

J. McKINLEY.
 DEVICE FOR DELIVERING AND CATCHING MAIL BAGS.
 APPLICATION FILED FEB. 26, 1910.

978,610.

Patented Dec. 13, 1910.

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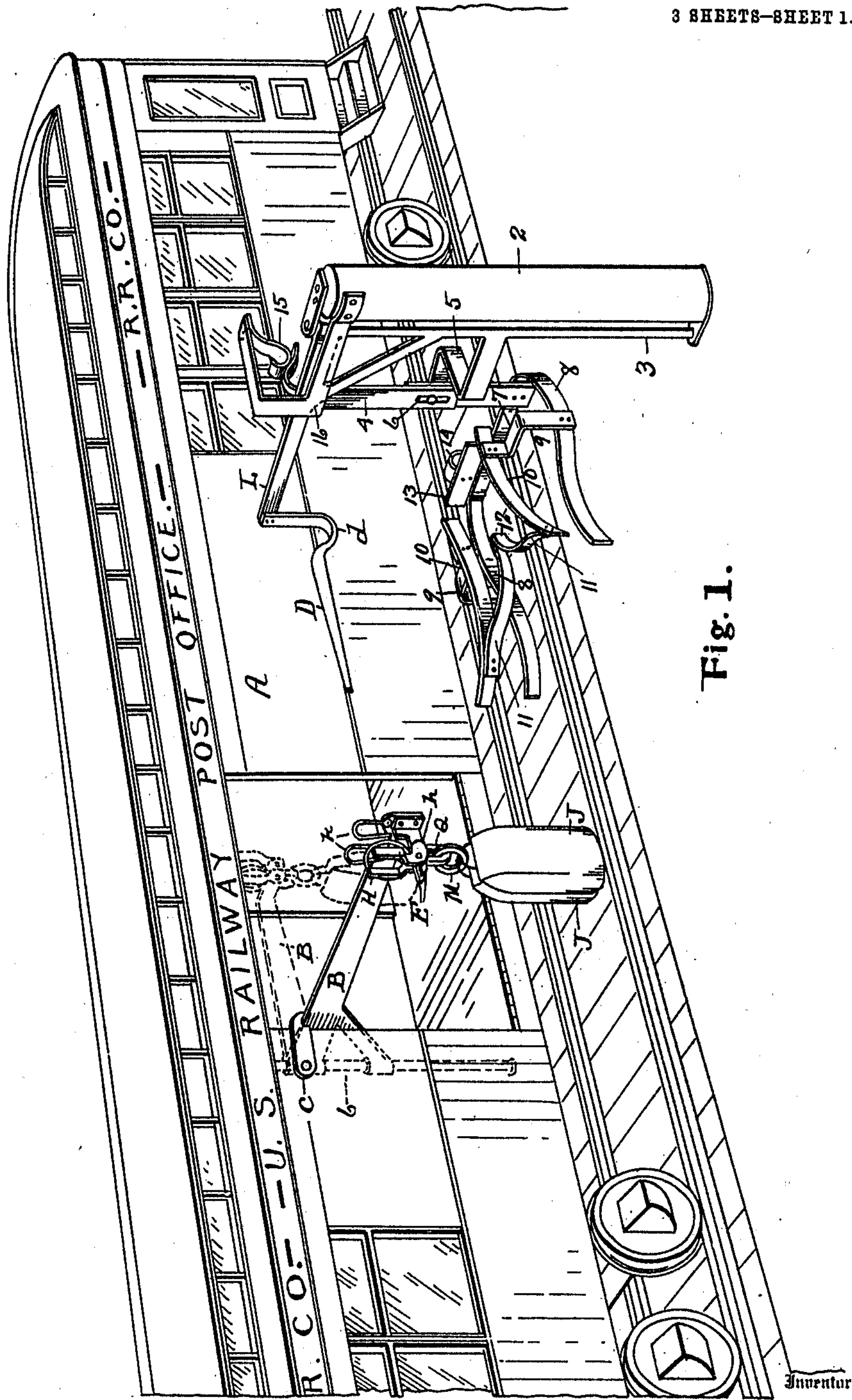


Fig. 1.

