

No. 674,978.

Patented May 28, 1901.

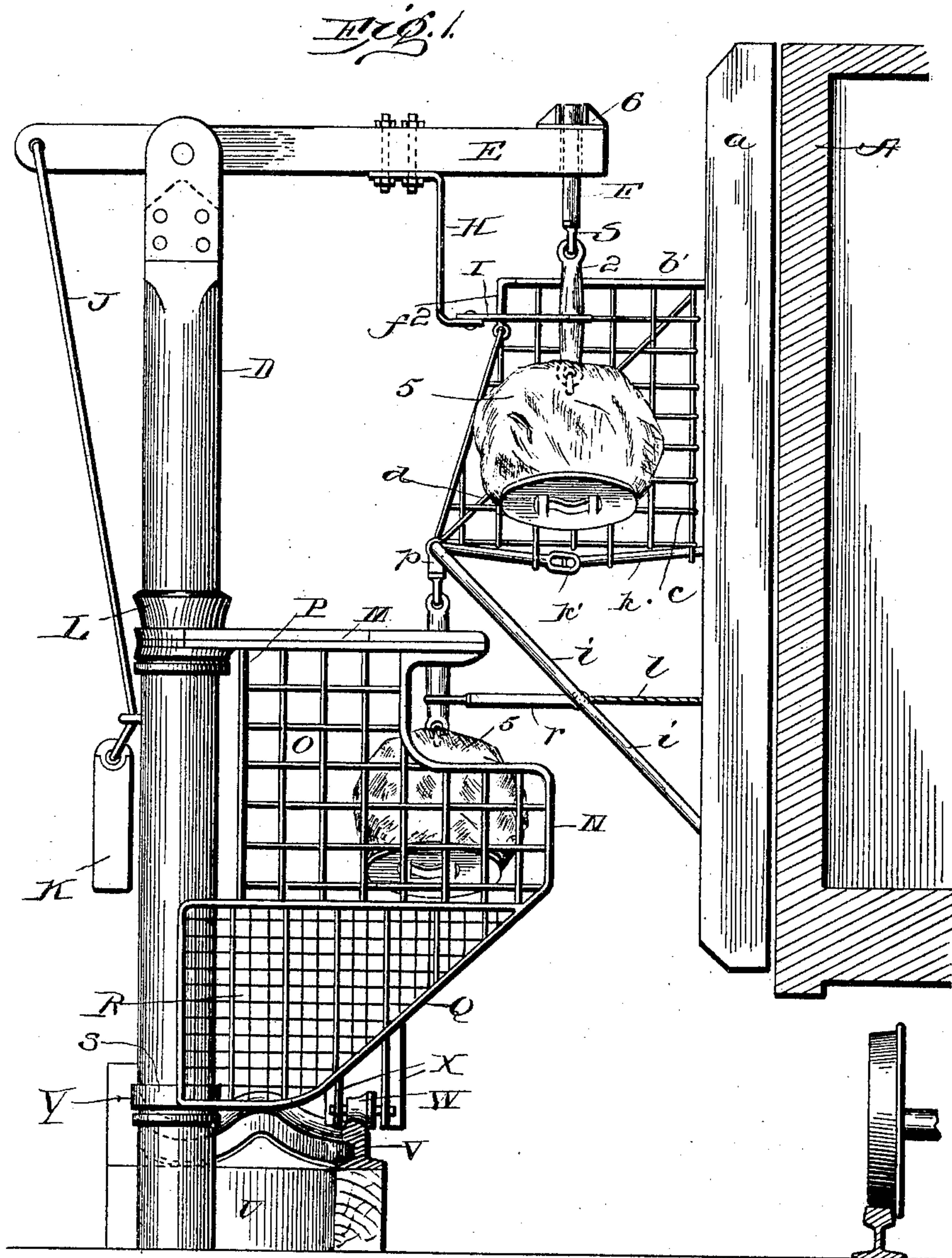
C. W. MURDOCK.

MAIL BAG CATCHING AND DELIVERING DEVICE.

(Application filed Sept. 22, 1900.)

No Model.)

3 Sheets—Sheet 1.



Witnesses:  
*J. M. Fowler*  
*Thomas Durant*

Inventor:  
*Charles W. Murdock*  
by *Church & Church*  
his Attys.

