No. 648,848. Patented May 1, 1900.

B. CHAMBERLAIN.

MAIL CATCHER AND DELIVERER.

(Application filed Sept. 27, 1899.)

(No Model.) 3 Sheets—Sheet 1.

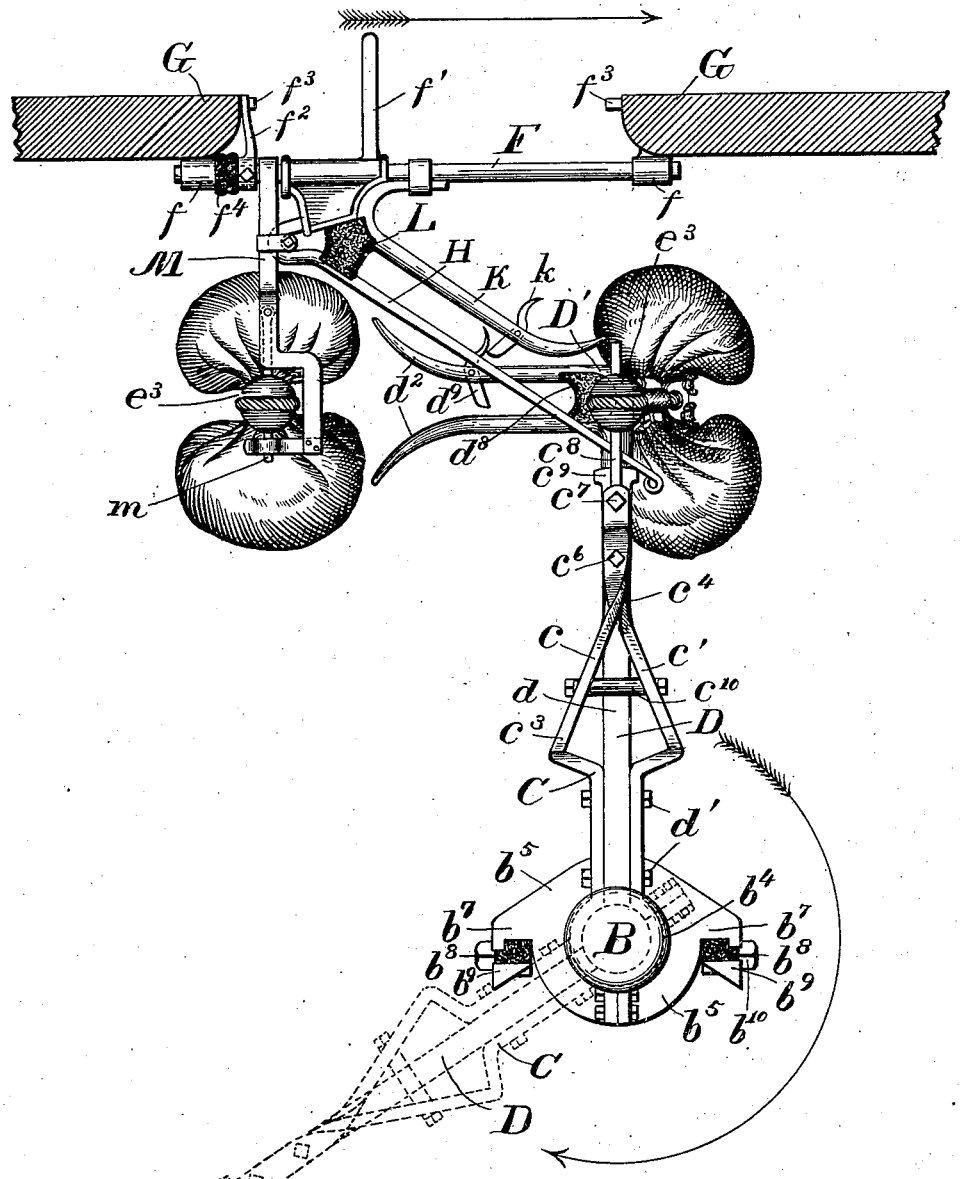

FIG. 1.

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No. 648,848. Patented May 1, 1900.

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MAIL CATCHER AND DELIVERER.

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(No Model.) 3 Sheets—Sheet 2.

