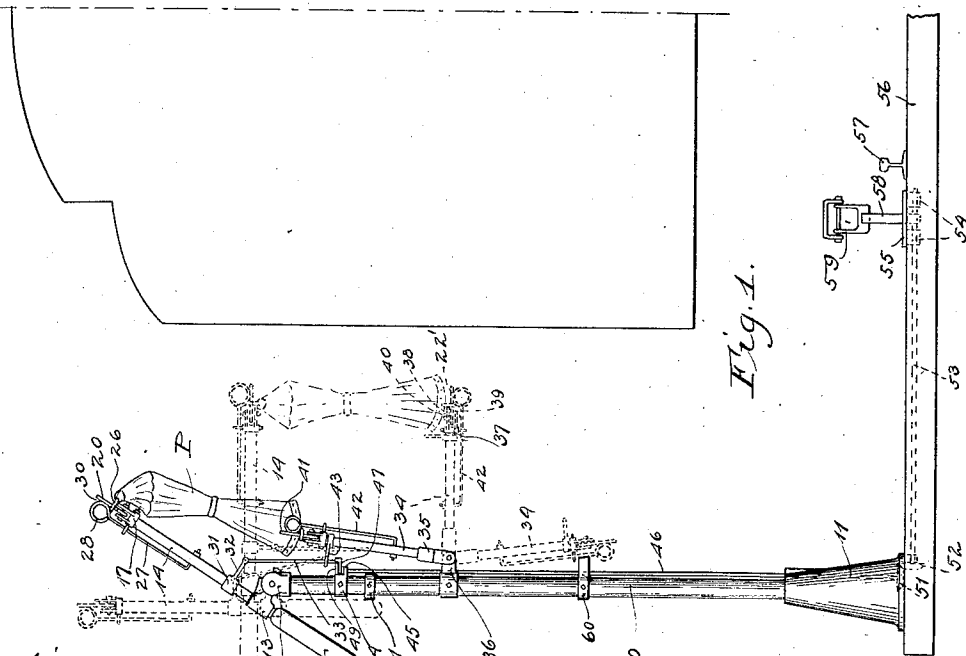
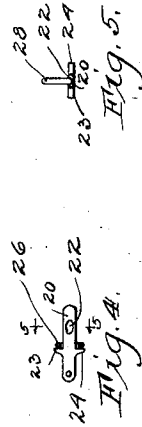
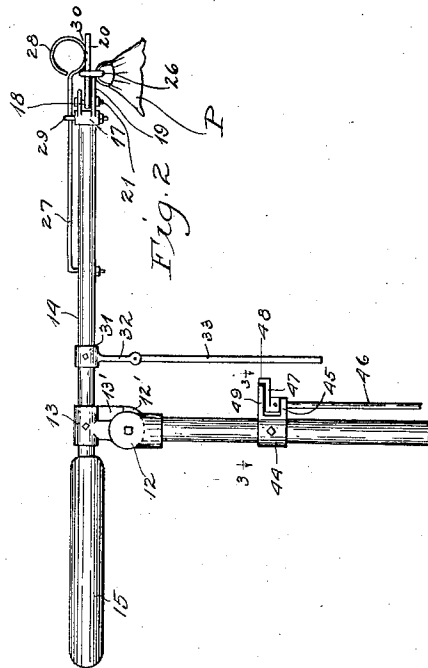


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RAILWAY MAIL CRANE.
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1,058,782.

Patented Apr. 15, 1913.



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UNITED STATES PATENT OFFICE.

BURTON W. MUDGE, OF CHICAGO, ILLINOIS.

RAILWAY MAIL-CRANE.

1,058,782.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, BURTON W. MUDGE, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Railway Mail-Cranes, of which the following is a specification.

My invention relates to railway mail cranes for supporting mail pouches in the path of catcher arms on moving trains.

My invention relates particularly to that class of cranes of which the crane shown in Burr Patent 895,723, August 11, 1908, is an example, the mail pouch being held in an intermediate clearance position until the engine and tender have passed, and is tripped during such passage to fall into the receiving position in time to be caught by the catcher arm or hook extending out from the mail car.