**No. 674,978.**

**Patented May 28, 1901.**

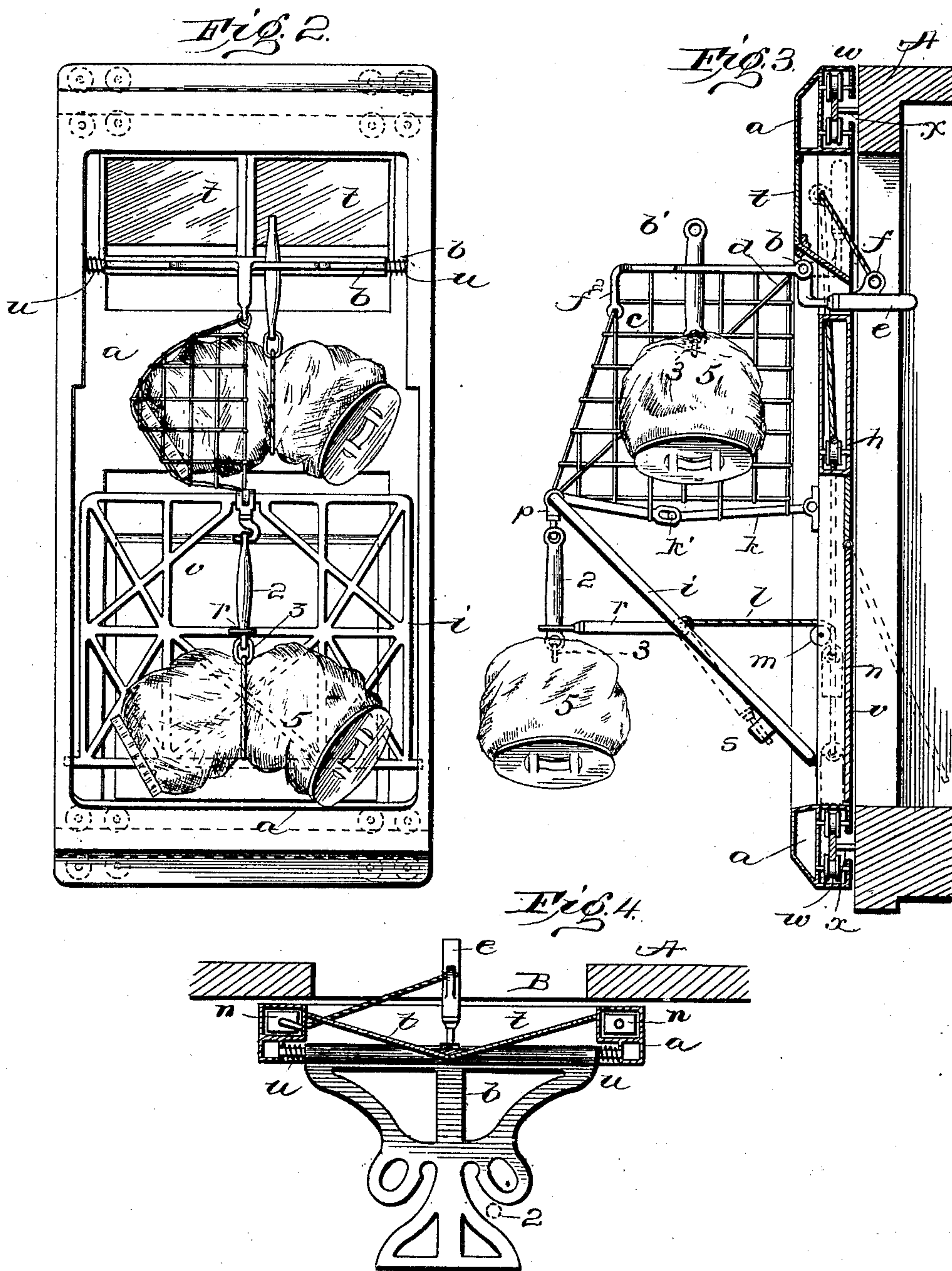
**C. W. MURDOCK.**

**MAIL BAG CATCHING AND DELIVERING DEVICE.**

(Application filed Sept. 22, 1900.)

(No Model.)

**3 Sheets—Sheet 2.**



*Witnesses:*

Witnesses:  
J. M. Fowler Jr  
Thomas Durant

*Inventor*

Charles St. Murdock.  
ay Church & Thurstin  
his Attys.



No. 674,978.

Patented May 28, 1901.