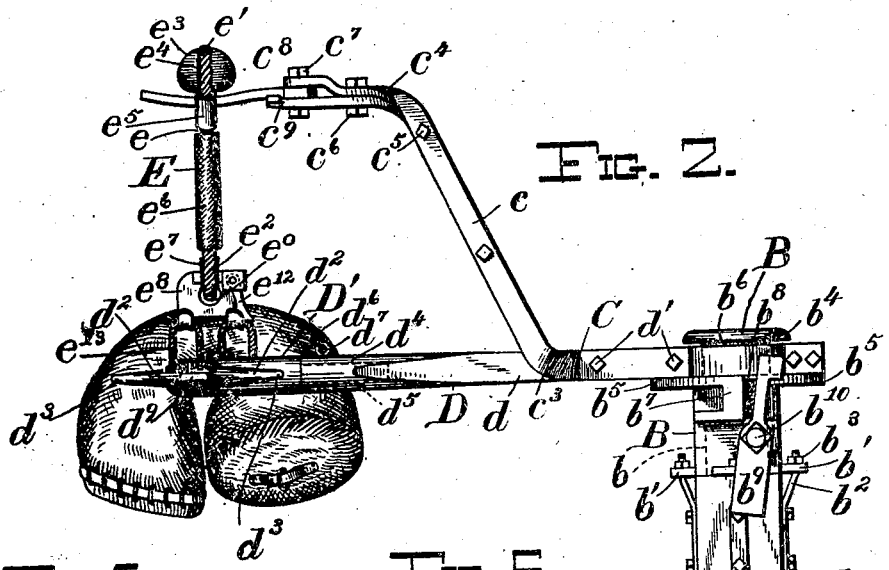

FIG. 2.

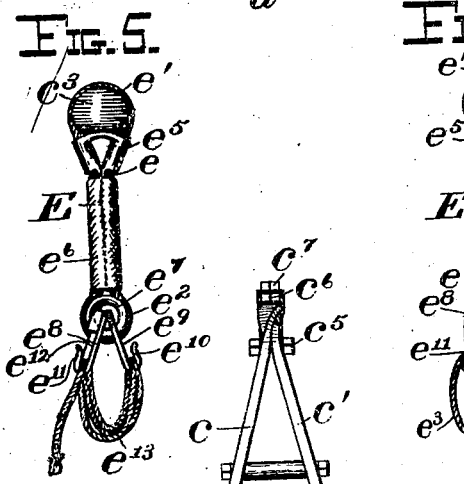

FIG. 5.

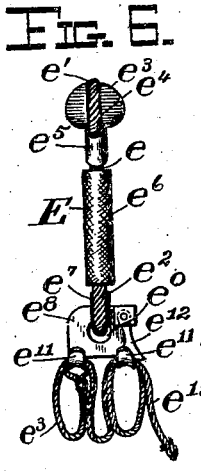

FIG. 6.

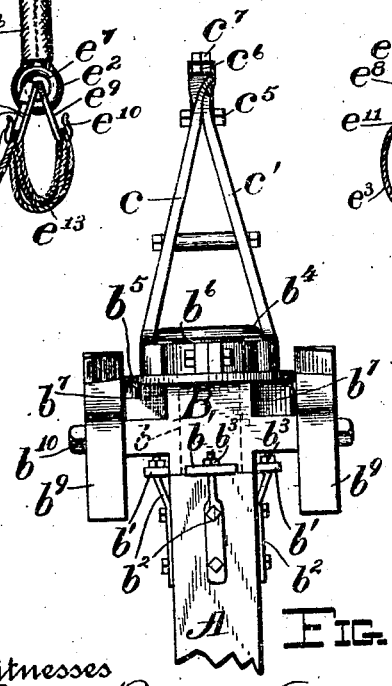

FIG. 3.

