

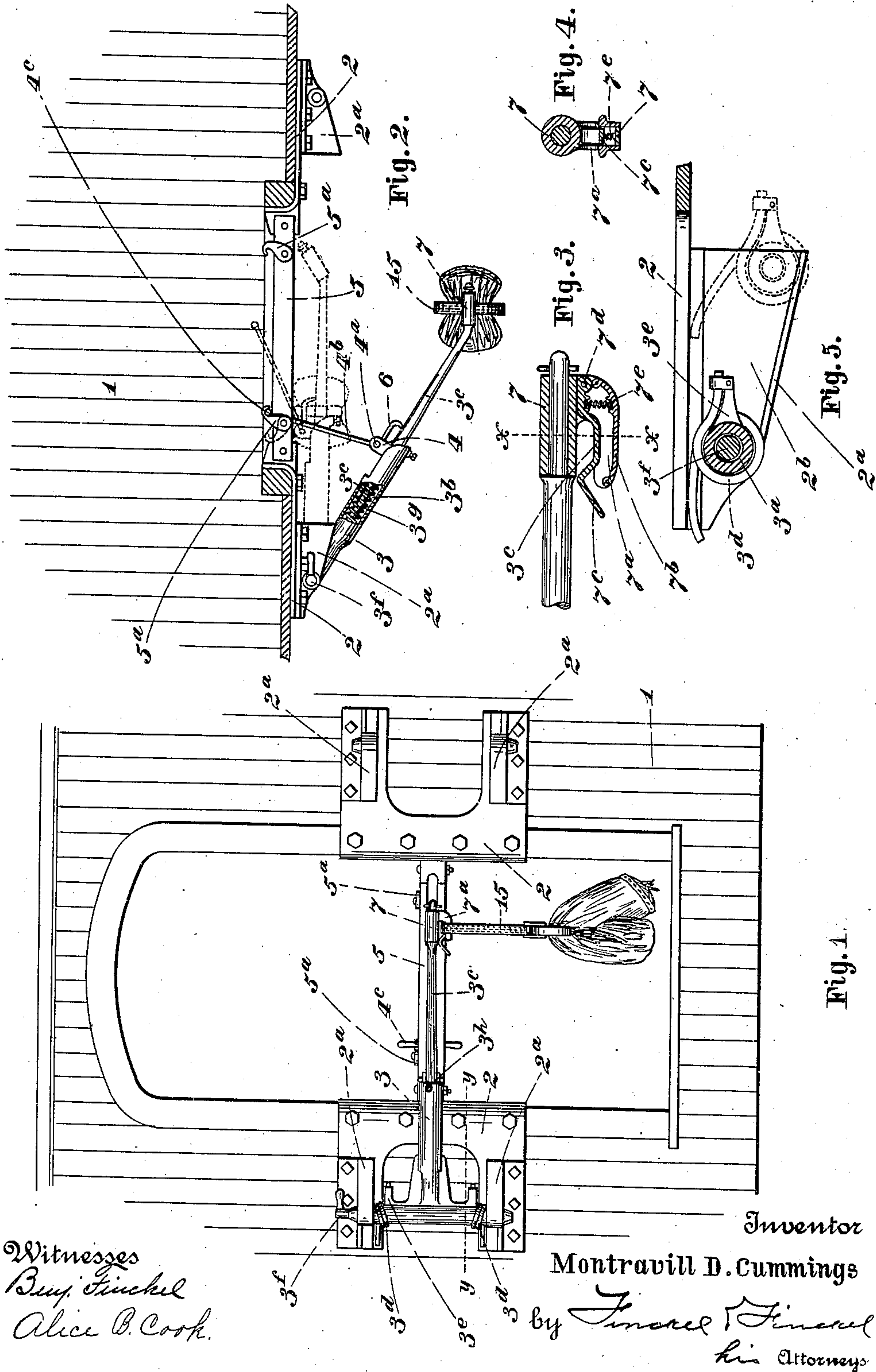
No. 843,560.

