(No Model.) 2 Sheets—Sheet 1.

G. W. SMITH.

DELIVERY CRANE FOR MAIL BAGS.

No. 497,391. Patented May 16, 1893.

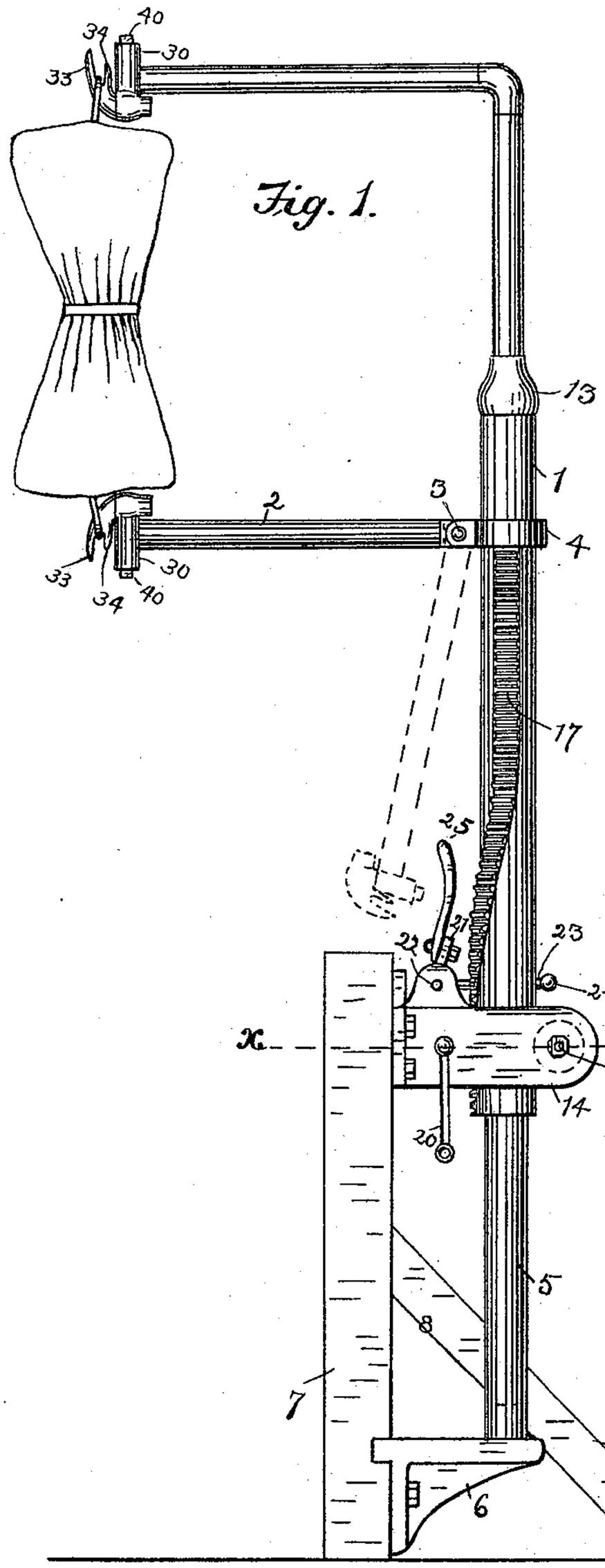


Fig. 1.