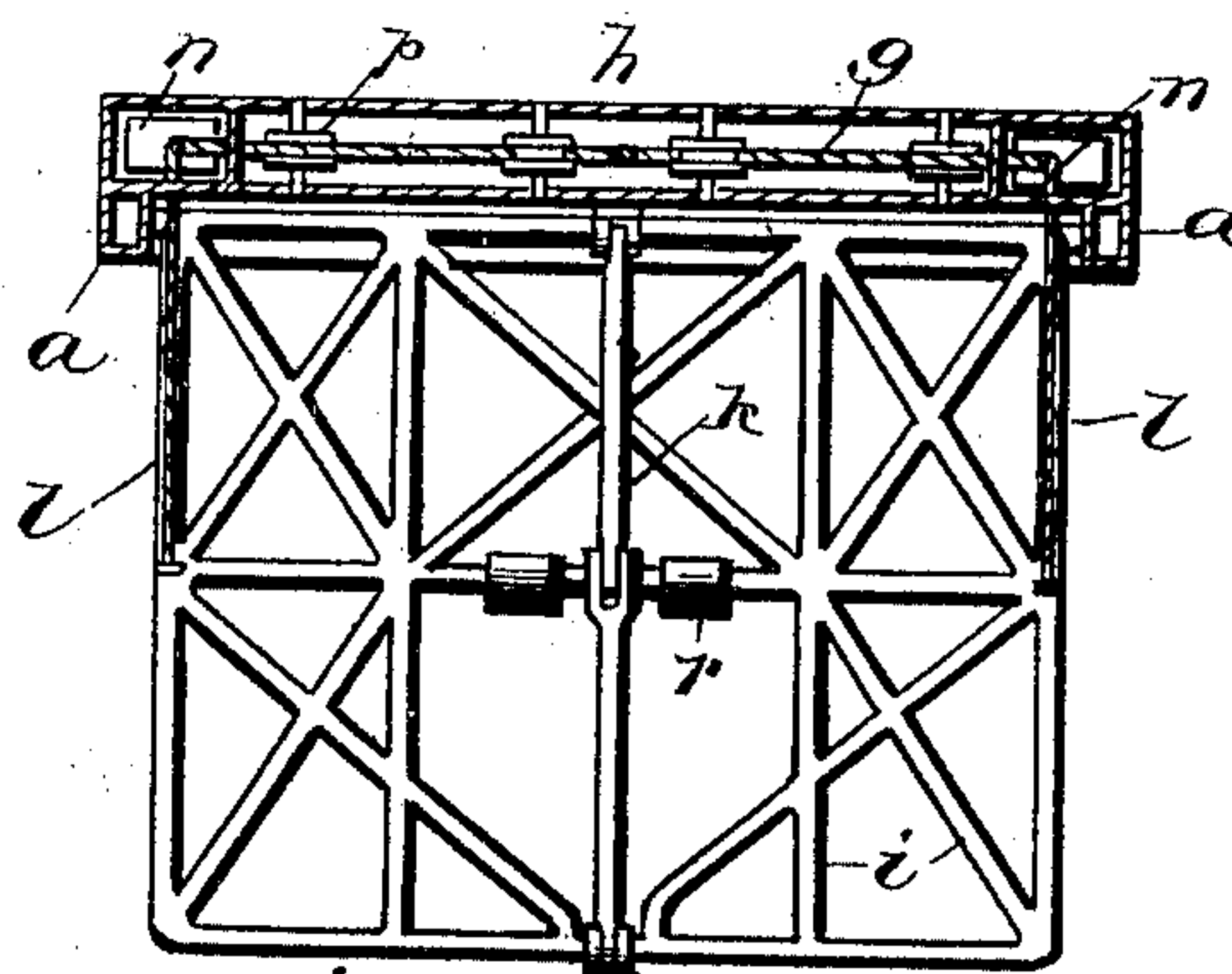
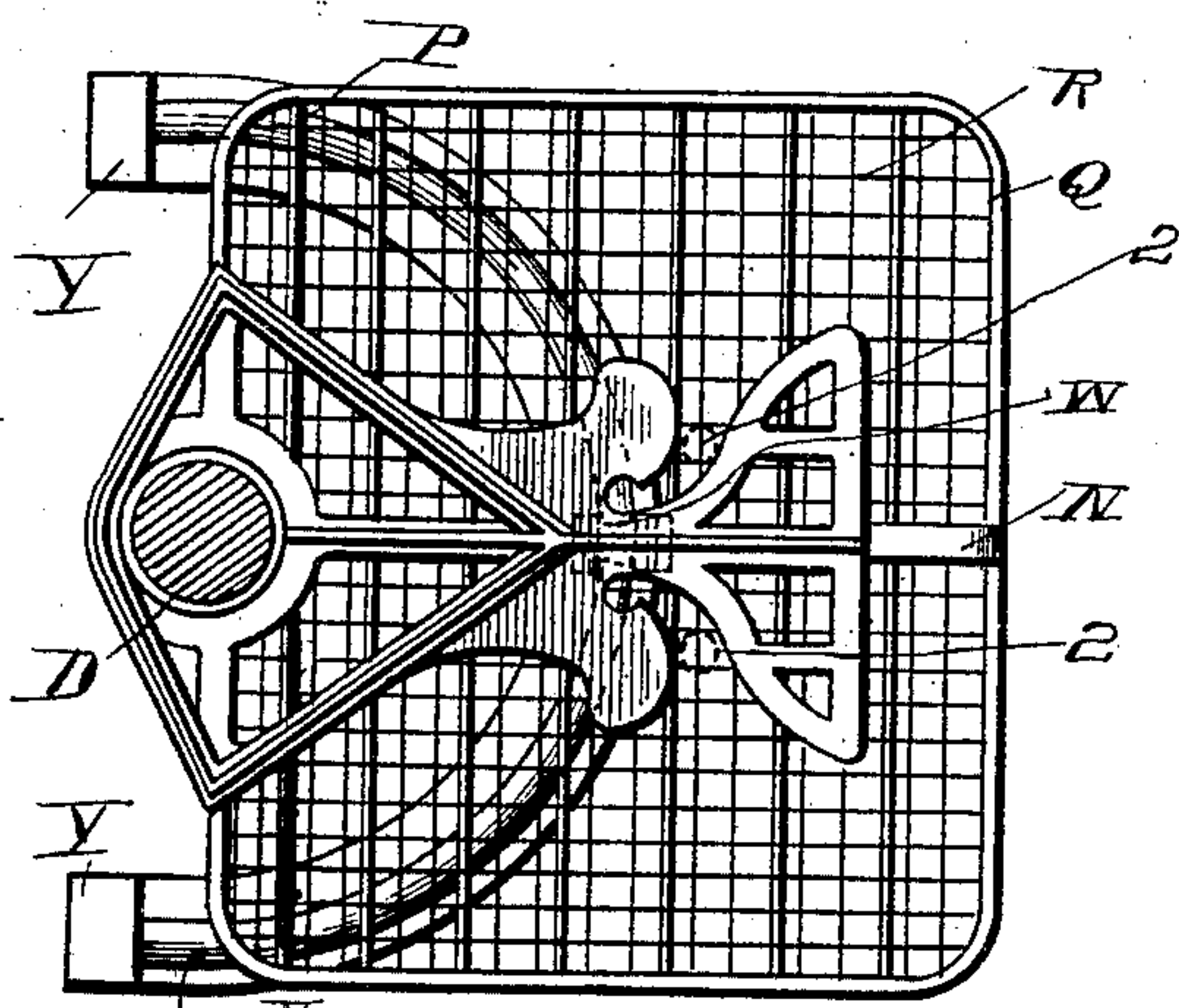