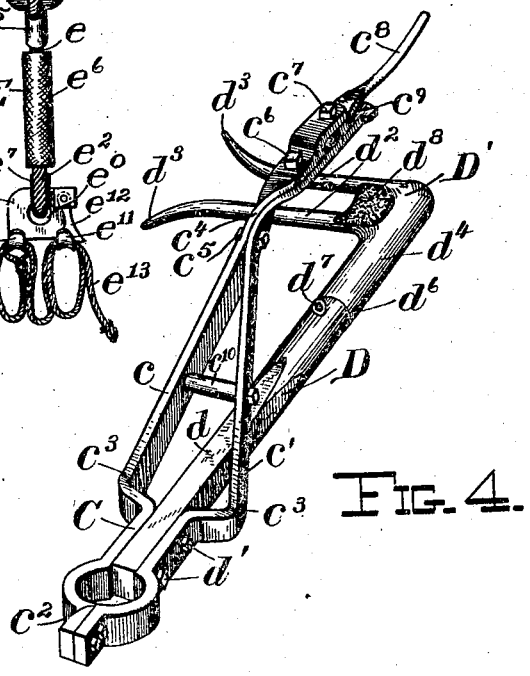

FIG. 4.

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No. 648,848. Patented May 1, 1900.

B. CHAMBERLAIN.

MAIL CATCHER AND DELIVERER.

(Application filed Sept. 27, 1899.)

(No Model.) 3 Sheets—Sheet 3.

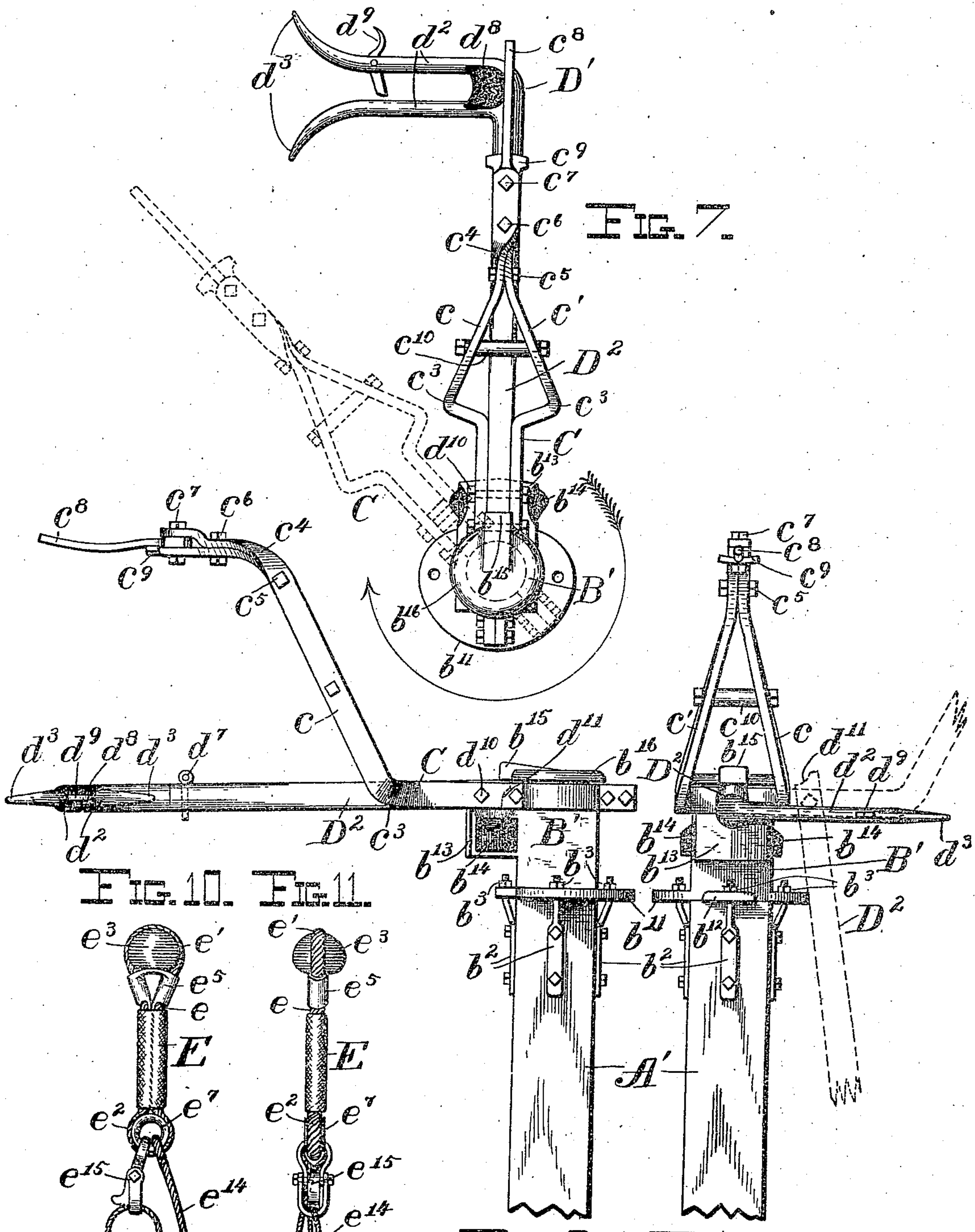

FIG. 7. FIG. 8. FIG. 9. FIG. 10. FIG. 11.

