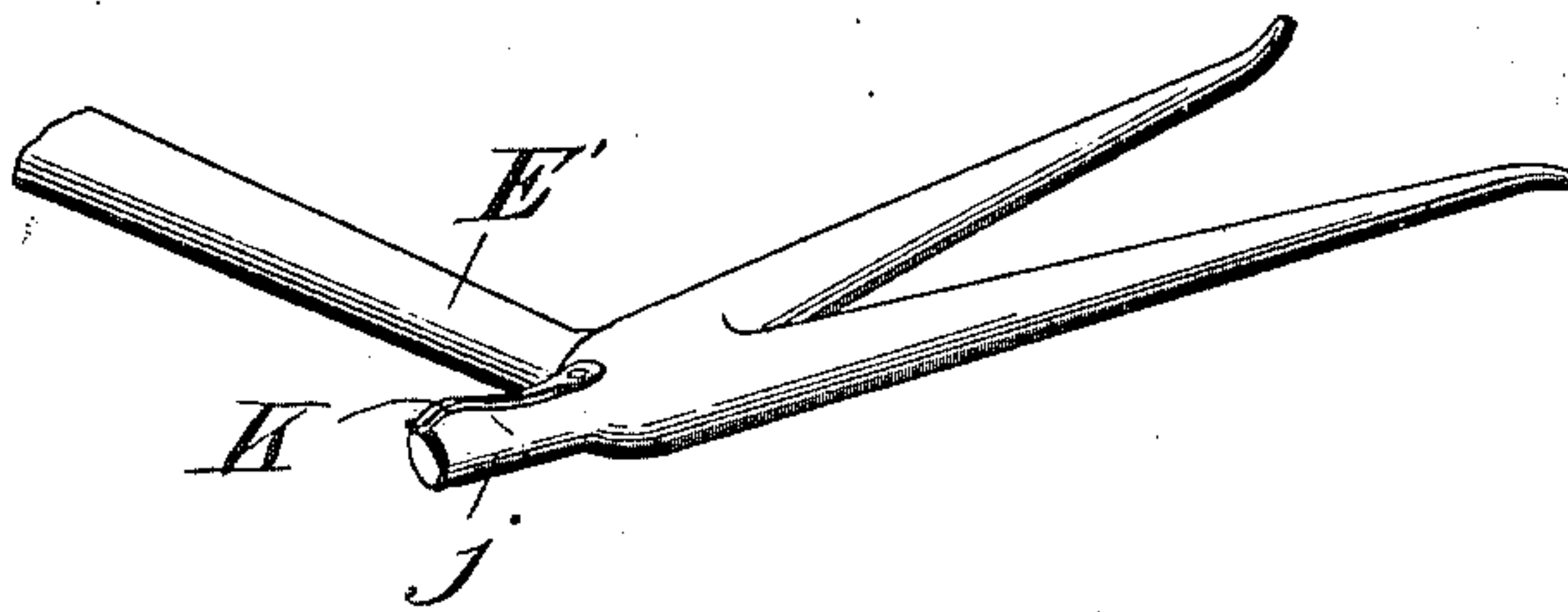


Fig. 4.

