M. M. MILLER, G. S. STEINBERGER & W. H. HARGRAVES.

MAIL HANDLING APPARATUS.

APPLICATION FILED OCT. 30, 1909.

957,235.

Patented May 10, 1910.

4 SHEETS—SHEET 1.

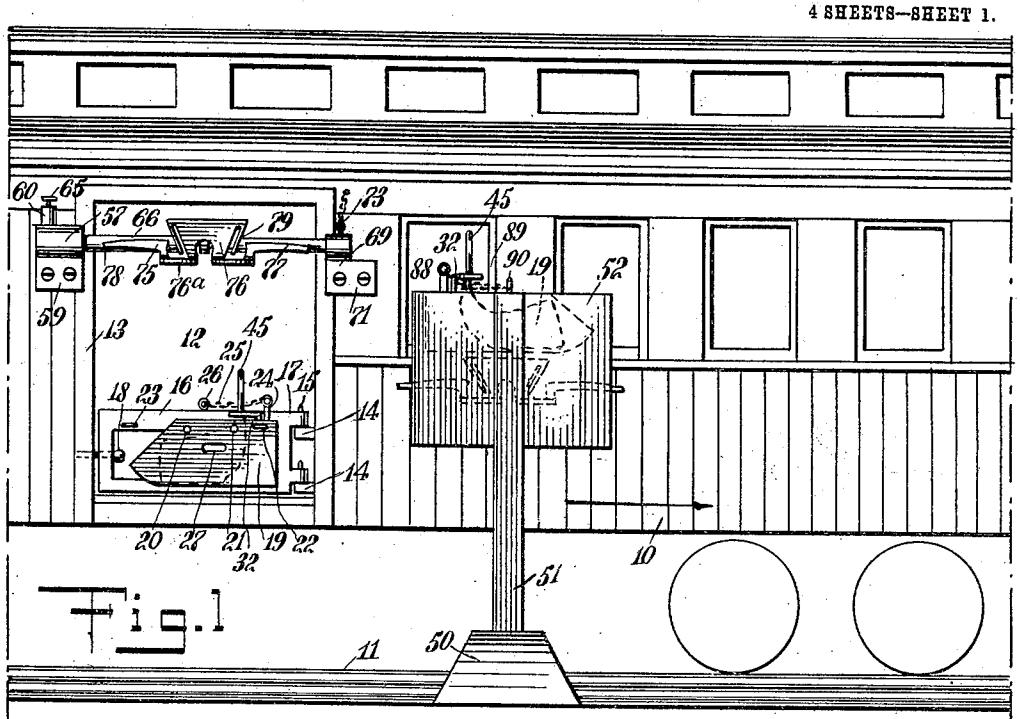

Fig. 1

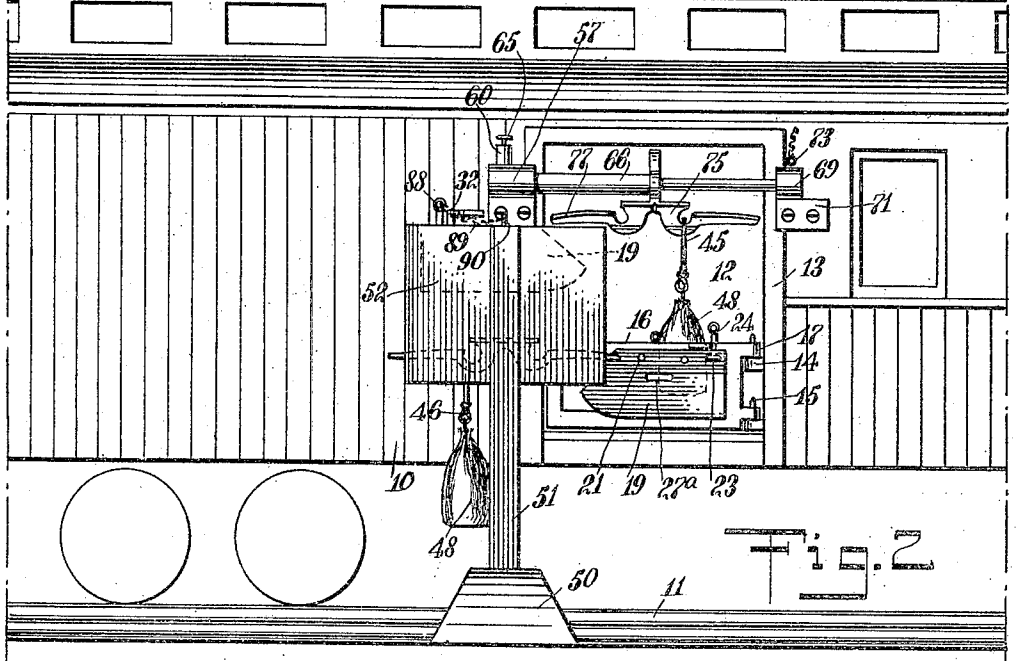

Fig. 2

WITNESSES

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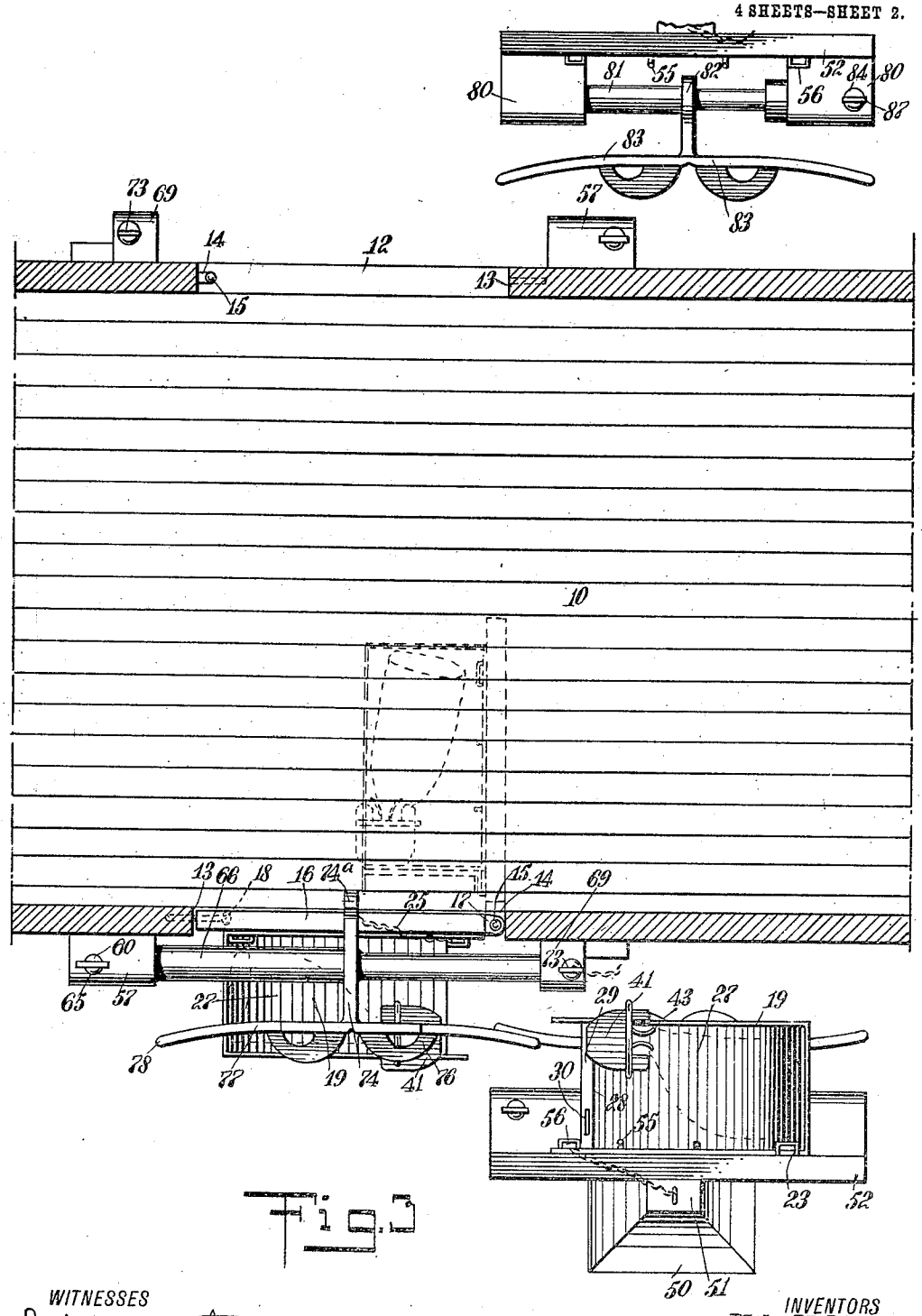