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UNITED STATES PATENT OFFICE.

BLANCHARD CHAMBERLAIN, OF BELLEFONTAINE, OHIO.

MAIL CATCHER AND DELIVERER.

SPECIFICATION forming part of Letters Patent No. 648,848, dated May 1, 1900.

Application filed September 27, 1899. Serial No. 731,842. (No model.)

To all whom it may concern:

Be it known that I, BLANCHARD CHAMBERLAIN, a citizen of the United States, residing at Bellefontaine, in the county of Logan and State of Ohio, have invented certain new and useful Improvements in Mail Catchers and Deliverers; 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.

My invention relates to improvements in mail-bag catchers and deliverers, and is designed more particularly as an improvement upon the invention described and claimed in Letters Patent No. 594,983, granted to me December 7, 1897, reissued February 8, 1898, and numbered 11,649.

The object of my invention is more especially to provide an improved form of track-crane and bag catcher and deliverer forming a part thereof, and also to provide an improved form of sling, in which the mail-bag is held.

It is also the object of my present invention to so construct the track-crane that the wear and tear produced by the blows which are delivered to devices of this character in consequence of the fast-moving trains will be reduced to a minimum, and in the attainment of this object my invention is designed to do away with many parts hitherto employed in the construction of track-cranes and to produce one which shall be simple, yet durable and positive in its action.

In order that my said invention may be more fully understood, the same will be more fully described with reference to the accompanying drawings, in which—

Figure 1 is a plan view representing the track-crane and catcher and deliverer on a postal car, showing them in the position that they occupy just previous to the operation of catching and delivering the mail-bags and showing in dotted lines the position of the crane-arm after the bag has been caught from the passing train or after the bag has been delivered to the train. Fig. 2 represents the track-crane and catcher and deliverer arm in side elevation, showing the mail-bag in position to be delivered. Fig. 3 is a rear elevation of the parts shown in Fig. 2 with the mail-bag removed. Fig. 4 is a perspective view of the crane catcher and deliverer arm. Fig. 5 is a front elevation of the sling, and Fig. 6 is a side elevation of the same. Fig. 7 is a top plan view showing another form of my improved track-crane. Fig. 8 represents the same in side elevation. Fig. 9 represents the same in front elevation, showing in dotted lines the position of the catcher-arm after action. Fig. 10 represents in front elevation another form of sling, and Fig. 11 represents the same in side elevation.

Similar letters refer to similar parts throughout the several views.

A represents the track-crane post or upright, located along the permanent way in close proximity to the railroad-track. Over the top of this post fits a head B in the form of a cap, being made hollow to receive the upper end of the post, as shown in dotted lines at b. This head B is preferably a single iron casting provided with the lower flanges b', through which the screw-threaded rods b^2 pass, securing the head B fast upon the top of the post A by means of the nuts b^3. Any looseness of the head upon the post which may be caused by the shrinkage of the latter may be compensated for by tightening the said nuts. The head B is provided also with the annular flange or cap b^4 and a flange b^5, and between these flanges is formed the neck b^6. The head beneath the flange b^5 is provided on opposite sides with the ears or lugs b^7, to which are secured the rubber or other elastic cushions or buffers b^8. To the lugs b^7 are secured the dogs b^9, pivoted as at b^{10}. The lower ends of these dogs are preferably made heavier than their upper ends to keep them in an upright position, their lower ends normally resting against the buffers b^8.

