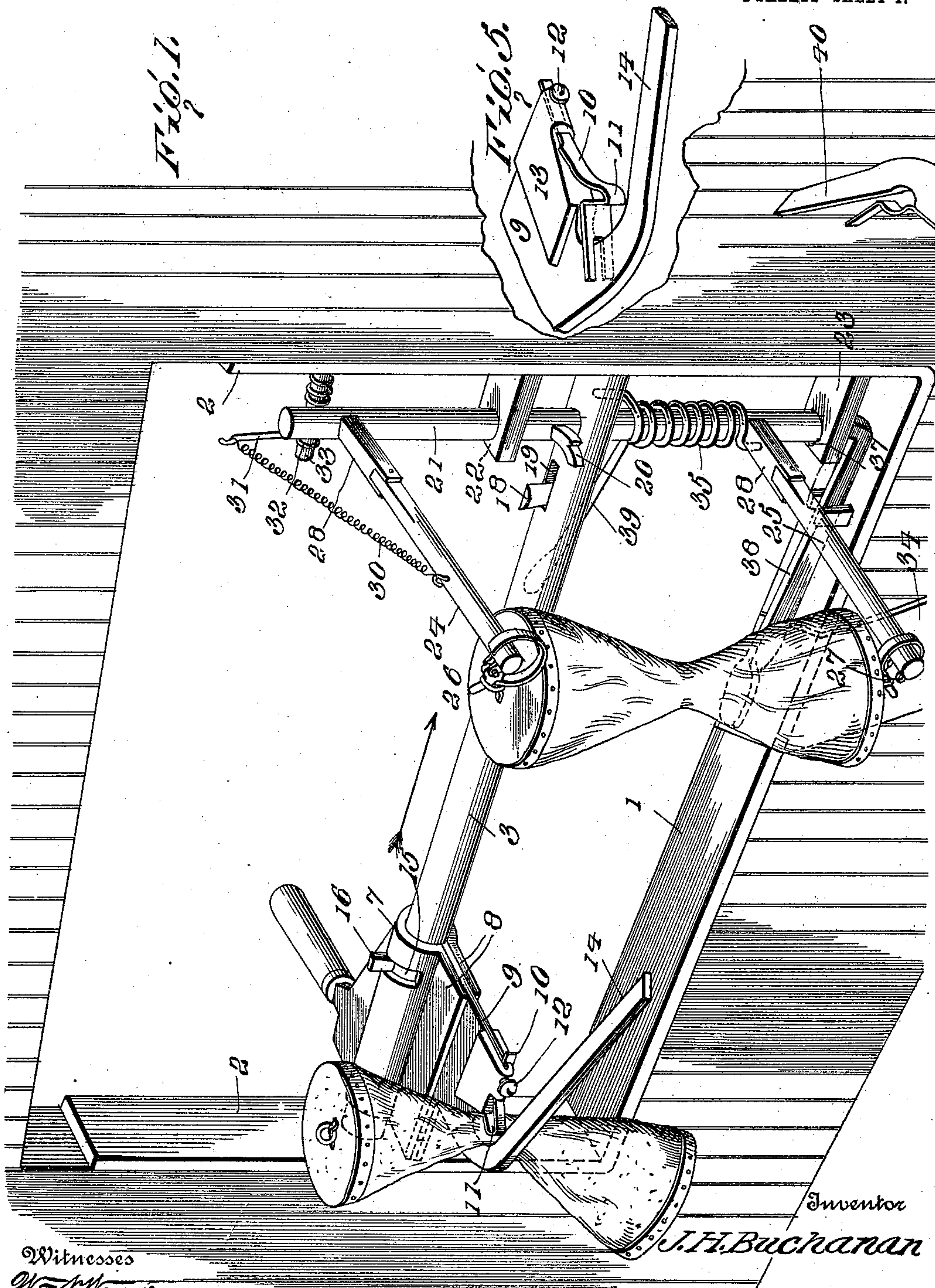


J. H. BUCHANAN.
MAIL HANDLING DEVICE.
APPLICATION FILED APR. 22, 1910.

966,649.

Patented Aug. 9, 1910.

