H. F. HANSMANN.

MAIL BAG HANDLING APPARATUS.

APPLICATION FILED NOV. 12, 1912.

1,063,435.

Patented June 3, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

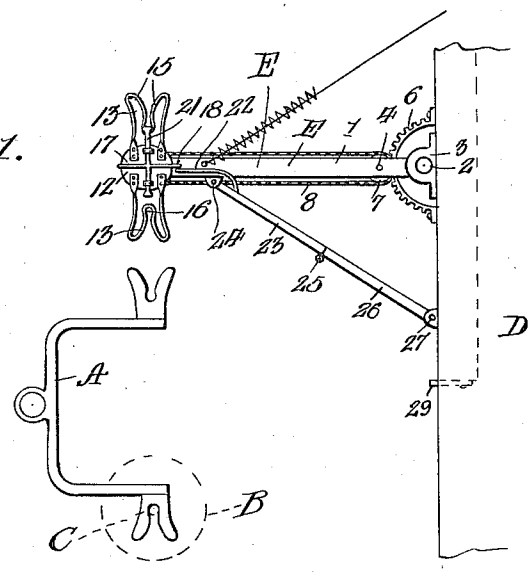
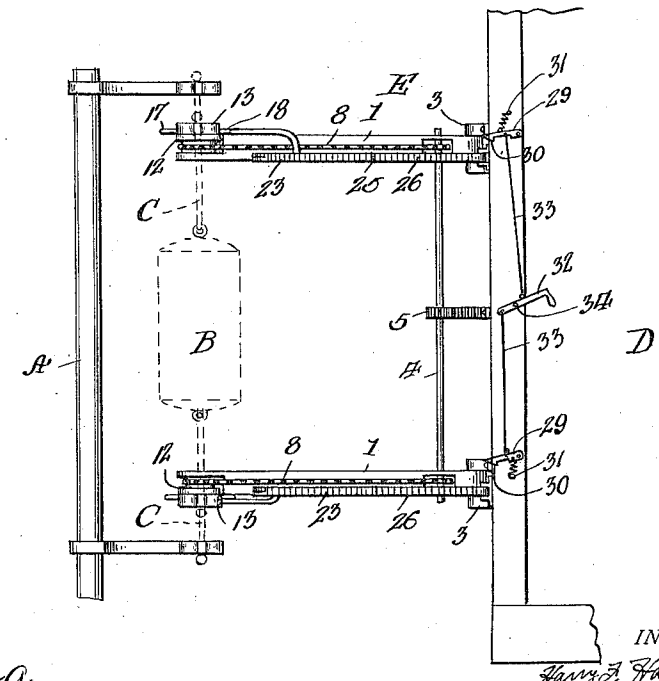


Fig. 2.



WITNESSES

G. M. Spring.

INVENTOR

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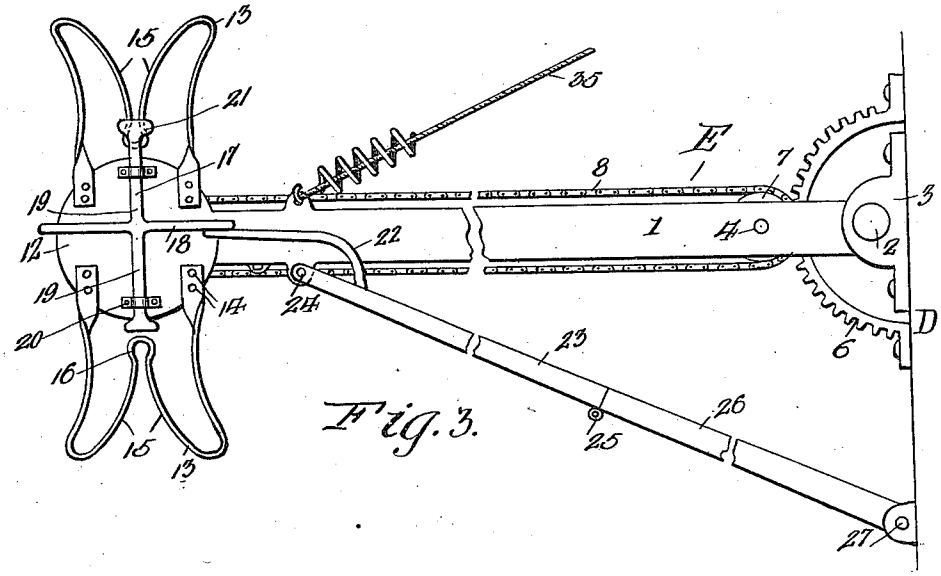

Fig. 3.