C represents the arm which holds the mail-bag to be delivered to the train and comprises two members $c\ c'$. This arm is supported upon the head of the crane by making the members $c\ c'$ at one end in the form of a yoke c^2, which surrounds the neck b^6, as shown, fitting tight enough to support the arm in a position substantially at right angles to the post, but loose enough to allow the arm to turn on the head of the post as a pivot. The arm C then extends out straight from its support for a short distance, when it is bent upward,

as at c^3, and then straight again, as at c^4. The members $c\ c'$ consist, preferably, of bars of wrought-iron, and at or near the point where they begin to bend upward diverge from each other. They then converge toward the point, where they are again bent straight and meet, being bolted together, as at c^5. At this point the members are bent so as to bring their sides uppermost and are bolted again, as at c^6. Between the upper ends of the members $c\ c'$ is pivoted, as at c^7, the bag-supporting pin c^8. In order to prevent this pin from being turned either to the right or left except under the action of a positive force, the upper face of the member c' is made rough or concave, as at c^9. The arms $c\ c'$ are braced by a stud c^{10}.

While I have described the shape of the arm C with some particularity, I do not wish to confine myself to that special shape, as it is obvious that I may vary this to a considerable degree without departing from the spirit of my invention.

D represents the catcher-arm, comprising a straight member d, secured at one end between the lower straight portions of the members $c\ c'$ by bolts $d\ d'$. The catcher-arm D carries a reversible catcher-hook D', comprising two substantially-parallel arms d^2, flaring outward at their ends, as at d^3. The shank d^4 of the hook is substantially at right angles to the arms d^2, is reduced at one end, as at d^5, (shown in dotted lines, Fig. 2,) to form a shoulder at d^6, and passes at that end into a socket in the end of the arm d. A pin d^7 passes through the arm d and hook-shank d^4 and holds the latter in the proper position. The hook is provided with the rubber or other elastic buffer d^8, against which the sling strikes when the mail-bag is caught.

E represents the sling to which the mail-bag is secured and by means of which it is suspended from the delivery-arm. This sling consists, among other parts, of a rope e, doubled upon itself and forming two loops e' and e^2. A ball e^3, of wood, rubber, or other suitable material, is carried in the loop e', the rope being held in a groove e^4. (See Fig. 6.) A guard e^5 in the form of an eye further secures the ball in the loop e', while at the same time preventing the rope from abrasion. The rope between the loops is covered with a casing e^6, of leather or some other tough material which will withstand the blows to which the sling will be subjected. The lower loop e^2 carries an eye e^7, from which is suspended two plates e^8 e^9, the said plates being provided with openings e^9, through which the eye e^7 passes. These plates are provided with the hooks e^{10} and e^{11} and the plate e^8 with the dog e^{12}. The mail-bag is secured to the sling by means of the rope or strap e^{13}. For this purpose the said rope or strap is secured at one end to one of the hooks e^{10}, then passed under the mail-bag over one of the hooks e^{11}, then back under the bag again and over another hook e^{10}, then back under the bag again and over the hook e^{11}, where it is held by the dog e^{12}. It will thus be seen that the rope or strap is not tied around the mail-bag, but rather laced around it in such a manner as to securely hold it and at the same time admit of it being easily removed. Obviously two or more mail-bags may be held at once in the manner described where only one bag is shown. The same sling may be used with a different type of rope or strap fastening, as shown in Figs. 10 and 11. In this case one end of the rope or strap e^{14} is secured directly to the eye e^7, having its other end held in a dog e^{15}, suspended from the eye e^7. The rope or strap e^{14} simply passes around the bag and then through the dog, which tends to grasp it tighter the greater the strain on the rope.

In supporting the bag to be delivered the pin c^8 of the delivery-arm passes through the guard-eye e^5, thus leaving the bag suspended with the sling directly in the path of the catcher of the mail-car.

The mail-bag catcher and deliverer that I have shown as carried by the mail-car (see Fig. 1) is substantially similar to that described and claimed in the Letters Patent No. 632,101, granted to me August 29, 1899, consisting, among other parts, of the catcher-rod F, which passes across the doorway of the mail-car and is journaled in the brackets f, secured to the door-jambs G. This catcher-rod is provided with an operating-handle f' and a stop-arm f^2, the latter being adapted to come in engagement with the stop f^3 when the rod has been turned to its fullest and proper extent in holding the catcher-arm out. A rubber or other elastic buffer f^4 is placed between the stop-arm and the bracket f.

H represents a catcher-arm of the usual type, and K an auxiliary arm substantially parallel to the arm H, both of which are secured to the catcher-rod, as shown. A buffer L is located between the arms H and K near the rearward ends, while the arm K is provided with a pivoted trigger k.