PATENTED FEB. 5, 1907.

M. D. CUMMINGS.
MAIL BAG CATCHING AND DELIVERING DEVICE.

APPLICATION FILED FEB. 26, 1906.

3 SHEETS—SHEET 1.



Witnesses
Benj. Finckel
Alice B. Cook.

Inventor
Montravill D. Cummings

by *Finckel Finckel*
his Attorneys

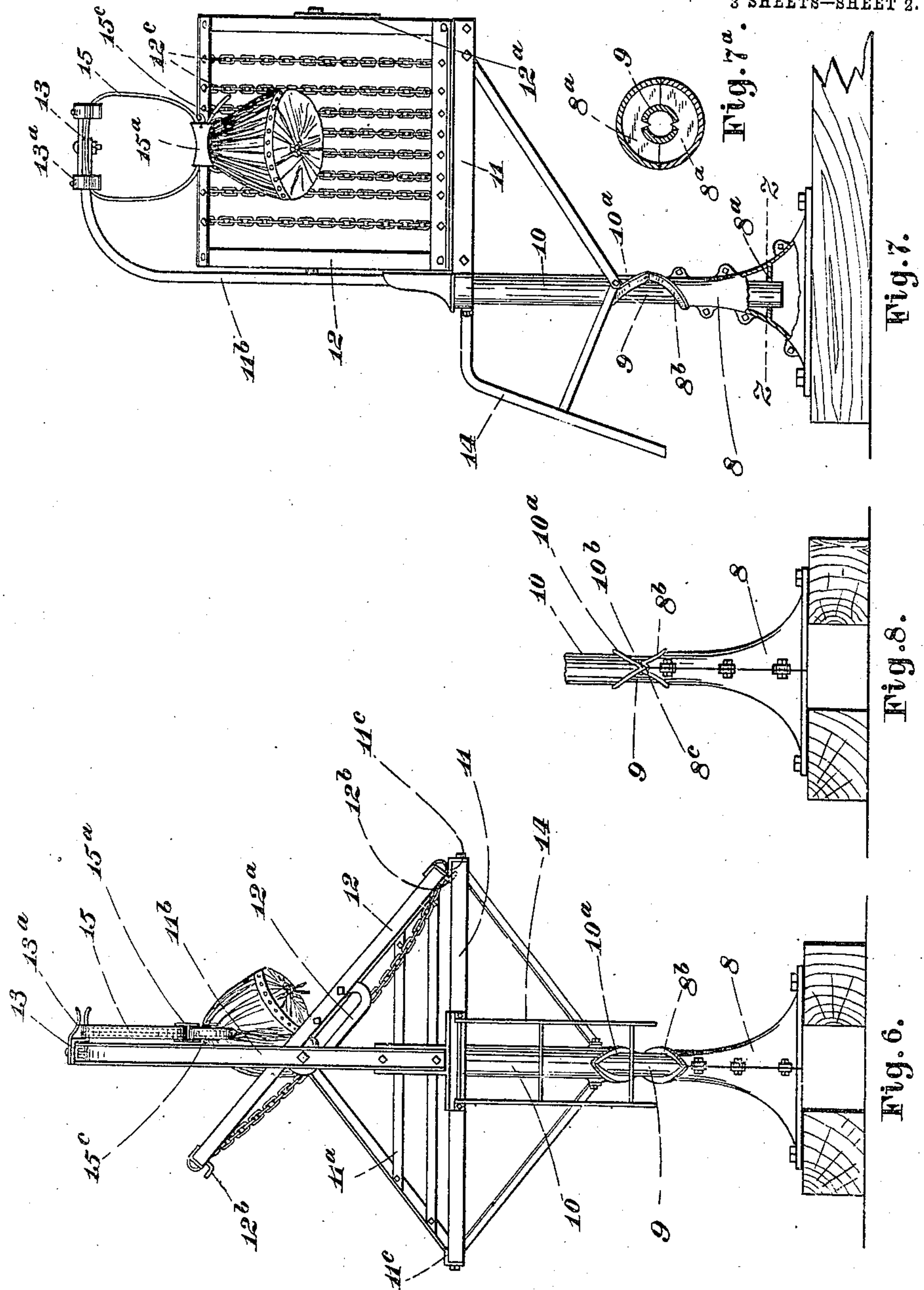
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