

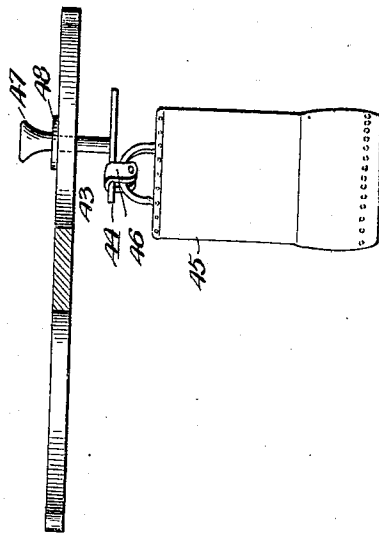
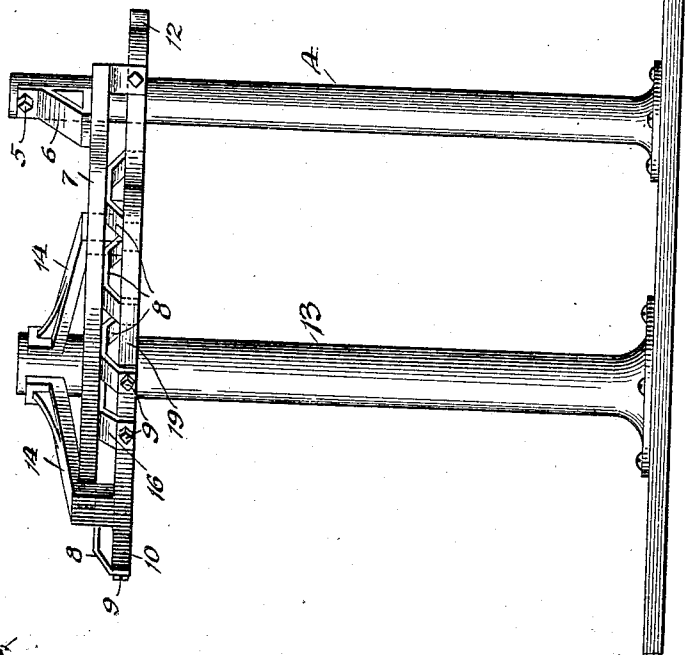
A. E. KAILER.  
MAIL BAG DELIVERY APPARATUS.  
APPLICATION FILED OCT. 14, 1907.

898,655.

Patented Sept. 15, 1908.

2 SHEETS—SHEET 1.

Fig 1.