Fig. 1

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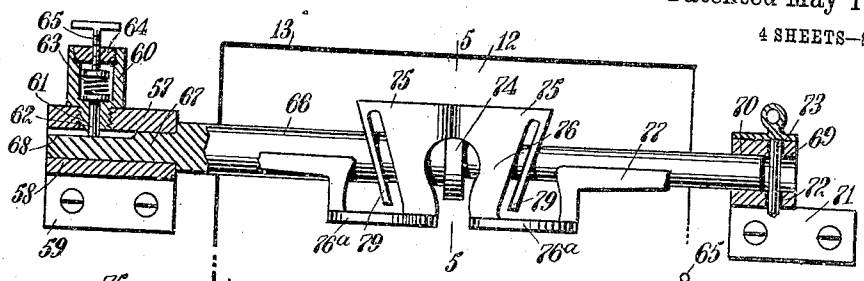

Fig. 4

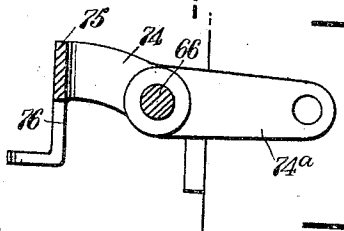

Fig. 5

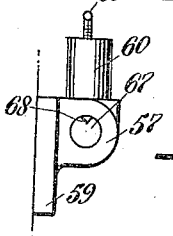

Fig. 6

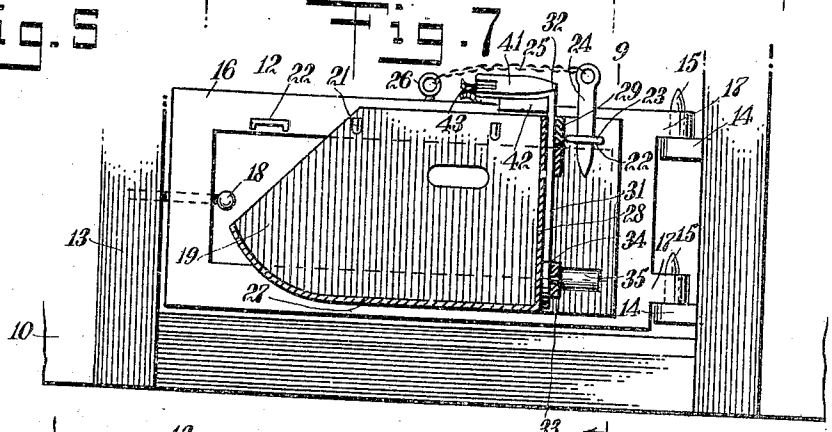

Fig. 7

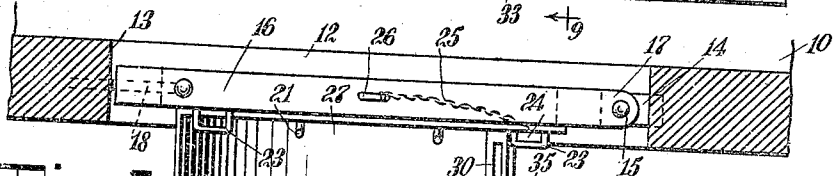

Fig. 8

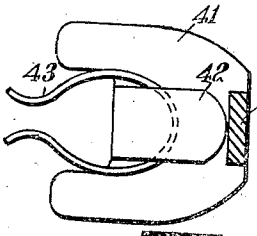

Fig. 10

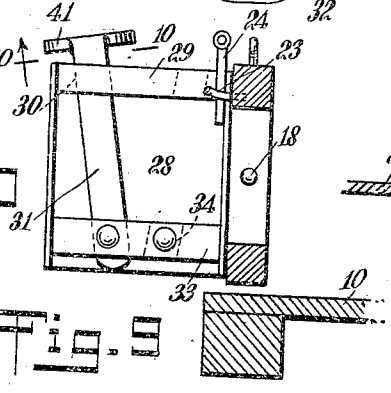

Fig. 9

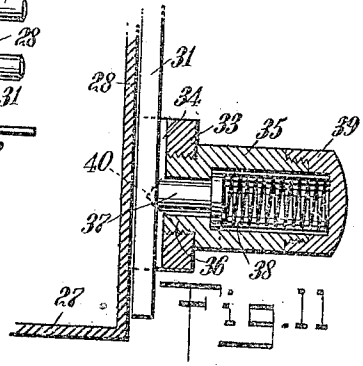

Fig. 11

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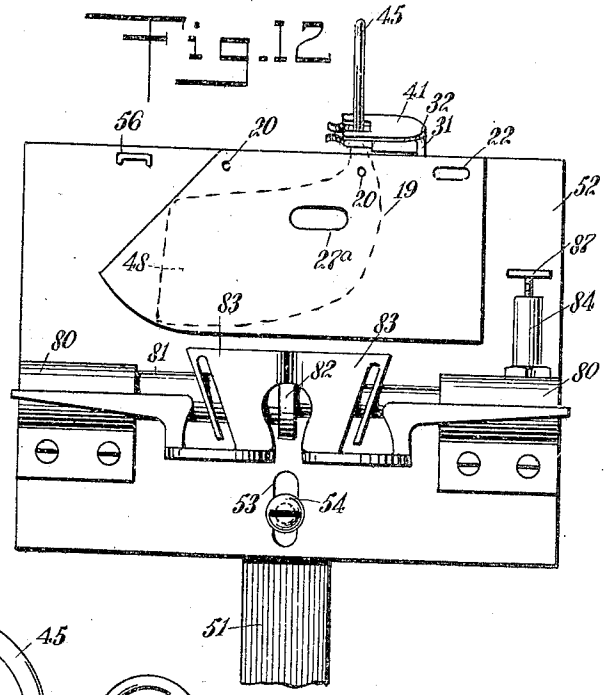
4 SHEETS—SHEET 4.

Fig. 12



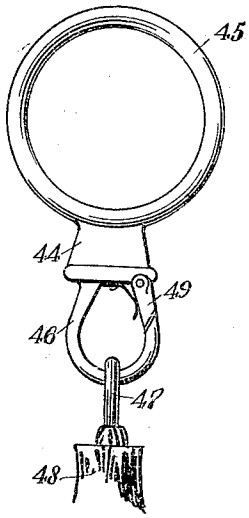


Fig. 14