In the patent referred to, means are shown for supporting the pouch from the ends of the supporting arms and the main object of my invention is to provide more efficient supporting terminals for the supporting arms so that these supporting arms will not be subjected to lateral strain when the bag is struck by the catcher arm. I provide a supporting finger on the upper supporting arm and on the lower supporting arm, pivoted to swing laterally, these fingers being normally yieldingly held each by a spring rod to extend straight outwardly from the supporting arms so that the supporting rings of the mail pouch may be slid onto the fingers below the terminals of the spring rods and the fingers then locked by the spring rods, the first impact of the slanting end of the catcher arm or hook then causing the spring rod terminals to be deflected away from the fingers by the mail pouch rings so that the fingers are then free to swing laterally to allow the pouch to leave the fingers and to enter the bend of the catcher.

Another object is to assure that the pouch rings will be accurately and correctly applied to the fingers, and the spring rod terminals are therefore in the form of closed eyes or loops made sufficiently larger than

the mail pouch rings to prevent passage thereof of these rings, the loops forming with the ends of the fingers comparatively large pockets into which the rings may be readily applied and forced to the bases of the fingers to the rear of the loops. To yieldingly lock the fingers in neutral position, a pocket is provided in each for receiving the lower end of the associated loop. When the pouch is thus first engaged by the slanting end of the catcher arm, the pouch rings will raise the loops out of the pockets so that the fingers are then free to swing laterally to release the pouch rings without causing any lateral strain on the fingers and their supporting arms.

The various features of the invention are clearly represented on the accompanying sheet of drawings, in which drawings—

Figure 1 is a side elevational view of a mail crane showing the various positions of the supporting arms, and showing tripping mechanism to be actuated from a moving train. Fig. 2 is an enlarged side elevational view of the upper end of the crane and the upper supporting arm. Fig. 3 is a sectional view looking from plane 3—3 Fig. 2, to illustrate the operation of the tripping platform or step. Fig. 4 is a plan view of one of the supporting fingers and Fig. 5 is a sectional view looking from plane 5—5 Fig. 4.

The supporting structure of the crane is a post 10 mounted in a pedestal 11. At the upper end of the post is secured the top arm supporting head 12 to which is pivoted the top arm connector 13. The top arm 14 may be in the form of a pipe extending through the connector and secured thereto, the rear end of the arm having a weighted extension 15 so that this arm, when released will tend to swing into a vertical position adjacent the rear of the post as indicated by dotted lines in Fig. 1. At its front end the arm 14 has secured thereto a fitting 17 from which project upper and lower bearing ears 18 and 19 between which the supporting finger 20 is pivoted at its rear end by the pivot bolt 21 extending through the ears. Near its front end this supporting finger 20 has in its upper face a pocket 22 and at an inter-

mediate point side lugs 23 and 24 form abutments for the ring 26 at the upper end of a mail pouch P. At an intermediate point on the arm 14 is anchored a spring rod 27 which extends forwardly and parallel with the arm 14 and terminates at its outer end in a loop or eye 28 whose lower end engages in pocket 22 of the supporting finger 20 when this finger extends outwardly and parallel with the arm 14. An eye 29 at the upper end of fitting 17 forms a guide for the spring rod and limits vertical movement thereof. The end of finger 20 extends a distance beyond the loop to form therewith an entrance pocket 30 into which the ring 26 may be applied and the loop readily raised to allow the ring to be slid along the finger and against abutments 23 and 24, the loop being then sprung back into the pocket 22 to yieldingly lock the ring to the finger and to yieldingly lock the finger in neutral position. The lower ear 19 is somewhat longer than the upper ear 18 so as to form additional abutment for the ring 26.

The connector 13 has a downward abutment extension 13' for engaging with the stop lug 12' to stop the arm 14 when it reaches substantially horizontal position. The arm 14 has also adjustably secured thereto a sleeve 31 having a downward extension 32 to which is pivoted the prop rod 33 for cooperating with the trigger mechanism.