Witnesses  
Ray White  
Harry R. White

Arthur E. Kailer  
By J. G. Elliott

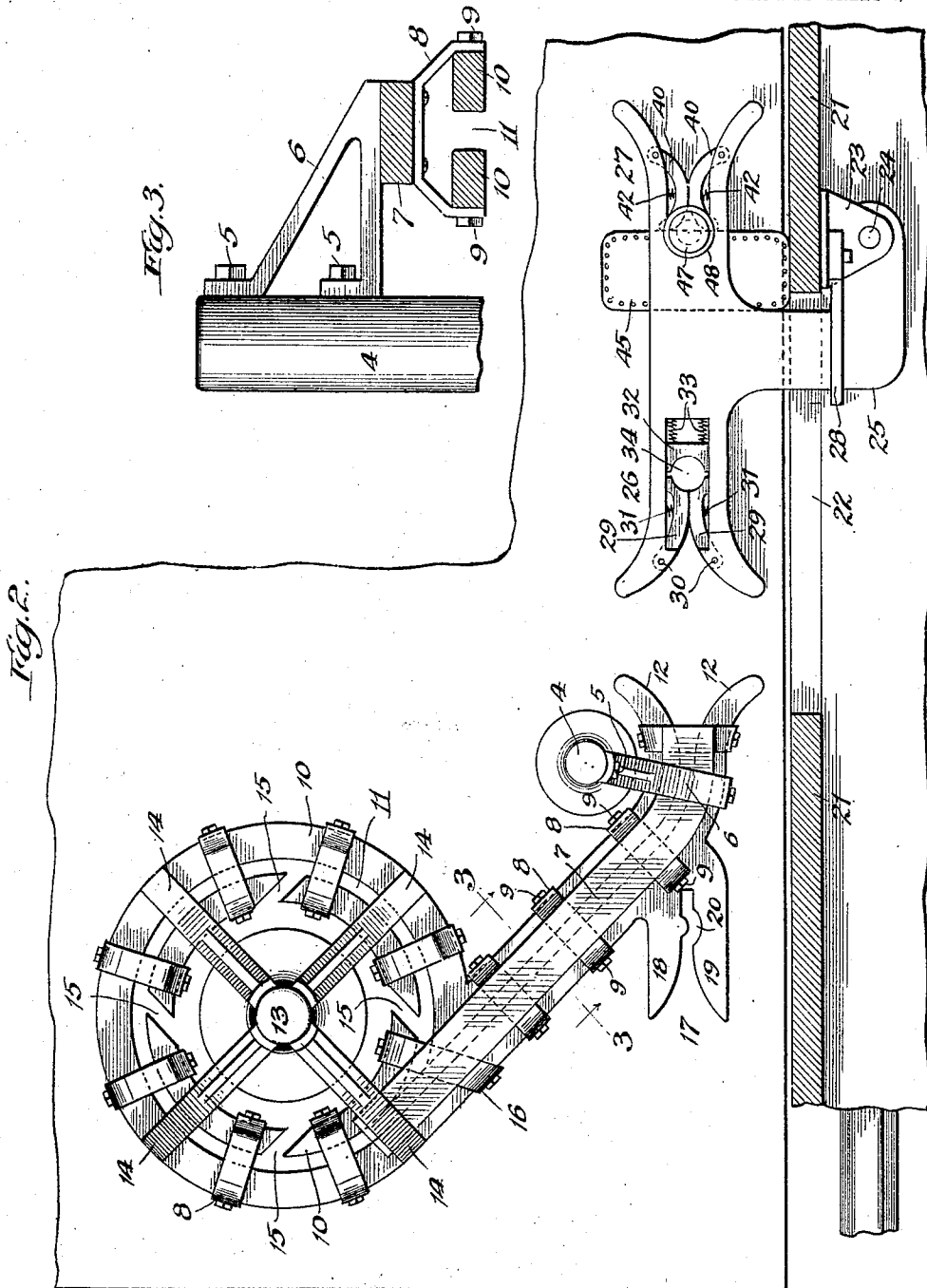
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2 SHEETS—SHEET 2.



Witnesses  
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# UNITED STATES PATENT OFFICE.

ARTHUR E. KAILER, OF NAPERVILLE, ILLINOIS, ASSIGNOR OF ONE-HALF TO MATTHEW C. MORLOCK, OF CHICAGO, ILLINOIS.

## MAIL-BAG-DELIVERY APPARATUS.

No. 898,655.

Specification of Letters Patent.

Patented Sept. 15, 1908.

Application filed October 14, 1907. Serial No. 397,254.

*To all whom it may concern:*

Be it known that I, ARTHUR E. KAILER, citizen of the United States, and resident of Naperville, in the county of Dupage and State of Illinois, have invented certain new and useful Improvements in Mail-Bag-Delivery Apparatus, of which the following is a full, clear and exact specification.

My invention relates to improvements in mail-bag delivery apparatus and particularly to the station portion thereof for receiving a mail bag discharged from a passing mail car.