Witnesses

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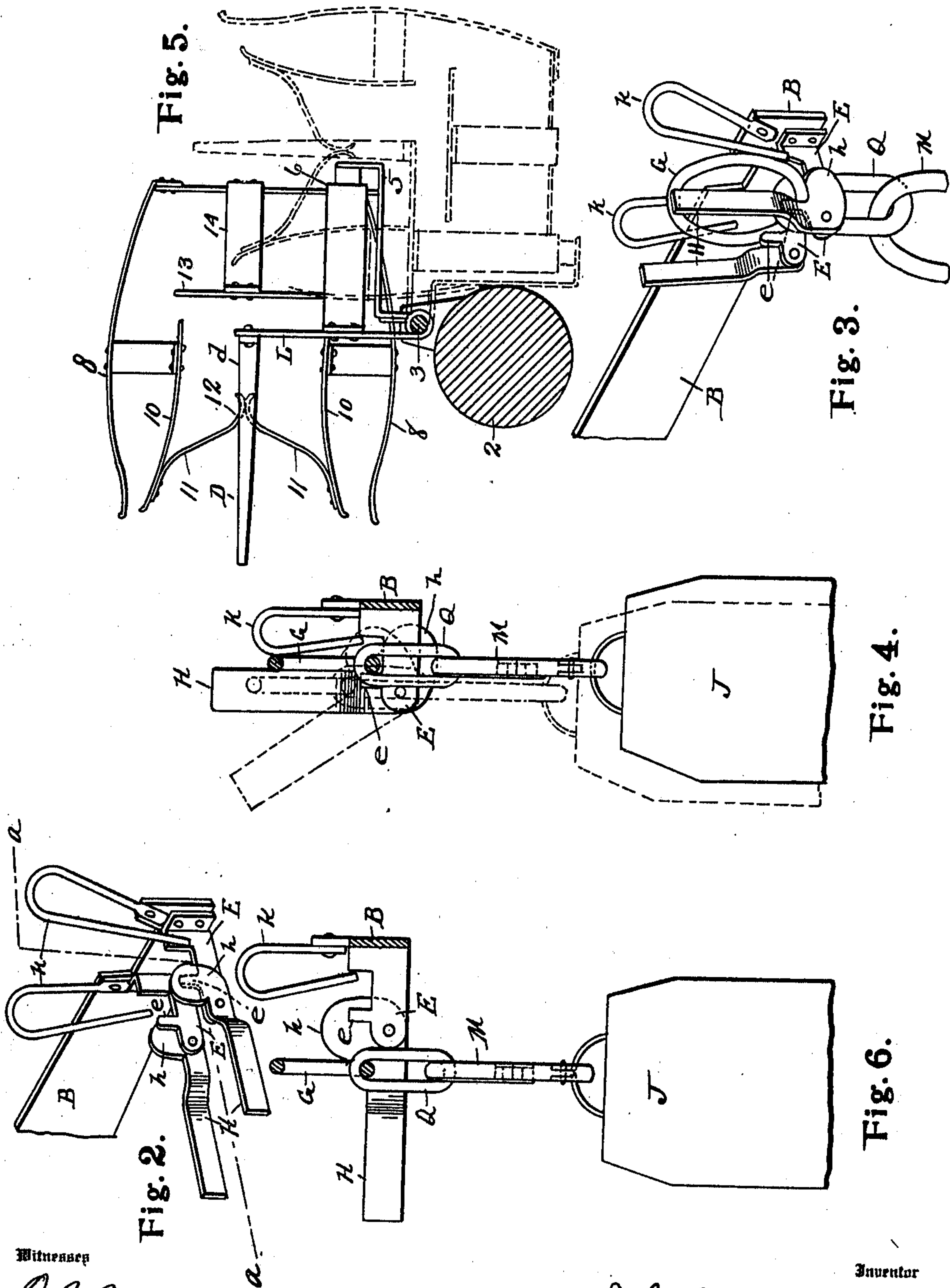