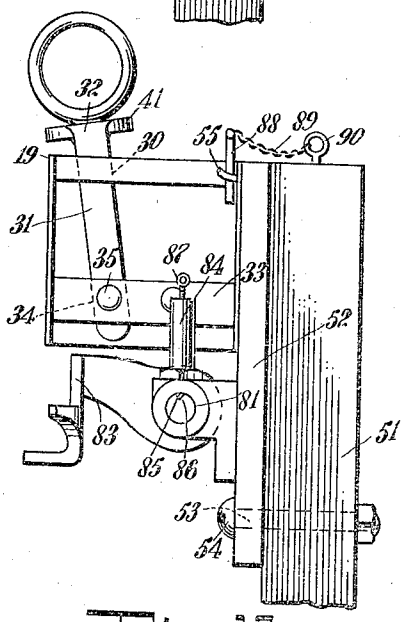


Fig. 13

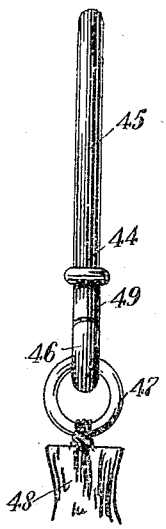


Fig. 15

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MAIL-HANDLING APPARATUS.

957,235. Specification of Letters Patent. Patented May 10, 1910.

Application filed October 30, 1909. Serial No. 525,574.

To all whom it may concern:

Be it known that we, MILO M. MILLER, GEORGE S. STEINBERGER, and WILLIAM H. HARGRAVES, citizens of the United States, and all residents of Allentown, in the county of Lehigh and State of Pennsylvania, have invented a new and Improved Mail-Handling Apparatus, of which the following is a full, clear, and exact description.