Prior to my invention, separately supported station-receiving and discharging structures have been commonly and now are employed for the mail bags, and which are so constructed and arranged that there is a substantial interval between the delivery of a bag thereto and discharge therefrom, and that the mail bag is so constructed that there is more or less liability from the outward swinging of the lower end of the bag to strike the passing train and its occupants, and that before the bag is brought to a standstill following the great velocity with which it is delivered from a moving train and its resulting momentum that its contents are frequently injured by impact, for which before my invention no ample or adequate provision has been made and which is not entirely satisfactorily present, wherein in these prior structures the receiving device is mounted upon a rotating post and in delivery, when the receiving device is mounted upon a vibrating post, subjecting the mail bag to violent and repeated jerks before bringing it to a standstill and which is seriously objectionable when the delivered mail bag is very heavy and its momentum correspondingly great.

The prime object of my invention is a station mail-bag receiving device, so constructed and arranged that the velocity of a mail bag delivered thereto, however great that velocity may be when discharged from a mail car, shall be uniformly and gradually reduced to nothing without any liability to injure the contents of the bag, however great its momentum may be, from the time it is delivered at the station until it is brought to a standstill and in a convenient position for its removal manually by the station agent or other attendant, and at the same time have the receiving apparatus not only simple and

convenient of construction but occupying the least possible space consistent with the conducting of the mail bag directly away from the passing train to such a point that the mail bag may not possibly come in contact with the passing train or its occupants for a single instant after its delivery thereto from such moving train.

A further object of my invention is to combine in a single structure with the station mail-bag receiving device, supported by a single post common to both, a simple and effective means for delivering a mail bag to a passing mail car at substantially the same instant that a mail bag is delivered from the car thereto and at the same time to have the discharging device so constructed, arranged and supported, that the mail bag, suspended therefrom for delivery to the car, may not be accidentally discharged therefrom by wind pressure from the train or otherwise, and this without any obstruction to a free delivery of the mail bag therefrom to the mail-car cranes commonly employed therefor.

With these ends in view, my invention consists in certain features of novelty in the construction, combination, and arrangement of parts, by which the said objects and certain other objects hereinafter appearing are attained, all as fully described with reference to the accompanying drawings, and more particularly pointed out in the claims.

In said drawings: Figure 1 illustrates a side elevation of a station-receiving apparatus and in operative position relative thereto, the receiving and discharging arms of a car-crane with the shank thereof in cross section, and a mail bag suspended therefrom in its operative position to be received by the station-receiving structure. Fig. 2, a top plan view of a station-receiving device embodying my invention, and of a new form of car-crane not of my invention, projecting in its operative position beyond the side of a mail car (shown in detail section) but which for the purposes of my invention may be any form of crane now or heretofore ordinarily used; and Fig. 3, a cross section on the line 3—3 of Fig. 2, with the post adjacent to the moving train broken off at a point just below the device for which it is a support.

Similar characters of reference indicate the same parts in the several figures of the drawing.

4 indicates a post, to which is secured, by bolts 5—5 or any suitable means, an arm 6 projecting in a direction towards a moving railway train, which arm may be of any ordinary form for securing to the underside thereof, towards its outer end, a beam 7 or other suitable device, to which may be secured and from which may be suspended a bracket 8 to the lower ends of the depending arms of which, by bolts 9—9 or other suitable means, are secured rails 10—10 separated from each other at their inner end and forming a trackway 11 for a coupling, hereinafter described, by means of which a mail bag is suspended therefrom. At their free and open end the rails 10—10 are preferably curved outwardly from each other, as indicated in Fig. 3 at 12—12, thereby forming a guideway of substantial width at its outer end for directing the mail-bag coupling between its supporting tracks, when for any reason, as for example when the side oscillations of the train would otherwise prevent the delivery of the mail-bag coupling to a supported position between and by the trackway formed by the rails 10—10. The beam 7 from a point near the receiving end of the trackway extends in an oblique direction away from the train towards a post 13, around which it is extended in circular form and supported from the post by means of any desired number of radial arms, 14, of any ordinary construction but preferably of the form of the arm, 6, employed in connection with the post, 4.