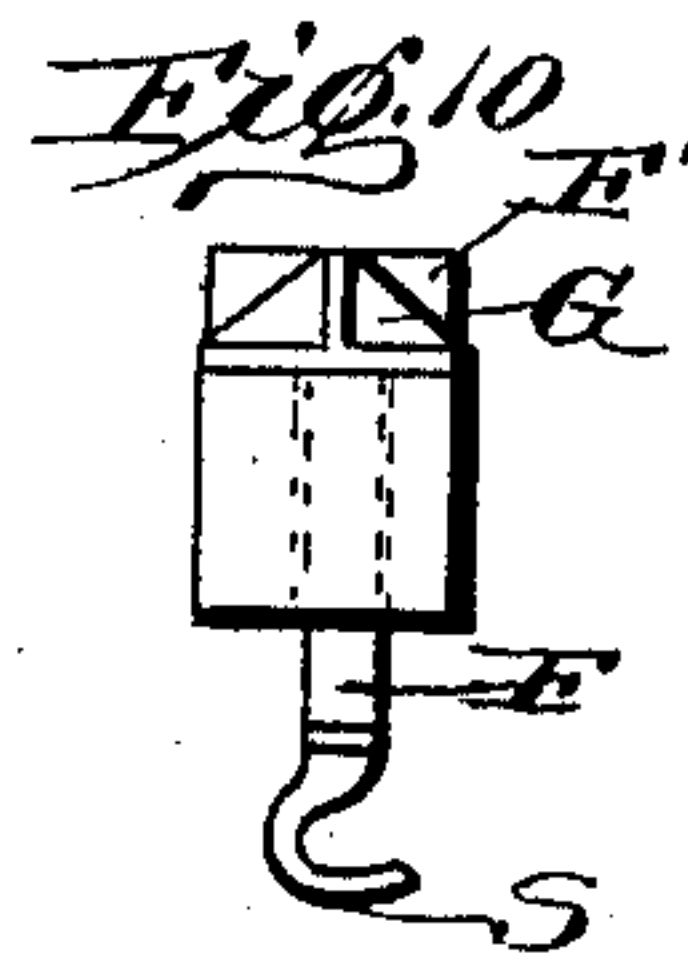
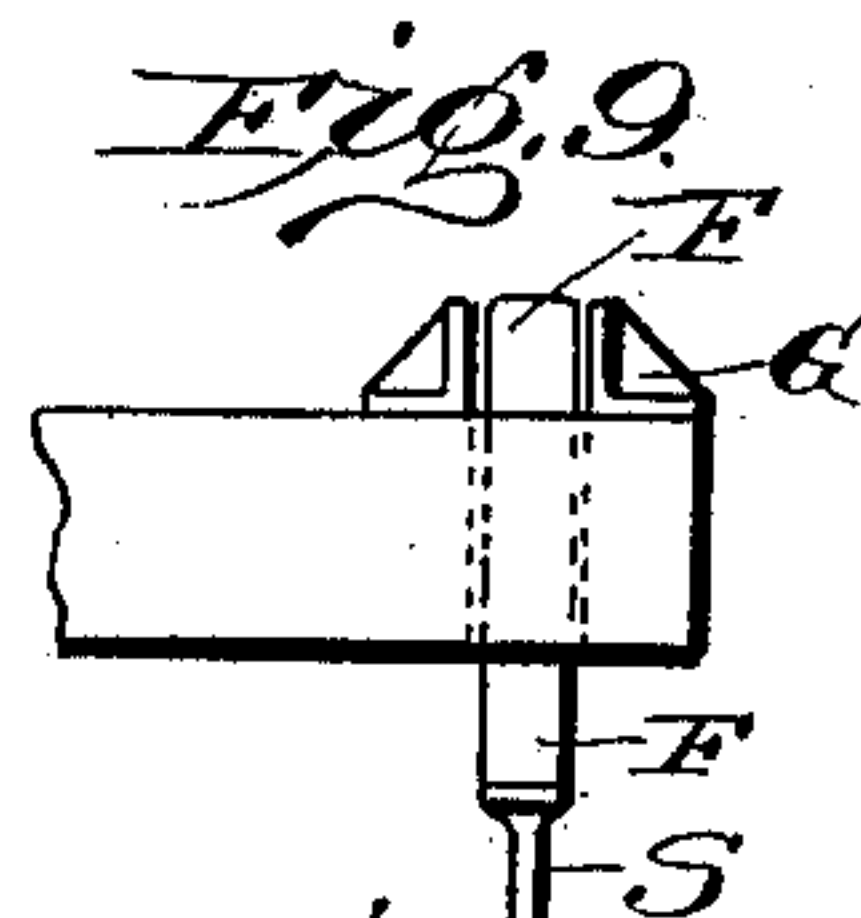
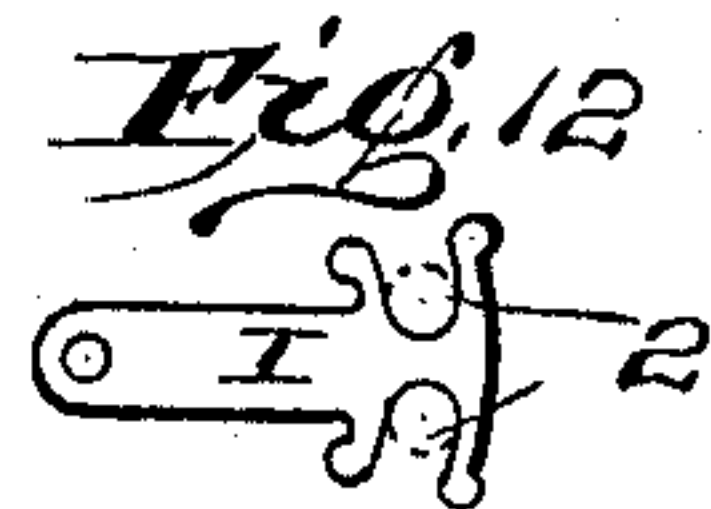