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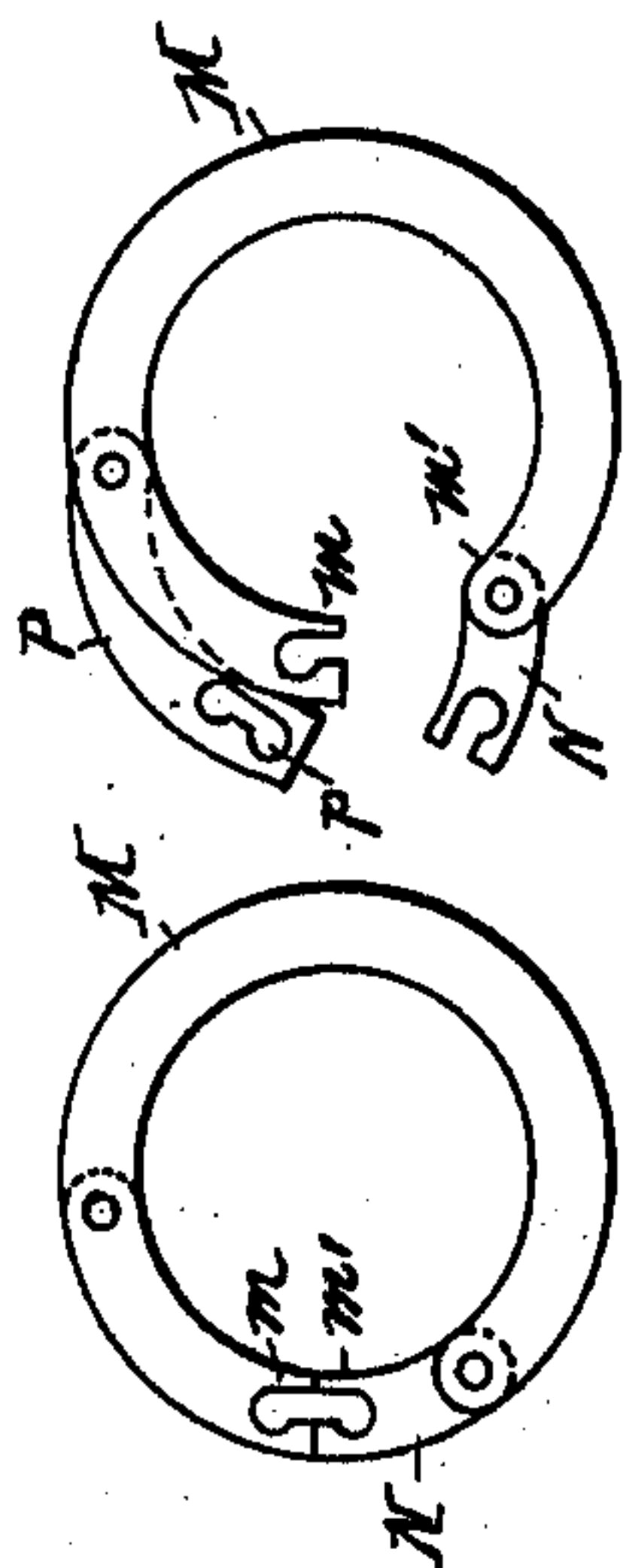