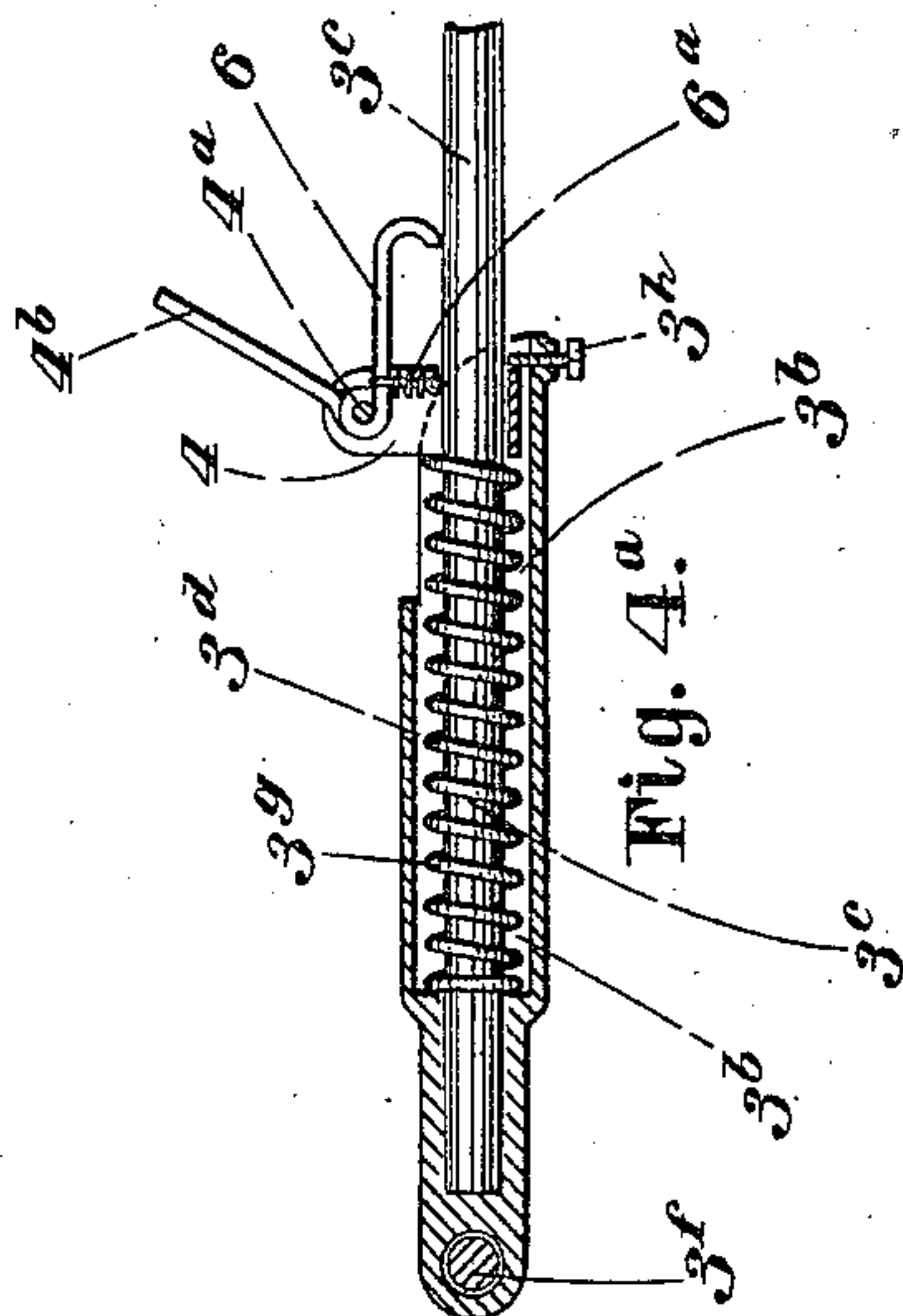
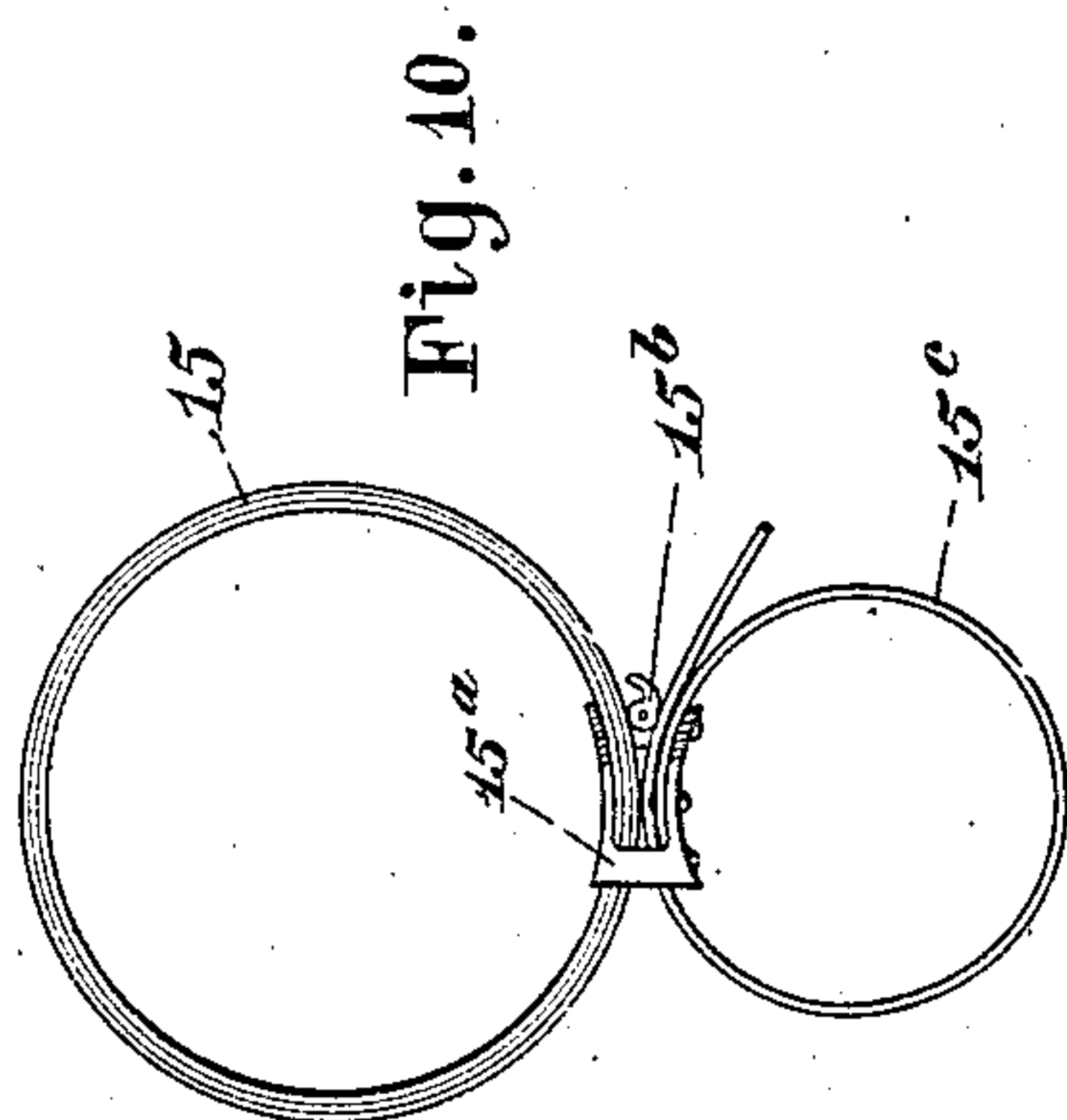
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UNITED STATES PATENT OFFICE.