This invention relates to mail handling apparatus, and more particularly to apparatus of this class which is used with mail or other railroad cars for receiving and delivering mail bags and like packages, and which comprises reversible means for receiving and delivering the bags, the means being adapted to be removably associated with the car or with a support arranged adjacent to the track.

The object of the invention is to provide simple and efficient mail handling apparatus, by means of which mail bags can be delivered to and received from rapidly moving trains traveling in either direction along a railroad track, and by means of which mail bags are securely held in position after being received and delivered, so that there is no danger of the bags being drawn under the train and destroyed or injured thereby, the receiving device being provided with means for cushioning the engagement thereof with the mail bag.

A further object of the invention is to provide apparatus of the class described, the operation of which obviates excessive wear of the mail bags and the apparatus, in which both the receiving and the delivering devices are reversible so that they can be used at both sides of a car, and at both sides of the track, when the train is traveling in either direction, and in which the mechanism carried by the railroad car, or that arranged adjacent to the track, does not require manipulation while it is in the act of receiving or delivering.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is an elevation showing a mail car having an embodiment of our invention applied thereto, and traveling upon a track adjacent to which is located a further embodiment of our invention, the two devices being adapted to coöperate; Fig. 2 is a similar view showing certain of the parts in different positions; Fig. 3 is a horizontal section of part of the car, showing the receiving and delivering apparatus associated therewith, and illustrating in plan view, similar devices arranged adjacent to the track; Fig. 4 is a partial, longitudinal section of a form of the receiving device associated with a car; Fig. 5 is a transverse section on the line 5—5 of Fig. 4; Fig. 6 is an end view of the device shown in Fig. 4; Fig. 7 is a longitudinal section showing the delivering device associated with a car; Fig. 8 is a plan view of the device shown in Fig. 7; Fig. 9 is a transverse section on the line 9—9 of Fig. 7; Fig. 10 is an enlarged, transverse section on the line 10—10 of Fig. 9, showing a detail of the delivering mechanism; Fig. 11 is an enlarged, longitudinal section of a further detail of the delivering mechanism; Fig. 12 is an enlarged, front elevation of the upper part of the mechanism arranged adjacent to the car track; Fig. 13 is an end elevation of the device shown in Fig. 12; Fig. 14 is a front elevation of a ring used in connection with the mail bag, which facilitates the handling of the bag; and Fig. 15 is a side elevation of the ring shown in Fig. 14.

Before proceeding to a more detailed explanation of our invention, it should be clearly understood that the present form of the device constitutes an improvement over that shown in the United States Patent No. 902,986, issued to Milo M. Miller and George S. Steinberger, and dated November 3, 1908. As will appear more clearly hereinafter, certain of the constructive details have been materially altered to increase the efficiency of the apparatus as well as its flexibility in use, *i. e.*, to permit the various parts to be reversed at will and to be used at both sides of the track, and at both sides of the car. These improvements also tend to render the

delivery and receipt of the mail bags more certain, as well as to obviate still further, the wear and tear upon the bags and the apparatus, incident to the operation of the latter.

Referring more particularly to the drawings, we have shown for example, a mail car 10 of any suitable form, arranged to travel upon track rails 11. The car 10 has at each side a door-way 12 having a frame 13 of conventional type. Near the sill of the door, the frame has stubs 14 each carrying upwardly disposed hinge pins 15. A movable support 16 has extensions 17 provided with openings by means of which it is journaled upon the hinge pins 15, so that the support can swing, as is indicated most clearly in dotted lines in Fig. 3. The support is preferably centrally cut away for the purpose of decreasing the weight. A catch 18 of any suitable form serves to lock the swinging support, within the door-way. It will be understood that it can be lifted from the hinge pins and moved from one door-way to the other, each of which is provided with stubs 14 for the purpose. We employ with this form of the device a delivering cradle 19 similar to that shown in the above-mentioned patent but differing somewhat therefrom in form. The present cradle is substantially symmetrical so that it can be used at both sides of the car, and has in the side walls, openings 20 adapted to receive upwardly curved supporting hooks 21 of the support 16. The cradle has furthermore, in the side walls thereof, slots 22 through which are adapted to project U-shaped members or staples 23 of the support, into which can be inserted locking pins 24, each flexibly associated by means of a chain 25 or the like, with an eye 26 of the support, as is shown most clearly in Fig. 7. In this way, the cradles can be secured against accidental displacement. The support 16 has two of the staples or U-shaped members 23, so that the cradles can be reversed, the hooks 21 being so located with respect to the members 22 that this reversal is possible. We prefer to provide furthermore, in the side walls of the cradles, openings 27^a to permit a hand to be inserted through the side wall of the cradle to adjust the mail bag, or for other like purposes. Each cradle is open at the rear, and has the bottom or floor 27 upwardly curved. The front wall 28 which is substantially perpendicular to the floor, and in a normal position of the cradle is vertical, is spaced inwardly from the front edges of the side walls, and has near the upper edge a bar 29 provided with openings 30 adapted to receive the shank or stem 31 of a mail bag holding device 32. Near the bottom, the front wall 28 has a transverse socket base 33, having openings 34 adapted to receive the lower end of the shank 31, so that the bag-holding device is securely positioned.