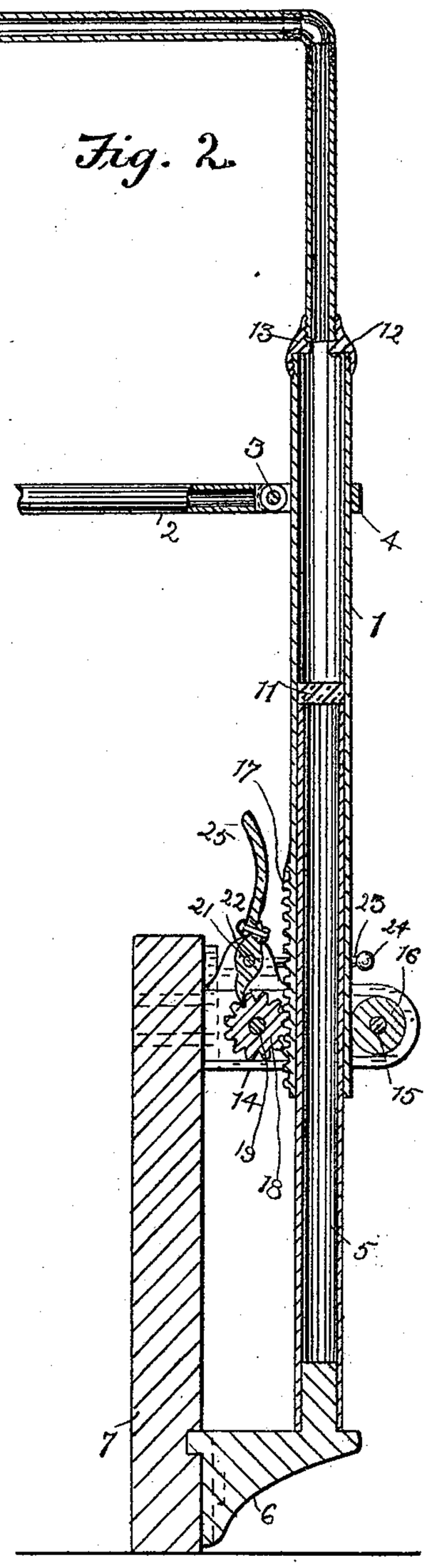


Fig. 2.

WITNESSES:

Thomas Durant

Wallace Murdock

INVENTOR

George W. Smith

BY

Church & Church

ATTORNEYS.

(No Model.) 2 Sheets—Sheet 2.

G. W. SMITH.

DELIVERY CRANE FOR MAIL BAGS.

No. 497,391. Patented May 16, 1893.

Fig. 3.