MONTRAVILL D. CUMMINGS, OF COLUMBUS, OHIO.

MAIL-BAG CATCHING AND DELIVERING DEVICE.

No. 843,560.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed February 26, 1906. Serial No. 303,020.

To all whom it may concern:

Be it known that I, MONTRAVILL D. CUMMINGS, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Mail-Bag Catching and Delivering Devices; 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 more particularly to the type of mail-bag catching and delivering devices illustrated in the patent of the United States issued to me April 7, 1903, No. 724,673, the object of the present invention being to make improvements in various details of construction in apparatus of this kind whereby they are simplified and cheapened and rendered safer and more certain in operation.

The invention consists in the constructions set forth in the following description and pointed out in the claims appended thereto, the invention not being confined in its embodiment to the exact forms and proportions shown.

In the accompanying drawings, in which I illustrate an exemplification of the invention, Figure 1 shows in elevation a portion of a railway-car at its doorway with the improved bag-catcher crane or arm applied thereto. Fig. 2 shows a top plan view with parts in section depicting in full lines the crane in bag delivering and catching position and in broken lines the position the crane automatically takes after it has caught a bag. Fig. 3 shows a longitudinal section in detail of the bag-holder at the end of the crane. Fig. 4 is a cross-section on the line $x x$, Fig. 3. Fig. 4^a is a sectional detail of the inner portion of the car-crane arm. Fig. 5 illustrates in plan and section on line $y y$, Fig. 1, the bracket or shoe in which the crane is pivoted and also the manner in which the crane is inserted therein. Fig. 6 shows in elevation the track-crane as viewed when it is between the spectator and the track and when it is in position to catch a sack from a car. Fig. 7 is a side view of the same viewed from a plane at right angles to that from which Fig. 6 is viewed. Fig. 7^a is a horizontal section on the line $z z$, Fig. 7, but on a larger scale. Fig. 8 is a detail of the post, showing how the rotary sleeve that carries the track sack-catching apparatus is latched in position to perform

its function. Fig. 9 is a perspective view showing the track-crane after it has caught and delivered a sack, the movable parts thereof having upon the performance of this operation been turned or thrown half-way around from the position indicated by Fig. 6. Fig. 10 is a side view of the sack suspending or holding device.

In the several views, 1 designates the car which moves along the track as usual. At each side of the car-door is a bracket or shoe comprising a main or base plate 2 to be attached to the car and two projections 2^a, provided with pintle-holes and flanged to provide a tapering groove or recess 2^b, into which the spring of the car-crane arm are pressed to give them proper tension. The base or inner end of the car-crane arm is a T-shaped structure 3, having a pintle-hole 3^a and a socket 3^b to receive the outer rod-like portion 3^c of the car-crane arm.

The coiled springs 3^d that actuate the crane-arm each have one end attached to a projection 3^e on the head of the T-shaped portion, while the other end is left free and extended laterally, so that by pressing the head of the T-shaped portion containing the springs into the grooves or recesses 2^b, as indicated in Fig. 4^a, until the pintle-holes of the T-shaped portion are alined with the pintle-holes of the projections the springs are given proper tension—that is, a tension tending to swing the crane-arm toward the car.