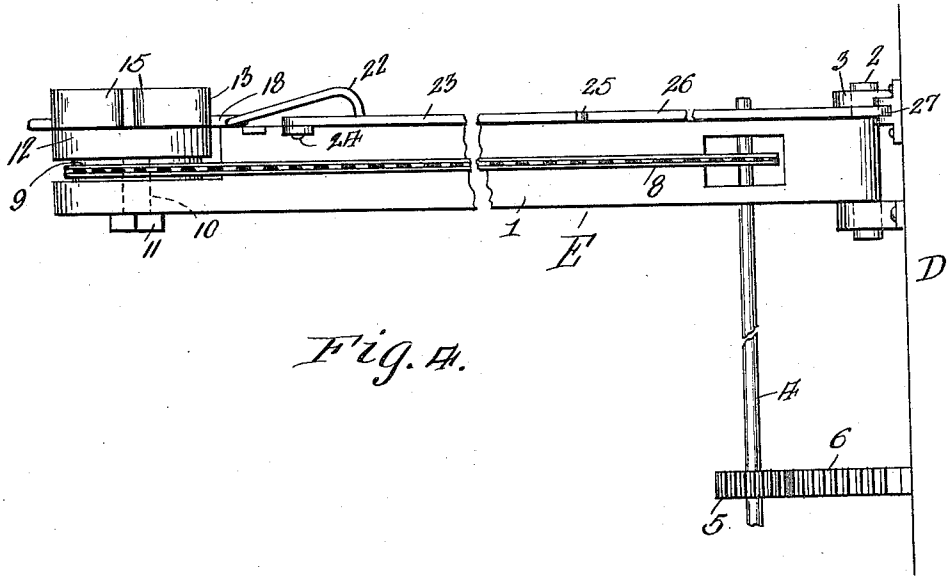

Fig. 4.

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UNITED STATES PATENT OFFICE.

HARRY F. HANSMANN, OF THORPE, WISCONSIN.

MAIL-BAG-HANDLING APPARATUS.

1,063,435. Specification of Letters Patent. Patented June 3, 1913.

Application filed November 12, 1912. Serial No. 730,845.

To all whom it may concern:

Be it known that I, HARRY F. HANSMANN, a citizen of the United States, residing at Thorpe, in the county of Clark and State of Wisconsin, have invented new and useful Improvements in Mail-Bag-Handling Apparatus, of which the following is a specification.

My invention relates to a mail-bag catching and delivering apparatus.

One object of my invention is to provide apparatus of this kind which will catch the mail-bags without undue shock and injury to the bags or parts attached thereto.

Another object of the invention is to provide suitable means for delivering the mail-bags to a car door or the equivalent, and means to automatically engage and maintain the parts in caught position until released by manually operated means.

Still another object is to provide in connection with such apparatus, arms which will fold during delivering movement of the apparatus, and means to initially start the folding of the arms upon the catching of the mail-bag.

A further object of the invention is to provide yielding means to directly engage a mail-bag or attached part thereof, which acts against a movable spider which in turn is cushioned by suitable yielding means.

Further objects of the invention will appear from the description following hereinafter taken in connection with drawings accompanying this application, wherein:—

Figure 1 is a plan view of the apparatus showing the same connected to the side of a car, and also showing means for holding a mail-bag to be caught; Fig. 2 is a side elevation of the same parts as Fig. 1; the car being shown in cross section at the doorway thereof; Fig. 3 is an enlarged plan view of the catching means, and; Fig. 4 is an enlarged side elevation of one of the crane arms and connected parts.

In the drawings, like reference characters designate like or similar parts throughout the several views.

Referring specifically to the drawings, A designates any suitable support for a mail-bag B which is usually stationed along a railway track, as at a railway station. The mail-bag as is usual, is connected to a movable support by upper and lower rods, links or cords, designated C.

D designates a car and E designates the improved mail catching and delivering apparatus.