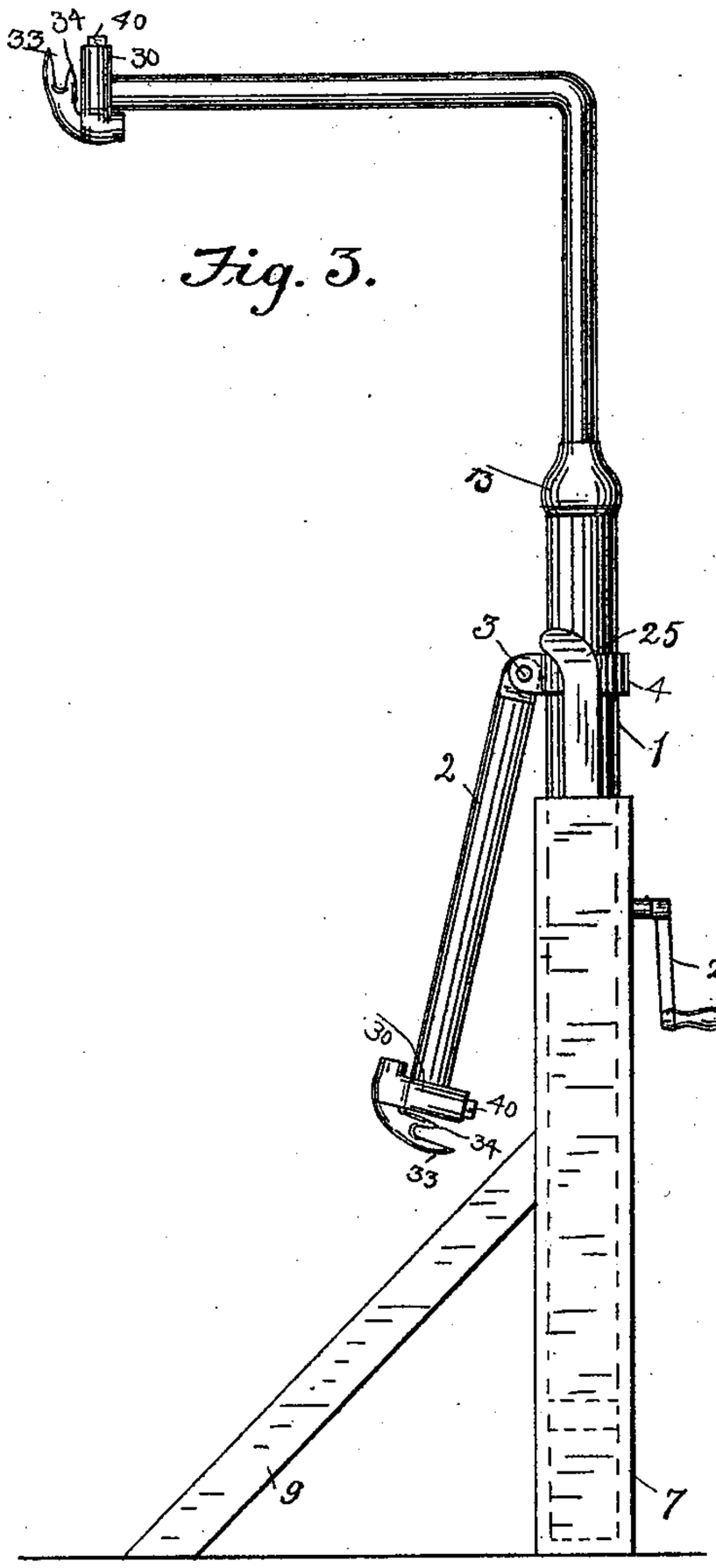


Fig. 4.

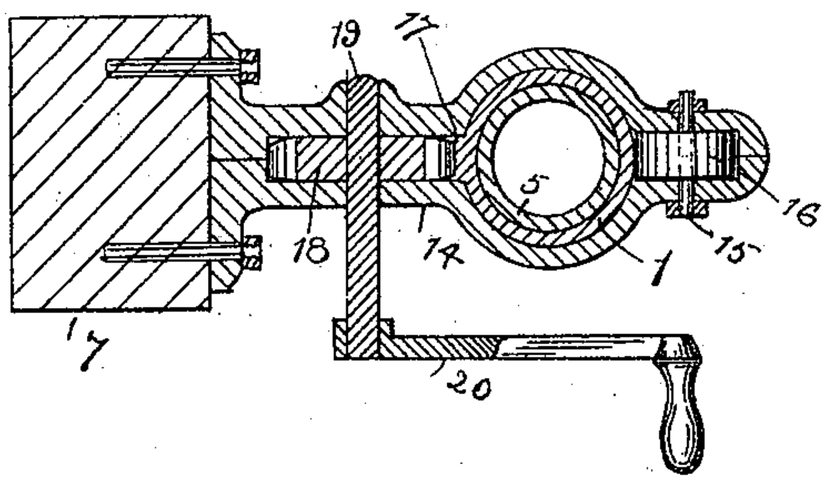


Fig. 5.