3^f designates the pintle that is removably inserted through the pintle-holes of the extensions 2^a and the head of the T-shaped portion of the crane-arm to secure the car-crane after the T portion has been pressed into proper position. Sliding on the rod-like portion 3^c of the car-crane arm is a clip 4, having hingedly attached to a pin 4^a therein a rod 4^b, reaching inward toward the car-door and provided with a T-shaped end 4^c, constituting also a handle, by which the said rod and car-crane arm can be manipulated. The rod 4^b passes through the slot of a horizontal bar 5, extending across the car-door, and this bar 5 is provided with a pivoted hook 5^a near the side of the doorway adapted to engage the T-shaped end or handle 4^c to latch the car-crane arm in its outer or operative position and against the tension of the springs 3^d. The clip 4 is yieldingly held outward by means of a coiled spring 3^e within the socket 3^b and encircling the inner end of the rod-like portion 3^c; but said clip is held

in position by means of a stop-screw 3^b. The function of the coiled spring 3^g is to cushion the impact of the sack when it is taken off the track apparatus by the car-crane arm. Hinged on the pin 4^a, independently of the rod 4^b, is a hook member 6, held with its end against the rod 3^c by means of a short coiled spring 6^a. The function of this hook is to catch and retain the sack-holding device or ring carrying the sack when it is by the momentum of the car brought to that point on the rod 3^c.

It will be noted that the hook 6 is so shaped near its point that the ring or sack-holder can readily slip back between it and the rod automatically or without manipulating the hook. At the outer end of the rod 3^c of the crane-arm there is provided an improved latch to sustain the bag in position to be delivered. This holder comprises a swiveled sleeve 7, upon which are cast or formed small side brackets 7^a, between which is secured a bottom piece 7^b, the brackets and bottom piece together constituting a sort of under-reaching hook-like pocket, and a latching member 7^c, that is pivoted at 7^d between the sleeve 7 and the pocket and held up by means of a small coiled spring 7^e, resting on the bottom piece 7^b. The latch member is angular at its outer end, as shown, so that the bag-holding ring or device may be slipped into and out of the holder.

In practice I prefer that the bag-holding ring shall be carried mainly, if not entirely, by the upper edges of the small side brackets 7^a rather than by the latch member and that the latch member shall serve chiefly as a means to prevent the ring from slipping off said brackets. The outer edges of the side brackets 7^a can be rounded, as seen in Fig. 4, so as to avoid chafing the ring.

Referring now to the bag-catching device at the side of the track, the character 8 designates a base, preferably made in two symmetrical sections or castings, each having an internal web 8^a with a projection adapted when the sections are bolted together to engage recesses in the lower end of a post 9 to hold the latter in place and from turning, as indicated in Figs. 7 and 7^a. The upper ends of the base-sections are each provided with spiral inclines 8^b, symmetrical with each other and extending about half-way round the post. The spiral inclines 8^b are so cast or made that when the base-sections are matched together a small V-shaped notch is formed between them at their upper terminals, as indicated at 8^c. On the upper end of the post 9 is a tube 10, which carries a platform 11, rising from one side of which is a fencing 11^a and from the other a crane-arm 11^b. Supported between bearings on the fencing 11^a and crane-arm 11^b is a frame 12, having slotted pieces 12^a at the middle of its sides to engage the said bearings.

The ends of the frame 12 are provided with hooks 12^b to catch under a suitable ledge 11^c at the end of the platform. The frame 12 is provided with a suitable flexible netting 12^c, consisting, in the instance shown, of a number of pieces of chain connected at their ends to the ends of the frame. The slotted pieces 12^a permit the netted frame 12 to be tilted over and reversed with reference to the platform, and with such construction the upper edge of the frame, when the latter is in sack-catching position, lies in a vertical plane well within the platform 11, so that a sack taken from a very slow-moving train (and therefore having little horizontal motion) will still fall onto said platform.

The crane-arm 11^b reaches out laterally at its upper end so as to support a sack approximately above the middle of the netted frame 12. In the instance shown, the crane-arm 11^b is provided with a pivoted bar 13, having spring-clips 13^a at its ends. Said bar 13 can be reversed by turning it on its pivot and the clips thereby made to point in the opposite direction.

The lower end of the tube 10 is provided with spiral inclines 10^a, similar to those designated 8^b on the base, said inclines 10^a being adapted to ride on the inclines 8^b. The inclines 10^a meet at a point to form a tooth 10^b, that gages the notch 8^c, and thus yieldingly latch the tube 10 and its superstructure in proper position.