Describing the mail-bag catching and delivering apparatus, 1 designates upper and lower crane arms which are pivoted as at 2 to suitable brackets 3 fastened to the side of a car. Rotatably mounted in the arms 1 is a vertical shaft 4 provided with a pinion 5 substantially midway thereof. The teeth of pinion 5 mesh with the teeth of a gear or toothed segmental rack 6 fastened upon the side of the car D. Suitable recesses are provided in the arms 1 and therein work sprocket wheels 7, keyed or otherwise fastened to the shaft 4. Over the sprocket wheels 7 pass sprocket chains 8 which in turn engage a sprocket wheel 9, pivoted upon the arms 1 as by means of a bolt or stud 10, receiving a nut 11 beyond one face thereof. The sprocket wheel 9 is preferably rigidly fastened to a plate 12. Upon the plate 12 and on opposite sides thereof extending substantially parallel with the car, are provided gripping or grasping devices 13 for the mail-bags, or more specifically the rods C thereof. Said devices 13 comprise a single strap of spring metal which is fastened at its ends at 14 directly to the plate 12, and bent intermediate its ends to provide the curved arms 15 which are deflected from a socket portion 16 from which they extend. Upon plate 12 slides a spider member 17 having arms 18 and 19 at right angles to each other, the latter of said arms sliding through brackets 20 on plate 12, and at their extremities provided with bumper sockets 21. Arm 18 is arranged in the path of an arm 22 provided on a link 23 pivoted at 24 to arms 1, and hinged or pivoted at 25 to a similar link 26. In turn the link 26 is pivoted to a bracket at 27 provided on the side of a car. To the arms 1 are connected coil springs 28 which are also connected to the car and exert tension in a direction to maintain the links 23 and 26 extended, as best seen in Figs. 1 and 3.

The arms 1 are to swing toward the doorway of a car, as will be more fully set forth hereinafter, and to maintain the arms latched or caught at said doorway to facilitate the removal of said bags, suitable means preferably as follows, is provided: Latches designated 29 are pivoted at the doorway of the car, one latch for each arm 1. The latches are provided with an inclined face

at 30 and beyond the same with a socket or opening as shown. Springs 31 fastened to the latches and to the car, are provided to hold the latches in operative relation to the arms. To the car at the doorway thereof, intermediate the latches 29, is pivoted a manually operable lever 32. To this lever 32 is connected cords or wires 33, in turn connected to the latches 29. It is to be noted that the pivot of lever 32, which may be designated 34, is intermediate the connections of the cords 33 thereto, so that by actuation of a single lever, both latches may be raised or disengaged from both arms.

To the arms 1 are connected cords 35, which preferably extend interior of the springs 28. These cords lead to the interior of the car and are pulled to return the arms 1 to extended position, should the same fail to operate, as in cases when the wind is too strong.

In operation, when a mail-bag is to be caught, the parts are in the position shown in the drawings, the arms 1 extending at right angles to the car as is obvious. The mail-bag to be caught is supported in the path of the grasping devices 13, the rods or the like C of the mail-bags adapted to be caught intermediate the arms 13 and by the socket 16, which being of spring metal frictionally grips the same. The shock incidental to the catching of the bag is taken up as follows: The grasping devices, being of spring metal, the same will spring toward the plate 12 and engage in the adjacent socket 21 of the spider, sliding the same and bringing the other socket 21 into yielding engagement with the arms 13 of the adjacent grasping device. Simultaneously with the grasping of the mail-bag, the arm 22 of link 23 is engaged by the arm 18, which moves said link at its hinge, relatively to the link 26 and starts the folding of links 23 and 26. The shock incidental to the catching of a mail-bag is sufficient to throw or swing the arms 1 to the doorway of the car, where the same are automatically caught and latched by the latches 29. During such movement the arms engage the inclined faces 30 of the latches, raising the latches and the springs 31 after the arm has passed the inclined faces, forcing the latches downwardly so that their sockets or openings effectively engage the arms 1. During the inward swinging movement of the arms 1, through the medium of the pinion 5 and gear 6, the shaft 4 is rotated, which through the medium of sprocket wheels 7 and 9 and chains 8, rotate to some extent the plate 12 so that said plate 12 may be swung to bring the mail-bag into a better position to be detached or removed from the grasping devices 13. To return the parts to normal position; this is effected through the action of spring 28 after adjustment of lever 32 to disengage the latches therefrom. As stated, in cases where the wind is too strong to prevent the return of the arms through the medium of the spring 28, the cords 35 may be actuated to effect resetting or extending of arms 1.