Fig. 8.

Fig. 7.

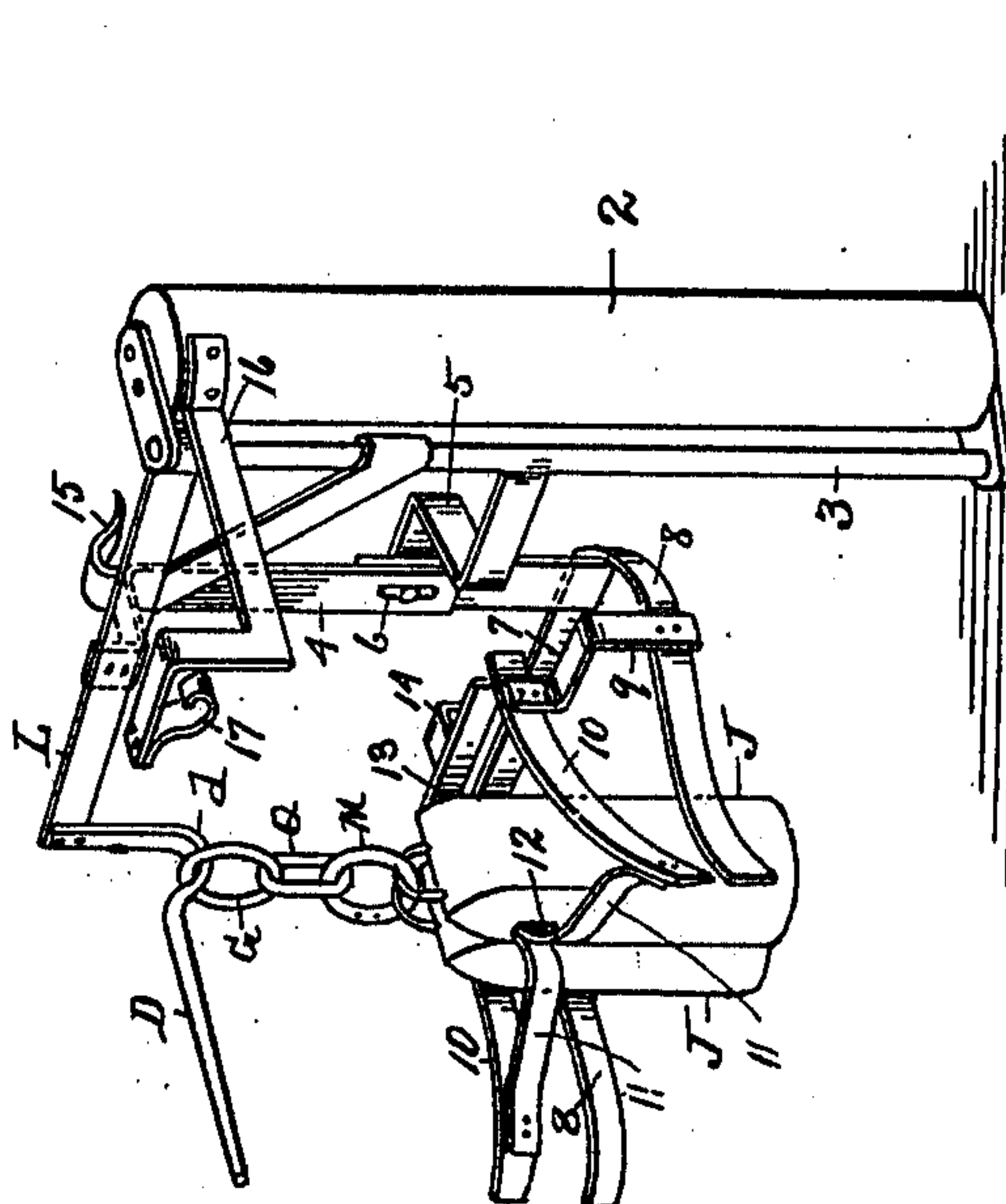
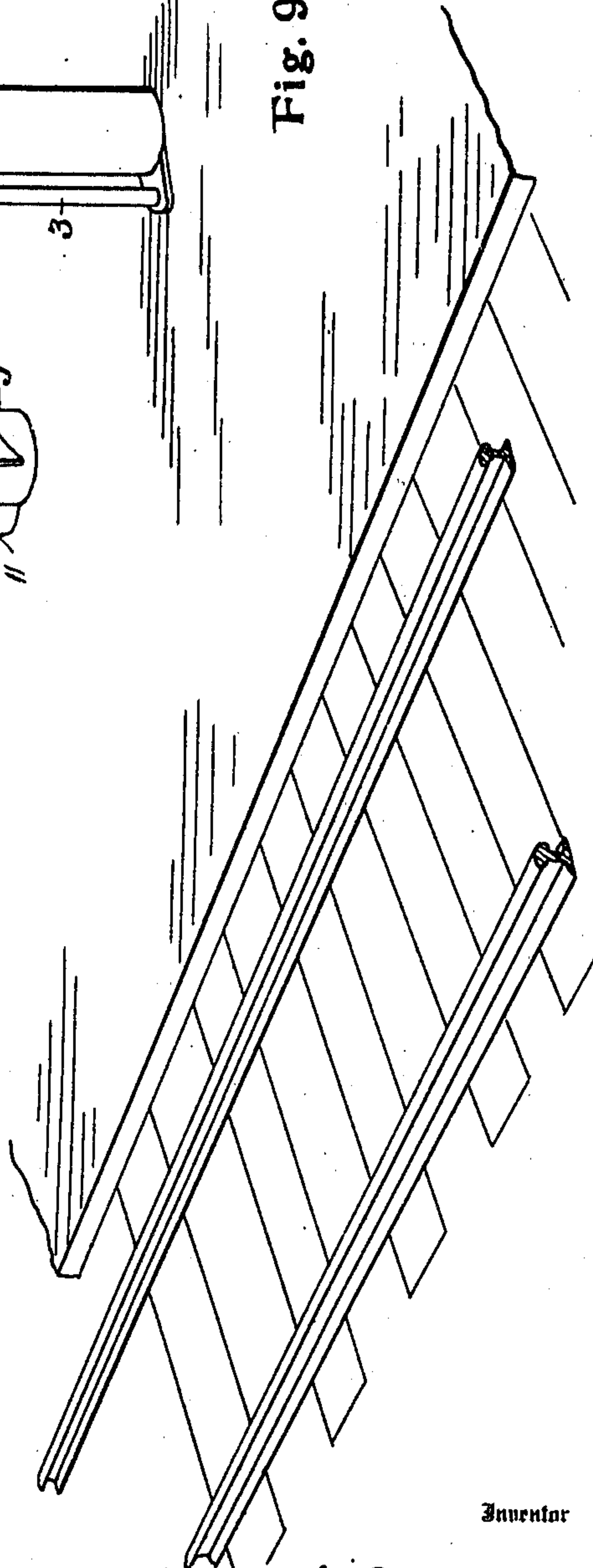