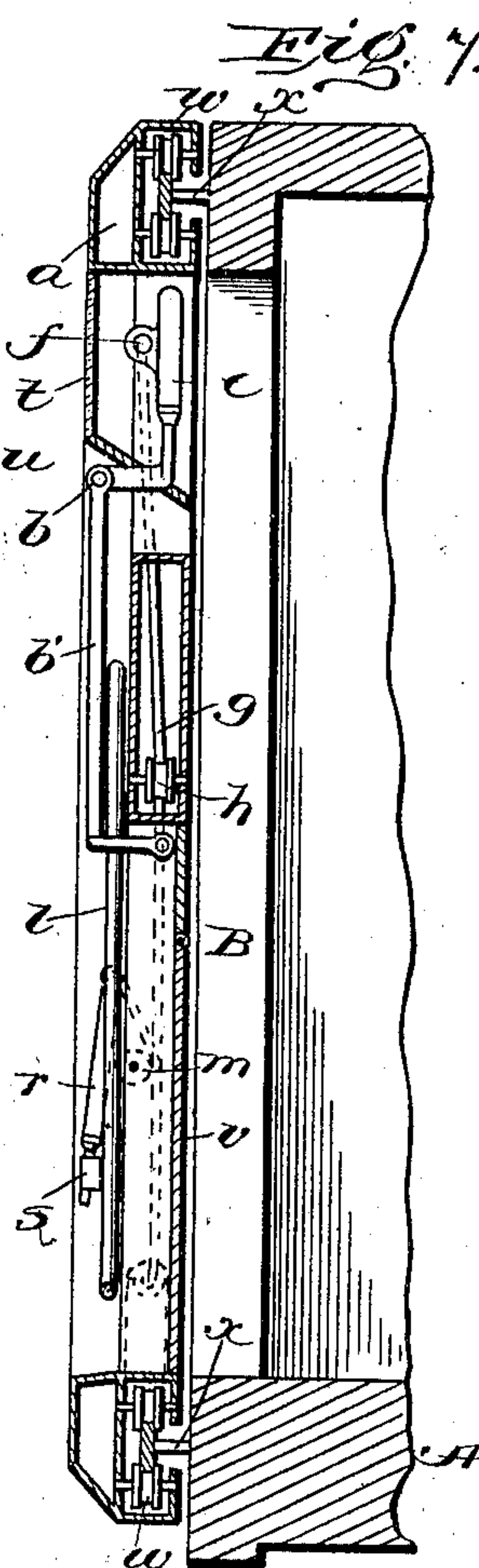
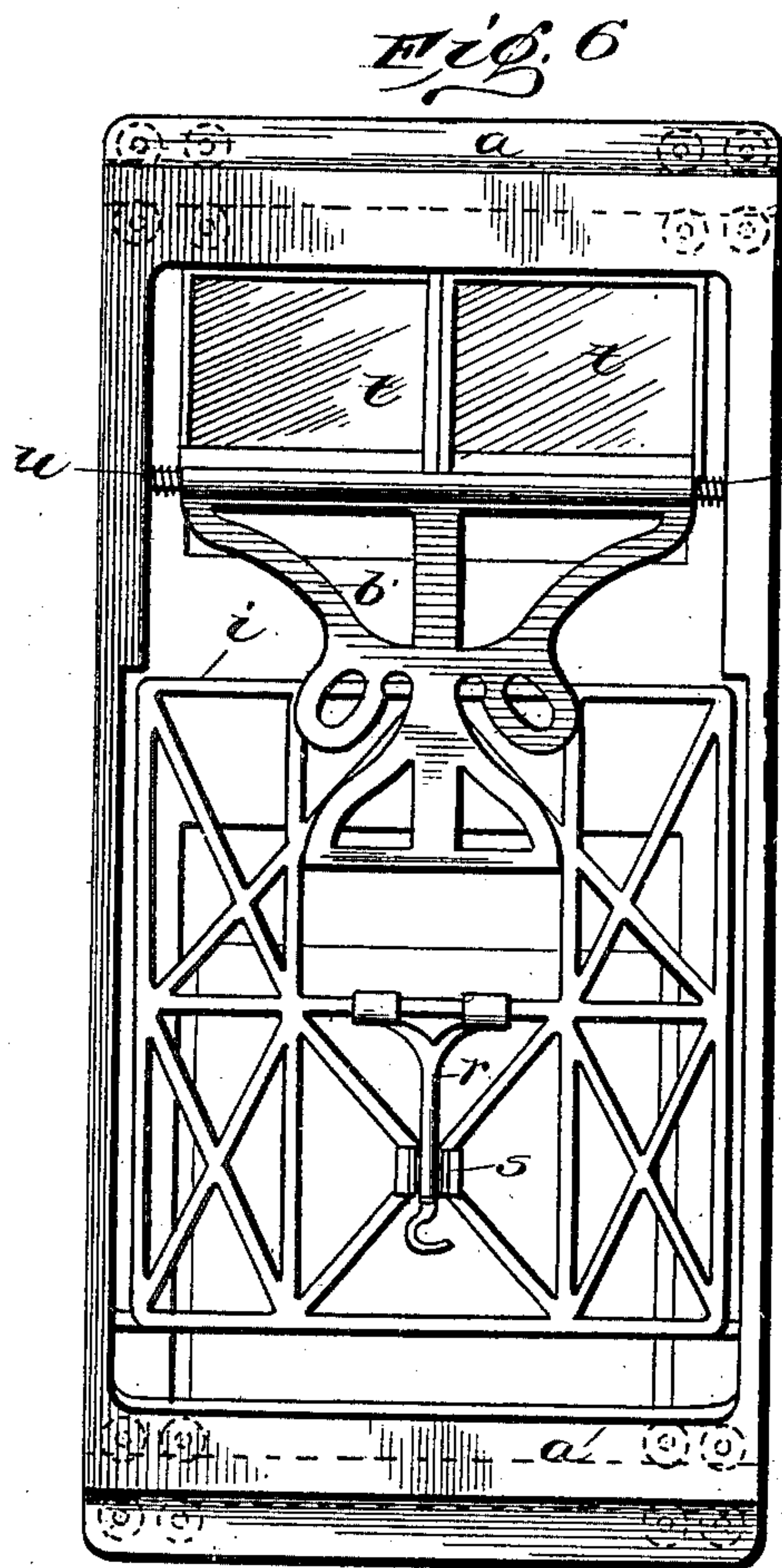
C. W. MURDOCK.