A lower supporting arm 34 extends from a jaw fitting 35 which pivots to a support 36 secured to the post 10. At its front end this arm carries a fitting 37 having upper and lower pivot ears 38 and 39 for supporting the pivot bolt 40 to which the lower supporting finger 41 is pivoted at its inner end. This end supporting mechanism for the lower arm is the same as the end mechanism on the upper arm except that the fitting 37 is inverted so that the pocket 22' is in the lower face of the supporting finger 41, the spring rod 42 being below the supporting arm 34. Extending upwardly from the supporting arm just inside the fitting 37 is a hook 43 for cooperating with the prop rod 33.

At the upper end of the post 10 is a fitting 44 having the lower inward extension 45 forming a bearing for the vertical trip shaft 46, and forming a seat for the trigger step 47 which is secured to the upper end of said shaft. The outer end of this step has a locking ridge 48 concentric with the shaft for receiving the lower end of the prop rod 33 as indicated in Figs. 1 and 3. When the lower end of the prop rod engages with the step, the upper arm 14 will be in inclined position as shown in full lines in Fig. 1, and the lower arm will likewise be in inclined position, and will be thus held by engagement of the hook 43 with the prop rod as

indicated. To hold the prop rod accurately in place on the trip step, the fitting 44 has the upper extension 49 having a slot 50 at its inner end for receiving the prop rod, thus to hold it in central position on the trigger step. With this arrangement when the trigger step is swung in either direction, the prop rod will be released therefrom and the supporting arms will drop to their horizontal positions as indicated in dotted lines in Fig. 1.

The lower end of the trigger shaft 46 journals in the pedestal 11 and carries the bevel gear 51 which meshes with the bevel gear 52 on the horizontal shaft 53 extending inwardly and journaled in lugs 54 extending downwardly from a plate 55 secured to the tie 56 adjacent the rail 57 of the track over which trains run. Between the lugs 54 the shaft 53 carries a trigger 58 which normally extends vertically and which is in the path of suitable abutment mechanism 59 carried by the engine or tender of a train, swing in either direction of the trigger resulting in swing of the trigger step and release of the mail pouch supporting arms.

When there is no mail pouch on the supporting arms, the upper arm is swung in vertical position by gravity and the lower supporting arm hangs downwardly against a suitable abutment 60 provided on the post 10. When a mail pouch is to be applied the upper arm is swung downwardly, then the upper ring of the mail pouch slipped onto the upper supporting finger 20 in a manner already described. The lower supporting arm is then raised and the lower mail pouch ring 61 is slipped onto the lower supporting finger 41, the loops of the respective spring rods then engaging in the pockets 22 and 22' of the supporting fingers. These loops are made sufficiently large so that the mail pouch rings cannot be slipped thereover so as to assure that the rings will be slipped onto the supporting fingers, the rings when brought against the loops sliding into the pockets 30 and being thus accurately guided below the loops and into proper position on the fingers behind the loops. The upper supporting arms are now swung upwardly to intermediate position indicated by full lines in Fig. 1, the prop rod 33 being set on the trigger step and in the slot 50 of the guide arm 49, and the hook 43 is applied to the prop rod. In this intermediate position the mail pouch is at a safe distance from the approaching train and remains in such safe position until tripped and just prior to the approach of the catcher arm projecting out from the mail car. When the abutment 59 strikes the trigger 58 the trigger step is swung laterally and the prop rod is released and the hook 43 slips therefrom so that the sup-

porting arms drop in horizontal position to carry the mail pouch into the path of the catcher arm. The shape of the catcher arms is well known and when the inclined end thereof first engages with the mail pouch the supporting rings of the pouch are moved outwardly along the supporting fingers and into engagement with the spring loops to raise these loops out of pockets 22, 22' so that the supporting fingers may then swing freely laterally in the direction of the moving train, and the rings then slide freely along and from the fingers to accurately guide the pouch into the bend of the catcher arm. This freedom of lateral movement of the supporting fingers will prevent any lateral strain on the supporting arms and post of the crane and likewise the mail pouch is not unduly subjected to strain. After removal of the pouch the upper arm will swing to its vertical position and the lower arm will drop against its abutment 60. An abutment 61 may also be provided on the post 10 for the upper arm.