On the underside of the beam, 7, at intervals thereof extending from the arm, 6, to and around the circular portion of the beam, 7, are a further number of brackets, 8, similar in every respect to that shown and indicated in Fig. 3, supporting a continuation of the rails, 10—10, but with the circular portion of the inner rail divided into a number of sections, so arranged as to form a number of slots, 15, between their opposing ends for the purposes of removing the mail bag from the receiving apparatus after its delivery thereto and at a standstill therein and to which end the slots, 15, extend tangentially through the inner rail and in a direction relative to that of the movement of the mail bag and so that the centrifugal force imparted to the mail bag between the circular trackways will prevent the accidental entry of its coupling through and out the radial slots, 15. In other words, so long as the mail bag is moving in a circle, the centrifugal force thereof is resisted entirely by the resistance of the bearing of the stem of the mail-bag coupling against the outer rail, and that it requires a manual movement of the mail bag and its coupling in a reverse direction to move the coupling between and inwardly out of the slots, 15; and furthermore that, when any form of coupling which I propose to use, as

ordinarily described, and that may be used, which may have a track-supported flange and a stem extending downwardly between the tracks to a connection with the mail bag: the mail bag can not possibly detach itself from the trackway, even though it is in register with any of the slots at the moment the coupling comes to a standstill.

If desired, greater rigidity of connection between the straight and circular portions of the trackway, 11, a bracket or clamp, 16, (see Fig. 2) may be employed of any ordinary desired form, connecting the outer rail, 10, of the straight portion with the adjacent segmental section of the inner rail, 10, and so also other and ordinarily constructed forms of braces; brackets may be employed for stiffening the entire structure by the use of ordinary mechanical skill and therefore without a substantial departure from the embodiment of my invention herein shown and described.

For the purposes of conveniently combining with the station-receiving structure means for delivering a mail bag therefrom to a passing train, I have in conformity with my invention secured to the underside of the beam, 7, a bifurcated plate, 17, (see Fig. 2), that is to say a plate having opposing prongs, 18 and 19, preferably diverging from each other on curved lines at or towards their outer ends and with an inwardly projecting slot having parallel walls conforming in distance to the diameter of the stem of the mail bag coupling. For the further purpose of preventing the accidental detachment of the mail bag coupling therefrom, a bend is formed in the opposing walls at a point inwardly from the outer parallel portions thereof, as indicated at 20, and may be as shown at a point slightly outwardly between the inner ends of said walls and so that, when the stem is located either directly in the curved portion of the guide-way or at a point inwardly beyond said curved portion, the disconnection of the mail bag coupling and the mail bag therefrom requires a sufficient shifting of the direction of its movement to prevent wind pressure from a passing train and from other source disengaging the mail bag coupling, but without substantially retarding their discharge therefrom by the receiving crane on a mail car.

The discharging plate or arm, 17, may be in a plane above the rails, 10, of the receiver, or be brought to the same plane by bending it downwardly thereto from the point at which it is secured to the beam, 7.

For the purpose of illustrating a means by which a mail bag may be delivered to a station structure embodying my invention and another bag may be delivered from the station to a passing mail car, reference is now made to Fig. 2, in which 21 indicates in detailed horizontal section the side of a mail

car, in which is a door-way, 22, at one side of which and secured to the car is a bracket, 23, to which, by a pivot, 24, is secured to a right-angular shank, 25, of a crane; the receiving arm, 26, and the discharging arm, 27, extend in opposite directions from and at a right angle to the adjacent arm of the crane, and which may be locked by a hook, 28, pivoted to the bracket, 23, or some other portion of the car side, so that by gravity it will drop to a locking position, when the crane is swung to the limit of its outward and operative position for receiving and discharging mail bags.