At each of the openings 34 the socket base carries a barrel 35, having a threaded portion 36 positioned in a suitably threaded opening of the base. A stud 37 is movably located in the barrel and projects into the opening 34, being normally projected into the opening through the agency of a spring 38, held in place by means of a cap 39 carried by the barrel. The shank of the bag-holding device is preferably provided with a suitable recess or groove 40, into which the pointed end of the stud 37 can slip to lock the shank resiliently against casual displacement.

At the upper end, the bag-holding device has a laterally disposed head 41, which is bifurcated and has positioned thereunder a block 42. By the block are carried the ends of mutually inclined spring arms 43, the free extremities of which are outwardly disposed, and which serve to hold therebetween the neck 44 of a ring 45 used in connection with mail bags, and having a catch 46 adapted to receive and removably hold the eye 47 of a mail bag 48. The catch 46 may be of any suitable form, and as shown for example, in Figs. 14 and 15, may have a spring-pressed tongue 49. The ring 45, as will appear more clearly hereinafter, is employed to receive the mail bag catching arm of the apparatus.

We can employ in connection with our invention, any suitable form of support for positioning the necessary parts of the apparatus adjacent to the railway track. As shown for example, this support may consist of a suitable base 50 preferably adjustable toward and away from the track and carrying an upright or post 51 upon which is mounted a support 52 corresponding to the support 16 and preferably vertically adjustable, owing to the provision of slots 53 which receive holding bolts 54. The support 52 has hooks 55 corresponding to the hooks 21, and staples or U-shaped members 56 corresponding to the members 23. A cradle 19 is used in connection with the support 52 and is in every particular similar to the cradle 19 used in connection with the railroad car, so that these parts are interchangeable.

The railroad car, at one side of each door-way, has a socket member 57 provided with a transverse bore 58 and having a flange 59 by means of which it is screwed or bolted to the door frame. A barrel 60 having a threaded nick 61, is mounted by means of the latter at a correspondingly threaded opening of the socket, and has therein a stud 62 normally projected toward the bore by means of a spring 63. The barrel has a cap 64 holding a threaded spring-adjusting member 65 formed so that it can be conven-

iently manipulated. A rod 66 has a reduced part 67 movably received by the bore and provided with a longitudinal groove 68 adapted to receive the end of the stud 62, so that it is resiliently held against rotation.

At the opposite side of each door-way is mounted a support 69, having a bore 70 adapted to receive the end of the rod 66 opposite that which is reduced in thickness. The support has a flange or extension 71, bolted or otherwise fastened to the door frame. The support has transverse openings 72, adapted to receive a locking pin 73, which holds the rod 66 against longitudinal movement in one direction. It will be understood that owing to the provision of the reduced part 67, the rod is held against longitudinal movement in the opposite direction. Intermediate its ends the rod 66 has a lateral extension 74, preferably integral therewith and carrying likewise, preferably integral, oppositely extending arms 75. These consist of downwardly disposed parts 76, outwardly curved and laterally disposed parts 76ª, and upwardly offset extensions 77, the extremities 78 of which are preferably outwardly curved. Each arm further, has at the part 76, a resilient buffer member 79 for a purpose which will appear more clearly hereinafter.