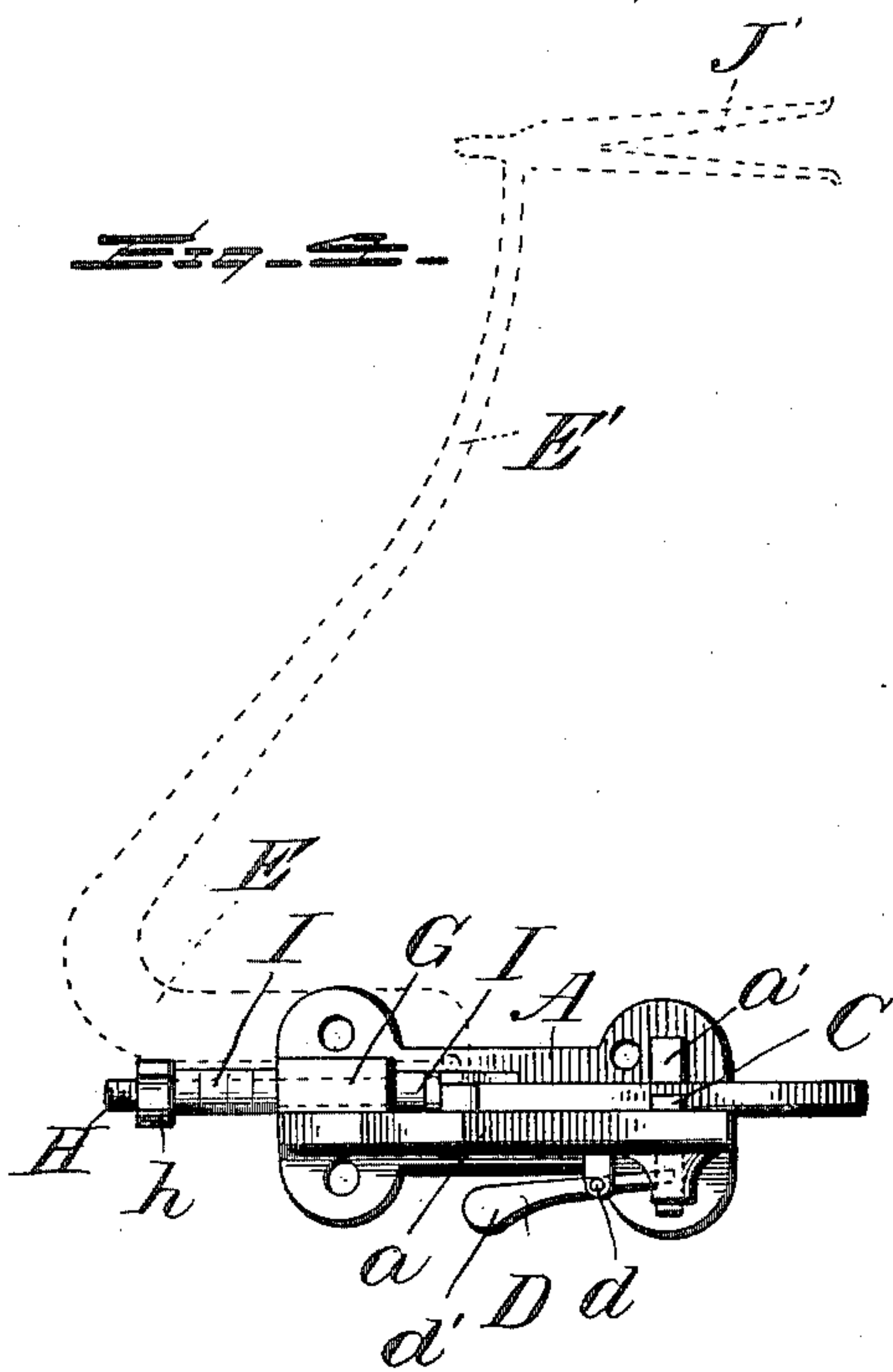
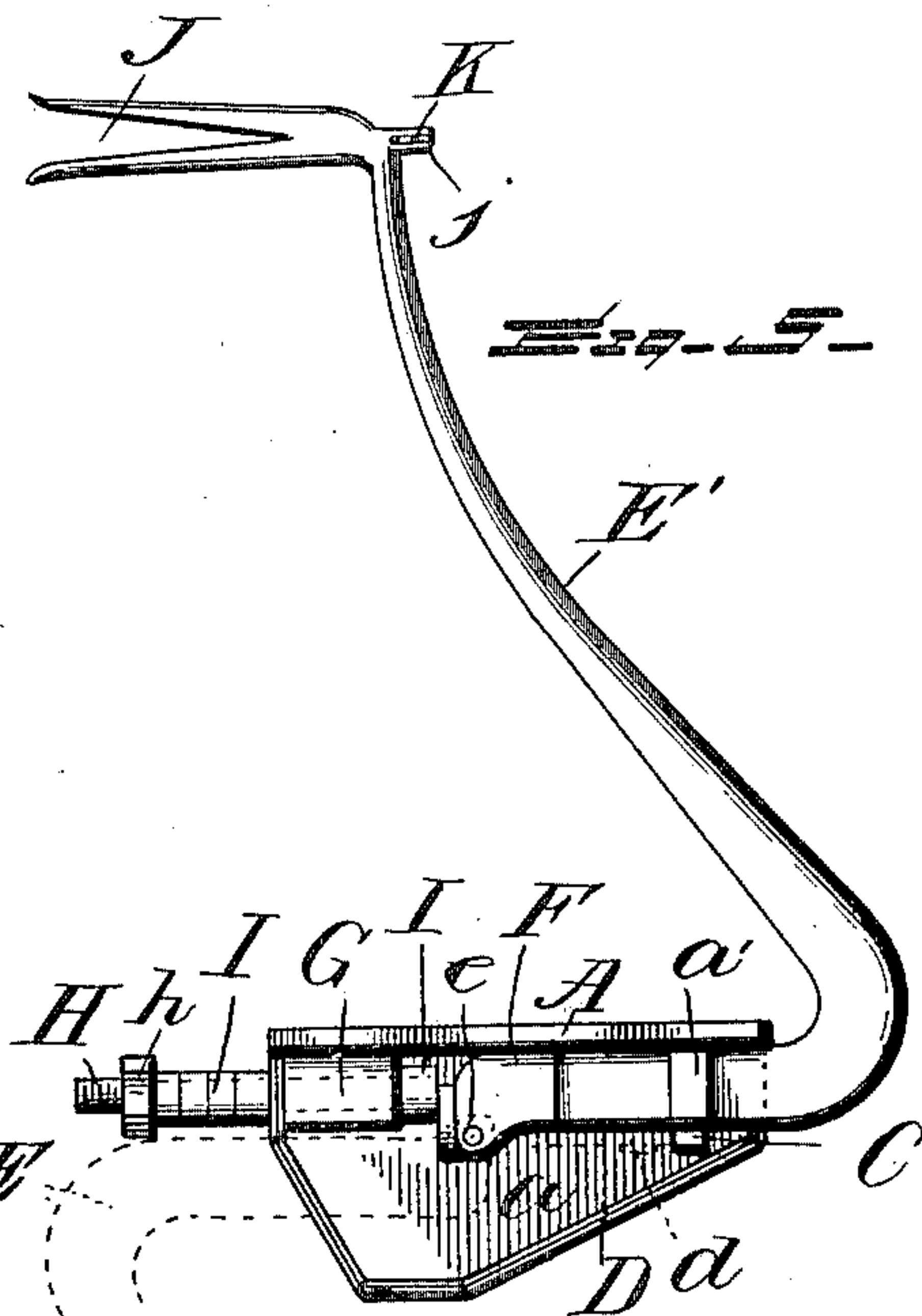