2 SHEETS—SHEET 1.



Witnesses

W. H. Woodman

J. H. Buchanan

By

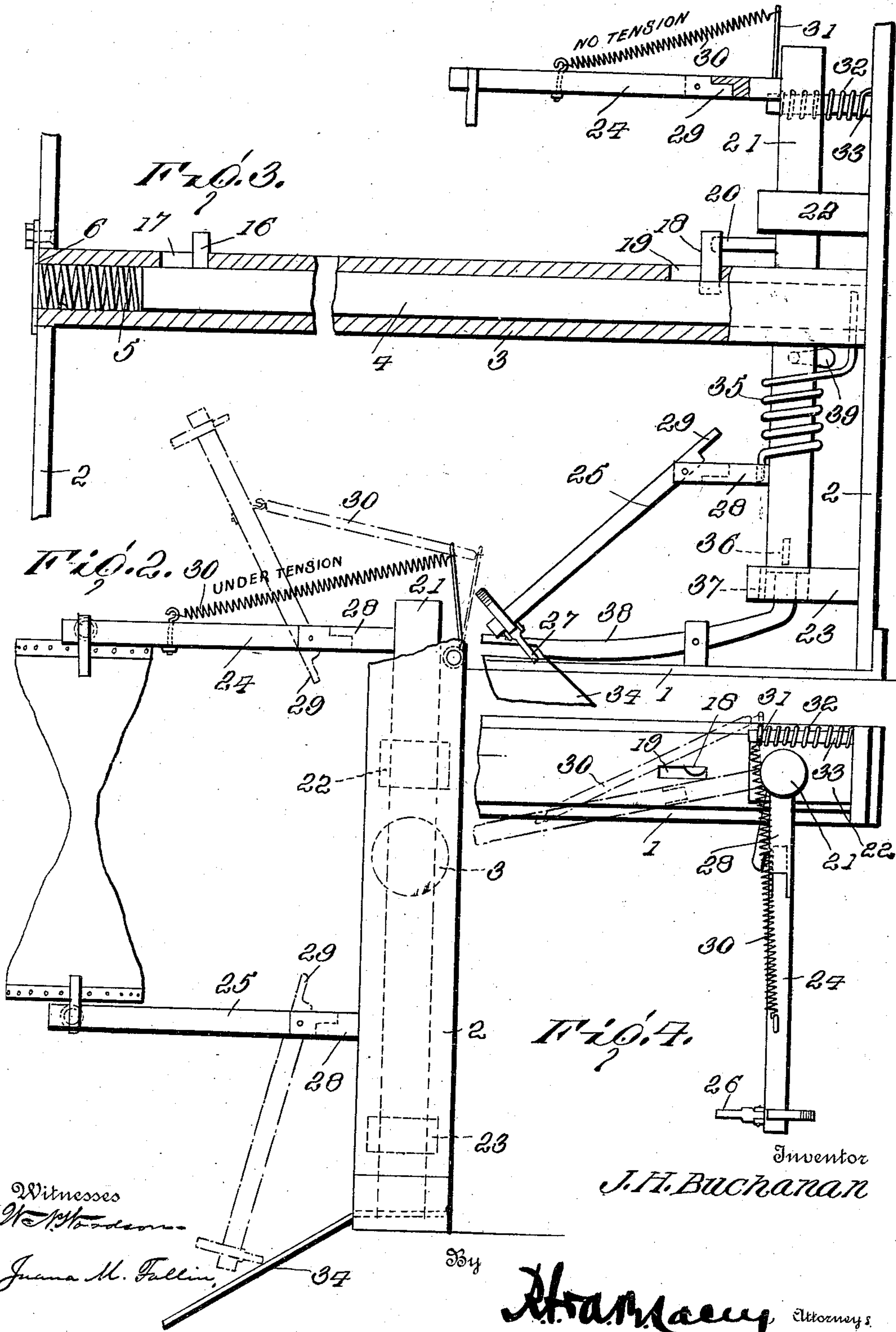
Attorneys

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Witnesses
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UNITED STATES PATENT OFFICE.

JOHN H. BUCHANAN, OF ASHLEY, PENNSYLVANIA.

MAIL-HANDLING DEVICE.

966,649.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed April 22, 1910. Serial No. 557,062.

To all whom it may concern:

Be it known that I, JOHN H. BUCHANAN, citizen of the United States, residing at Ashley, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Mail-Handling Devices, of which the following is a specification.

This invention comprehends certain new and useful improvements in apparatus for transferring mail to and from moving trains, and the invention has for one of its primary objects a simple, durable and efficient construction of mail handling mechanism designed to be embodied in a railway mail car and so arranged that it will be positive and practically automatic in its action to receive the mail bag from a crane or the like alongside of the track and to subsequently and automatically swing a mail bag out from the car so that it will be caught by the crane or other track apparatus and deposited at the station without any liability of injury to the bag or mail matter contained therein.

The invention also has for its object a bag holding device embodying arms which will be automatically swung out of the way or moved to an inoperative and out-of-the-way position, as soon as the bag has been stripped therefrom, and the invention also has for its object a bag holding device embodying upper and lower arms, the lower arm being held in engagement with the bag in operative horizontal position when swung out from the car and the upper arm being likewise held against the tension of a spring in lowered operative position when in outstanding relation to the car and being automatically pulled upwardly to an inoperative position as soon as the bag has been stripped from the arms.