Fig. 9.



Witnesses

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DEVICE FOR DELIVERING AND CATCHING MAIL-BAGS.

978,610.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN MCKINLEY, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Devices for Delivering and Catching Mail-Bags, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to devices for delivering and catching mail bags on trains while in motion, and it consists in the combinations and devices hereinafter described and claimed.

In the drawings:—Figure 1, is a perspective view of my invention, showing both the delivery and receiving apparatus as it would appear while in use. Fig. 2, is a perspective view of a portion of the delivery apparatus showing details of construction after delivery. Fig. 3, is a perspective view of the same delivery apparatus while in position and holding the mail bag before its delivery. Fig. 4, is a vertical elevation of the apparatus shown in Figs. 2 and 3, showing its mode of operation during the act of delivery. Fig. 5, is a plan view of the receiving apparatus with the upper portion removed, for the sake of clearness. Fig. 6, is a companion view to Fig. 4, showing the position of the apparatus in Figs. 2 and 3, just at the point of delivery. Figs. 7 and 8 are detail views of the detachable holding ring for the mail bag. Fig. 9, is a view of the catching apparatus, after catching a pair of mail bags, showing the position of said catcher after its operation as such in which it is swung at right angles from its original or catching position, as shown in Fig. 1 by the impact of the bags.

Similar indices refer to similar parts.

Referring to the drawings:—A, represents a postal car; B, is a crane preferably secured therein and enabled to swing out at right angles therefrom, as shown in the drawing, in which outward position, it may be held from swinging by the hook C. The outer end of this crane carries a mail bag holding apparatus, illustrated in Figs. 2, 3, 4 and 6, which I will now proceed to describe in detail.

Figs. 2 and 3 are perspective views show-

ing two different positions of this apparatus, one of which, Fig. 3, shows the manner of holding the mail bags in position on the crane; and Fig. 2, shows the position of the parts of the crane after the mail bag has been detached therefrom.

Fig. 4, illustrates the detaching movement; it being understood that this detachment is caused by the projecting lance head D, carried by another crane rotatively attached to a fixed part. (See Figs. 1 and 9.)

On the outer end of the crane B are attached two parallel brackets or arms E, E; these are separated by short distances which permits an elongated flat solid link Q to be inserted between them; this link is supported by a large ring G, shown in section in Figs. 4 and 6, and more particularly shown in full in Fig. 3. This ring is large enough so that it rests upon the two brackets E, E, holding the link Q between them, as illustrated in Fig. 3. Each of these brackets has a short upward projection e, one of which is shown in Figs. 2 and 3 in full lines and the other in dotted lines. Between these projections and the crane end of the brackets is a depression into which the ring G drops and is held therein until it is detached in the manner hereinafter stated.