Fig. 5.



WITNESSES:  
L. C. Mills.  
Chas. L. Wallace.

INVENTOR  
AMOS O. CRAVENER,  
BY L. D. GANE & SON  
Attorneys



# UNITED STATES PATENT OFFICE.

AMOS O. CRAVENER, OF INDIANA, PENNSYLVANIA.

## MEANS FOR HANDLING MAIL-BAGS UPON MOVING TRAINS.

SPECIFICATION forming part of Letters Patent No. 661,394, dated November 6, 1900.

Application filed May 9, 1900. Serial No. 16,079. (No model.)

*To all whom it may concern:*

Be it known that I, AMOS O. CRAVENER, a citizen of the United States, residing at Indiana, in the county of Indiana and State of Pennsylvania, have invented certain new and useful Improvements in Means for Handling Mail-Bags upon Moving Trains; 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.

This invention relates to improvements in means for handling mail-bags upon a moving train; and it has for one object primarily to provide a simple and cheap mechanism whereby the mail-bag may be delivered from the moving train and another bag taken from a stationary support into the car. By my invention the two bags are taken and delivered practically simultaneously—that is, the one is delivered from the train and the other taken up by the train at the same time and by the conjoint action of the device on the car and that upon the crane or other stationary support.

A further object of the invention is to so construct the mechanism upon the car that the mail-bag to be delivered can be placed on the deliverer in the car and before the arm is extended from the car and by means of which the mail-bag caught may be taken into the mail-car and the door of the car closed, if desired, before removing the bag from the arm of the catcher. Thus all danger of accident to the attendant or of loss of or injury to the bag is avoided, and the bag is exposed to the elements the shortest possible time.