Mounted upon each of the supports 52 are spaced sockets 80, each receiving the end of a rotatable rod 81 having an extension 82 and carrying arms 83 exactly similar to the arms 75. One of the sockets 80 has a barrel 84 in which is a resiliently controlled stud 85 projecting into a suitable groove 86 of the rod 81 and controlled by a manually adjustable member 87. Each support has associated therewith a locking pin 88 corresponding to the pin 24 and secured by means of a chain 89 to an eye 90 of the support, and serving to lock the delivering cradle in position.

The operation of the device is as follows: When a mail bag is to be delivered from a train or to the same, it is placed in the cradle with the neck positioned between the resilient arms 43 and projecting upwardly above the head 41 of the bag-holding device, and with its ring at substantially right angles to the direction of movement of the train. The receiving device is so positioned that its arms extend outwardly, the rod being held in position by the resiliently-controlled stud. When the train passes the stationary apparatus, the forward arm passes through the ring and the latter is brought into engagement with the buffer of the arm and remains upon the arm. The shock incident to the engagement of the parts is largely absorbed by the buffer of the arm, and the ring assumes a position upon the part 76ª, the bag hanging from the arm. The shock of engagement, together with the weight of the bag, swings the rod downward so that the arms are underneath the same, in the position indicated in Fig. 2. The bag can subsequently be removed in any suitable manner from the receiving arm. Needless to say the arrangement of the parts depends upon the direction of travel, and whether the bag is being transferred to a car or from the same, both operations being possible simultaneously.

It will be understood that owing to the provision of the swinging support 16, the mail bag can be arranged in the cradle thereof when the same is located within the car, as indicated in dotted outline in Fig. 3. After the bag is suitably placed within the cradle, the support is swung outwardly into its operative position and is secured in place by means of the rod 18. It will be understood that each rod 66 can be removed by withdrawing the locking pin 73 and sliding the rod in the direction of its length until the reduced part 67 is free of the socket 57. In this way the rod 66 can be moved from one side of the car to the other as the exigencies of the service demand.

A suitable implement can be provided for removing the mail bags from the catching arms mounted upon the car to facilitate the removal of the bags into the car. We prefer to provide the part 74 rigid with the rod 66, with an extension 74ª projecting inwardly toward the car and serving as a handle by means of which the catching arms can be set.

Having thus described our invention, we claim as new, and desire to secure by Letters Patent:—

1. In apparatus of the class described, a mail-bag receiving arm having an offset part adapted to receive and hold an annular member associated with the mail-bag, and provided at said offset part with a resilient member adapted to be engaged directly by said annular member.

2. In apparatus of the class described, an adjustable rod having a mail-bag catching arm, said arm having an elongated, substantially straight part, a curved part, and beyond the same a laterally disposed part secured to said rod, whereby said arm is offset from said rod, said arm having associated therewith at said offset part a resilient member constituting a buffer.

3. In apparatus of the class described, a rod having an extension, and oppositely extending mail-bag catching arms carried by said extension, each of said arms consisting of a downwardly disposed part, a lateral, outwardly curved part, and an upwardly offset, substantially straight part, said first part having a resilient extension extending toward said second part and constituting a buffer.

4. In apparatus of the class described, a member adapted to be mounted upon a rail-

road car and having a mail-bag catching arm, said arm being rotatable, and movable in the direction of its length, and means for resiliently holding said member against rotation.

5. In apparatus of the class described, a member adapted to be mounted upon a railroad car and having a mail-bag catching arm, said arm being rotatable, and movable in the direction of its length, means for resiliently holding said member against rotation, and means for locking said member against movement in the direction of its length.

6. In apparatus of the class described, a mail-bag receiving member movable in the direction of its length and rotatable, means for locking said member against longitudinal movement, and resilient means for holding said member against rotation, said resilient means being adjustable.

7. In apparatus of the class described, a socket having a bore, a rod having a part slidably and rotatably mounted in said bore, a support for said arm, whereby said arm is free to slide and to rotate, means for locking said arm against movement in the direction of its length, a mail-bag catching arm associated with said rod, and a resiliently controlled stud associated with said socket and tending to hold said rod against rotation.