The track-catching apparatus may be provided with a ladder 14 for convenience in placing or removing sacks.

Because of the blows to which it is subjected, the sack-suspending device should be stout, but neither very pliable nor very rigid. I have discovered that leather constitutes the best material of which to make this device, and in Fig. 10 I have illustrated my improved sack-holder as I now make it. In this view the larger ring 15 is composed of several layers of thick leather sewed together, so that it shall be strong and moderately stiff and flexible. Attached to the ring 15, by means of a metal collar 15^a, containing a small clamping-cam 15^b, is a strap 15^c, which can have its free end passed through the collar 15^a and engaged by the clamp 15^b. In practice the mail-sack is held by the strap 15^c, which can be drawn and held as tight as desired around it. This construction of sack-suspending device leaves the ring 15 free and clear for the entrance of the car-crane arm in taking a sack off the track apparatus and at the same time strong enough to take the blows of it against the projecting edge of the frame 12.

In operation a mail-sack to be delivered from the car is hung by means of one of the devices illustrated in Fig. 10 at the end of the car-crane arm in the device described for that purpose and a mail-sack to be taken from

the track-crane arm is hung by means of a similar device in the clips 13^a and as seen in Figs. 6 and 7. When the car (illustrated in Figs. 1 and 2) moves to the right, the car apparatus and track apparatus are set to the position illustrated by full lines in said Figs. 1 and 2 and in Figs. 6 and 7. When the parts are thus arranged and the car is moving as stated, the sack-suspending ring on the car-crane arm is driven against the upper edge of the frame 12 and drawn out of the latching device at the end of said arm and the sack thrown into the receptacle formed by said frame and the platform. About the same instant the end of the car-crane arm is projected through the sack-suspending ring of the sack on the track apparatus and said ring pulled out of the clips 13^a. If the car be moving rapidly, the momentum of the sack against the netted frame will throw the tube 10 and the superstructure around on the post or spindle 9, lifting the tooth 10^b out of the notch 8^c and to the position indicated by Fig. 9. The violence of the impact of the sack is thus cushioned in two ways, first, by the pliable netting of the frame 12 and, second, by the yielding of the frame, so that the contents of the sack are left uninjured. When the other sack is taken by the car-crane arm, said sack, by means of its inertia, slips back on the rod 3^c of that arm and under the hook 6, where it is caught and held, but the inertia of the sack also pulls said arm outward and the hook 5^a out of engagement with the handle or cross-piece 4^c, as indicated by broken lines, Fig. 2. The hook 5^a is thrown to position like that indicated in broken lines, Fig. 2, by the draft of the cross-piece 4^c toward rear side of the car-door. The release of the hook 5^a of course releases the rod 4^b, and the tension of the springs 3^d moves the car-crane arm, carrying the caught sack inward toward the car-door, as indicated by broken lines, Fig. 2, where it is within easy reach of the mail clerk in the car.

It will be observed that the parts illustrated on the car and next the track are so constructed that they can be reversed and used to catch and deliver mail if the car were moving in a direction opposite that described; but instead of using the hook 5^a at the left-hand side of the door, as seen in Figs. 1 and 2, the corresponding hook at the right-hand side will be used, and in like manner the bracket or shoe at the right-hand side of the door will be used instead of that at the left. When the car-crane arm is transferred to the right-hand side of the door the sleeve 7 is turned or turns half-way round on the end of the rod 3^c.

What I claim, and desire to secure by Letters Patent, is—

1. In a mail-sack-catching apparatus, the combination with a car bracket or shoe provided with a tapering recess, of a car-crane

arm provided with a spring adapted to be placed under tension by insertion in said recess.

2. In a mail-sack-catching apparatus, the combination with a car bracket or shoe provided with a recess, of a car-crane arm provided with a spring adapted to be placed under tension by insertion in said recess.