By reason of the provision of the opposite grasping devices 13, either device may be used to engage or catch a mail-bag. It is to be noted that when one of such devices is used to catch a mail-bag, that the other is used as a yielding bumper for the spider 17. It is also to be noted that the link 23 and spring 28 are connected to similar lugs on opposite sides of the arms 1. Thus, if desired, the spring and link connections may be fastened on opposite sides of the arms 1, as would be necessary were the device operating from the opposite side of the car door to that shown.

As merely the preferred embodiment of my invention has been illustrated and described, and as changes in the details of construction may suggest themselves, such changes are reserved providing they fall within the spirit and scope of the appended claims.

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

1. In apparatus of the class described, in combination with a doorway, a swinging object-delivering arm mounted to swing toward said doorway in a substantially horizontal plane, means to maintain said arm projected, and means adjacent said doorway to automatically engage said arm during swinging movement toward the doorway from projected position and hold said arm caught.

2. In apparatus of the class described, in combination with a doorway, an object-delivering arm, latch means automatically operable upon movement of said arm, spring means exerting pressure to normally maintain said arm projected and said arm and latch means disengaged.

3. In apparatus of the class described, in combination with a doorway, an object-delivering arm, links pivoted to each other, one pivoted to said arm and the other pivoted adjacent said doorway, and means connected to said arm and exerting pressure to maintain said links extended, limiting the swinging movement of said arm.

4. In apparatus of the class described, in combination with a doorway, a plurality of object-delivering arms mounted to swing toward said doorway, separate means to latch said arms fastened adjacent said doorway, and a single operating member for said latter means.

5. In apparatus of the class described, in combination with a doorway, an object-delivering arm mounted to swing toward said

doorway, object-catching means on said arm, and means to rotate said catching means as the arm swings toward said doorway.

6. In apparatus of the class described, a swinging object-delivering arm, a turnable plate mounted on said arm, an object grasping device supported from said plate and means to turn said plate on said arm upon the swinging of said arm.

7. In apparatus of the class described, an object-delivering arm, a sprocket wheel on said arm operable through movement of the arm, a chain movable over said sprocket wheel, a second sprocket wheel mounted on said arm engaged by said chain, a plate fastened to said sprocket wheel, and an object engaging device on said plate.

8. In apparatus of the class described, in combination with an object-delivering arm pivoted thereto, a shaft mounted on said arm, a gear on said shaft, a second gear on said shaft in mesh with said gear, a sprocket wheel on said shaft, a second sprocket wheel on said arm, a chain passing over said sprocket wheels, a plate fastened to said second sprocket wheel, and object-catching means on said plate.

9. In apparatus of the class described, a plurality of article-engaging members of yieldable material, and a slidable member mounted intermediate said members and engagable directly with either of them for the purpose specified, said members thus serving as means of engaging an article and as cushions.

10. In apparatus of the class described, an article clasp member of yieldable material, and bumper means for said member separate therefrom.

11. In apparatus of the class described, a catching member of yieldable material, a slidable member separate therefrom engaged thereby, and spring bumper means for said sliding member.

12. In apparatus of the class described, a plate, a slidable member thereon, spring bumper means therefor, and a yieldable catching member movable against said slidable member.

13. In apparatus of the class described, a swinging article-delivering arm, foldable links, one pivoted on said arm, a second arm on one of said links, and means to engage said arm to start the folding of said links, operable through the movement of a caught mail-bag.

14. In apparatus of the class described, a swinging article-delivering arm, foldable links pivoted to each other and one to said arm, a second arm on one of said links, a slidable spider on said arm having an arm in the path of said arm of the link, spring cushioning means for said spider, article catching means, said article catching means operable through the catching of a mail-bag to engage and operate said spider.

15. In apparatus of the class described, in combination with a support and doorway, a swinging arm pivoted to said support, a shaft mounted on said arm, a gear on said shaft, a gear on said support in mesh with said gear, a sprocket wheel on said shaft, a second sprocket wheel on said arm, a chain passing over said sprocket wheels, a plate on said second sprocket wheel, a yieldable object-catching device on said plate, a slidable spider on said plate operable by said catching device, yieldable bumper means for said spider, a spring for said arm, links pivoted to each other, one pivoted to the arm and the other to the support, one of said links having an arm, and said spider having an arm in the path of movement of said link.

HARRY F. HANSMANN.

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