M represents the delivery-arm, which holds the bag to be delivered from the mail-car. This arm M is provided with a pivoted pin m, from which the sling is suspended, being substantially the same as that shown and described in my aforesaid patent.

In describing the operation of the apparatus it will be assumed that the train is moving in the direction of the arrow, Fig. 1, and that it is desired to deliver a mail-bag to the crane and take one from it. The mail-bag to be delivered to the crane having been placed on the delivery-arm, on approaching the crane the mail clerk operates the catcher-rod handle and throws the catcher-arms out until the stop-arm on the catcher-rod engages the stop f^3 on the door-jamb. In Fig. 1 the parts in full lines are shown in the position that they will occupy just at the instant the exchange of the bags is to be made. The sling secured to the bag on the crane-arm is caught by the arms H and K of the crane-catcher, sliding

the sling off the pin c^8, which may turn on its pivot, and thereby assist the operation. When the sling is disengaged from the pin c^8, it falls upon the arms H and K, being suspended by the ball e^3, which rests upon the said arms. The sling then passes the trigger k and strikes the buffer f^4. The sling secured to the bag to be delivered to the crane-catcher is at the same time caught between the arms d^2 of the catcher-hook, the ball of the sling resting upon the arms and supporting the bag, as in the previous case, the sling passing the trigger d^9 and striking the buffer d^8. The whole crane-arm being rotatably mounted on the head of the post, as described, will in the operation of exchanging the bags be knocked around in the direction of the circular arrow, Fig. 1, and will assume the position indicated in dotted lines. In passing around to this position the crane-arm trips one of the dogs b^9 and passes around to the other, striking it and bringing it against the buffer b^8. Obviously when the car is moving in the opposite direction from that indicated the crane-arm will be rotated in the opposite direction, and the dog which it tripped in going in the other direction now acts as a stop. It will thus be seen that the whole apparatus is designed to reduce the effect of the blow occasioned by the exchange to a minimum. When the sling is caught in the crane-catcher hook, it strikes a rubber buffer, and instead of landing against a stationary arm the arm swings around, losing a great deal of its force before it reaches the dog which stops it. It will also be observed that the catcher-arm of the mail-car does not strike the sling supporting the bag to be taken from the crane a straight blow at right angles to the crane-arm. The blow is a glancing one, the catcher-arm being so directed as to gradually slide the sling off the pin which supports it. It will also be seen that the bag that is caught upon the crane is carried completely out of the way of the train, so that there will be no danger from a following train or from the same train from which the bag is taken.

With the track-cranes generally in use two arms are usually employed, one extending from the post at or near its upper end and another below. According to my invention it will be seen that only one arm extends from the post, the upper arm of the ordinary type being supplanted by the arm C.

In Figs. 7, 8, and 9 I have shown another form of crane embodying my invention, but differing somewhat from that above described. In this case B′ represents the head, which fits over the top of the post A′, as before. This head is provided with a flange b^{11}, which extends around three of its sides, while on the fourth side is a smaller flange or lug b^{12}. The rods b^2, secured to the post, pass through these flanges and hold the head down on the post by means of the nuts b^3, as described with reference to the other form of head. The head B′ is provided with an extension b^{13}, having an opening through it, in which is carried the rubber or other elastic buffers b^{14}. The crane catcher and deliverer arm in this case is similar to that above described, except the catcher-arm D^2 is pivoted, as at d^{10}, being cut away at its inner end, as at d^{11}. When the catcher and deliverer arms are in the position to catch or deliver the mail-bags, as shown in Figs. 7 and 8, the end d^{12} of the arm D^2 is held under the nipple b^{15}, which is cast to the top or cap b^{16} of the head B′. When the bags are caught and the arm D^2 is struck, it is knocked around, as in the previous case, except in this instance when the portion d^{12} of the arm D^2 passes from beneath the nipple b^9 the arm drops down into the position shown in dotted lines in Fig. 9 and continuing around strikes the buffer b^{14}, as shown in dotted lines, Fig. 7. When the arm thus drops, it strikes the flange b^{11} and is thus prevented from striking the post. The arm D^2 is readily reset by raising and turning it around to its proper position again.