3. In a mail-sack-catching apparatus, the combination with a car bracket or shoe provided with a recess, of a car-crane arm provided with a spring adapted to be placed under tension by insertion in said recess and means for locking said car-crane arm pivotally to said bracket or shoe after insertion therein.

4. In a mail-sack-catching apparatus, the combination with a car provided with a doorway, a spring-actuated car-crane arm, a rod pivotally connected therewith, a bar extending across the car-doorway, and a hook pivoted on said bar to engage and hold said rod.

5. In a mail-sack-catching apparatus, the combination with a car provided with a doorway, a spring-actuated car-crane arm, a spring-held clip on said arm, a rod connected with said clip, a bar extending across the car-door and a hook pivoted on said bar to engage and hold said rod.

6. In a mail-sack-catching apparatus, the combination with a car provided with a doorway, a car-crane arm composed of an inner and an outer member, a spring between them a clip or abutment held by said spring to take the impact of a sack sliding onto said arm.

7. In a mail-sack-catching apparatus, the combination with a car provided with a doorway, a car-crane arm composed of an inner and an outer member, a spring between them, a clip or abutment held by said spring to take the impact of a sack sliding onto said arm, and a device to catch and hold the sack when slid onto said arm.

8. In a mail-sack-catching apparatus, the combination with a car provided with a doorway, a car-crane arm provided with a sack-catching device comprising a spring-actuated arm having its end bent inwardly and in engagement with said crane-arm when in sack-catching position, said catch adapted to be opened to receive the sack by the impact of the sack thereon.

9. In a mail-sack-catching apparatus, the combination with a car provided with a doorway, a car-crane arm provided with sack-support swiveled on its free end and a spring-latch to hold the sack on said support.

10. In a mail-sack-catching apparatus, the combination with a car-crane arm provided with a sack-support at its end a spring-actuated latch secured to said support, said latch and support being swiveled on said arm.

11. In a mail-sack-catching apparatus, the combination with a track spindle or post, a platform supported thereon, a frame pro-

vided with a yielding sack-catching device, said frame being supported on elongated pivotal bearings above said platform.

12. In a mail-sack-catching apparatus, the
5 combination with a track spindle or post, a platform supported thereon, a frame provided with a yielding sack-catching device, said frame being supported on elongated
10 pivotal bearings above said platform, and means for latching said frame with respect to the platform.

13. In a mail-sack-catching apparatus, the combination with a track spindle or post
15 having a spiral cam or shoulder extending entirely around it, of a tube carrying the sack-catching apparatus fitted upon said spindle, said tube having a shoulder to engage the spiral shoulder around the spindle.

14. In a mail-sack-catching apparatus, the
20 combination with a track spindle or post with a spiral shoulder or cam extending entirely around it and having a notch in its upper portion, of a tube carrying the sack-catching apparatus fitted upon said spindle,
25 said tube having a tooth or projection to engage said notch and to rest and move on said shoulder or cam.

15. In a mail-sack-catching apparatus, a
30 sack-holder consisting of a ring of stiff leather.

16. In a mail-sack-catching apparatus, a sack-holder consisting of a ring comprising several layers of leather secured together.

17. In a mail-sack-catching apparatus, a
35 sack-holder comprising in combination a ring of stiff leather and means for attaching a sack to said ring.

18. In a mail-sack-catching apparatus, a sack-holder comprising in combination a
40 ring of stiff leather, and means for attaching a sack to said ring consisting of a collar, a clamping device and a strap adapted to be clamped to said collar.

19. In a mail-sack-catching apparatus, the combination with a track spindle or post
45 having a spiral cam or shoulder extending entirely around it, of a tube carrying the sack-catching apparatus fitted upon said spindle, said tube having a corresponding spiral cam or shoulder to engage the spiral
50 shoulder around the spindle, and means for yieldingly holding said tube in elevated position.

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

MONTRAVILL D. CUMMINGS.

Witnesses:

ULYSSES R. PETERS,
BENJ. FINCKEL.