Instead of applying the mail pouch to the arms when the spring loops are in engagement with the supporting fingers, the pouch rings can be applied when the fingers are swung away from the loops and the finger then swung back into locking engagement with the loops.

I do not desire to be limited to the precise construction and operation shown and described as modifications are perhaps possible which would still come within the scope of the invention and

I claim the following:

1. In a mail crane, the combination of a supporting arm, a supporting finger pivoted at the end of said arm for receiving the supporting ring of a mail pouch, a spring member anchored to said supporting arm and adapted to enter into yielding locking engagement with said supporting finger to lock the mail pouch ring to said finger.

2. In a mail crane, the combination of a supporting arm, a supporting finger pivoted to said arm to swing laterally and adapted to receive the supporting ring of a mail pouch, a spring member anchored to said supporting arm and having an end adapted for yielding engagement with said supporting finger to lock the mail pouch ring to the finger.

3. In a railway mail crane, the combination of a supporting arm, a supporting finger pivoted to the end of said arm for lateral swing and adapted to receive the supporting ring of a mail pouch, said finger having a pocket, a spring member anchored to said supporting arm and adapted to engage at its end in said pocket in advance of the mail pouch ring to yieldingly lock said ring on said finger.

4. In a railway mail crane, the combination of a supporting arm, a supporting finger pivoted to the end of said arm for lateral swing and adapted to receive a supporting ring of a mail pouch, a spring rod anchored at its inner end to said supporting arm and having a loop at its outer end for yieldingly engaging with said finger to lock said mail pouch ring thereto.

5. In a railway mail crane, the combination of a supporting arm, a supporting finger pivoted to the end of said arm for lateral swing and having a depression, a spring rod anchored at its inner end and having a loop at its outer end for engaging in said depression in advance of a mail pouch supporting ring received by said finger, said spring member yielding upon outward pressure of said ring against the loop whereby said finger is released to swing laterally.

6. In a railway mail crane, the combination of a supporting arm, a supporting finger extending from and pivoted to the end of the arm for lateral swing, said finger having a locking abutment, a spring member anchored at its inner end and engaging at its outer end with said abutment to yieldingly lock said finger against lateral swing and to lock a supporting ring of a mail pouch to said finger.

7. In a railway mail crane, the combination of a supporting arm, a supporting finger pivoted to the outer end of said arm for lateral swing, said finger having a locking abutment, a spring member anchored at its inner end and having a loop at its outer end for engaging with said abutment to yieldingly lock said finger against lateral swing and to lock the supporting ring of a mail pouch to the finger, said spring member yielding to outward pressure of said ring against said loop whereby said loop is disengaged from said abutment and said finger allowed to swing.

8. In a railway mail crane, the combination of a supporting arm, a supporting finger pivoted to the end of said arm for lateral swing, said finger having abutments near its pivoted end and having a depression in advance of said abutments, said finger being adapted to receive the supporting ring of a mail pouch, a spring rod anchored at its inner end to said supporting arm and having a loop at its outer end for engaging in said depression to yieldingly lock said finger against lateral swing and to lock said supporting ring to the finger, outward pressure of said ring against said loop removing said loop from said depression to allow swing of the finger.

9. In a railway mail crane, the combination of a supporting arm, upper and lower ears extending outwardly from the end of said arm, a finger pivoted to and between

said ears and adapted for lateral swing, a spring member securely anchored at its inner end in the path of said finger and serving to yieldingly lock said finger against lateral swing, and serving also to yieldingly lock the supporting ring of a mail bag to said finger.

In witness whereof, I hereunto subscribe my name this 17th day of July, 1912.

BURTON W. MUDGE.

Witnesses:

THOMAS H. GARLAND,
CHARLES J. SCHMIDT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."