Pivoted to the brackets E, E, respectively, are two arms H, H, which are rights and lefts and are bent transversely outwardly, as shown in Figs. 2 and 3. Beyond the point of pivoting, they are roughly L-shaped at h, h. These arms H, H, are adapted to raise vertically, as shown in full lines in Fig. 4; the projections h, h, dropping below the upper edge of the brackets E, E, as shown in Fig. 3. When in this position, the projections h, h, come under the ring G when it is in position and holding through the linkage the mail bag J. Attached to the outer end of the arm B are two U-shaped springs K, K, and when the ring G is in position, as shown in Figs. 3 and 4, these springs are slightly compressed so that they assist in throwing the ring out of position when the arms H, H, are turned to a horizontal position, as shown in Figs. 2 and 6. The turning of these arms in a horizontal position lifts the ring G from out behind the projections e, e, carries it over into the position shown in Fig. 6, and as at that point the lance head D has engaged the ring G, the continued movement of a railway car in which the crane B is carried, would shift the ring G from the

arms H, H, until it is dropped into the depression adjacent to the ground crane on the lance head at *d*, as shown in Fig. 9. The inertia of the mail bag J is taken up by a system of springs from the crane L in the manner hereinafter stated.

In order to securely attach and carry the mail bag and yet at the same time permit it to be readily placed in position to be taken off from the crane B, I have devised the ring shown in Figs. 7 and 8. This ring consists of a curved piece M, the extremities of which are bent nearly together, as shown at *m*, (Fig. 8.) To one extremity at *m'* is pivotally attached a continuation piece, which when closed fills the gap between the two extremities *m* and *m'*, as shown in Fig. 7. The peculiarly shaped notch, as illustrated in the drawing, is cut in the extremity *m* of this curved piece, and a corresponding notch is cut in the outer extremity of the continuation piece N, so that when N closes the gap, the two peculiar notches match and form a roughly dovetailed space like that shown in Fig. 7. At some distance back from the extremity *m* is pivoted another piece P, adapted to swing outwardly, and which is thin enough to possess some resiliency transversely of the plane of the ring as a whole; upon the outward swinging extremity of the piece P there is a block or projection *p*, which is given the shape of the two notches in the extremity *m* and piece N, when these two points are in junction, as shown in Fig. 7. When the link M is closed by the piece N being shut into place, the piece P can be thrown down into line with the ring and the spring thereof will force the peculiarly shaped projection *p* into the contiguous spaces of *m* and *n*, and lock the two together. It is evident from the shape of the piece *p* and the peculiarly shaped notches that when the piece P carrying *p* enters into these notches, the ring is locked and becomes essentially a solid ring. In this apparatus, this ring M is supported by a flattened link Q, and the flattened link in turn has linked therein and is supported by the ring G. The flattened link Q is manually passed between the projecting brackets E, E, attached to the crane B; the ring G is forced up against the links K, and the swinging arms H, H, are raised so that their extremities are in a perpendicular position, the ring G falling in behind the projections *e*, *e*, and the parts all have the position, as shown in Fig. 3. By leaving the ring M unlocked and open a convenient number of mail bags may be hung thereon, as shown in Fig. 1, in which there are shown two mail bags. These operations are performed manually while the car is in motion, and while the crane B is shown swung in the car, as appears by the dotted lines in Fig. 1.

When it is desired to deliver the bags on approaching a delivery station, the crane B with the bags is swung outwardly and held by the hook C. The continued movement of the car enables the lance head D to engage the ring G and throw the pieces H, H, downward, thus lifting the link over the projections *e*, *e*, thus detaching the bag from the crane B and leaving it upon the lance head in the depression *d'*. As the bag assumes this position upon the swinging arm L, to which the lance head D is attached, in order to prevent the bag swinging, and perhaps tearing it apart by suddenly arresting its motion, I have devised a sort of pocket which consists essentially of a series of springs, and which is illustrated in the catching position in Fig. 1, with a vertical plan in Fig. 5, and in the final movement in Fig. 9. I do not consider, however, the form of these springs to be essential to this invention, as many formed might be devised that would effect the same purpose, the principal effect being to catch the bag into a yielding pocket, and to prevent its continued swinging by the reaction after it is caught. To carry out this idea, I fix a post rigidly upon the ground; pivotally attached to brackets at top and bottom of this post is a swinging post 3 to which the arm L is attached, forming a swinging crane; depending from this crane is an elastic bar 4 vertically supported in position by an elastic horizontal L-shaped bar 5; the attachment of bar 5 to bar 4 being formed by a sliding bolt in an elongated mortise 6. This will permit the depending bar 4 to spring backward without a strain due to the attachment of bar 5 to bar 4. At the lower end of the bar 4 is attached a cage made of elastic curved bars; this cage consists essentially of a back piece 7, two curved side pieces 8, 8, attached to the back piece two L-shaped standards 9, 9, attached to the side pieces 8, 8, and carrying fixedly at their tops respectively curved pieces 10, 10. To the outer ends of the curved pieces 10, 10, are attached inner curved pieces 11, 11, which practically meet in the center at 12. As all of these bars and pieces are elastic, it is obvious that the points of pieces 11, 11, at 12, may be separated and as the approaching pieces 11, 11, receive the impact of the bags they separate and allow the bags to pass into the space behind 12. A yielding buffer 13 is formed to receive the bag by being attached to a spring 14, which is also carried by the piece 7. As the bag is caught in behind 12 and against the buffer 13, the impact swings the whole crane upon the pivotal post 3 one-quarter of a turn, as shown in dotted lines in Fig. 5, and as shown in perspective in Fig. 9.