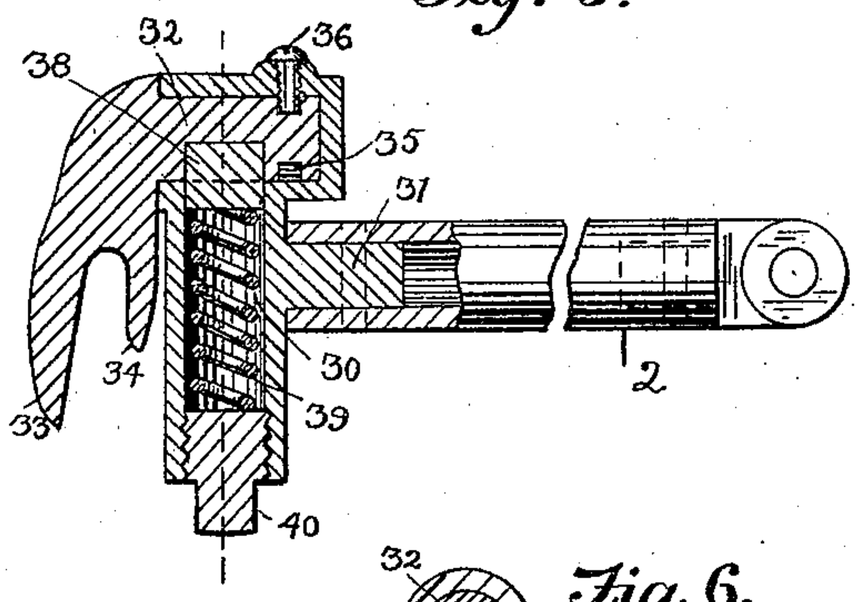
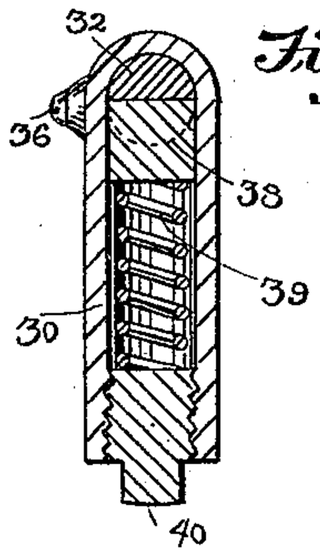


Fig. 6.



WITNESSES:

Thomas Durant

Wallace Murdock

INVENTOR

George W. Smith

BY

Church & Church

ATTORNEYS.

UNITED STATES PATENT OFFICE.

GEORGE W. SMITH, OF ROCHESTER, NEW YORK, ASSIGNOR TO CHARLES F. POND, OF SAME PLACE.

DELIVERY-CRANE FOR MAIL-BAGS.

SPECIFICATION forming part of Letters Patent No. 497,391, dated May 16, 1893.

Application filed July 14, 1892. Serial No. 440,072. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. SMITH, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Delivery-Cranes for 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 a part of this specification, and to the reference-numerals marked thereon.

My present invention has for its object to provide a crane or device for holding mail-bags in position to be delivered to the catcher on postal cars, which, when the bag has been moved by the catcher, will automatically move to a position out of the way, preferably parallel with the railroad track, and toward the ground, which position is also convenient for the operator in applying another bag or pouch and moving the latter in position to be grasped by the catcher arm on the car, and to these and other ends the invention consists in certain improvements in construction and combinations of parts, all as will be hereinafter fully described and the novel features pointed out in the claims at the end of this specification.

In the drawings: Figure 1 is a side elevation of a crane constructed in accordance with my invention showing a mail pouch held in position to be engaged by the bag catcher on a postal car. Fig. 2 is a longitudinal sectional view of the same; Fig. 3 a front view looking from the track when the crane is in lowest position; Fig. 4 a cross sectional view on the line *x*—*x* of Fig. 1; Fig. 5 a longitudinal sectional view of one of the bag holding clips or catches; Fig. 6 a sectional view of the same, on the line *y*—*y* of Fig. 5.

Similar reference numerals in the several figures indicate similar parts.

The main standard 1 of the crane is constructed of hollow material preferably gas pipe having a reduced upper end extending at right angles and carrying the clip for holding the bag, and an arm 2 carrying a corresponding clip for holding the other end of the bag pivoted at 3 to a collar or band 4 secured to the standard 1; the arm at the top and the pivoted arm 2 being arranged a distance apart approximately equal to the length of the bag or pouch to be held.