A further object of the invention is an apparatus of this character in which the spring is so arranged that it will only exert a tension on the upper arm when such arm has been moved out from the car, the parts being so constructed and correlated that when the upper arm has been swung within the car its spring will be relaxed and the arm will be permitted to assume a horizontal position in readiness to have a bag secured thereto.

With these and other objects in view as will more fully appear as the description proceeds, the invention consists in certain

constructions, arrangements and combinations of the parts that I shall hereinafter fully describe and claim.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawings in which:

Figure 1 is a perspective view illustrating the parts of my invention in their operative position secured within the door-way of a rail way mail coach; Fig. 2 is a side elevation of the bag holding arms, said arms being illustrated in full lines in their operative position; Fig. 3 is a longitudinal sectional view of part of the device, portions being shown in side elevation and the arms being in their retracted position; Fig. 4 is a top plan view looking down on the uppermost arm and showing the same in different positions in full lines and in dotted lines; and, Fig. 5 is a fragmentary perspective view of the bag catching hook.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings by the same reference characters.

Referring to the drawings and now particularly to Fig. 1, the numeral 1 designates the bottom sill of the framework of my improved mail handling apparatus which is designed to be located within the door-way of a rail way mail coach, the ends of the sill being upwardly turned as indicated at 2 to form standards for some of the actuating parts.

Supported by and between the standards 2 and secured thereto in any desired way is a horizontally extending tubular casing 3, in which a rod 4 is mounted for a longitudinal movement, the said rod being held at one limit of its movement by an expansion spring 5 bearing against the rod at one end and also bearing against a hinged cover plate 6 secured by a screw or similar fastening device to the outer wall of one of the standards 2 so as to swing over and close the opening in one end of the casing back of the spring 5.

Mounted to turn and slide on the casing 3 is a sleeve 7 provided with longitudinal flanges 8 between which is secured an extension plate 9 slotted to receive a shank 10 of a spring detent 11, the said shank being secured to the plate by a set-screw 12 as best illustrated in Figs. 1 and 5. The detent 11 is forked at one end as indicated at 13 and

straddles the inner edge of a bag receiving hook 14 which may be formed as an integral extension of the plate 9. It will thus be seen that when the hook 14 is extended in operative position, the bag caught by the same will strike the detent 11 and snap the same backwardly so as to be securely held in the crotch of the detent, all liability of any rebounding action and the consequential accidental dropping of the bag being thereby effectually precluded. As above stated, the sleeve is mounted both to turn and slide on the casing 3, and said sleeve is formed with a bayonet slot 15 designed to receive a pin 16 which is secured to the rod 4 and which projects out through a longitudinal slot 17 formed in the casing 3. This bayonet slot admits of a one-quarter turn being given to the sleeve 7 which carries the bag receiving hook 14.

The rod 4 is provided at its end opposite to the spring 5 with a trigger 18 which projects upwardly through a longitudinal slot 19 formed in the casing 3 and which is designed for locking engagement with a trip arm 20 secured to a vertically disposed spindle 21 which is mounted for a rotary movement about a horizontal axis, and a limited vertical movement also on the brackets 22 and 23 formed on the adjacent standard 2 and extending inwardly therefrom. The spindle 21 carries upper and lower bag holding arms 24 and 25 which carry at their free ends spring pressed bag holding fingers 26 and 27 respectively. Each of the bag holding arms is pivotally connected at one end to swing about a horizontal axis in a bracket 28, the said upper and lower brackets being extended perpendicularly from the spindle 21 and the upper arm is arranged for movement from a horizontal position upwardly to a vertical position, while the lower arm is movable from a horizontal position downwardly to the vertical position. The movement of each arm is limited in one direction, that is, when it reaches a horizontal position by the engagement of a rear extension 29 with the wall of a socket formed in the bracket which carries such arm as best indicated in Fig. 3. The upper arm 24 is secured in any desired way to one end of a contractile spring 30 and the said spring is in turn connected at its other end to the extending end 31 of a slack spring 32 which is coiled upon a post 33 which projects inwardly from the adjacent standard 2; the parts are so arranged that when the spindle 21 is turned so as to carry the arms 24 and 25 to an extended position relative to the doorway, the springs 30 and 32 will be placed in position and thereby have a tendency to swing the arm 24 upwardly. But when the arms 24 and 25 are within the doorway, that is in an inoperative position, the spring 30 will be slack as indicated in

full lines in Fig. 3 and in dotted lines in Fig. 4 and the end 31 of the spring 32 will be relaxed, so that the arm 24 will be permitted to rest in its horizontal position thereby easily admitting of the upper ring of a bag or sack to be slipped over the finger 26. The lower arm 25 has a tendency to swing downwardly by gravity but is permitted to do so only when in extended position, after the bag has been stripped therefrom. In the retracted and inoperative position of this arm it will be held in a substantially horizontal position by resting upon the sill 1 so that after the bag has been suspended from the upper arm 24, the operator may raise the lower arm slightly and slip the ring of the bag upon the finger 27. The lower arm 25 is automatically moved from its inoperative downwardly extending and vertical position (as the spindle 21 is turned to move the bag holding arms inwardly into the doorway of a car) by riding upwardly and inwardly upon an inclined plate 34 which is secured to the sill 1 and which projects outwardly and downwardly therefrom, as best illustrated in Figs. 1 and 2.