MAIL BAG CATCHING AND DELIVERING DEVICE.

(Application filed Sept. 22, 1900.)

(No Model.)

3 Sheets—Sheet 3.



witnesses: *Fig. 8*  
J. M. Fowler  
Thomas Durant

*Fig. 5*  
Inventor  
Charles W. Murdock  
By *Chinch & Chinch*  
his Attys



# UNITED STATES PATENT OFFICE.

CHARLES W. MURDOCK, OF OMAHA, NEBRASKA.

## MAIL-BAG CATCHING AND DELIVERING DEVICE.

SPECIFICATION forming part of Letters Patent No. 674,978, dated May 28, 1901.

Application filed September 22, 1900. Serial No. 30,845. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES W. MURDOCK, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, 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 same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

This invention relates to improvements in mail-bag catching and delivering devices, the object of the invention being to provide a device for this purpose which will catch and retain both the outgoing and incoming pouches and without causing undue wear and tear on the pouches themselves, thereby obviating the necessity for frequent and expensive repairs and, furthermore, insuring a safe delivery of the pouches at the point intended.

The invention consists in certain novel details of construction and combinations and arrangements of parts, all as will now be described, and pointed out particularly in the appended claims.

Referring to the accompanying drawings, Figure 1 is a general elevation of the catching and delivering devices on both the car and crane arranged in proximity to the track. Fig. 2 is a front and Fig. 3 a side elevation of the apparatus which is mounted on the car or moving structure, mail-pouches being shown in position to be delivered and in the position they occupy when first caught from the crane or structure alongside the track. Fig. 4 is a top plan view of the catcher-arm with the supporting-frame and side of the car in section. Fig. 5 is a similar view of the chute for directing the pouches into the car. Fig. 6 is a front elevation of the catching-arm with its supporting-frame and chute folded into the position they occupy when not in use. Fig. 7 is an end elevation of the parts in the position illustrated in Fig. 6. Fig. 8 is a top plan view of the receiving arm and basket on the fixed crane, with parts in section. Figs. 9, 10, 11, and 12 are details of parts of the crane from which the catcher takes the pouch.

Like letters and figures of reference in the several drawings indicate the same parts.

As in other apparatus of this character heretofore suggested and used, my present invention contemplates the employment of what may be termed a "fixed" and a "moving" part, the fixed part being that portion of the apparatus adapted to be located beside the track, and while its members are independently movable as a whole it occupies a fixed position, and the moving portion is that part of the apparatus adapted to be located on the car or vehicle and to take and deliver mail from and to the fixed part.

In designing the practical embodiment of my present invention it has been one of the objects to provide a mechanism which might be readily attached to and removed from a car-body and when in position might be successfully operated while the car was kept closed or practically closed, so as to protect the operator or mail-clerk from the weather or from danger of injury by the pouches as they are caught and delivered. With this object in view I mount the movable portion of the mechanism on and partially in a frame or casing *a*, which frame or casing *a* may well constitute a door in the side of the car-body. For this purpose it may be conveniently mounted on tracks or ways *x* at top and bottom of the door-opening and be adapted to be moved longitudinally on said tracks or ways, so as to open or close the door-opening. Obviously this frame or casing *a* may be hinged or otherwise applied as an independent attachment to any car having a side door-opening, and at the same time the ordinary door, if located on the inner side of the car, may remain in place. This frame or casing *a* is provided near the top with window or glass panels *t*, through which the clerk may observe the track and apparatus on the outer side of the casing, and at the bottom it is provided with an inwardly-swinging panel or door *v*, through which the incoming pouch is delivered into the car. Immediately below the windows *t* there is provided a horizontal shaft *b*, journaled in bearings at opposite sides of the frame *a* and held against longitudinal movement by relatively stiff springs *u*. On the inner side the shaft is provided with a controlling-handle *e* and on the