While I have thus shown and described two forms of my said invention, it is obvious that I may make still further changes and modifications therein without departing from the spirit of my invention.

I do not wish it to be understood that the catcher and deliverer crane-arm herein shown and described in any form is limited to use with the particular support or crane-post herein shown and described, it being my intention especially to use the form of drop-down catcher-arm such as is shown in Figs. 7, 8, and 9 with the crane-post shown and described in my reissued Letters Patent No. 11,649, above referred to.

Having thus fully described my said invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a mail-bag catcher and deliverer, an upright support, a head comprising a flanged hollow casting mounted fast upon the upper end of said upright, and a mail catcher and deliverer arm pivoted to said head, substantially as described.

2. In a mail-bag catcher and deliverer, an upright support, a head comprising a metal cap fitting fast over the top of said upright, a rotatable mail catcher and deliverer arm pivoted to said head and means carried by said head for limiting the travel of said arm, substantially as described.

3. In a mail-bag catcher and deliverer, an upright support, a head comprising a metal cap fitting fast over the top of said upright, a rotatable mail catcher and deliverer arm carried by said head and elastic buffers carried by said head for limiting the travel of said arm, substantially as described.

4. In a mail-bag catcher and deliverer, an upright support, a head in the form of a metal cap fitting fast over the top of said upright, and a rotatable mail catcher and deliverer arm pivoted to said head, substantially as described.

5. In a mail-bag catcher and deliverer, an upright support, a head surmounting said upright, a rotatable mail catcher and deliverer arm pivoted to said head, stop-dogs pivoted to the sides of the head and adapted to limit the travel of said arm, and elastic buffers against which said dogs strike, substantially as described.

6. In a mail-bag catcher and deliverer, the combination with an upright support, a stationary flanged head fitting over the top of said upright, a combined catcher and deliverer arm rotatably mounted on said head and comprising a catcher-arm, and a delivery-arm diverging from said catcher-arm, substantially as described.

7. In a mail-bag catcher and deliverer, the combination with an upright support, a head fitting over the top of said upright, a combined catcher and deliverer arm rotatably mounted on said head and comprising a catcher-arm and deliverer-arm extending upward from said catcher-arm and pivoted stops for limiting the travel of said arm, substantially as described.

8. In a mail-bag catcher and deliverer, the combination with an upright support, a head in the form of a hollow casting fitting over the top of said upright, a combined catcher and deliverer arm rotatably mounted on said head and comprising a catcher-arm and a deliverer-arm diverging from said catcher-arm, and elastic buffers secured to said head and limiting the travel of said arms, substantially as described.

9. In a mail-bag catcher and deliverer, the combination with an upright support, a stationary head in the form of a hollow casting fitting over the top of said upright, means for securing said head down upon said upright, a combined catcher and deliverer arm rotatably mounted on said head and comprising a catcher-arm, and a deliverer-arm extending upward from said catcher-arm and means for suspending a mail-bag from said deliverer-arm, substantially as described.

10. In a mail-bag catcher and deliverer, the combination with an upright support, a stationary head in the form of a hollow casting fitting over the top of said upright, means for securing said head down upon said upright, a combined catcher and deliverer arm rotatably mounted on said head and comprising a catcher-arm and a deliverer-arm extending upward from said catcher-arm, means for limiting the travel of said arms and means for suspending the mail-bag from said deliverer-arm, substantially as described.

11. In a mail-bag catcher and deliverer, the combination with an upright support, a head in the form of a hollow casting fitting over the top of said upright, rods secured to said upright and passing through the lower portion of said head, bolts upon said rods for holding the head down upon the upright, and a combined mail catcher and deliverer arm rotatably mounted on said head, substantially as described.

12. In a mail-bag catcher and deliverer, the combination with an upright support, a stationary flanged head in the form of a hollow casting carried upon the top of said support, a combined catcher and deliverer arm rotatably mounted upon said head, said arm comprising a catcher-arm, a reversible catcher-hook carried by said arm and a deliverer-arm diverging from said catcher-arm, and means for suspending the mail-bag from said deliverer-arm, substantially as described.