8. In apparatus of the class described, a socket having a bore, a rod having a part slidably and rotatably mounted in said bore, a support for said arm, whereby said arm is free to slide and to rotate, means for locking said arm against movement in the direction of its length, a mail-bag catching arm associated with said rod, a resiliently controlled stud associated with said socket and tending to hold said rod against rotation, and means for adjusting said stud, said arm being laterally offset from said rod, whereby a weight imposed upon said arm tends to rotate said rod.

9. In apparatus of the class described, a socket having a bore, a rod having a reduced part rotatable and slidable within said bore, a support having a bore rotatably and slidably receiving the end of said rod remote from said socket, a barrel carried by said socket, a stud movable within said barrel and projecting into said bore, said reduced part of said rod having a recess adapted to be engaged by said stud, a spring within said barrel engaging said stud, an adjusting member controlling said spring, a laterally offset mail-bag catching arm carried by said rod, and a locking pin associated with said support and adapted to hold said rod against movement in the direction of its length.

10. In apparatus of the class described, a swinging support adapted to be mounted at a door-way of a railroad car and in a normal position in the plane of the doorway, and a reversible cradle removably associated with said support and adapted to receive and hold a mail bag for delivery.

11. In apparatus of the class described, a swinging support adapted to be removably mounted in the door-way of a railroad car, a reversible cradle removably mounted upon said support and adapted to receive a mail-bag, and means adjustably carried by said cradle, for holding the mail-bag in suitable position for operative engagement with a mail-bag catching arm.

12. The combination, with a railroad car having a door-way, of a movable support, means for removably mounting said support in said door-way, whereby said support can swing, means for locking said support in position within said door-way, and a reversible cradle removably carried by said support and adapted to receive and hold a mail-bag for delivery.

13. In apparatus of the class described, a symmetrical cradle having means at both sides for removably mounting it upon a support, and removable means carried by said cradle for holding a mail-bag in position for delivery, said last-mentioned means being adapted to be positioned at each side of said cradle.

14. In apparatus of the class described, a symmetrical cradle having means at both sides for removably and reversibly positioning it upon a support, said cradle being formed to carry a mail-bag, and a mail-bag holding member removably associated with said cradle, said cradle having means for removably and resiliently locking said member in position at both sides of said cradle.

15. In apparatus of the class described, a symmetrical cradle having means at both sides thereof for reversibly and removably securing it upon a support, a cross bar carried by said cradle and provided with openings, a socket base carried by said cradle and having openings, and a mail-bag holding device having means for resiliently engaging the mail-bag and provided with a shank adapted to be removably positioned in said openings, said cradle having means for resiliently engaging said shank to lock the same in place.

16. In apparatus of the class described, a symmetrical cradle having side walls and a front wall, said side walls having means whereby said cradle can be reversibly and removably mounted upon a suitable support, said front wall having a cross-bar near the upper edge, provided with a plurality of openings, said front wall further having near the lower edge thereof a socket base provided with a plurality of openings, and a mail-bag holding member having means for resiliently engaging and holding the mail-bag, and provided with a shank adapted to be positioned in said openings

of said cross-bar and said socket base, said socket base having at each of said openings a barrel, and a resiliently-projected stud in said barrel and adapted to engage said shank to hold the same in place.

17. The combination, with a support having a hook and a staple, of a cradle having openings adapted to receive respectively, said hook and said staple, and a locking member adapted to be positioned in said staple to secure said cradle in place.

18. The combination, with a support having a hook member and a plurality of staples, of a cradle having a wall provided with openings adapted to receive respectively, said hook member and either of said staples, whereby said cradle can be reversibly mounted upon said support, said support being provided with a locking member adapted to be inserted in each of said staples to lock said cradle in place.

19. The combination, with a support having a hook member and a plurality of staples, of a cradle having a wall provided with openings adapted to receive respectively, said hook member and either of said staples, whereby said cradle can be reversibly mounted upon said support, said support being provided with a locking member adapted to be inserted in each of said staples to lock said cradle in place, said cradle having an opening in the wall thereof to permit a hand to be inserted into said cradle, and being further provided with means for removably holding a mail-bag therein.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

MILO MONROE MILLER.
GEORGE SOLOMON STEINBERGER.
WILLIAM H. HARGRAVES.

Witnesses:
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ALBERT MOYER.