I aim, further, at improvements in the details of construction whereby the desired objects are attained in the most satisfactory manner.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which show what I at the present time consider the preferable way of carrying out my invention, and which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a perspective view looking from the interior of the car, a portion of the side wall of which is broken away, with the delivery and catch arm extended from the car through the door-opening and just approaching the stationary crane. Fig. 2 is a perspective view of the crane and its accessories. Fig. 3 is an enlarged perspective of the forked arm of the deliverer. Fig. 4 is an edge view showing the delivery-arm turned up in dotted lines against the inner wall of the side of the car. Fig. 5 is a top plan showing by full lines the arm extended outside the car and by dotted lines the position it assumes when it is brought into the car and before it is turned up into the position in which it is seen by dotted lines in Fig. 4.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates a base-plate designed to be attached in any suitable manner, as by screws or the like, as shown in Figs. 1 and 4, to the inner face of the wall B of a car, with its outer end adjacent the edge adjacent the door-opening therein, which latter is indicated at X in Fig. 1. This base-plate has the horizontal flange or extension *a*, as seen clearly in Fig. 1, for a purpose which will hereinafter appear. As seen best in Fig. 1, this base-plate is also provided with a lug *a'* near its outer end, beneath which the delivery-arm is designed to engage, as seen in said Fig. 1, when the arm is extended outside the car, as it is in said view.

C is a vertically-disposed latch-bolt working through an opening in the extension *a* of the base-plate, as seen in Figs. 1 and 4, and adapted to be projected in front of the delivery-arm when the latter is in its extended position, as seen in Fig. 1, and thus keep the same locked in such position. This pin is actuated by a lever D, pivotally mounted, as at *d*, in lugs or ears on the under side of the said extension of the base-plate, with one end weighted, as seen at *d'*, and its other end connected with the latch bolt or pin in any suitable manner. By this means the bolt is normally kept projected and there held by the weighted end of the lever, and when it is desired to remove the bolt from its engagement with the arm the free or weighted end of the



lever is pressed upward, with the result that the bolt is drawn downward, when the arm may be swung inward.

E is the arm. It is of gooseneck form, as shown, the straight portion being at all times within the car, and its inner end is pivotally mounted on the pin or pivot *e*, held in the block or ears F, so that the arm may be swung from the position in which it is seen in dotted lines in Fig. 5 into that in which it is shown by full lines in the same view. It is desirable also that the arm when in the car and not in use, as between stations where the arm is to be employed, should be placed into such position as to be out of the way of the occupants of the car, and for this purpose I provide the following construction: G is a block on the base-plate, through which works a rod H, having a nut *h* on its outer end, and its outer end is connected with the inner end of the straight portion of the arm by a swivel joint or connection, so that the arm after being brought into the car into the position in which it is shown by dotted lines in Fig. 5 may be turned up against the side of the car, as indicated by dotted lines in Fig. 4. On this rod upon opposite sides of the block G are yielding collars or washers I to take up the recoil of the machine when in use. They yield sufficiently to allow of the necessary movements of the rod and arm in its various movements. The curved portion of the arm terminates in the fork J, extended at substantially right angles from the outer portion E' of such arm, as seen clearly in Figs. 1, 3, 4, and 5, while at the apex of the fork there is an extension *j*, (seen best in the enlarged view, Fig. 3,) and upon this extension or pin *j* there is attached a small spring-arm K for a purpose soon to be described. As seen in Fig. 1, the outer portion of the arm has a curved depending supplemental arm L, which terminates in a substantially horizontal pin, which is extended rearward, as seen at *l*, in vertical alinement with the pin *j* on the fork above, as shown clearly in Fig. 1.

M is a rope or chain having at each end an eye *m*, adapted to engage over the pins *j* and *l*, as seen clearly in Fig. 1, and the lower eye or ring is provided with a snap-hook or analogous device N to engage a strap buckled around the center of the mail-bag, (shown at Y in Fig. 1,) suspended in position to be engaged by the forked arm on the crane, now to be described.