outer side with a catcher-arm  $b'$ , preferably having slots on opposite sides for catching a pouch when the car is moving in either direction, and thereby obviating the necessity of reversing the apparatus. At the bottom of the frame or casing  $a$  is provided with an outwardly-swinging chute  $i$ , and between the upper end of this chute and the wall of the casing there is interposed a link brace composed of links  $k$ , pivotally connected together by a pin-and-slot connection  $k'$ , and this link brace is connected with the catcher-arm by means of a netting  $c$ , which when the catcher-arm is turned up into horizontal position, as illustrated in Fig. 3, will be distended by the pouch and hold the link connection, thereby maintaining the chute in its proper position for catching the pouch when dropped from the catcher-arm after having had its motion arrested by contact with the netting, as will hereinafter more fully appear. In the preferred construction the cords of the net which are attached to  $k$  and the diagonal tension-cord  $d$  will be made shorter than the others, which will bring the strain on them before the others are called on for work. Those attached to  $k$  will tend to pull it into a straight line, and in doing so they will force it to act as a brace between the wall of the case and the chute, and the cord  $d$  will bring the pull on the catcher-arm close in to the pivotal point or shaft  $b$ , reducing the shock on the hand of the operator to the minimum. For convenience in folding the chute and catcher-arm a weight or weights  $n$  are provided in the casing, and a flexible connection or connections  $l$ , passing over pulleys  $m$ , connect said weight or weights with the chute and tend to draw the same up into its folded position, as illustrated in Fig. 7. For raising the weights when it is desired to turn the chute out into its operative position flexible connections  $g$  are provided, which after extending over pulleys  $h$  are connected with the inner end of the controlling-handle  $e$  at the point  $f$ . Thus when said handle is turned down and the catcher-arm thrown outwardly the weights will be elevated and the chute allowed to swing out into operative position, where it will be held by the tension of the netting connecting the brace and catcher-arm.

For delivering the outgoing pouch a hook  $p$  is secured to the outer end of the chute, with which a striking-bar 2, from which the pouch is suspended, may be engaged, and for holding said striking-bar against swinging a horizontal brace  $r$  is provided, extending outwardly from an intermediate point on the chute and having a hook at the outer end adapted to engage the lower end of the striking-bar. The brace  $r$  may be held down in its folded position by a spring-clip  $s$  when not in use.

The fixed portion of the apparatus embodies a crane or post  $D$ , carrying at the upper end an arm  $E$ , provided with the weight  $K$  and a flexible connection  $J$  for throwing it

into upright position when not in use, and having at the outer end a reversible hook  $S$ , upon which the pouch is hung, and a brace-arm  $H$ , with a swinging end  $I$ , for holding the striking-bar 2 in place. The hook  $F$  is preferably provided with an elongated head  $F'$ , Figs. 9, 10, and 11, adapted to be seated between guides  $G$ , whereby said hook may be held to point in either direction, and is readily reversible by simply elevating the hook and reversing the position of the head between the guides. The crane-arm  $E$  is for supporting the pouch to be delivered to the car, and immediately beneath it is an arrangement which corresponds, essentially, to the apparatus on the car for receiving the pouch delivered from the car. This apparatus consists of a catcher-arm  $M$ , journaled on a collar  $L$ , carried by the post  $D$ , and having oppositely-arranged slots for catching a pouch in either direction. Immediately beneath the catcher  $M$  is a basket  $R$ , also mounted on the post  $D$  and held by a collar  $s$ , whereby it may swing around the post in unison with the catcher-arm  $M$ , the two parts being united by a bracing  $N$  and a netting  $O$  for arresting the momentum of the pouch and causing the same to drop into the basket. Transverse braces  $P$  may be employed to secure rigidity, and in order to arrest the swinging movement of the catcher-arm  $M$  and basket  $R$  these parts are preferably supported upon a track  $V$ , inclined upwardly in each direction from a central point and upon which a roller  $W$ , mounted in a bracket  $X$  on the basket, travels.

In apparatus of this character it is highly desirable to protect the pouches against wear and tear as far as possible, practice having demonstrated that the usual catchers and method of delivering such pouches are extremely injurious, and with a view to overcoming this difficulty I have designed the present apparatus for use in connection with what I have termed the "striker" or "striking" bar, which striking-bar is usually a link having eyes at opposite ends and is adapted to be attached to the pouch centrally by a cord, strap, chain, or other device, and by means of which the pouch may be suspended from either the crane or the delivering-arm. The striking-bar is adapted to contact with those portions of the apparatus which ordinarily engage the pouch and occasion the wear and tear, as aforesaid. The striking-bar may be made of metal or material calculated to resist the action of the contacting parts, and with the arrangement of mechanism described and illustrated a safe delivery of the pouch is insured under all circumstances.

In operation the outgoing pouch is suspended from a hook  $p$ , and the brace  $r$  is swung up into position to engage the lower end of the striking-bar, so as to hold the pouch against swinging movement. The incoming pouch is placed in position on the crane-arm  $E$ , and the swinging end  $I$  of the



brace-arm H is brought into position to engage the lower end of the striking-bar on that pouch. As the mail-car approaches the stationary portion of the apparatus the arm *e* is grasped by the clerk and the catcher-arm turned up into its operative position, thereby swinging the outgoing pouch out into position for delivery. The movement of the car causes the striking-bar 2 of the incoming pouch to enter the forward slot in the catcher-arm, and the downwardly-turned end *f*<sup>2</sup> of said catcher-arm simultaneously contacts with the swinging end I of the brace H, causing the same to release the striking-bar, which is then caught in the slot and momentarily suspended, the pouch meanwhile engaging the netting, thereby preventing any rotary movement of the pouch and imparting the momentum of the car thereto. This pouch having been thus caught from the fixed crane will almost immediately disengage itself from the catcher-arm and drop down upon the chute *i*, being conducted by the chute through the door *v* and into the car. For the purpose of preventing undue shock the casing *a* may be held against longitudinal movement by springs, which are extended between the inner side of said casing and the edges of the door-opening, as illustrated in Figs. 4 and 5. Thus the incoming pouch is caught and dropped into the car without exposing the clerk either to the weather or to danger from broken or flying parts should anything prevent a perfect operation of the devices.