The crane arm L has a curved spring 15

attached to it, and projecting from the fixed post 2 is an arm 16, its outer extremity carrying another curved spring 17. When the crane is in the position, as shown in Fig. 1, these two springs 15 and 17 engage, as shown in said figure, and thus the crane arm L is held with sufficient rigidity projecting toward the track in the receiving position to prevent its being wantonly swung out of position, except when it is designedly so swung by the impact of the mail bag, as hereinafter stated.

The operation of this device is sufficiently obvious from the foregoing description.

15 Having thus described my invention, what I desire to claim is:—

1. The combination of a swinging crane located adjacent to the opening in a railway car, a pair of adjacent brackets on the end thereof, said brackets being notched at their upper edges, each bracket carrying an L-shaped latch pivoted to said bracket adapted to revolve and raise the load thereon out of the notch, a swinging crane hung upon an immovable fixed support carrying a lance shaped projection, adapted to engage a ring support for mail bags, said parts operating in such a manner that the lance projection from the second named crane is adapted to withdraw the ring support from out of the notch in the brackets by dropping the revolvable latches, substantially as described.

2. In a mail catcher, the combination of a fixed support, a vertical revoluble crane carrying a lance-shaped projection D, and supporting and carrying a nest of springs and a spring buffer, said nest of springs and buffer and a frictional spring contact to hold it in the receiving position and yet permitting the impact of a railway mail bag to throw it from said position and rotate the same around the revoluble support, substantially as described.

3. In a mail catcher, the combination of 45 spring supports 8, 8, spring brackets 9, 9, elastic pieces 10, 10, reëntering elastic inner pieces 11, 11, and a yielding buffer 13, ar-

ranged and adapted to catch and retain a mail bag, substantially as described.

4. In a mail bag support, in combination 50 with supporting brackets, a correlated set of rings, one of which is adapted to rest thereupon and the others of which are adapted to pass beneath said brackets, and spring means adapted to assist in the projec- 55 tion of the ring engaging said brackets from its normal position of rest therein, substantially as described.

5. A supporting ring for mail bags consisting of the combination of a main ring 60 having an opening therein, an L-shaped recess in one end thereof, a closing piece N pivoted to the other end thereof and having a similarly shaped recess at its free end and adapted when closing to form a double L- 65 shaped transverse opening, a spring P pivoted to said main ring and carrying a block adapted to fit into the opening formed by the closing of the piece N, and the end *m* of the ring, thereby locking the two together and 70 permitting them to separate by pressing outwardly the block *p* therefrom, substantially as described.

6. In a mail catcher, in combination with a supporting arm, a projecting member sup- 75 ported thereby in position to receive about its stem a ring moving theretoward, a resilient buffer member carried by said arm, and adapted to cooperate with said projecting portions in receiving the impact of a bag 80 to which the moving ring is attached, a fixed support for said arm upon which the same is pivotally carried, and resilient means for normally holding the said arm and its attached parts in desired position with respect 85 to the fixed support, substantially as described.

In testimony whereof, I sign this specification in the presence of two witnesses.

JOHN McKINLEY.

Witnesses:

VIRGINIA C. SPRATT,
LOTTA LEE BRAY.