O is the post, supposed to be supported alongside the railway-track in the usual manner, and surrounding this post near its upper end is a band *o*, and to this band is hinged the crane-arm P in such a manner that it can be thrown into position, as shown, for holding the mail-bag to be caught and receiving one to be delivered thereto and also thrown to the outer side of the post when not in use. On the end of this arm is the fork Q, having at the end farthest from the fork a pin *q*, while secured to the upper side of

the arm is the bent metallic arm R, the horizontal upper portion of which terminates in the pin *r*, which is disposed in vertical alinement with the pin *q*, and these two pins are adapted to receive the eyes or rings *s* on the ends of a rope or chain S, the lower ring or eye being provided with a snap-hook or analogous provision T, adapted to engage the strap buckled around the middle of the mail-bag U, as shown in Fig. 1, where it is shown as suspended therefrom ready to be received by the forked arm J of the arm E.

The operation will be apparent from the foregoing description when taken in connection with the annexed drawings, and a further detailed description thereof does not seem necessary, it being sufficient to explain that with the parts in the position in which they are shown in Fig. 1, the cars going in the direction indicated by the arrow in said figure, as the car moves slightly farther the forked arm J will engage the rope S and by its momentum will force the eyes or rings *s* off of the pins *q* and *r*, the rope and its bag being retained in the fork, and at the same time the fork G will engage the rope M and detach or disengage its eyes or rings from the pins *j* and *l*, which, it will be noticed, are oppositely disposed to the pins *q* and *r*, and the bag Y will be caught and held in the fork, to be afterward removed by the proper person, while the arm E is swung into the car in the manner hereinbefore explained and the bag removed therefrom.

From the foregoing it will be observed that I have produced a novel form of mail-bag catching and delivering device of simple, compact, and efficient construction; but while the present embodiment of the invention is what I consider at this time to be preferable I do not desire to limit myself to the structural details defined, but reserve the right to make such changes, modifications, and variations as may come properly within the scope of the protection prayed.

What is claimed as new is—

1. In a mail-bag catching and delivering device, a delivery-arm mounted on a vertical pivot carried by a sliding rotatable member and to be extended outside the car and when withdrawn inside the car to be turned vertically, as set forth.

2. In a device of the character described, a pivotally-mounted arm carried by a horizontally-sliding rotatable member and having a forked end, and means for locking the arm in its extended position, as set forth.

3. In a device of the character described, a horizontally-slidable rotatable member, a pivotally-mounted arm carried thereby and having a forked end, means for locking the same in its extended position, and means for taking up the recoil, as set forth.

4. In a device of the character described, simultaneously-operating delivering and receiving means comprising forked arms extended in opposite directions in substantially



the same vertical plane, one of said arms being pivotally mounted on a vertical pivot and connected with a horizontally-slidable rotatable member, as set forth.

5 5. In a device of the character described a pivoted delivery-arm having its free end provided with a fork having a pin projecting from the rear thereof, said arm being also provided with a downwardly-extending supplemental arm having a pin in vertical alignment with the pin on the fork, as set forth.

10 6. In a device of the character described, a crane-arm provided with a fork having a pin, projecting horizontally from the rear thereof, and an arm above the same having a pin in the same vertical plane as the pin carried by the fork, as set forth.

15 7. In a device of the character described, the combination with two oppositely-disposed forked arms each of which is provided with a bag-supporting pin extended in the direction opposite to that of the fork, of a supplemental arm carried by each of said forked arms, and each provided with a bag-supporting pin, the pins of the supplemental arms being vertically aligned with the pins of the forked arms, and a bag-supporting cord normally suspended from the pin of each fork and the pin of the supplemental arm carried thereby

and adapted to be removed by the opposing 30 fork.

8. In a device of the character described, the combination of a base-plate with lug, a pivotally-mounted arm designed to engage beneath said lug, and a latch-bolt movable 35 through the base-plate to engage said arm, as set forth.

9. In a device of the character described, the combination of a base-plate with lug; an arm pivotally mounted on said base-plate to 40 engage beneath said lug; a latch-bolt movable vertically through said base-plate, and a pivotally-mounted weighted lever connected with said bolt, as and for the purpose specified.

10. In a device of the character described, the combination of a base-plate, an arm pivotally mounted thereon, a rod slidable through a block on the base-plate, connections between said rod and arm, and elastic collars 45 on the rod bearing upon opposite sides of said block, as and for the purpose specified.

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

AMOS O. CRAVENER.

Witnesses:

H. S. THOMPSON,

HARRIET J. MCANULTY.