The standard 1 is arranged to be moved vertically and to rotate in suitable guides or supports consisting, in the present instance, of a suitable rod or column 5 preferably formed of gas pipe, or similar material, extending up inside the column 1 and mounted at its lower end upon a bracket 6 secured to an upright or post 7, which latter is preferably supported by braces 8 and 9, shown in Figs. 1 and 3. Upon the upper end of the column 5 is a suitable buffer 11, formed of a piece of rubber or a metal spring, if desired, arranged, when the standard 1 is in its lowest position to engage with a suitable shoulder or abutment 12 formed in the inner side of the column to arrest the downward movement of the latter and prevent its being broken by the jar. This inner abutment is preferably formed, in the present instance, by the connecting piece or collar 13, which connects the reduced upper end of the standard 1 with the larger lower part, though if the column were made all of one size the abutment could be otherwise constructed.

Secured to the post 7 is a bracket or frame 14 preferably composed of two parts bolted to the post and connected at their outer ends by a bolt 15; said parts encircling the standard 1 and guiding it to some extent in its vertical movement and between these parts and mounted upon the bolt 15 is a roller 16 engaging the rear side of the standard and serving to reduce the friction in its up and down movement. The standard is provided with a rack 17 preferably arranged in the form of a spiral, it being guided between the parts of the bracket 14, so that in the vertical movements of the column it will be turned a quarter way around, that is, when the standard is raised its upper arm will project at right angles to the track and when lowered the spiral rack will cause it to turn parallel with the track, as shown in Fig. 2 of the drawings. Engaging with this rack and located between the parts of the bracket 14 is a pinion 18 mounted upon a shaft 19 journaled in the bracket, and provided on its outer end with a crank handle 20, so that by the rotation of the pinion in one direction the standard can be

raised to the position shown in Fig. 1. Also pivoted between the parts of the bracket is a pawl 21 mounted upon an arbor 22 to which it is rigidly secured and its lower end engages the pinion and prevents its rotation and the descent of the standard when the weight of the latter is on the gear. To the arbor 22, of the pawl, is secured an arm 23 having at its outer end a weight or ball 24 and secured to the pawl is an upwardly extending arm 25 of such a length that when the column is raised to the position in Fig. 1, the lower portion of the pivoted bag carrying arm 2 will strike it when dropped to the position shown in dotted lines. The weight 24 is not heavy enough to disengage the pawl from the pinion when the weight of the standard is on the latter, but after the pawl has been disengaged it is sufficient to hold it in this position until the standard has descended to its lowest position. The bracket 14, it will be noted, serves to inclose the operating parts of the crane and effectually protects them from rain, snow, &c., thereby insuring the proper operation at all times.

The bag holding clips in Figs. 4 and 5 mounted on the upper end of the standard and the outer end of the movable arm 2 are constructed alike, excepting their position is reversed, so that a description of one will answer for both. As shown in said figures they consist of a casting having a recessed portion or barrel 30 to which is secured a stud 31 extending into the supporting arm and at the outer end of said barrel is provided a recess extending at right angles to it in which turns the stud or pin 32 carrying at its outer end the fingers 33 and 34, the former being the longer and the one on which the ring at the end of the bag or pouch is hung. By employing the two fingers shown there is no liability of the bag being caught and the ring broken when it is removed, as the inner finger keeps the ring properly positioned. The pin 32 is provided near its inner end with a groove 35 and is retained by a screw 36 passing through the body and entering said groove and a portion of said pin is flattened at 37, as shown, with which flattened portion co-operates a plug 38 sliding in the barrel and projected toward said stud by a spring 39 held in position by a plug 40. This spring and plug serve to keep the stud turned with the fingers 33 and 34 in line with the barrel, as shown, and when the stud is turned and the bag removed will return the fingers to normal position by pressure on the flattened portion, as will be understood. As stated, the fingers on the clips on the movable arm 2, and the end of the standard, are arranged in reversed positions so that the bag will be held in position indicated in Fig. 1, but may be readily removed by the catcher arm on the car; the clips turning to permit its release and then resuming normal position.