The operation of the catching portion of the fixed part of the device is substantially similar to that of the moving portion—that is to say, the outgoing pouch is carried by the car until the striking-bar 2 enters the slot in the arm M and the movement of the pouch is arrested by the netting O. The striking-bar rides out of the hooks *p* and *r*, leaving the pouch in the stationary catcher-arm, from which, as soon as its momentum is arrested, it drops into the basket R, from which it may be removed by the carrier. The momentum of the pouch is gradually arrested by the yielding of the catcher-arm M and basket, which swings around on the track V and is gradually brought to rest by riding up the inclined portion of the track.

When the clerk has caught the pouch on the crane and the outgoing pouch has been delivered, he releases the lever *e*, allowing the weights to fall and pull the chute back into position in the case and the catcher-arm to fold down over it, the parts assuming the position they occupy in Figs. 6 and 7, being entirely within the side walls of the casing *a*. Said casing then may be moved back away from the door-opening, if so desired, or may be utilized as a door to close said opening.

When desired, the slots which take the striking-bars, from which the pouches are suspended, may be made with an enlargement at their inner ends, as illustrated in Figs. 4 and 8,

which enlargement is of sufficient diameter to permit the striking-bars to escape when moved vertically, and thus in the ordinary operation of the apparatus the striking-bars will be caught and held only until they travel around to the back of said slots, for as soon as they reach the enlargement they will drop, and the pouch held thereby will be allowed to pass down the chute into the car, on the one hand, or down into the basket, on the other hand, without liability of catching and hanging in the arms themselves.

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

1. In a mail-bag-catching device the combination with a car having a door-opening therein, of a closure for said opening movable transversely of the opening and a catcher-arm mounted in said closure; substantially as described.

2. In a mail-bag-catching device the combination with a car having a side door-opening therein, of a closure for said opening mounted on tracks to slide transversely of the opening and a catching-arm pivotally mounted in said closure to swing outwardly and a controlling-arm adapted to project into the door-opening when said catcher-arm is swung outwardly; substantially as described.

3. In a mail-bag-catching device the combination with a car-body having a side door-opening and a casing mounted on tracks at top and bottom of said opening and adapted to form a closure therefor, said casing having a receiving-opening near the bottom thereof, of a catcher-arm pivotally mounted in said casing so as to swing outwardly and a controlling-arm for said catcher-arm adapted to project on the inner side of the casing; substantially as described.

4. In a mail-bag-catching device the combination with a projecting catcher-arm having a receiving-slot, of a flexible fabric extending downwardly in rear of said slot for arresting the momentum of the mail-bag; substantially as described.

5. In a catching device such as described, the combination with the projecting catcher-arm having the receiving-slot, of a frame below said catcher-arm and a netting extending between said arm and frame and against which the mail-bag is received; substantially as described.

6. In a catching device such as described, the combination with the vertically-swinging catcher-arm, of an outwardly-swinging chute controlled by said catcher-arm whereby when the catcher-arm is thrown up into operative position the chute will be moved out into operative position; substantially as described.

7. In a catching device such as described, the combination with an outwardly-swinging catcher-arm and an outwardly-swinging chute arranged below said catcher-arm, of a netting above said chute and beneath the



catcher-arm and connections between said chute and catcher-arm whereby they are caused to move out into operative position simultaneously; substantially as described.

5 8. In a catching device such as described, the combination with the outwardly-swinging catcher-arm and the outwardly-swinging chute below said arm, of a jointed brace at the upper end of said chute and a netting connecting said brace and catcher-arm; sub-  
10 stantially as described.

9. In a catching device such as described the combination with the outwardly-swinging catcher-arm and the outwardly-swinging  
15 chute below said catcher-arm, of the brace between the upper end of said chute and its support, the netting connecting said brace and catcher-arm and the weights for drawing said chute into its folded position when released  
20 by the downward movement of the catcher-arm; substantially as described.

10. In a catching device such as described, the combination with the outwardly-swinging catcher-arm, the pivoted chute below said  
25 catcher-arm and a netting interposed between the chute and catcher-arm, of a casing on which said catcher-arm and chute are mounted, a hinged panel in said casing and a controlling-handle for said catcher-arm and chute

projecting on the inner side of said casing; 30  
substantially as described.

11. In a catching and delivering device such as described, the combination with the fixed catcher-arm, of a catcher-arm mounted on the car, an outwardly-swinging chute arranged 35  
below said catcher-arm, a hook and brace supported by said chute for carrying the outgoing pouch and means for delivering the incoming pouch to the catcher-arm on the car; substantially as described. 40

12. In a mail-bag catching and delivering apparatus the combination with the fixed mechanism consisting of the supporting-frame, the swinging catcher-arm; the basket below said catcher-arm, the netting between 45  
said catcher-arm and basket with means for gradually arresting the movement of said swinging catcher-arm, of the movable mechanism consisting of the outwardly-swinging catcher-arm mounted on the car-body, the in- 50  
clined chute below said catcher-arm, the netting between said chute and catcher-arm and the supporting devices on said chute for the outgoing pouch; substantially as described.

CHARLES W. MURDOCK.

Witnesses:

E. O. HALSTEAD,  
R. C. HOYT.