The spindle 21 is encircled by a coil spring 35 having a tendency to partially rotate the spindle in a direction to carry the arms outwardly and the spindle is held as against such movement by the engagement of the trip arm 20 with the trigger 18. As soon as the rod 4 is moved in a direction to release the trigger from the trip arm, the spring 35 will be permitted to act so as to turn the spindle 21 and swing the bag holding arms out of the car and to their operative positions. In order to lock the spindle with the arms in this position, the spindle is provided with a lug 36 which is adapted to drop down into a slot 37 which communicates with the opening in the lower bracket in which the lower end of the spindle 21 is fitted. To release the lug 36 from the slot 37 I have provided a foot pedal 38 one end of which passes upwardly and into the opening in said bracket so as to engage the spindle 21 and raise it whereupon the handle 39 may be grasped and the spindle turned around so as to move the bag holding arms into the doorway of the car.

From the foregoing description in connection with the accompanying drawing, the operation of my improved mail handling apparatus will be apparent.

In the practical use of the device, the arms are held in their retracted position within the doorway of a car by means of engagement of the trip arm 20 with the trigger 18 and a bag is then suspended by the arms. At the required time, the handle of the bag catching hook is grasped and the hook turned around so as to project outside of the car and the sleeve of the hook is moved

in a direction to pull the rod 4 so as to release the trigger 18 from the trip arm 20 whereupon the spindle 21 will turn and the bag holding arms will be swung out from the car. As soon as the bag is stripped from the arm as by a crane, a portion of which is indicated at 40 in Fig. 1, the lower arm will drop or swing downwardly and the upper arm will be pulled upwardly by its spring, both arms being thereby moved automatically and immediately thereafter, the bag receiving hook will engage the bag which is intended to be carried by the crane and which is designed to be lodged within the car. To raise the device it is only necessary for the operator to depress the foot pedal 38 so as to raise the spindle 21 and swing the spindle around so as to carry the arm within the car, the lowermost arm will in this movement ride upwardly in the plate 34 and finally rest upon the sill, while the upper arm can easily swing downwardly to a horizontal position ready for engagement by another bag, as the tension springs of the arm are released as above described when the arm is in its inner position.

While the accompanying drawings show the preferred embodiment of my invention it is to be understood that various changes may be made in the construction, arrangement and proportions of the parts of the device without departing from the scope of the invention as defined by the appended claims.

Having thus described the invention, what is claimed as new is:

1. A mail handling apparatus, comprising upper and lower bag holding arms, means for carrying said arms into and out of operative position, means for automatically moving said arms out of the way when a bag is stripped therefrom, and means for automatically maintaining the last named means for the upper arm inoperative when said arm is in an inoperative position.

2. A mail handling apparatus comprising upper and lower bag holding arms, a support therefor, means for swinging said arms

in and out, means for automatically raising the upper arm when the bag is stripped therefrom, and means for maintaining the raising means in an inoperative position when the upper arm is in its inner position.

3. A mail handling apparatus comprising upper and lower bag holding arms, means for swinging said arms in and out, a spring tending to swing the upper arm upwardly when the bag is stripped from the arms, and means for holding the spring slack when the arm is in its inner position.

4. A mail handling apparatus, comprising upper and lower vertically movable bag holding arms, a spindle adapted to carry said arms in and out, a support for said spindle, a spring carried by said support and another spring connected to the first named spring and to the upper arms, the springs being arranged to exert a tension in an opposite direction on the upper arm when the latter is in its outer position and being arranged for relaxing when the arm is in its inner position.

5. A mail handling apparatus comprising upper and lower bag holding arms, a spindle supporting said arms and adapted to carry the same in and out, a support in which the spindle is journaled, a post projecting from said support, a spring coiled around said post and having an upwardly projecting end and another spring connected to the first named spring and to the upper arm, for the purpose specified.

6. A mail handling apparatus comprising bag holding arms, means for swinging said arms in and out, the lower arms being adapted to swing downwardly when a bag is stripped from the arm and an inclined plate upon which the lower arm is adapted to ride when the arms are moved inwardly for the purpose specified.

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

JOHN H. BUCHANAN. [L. S.]

Witnesses:

W. N. WOODSON,
FREDERICK S. STITT.