13. In a mail-bag catcher and deliverer, the combination with an upright support, a head carried upon the top of said support, a combined catcher and deliverer arm rotatably mounted upon said head, said arm comprising a catcher-arm, a reversible catcher-hook composed of two substantially-parallel arms with a flaring mouth carried by said arm, a deliverer-arm diverging from said catcher-arm and then extending parallel thereto, and a bag-supporting pin carried by said deliverer-arm, substantially as described.

14. In a mail-bag catcher and deliverer, the combination with an upright support, a head carried upon the top of said support, a combined catcher and deliverer arm rotatably mounted upon said head, said arm comprising a catcher-arm, a reversible catcher-hook having two substantially-parallel arms with a flaring mouth, a buffer in said hook, a retaining-trigger also carried by said hook, a deliverer-arm diverging from said catcher-arm and then extending parallel thereto, and a pivoted bag-supporting pin carried by said deliverer-arm, substantially as described.

15. In a mail-bag catcher and deliverer, the combination with an upright support, a head carried upon the top of said support, a combined catcher and deliverer arm rotatably mounted upon said head, said arm comprising a catcher-arm, a reversible catcher-hook carried by said arm and a deliverer-arm diverging from said catcher-arm and then extending parallel thereto, and a bag-supporting pin carried by said deliverer-arm, substantially as described.

16. A mail-bag catcher and deliverer, comprising a fixed support, a deliverer-arm pivoted to said support and adapted to rotate in a horizontal plane, a catcher-arm pivoted to said deliverer-arm and adapted to rotate in a vertical plane, means for retaining the said deliverer-arm in a substantially-horizontal position and for allowing the said catcher-arm to drop when the same is rotated around its pivot, substantially as described.

17. In a mail-bag catcher and deliverer, the combination with an upright support, of a head surmounting said support said head having a hollow extension upon one of its sides, buffers carried in said extension, a deliverer-arm rotatably mounted upon said head, a catcher-arm pivoted to said deliverer-

arm and adapted to swing about its pivot in a vertical plane, means for maintaining said catcher-arm in a horizontal position and means for releasing the same and allowing it to fall when the arm is rotated in a horizontal plane, substantially as described.

18. In a mail-bag catcher and deliverer, the combination with an upright support, of a head surmounting said support, said head having an extension upon one of its sides, buffers carried in said extension, a deliverer-arm rotatably mounted upon said head, a catcher-arm pivoted to said deliverer-arm, an overhanging nipple upon the top of said head and adapted to engage the inner end of said catcher-arm and to hold the same in a horizontal position until the said arm is rotated out of engagement with said nipple, substantially as described.

19. In a mail-bag catcher and deliverer, the combination with an upright support, of a head surmounting said support, said head having an extension upon one of its sides, buffers carried in said extension, a deliverer-arm rotatably mounted upon said head, a catcher-arm pivoted to said deliverer-arm, a reversible catcher-hook carried by said catcher-arm, an overhanging nipple upon the top of said head and adapted to engage the inner end of said catcher-arm and to hold the same in a horizontal position until the said arm is rotated out of engagement with said nipple, substantially as described.

20. A sling for supporting a mail-bag comprising a rope doubled upon itself and bound together for a part of its length and forming a loop upon each end of the bound portion, a ball carried in one of said loops, and means for securing the mail-bag to the other loop, substantially as described.

21. A sling for supporting a mail-bag, comprising a rope doubled upon itself and bound together for a part of its length a covering of wear-resisting material inclosing the bound portion of the rope, a loop formed at each end of the bound portion, a ball carried in one of said loops, an eye in the other of said loops, and a bag-fastening device carried in said eye, substantially as described.

22. A sling for supporting a mail-bag, comprising a rope doubled upon itself and bound together for a part of its length and forming a loop at each end of the bound portion, a ball carried in one of said loops, an eye carried in the other of said loops, lacing-hooks carried by said eye and a rope or strap for lacing said bag to said hooks, substantially as described.

23. A sling for supporting a mail-bag, comprising a rope doubled upon itself and bound together for a part of its length and forming a loop at each end of the bound portion, a ball carried in one of said loops, an eye carried in the other of said loops, a pair of plates carried by said eye, lacing-hooks carried by said plates, a clamping-dog carried by one of said plates, a rope or strap secured to one of said hooks and adapted to be clamped by said dog, substantially as described.

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

BLANCHARD CHAMBERLAIN.

Witnesses:
FRANK D. BLACKISTONE,
JOHN H. HOLT.