Assuming the parts in the position shown in Fig. 2, when it is desired to deliver the bag to a train, the operator hooks the ring at the upper end of the bag on the upper clip and the ring at the lower end on the clip on the arm 2, and then operates the crank 21 and through the pinion and rack raises the standard to the position shown in Fig. 1, the spiral arrangement of the rack turning the standard as it is raised so that the arms will project at right angles to the track; the upper end of the arm B on the pawl is turned outward and the pawl engaged with the pinion maintaining the standard in this position. When the bag has been removed by the catcher, the pivoted arm 2 drops down and striking the arm B on the pawl, disengages the latter from the pinion and the weight of the standard permits it to fall rapidly to the position shown in Fig. 2, being given, as stated, a quarter turn by the spirally arranged rack, so that the arm will project parallel with the track and out of the way of anything projecting from the train, so that all liability of accidents is prevented. After the pawl has been disengaged, the weight 24 on its shaft will hold it out of engagement and permit the free descent of the column, the latter being arrested by the buffer or stop 11 on the end of the standard 5, or other suitable means may be provided for preventing excessive shock.

I do not wish to be confined to the precise details of construction herein shown, as extensive modifications could be made and the essentials of the invention preserved, but the device described is very simple and can be manufactured cheaply from gas pipe or similar material readily accessible.

I claim as my invention—

1. The combination, with the rotary and vertically movable standard having the bag supporting arms, one of which is movable, the spiral rack thereon, and the guide therefor, of the pinion engaging said rack and an operating handle connected thereto, a latch for retaining said standard in elevated position adapted to be released by the movable bag supporting arm, substantially as described.

2. The combination with the rotary and vertically movable standard having the bag supporting arms, one of which is movable, the spiral rack thereon, and the guide for the rack, of the pinion engaging the rack, a latch or pawl engaging said pinion and retaining the standard in elevated position adapted to be engaged and released by the movable bag supporting arm, substantially as described.

3. The combination with the vertically movable standard having the bag supporting arms, one of which is movable, the rack thereon, the pinion engaging the rack, a latch or pawl for retaining the standard in raised position adapted to be engaged and released by the movable bag supporting arm, substantially as described.

4. The combination with the vertically movable standard having the bag supporting arms, one of which is movable, the rack thereon, the

pinion engaging the rack, a latch or pawl for retaining the standard in raised position adapted to be engaged and released by the movable bag supporting arm, and a weight connected to the pawl for holding it out of engagement, substantially as described.

5. The combination with the tubular vertically movable standard having the bag supporting arms, one of which is movable, and the spiral rack, of the bracket having the guide for the rack, the pinion and the latch or pawl engaging the pinion and adapted to be engaged by the bag supporting arm, and the column arranged in the interior of the standard, substantially as described.

6. In a delivery crane, the combination with the two bag supporting arms, of the bag holding fingers pivoted on the arms and extending in opposite directions and springs operating on said fingers and holding them in position permitting them to turn toward each other on the pivots, substantially as described.

7. In a delivery crane, the combination with the standard, the stationary bag supporting arm, and the movable bag supporting arm, of the bag holding fingers pivoted on the arms, and the springs operating on the fingers and holding them projecting in opposite directions, permitting their turning toward each other, substantially as described.

8. The herein described clip for holding mail bags consisting of the support having a socket or bearing, the pintle operating therein having the angular portion and the bag supporting finger, and the spring operating in the angular part of the pintle to maintain it yieldingly in position, substantially as described.

9. The combination with the vertically movable standard and the bag supporting arms and the rack thereon, of the bracket encircling the standard made in two parts secured together, the pinion engaging the rack inclosed in the bracket, the pawl, and the operating handle connected to the pinion, substantially as described.

GEORGE W. SMITH.

Witnesses:
FRED F. CHURCH,
G. A. RODA.