The crane arms, 26 and 27, are slotted longitudinally, the walls of which, towards their outer ends, diverge from each other on curved lines, as usual, and are provided respectively, that is to say, the receiving arm with opposing jaws, 29—29, pivoted at their outer ends, as respectively indicated at 30—30, opened by the force produced by a moving train against the resistance of springs, 31—31, by the shank of the coupling of a mail bag suspended at a station, the impact thereof being reduced by a block, 32, seated upon springs, 33, and between which and the inner end of the jaws is formed a circular space, 34, conforming in diameter to that of the shank of the mail-bag coupling, whereby it is held against detachment until after the crane is swung inwardly to and manually removed therefrom by a mail agent standing in the car. The discharging end of the crane is provided with jaws, 4, similarly pivoted at their outer ends but formed on substantially the arc of a circle, between which jaws and the end of the bifurcated slot is a semi-circular opening, 41, likewise conforming in diameter to that of the shank of the mail-bag coupling, one side of which circular opening is closed by the automatic forcing of the apices of the jaws to contact with each other and with the result that, when a mail bag is suspended by its coupling in and between the circular opening and the inner end of its jaws, it is held against accidental detachment, but freely discharged therefrom by the engagement of the coupling by the station-receiving trackway, and freely and instantly discharged from the crane thereto.

In this connection, however, it should be understood that my invention is not limited to the particular or substantially the form of crane shown; although at present it is seemingly best for that purpose, for it would be no departure from the spirit of my invention to use any other well known or heretofore used crane capable of delivering a mail bag to a station-receiving device of any kind and receiving another mail bag therefrom, and this whether or not the station-receiving and delivering devices are joined or separated from each other, and whether or not either of them have vibrating or rotating supports in post or other form. Furthermore, the suc-

cessful operation of the embodiment of my invention, in any form or forms which it may have, is not at all dependent upon the structure of the car crane, so long as it is capable of delivering a mail bag to the station-delivery device thereof.

For the purposes of suspending a mail bag from the crane, receiving and delivery devices I preferably employ the coupling illustrated in Fig. 1, consisting of a stem, 43, provided at its lower end with an arm, 44, extending at a right-angle thereto and upon which the mail bag, 45, may be hung by a strap, 46, or other suitable connection. The stem 44 terminates at its upper in the flaring portion, 47, below which and towards and just above the flange, 47, is a collar, 48, which rests upon the delivery end of the crane and the delivery end of the discharging arm of the receiver, and projects below the rails of the receiving track to prevent undue rocking after delivery thereto. In practice however I may use any other form of coupling which is adapted to connect a mail bag with the crane and station-receiving devices, and have indicated the form shown, and which I do not claim, as convenient and desirable coupling.

Having described my invention, what I claim and desire to secure by Letters Patent is:

1. A mail-bag delivery apparatus, comprising in combination a mail-car crane, a station-receiving structure having therein an endless open rail support for a mail bag and means for conducting a mail bag thereto, whereby the velocity and momentum of a mail bag delivered from a moving train to a station crane may with uniformity be gradually reduced and destroyed, substantially as described.

2. A mail-bag delivery apparatus, comprising in combination a mail-car crane, a station-receiving structure having therein an endless open rail trackway for a mail bag and means for conducting a mail bag from a moving car thereto, substantially as and for the purpose described.

3. A mail-bag delivery apparatus, comprising in combination a mail-car crane, an elevated station-receiving structure having therein a circular rail track support for a mail bag and means for conducting a mail bag into said structure from a moving train, substantially as and for the purpose described.

4. A mail-bag delivery apparatus, comprising in combination a mail-car crane, a receiving structure at said station having therein an endless parallel rail support for a mail bag, and means for conducting a mail bag thereto from a moving train, substantially as and for the purpose described.

5. A mail-bag delivery apparatus, comprising in combination a mail-car crane, a

station - receiving structure having therein an endless parallel rail support for a mail bag, and another support rail projecting tangentially therefrom in the path of the mail bag suspended from the car crane, substantially as and for the purpose described.

6. A mail-bag delivery apparatus, comprising in combination a mail-car crane, a stationary receiving structure having a fixed parallel rail track terminated in an endless guide a support thereon for a mail bag suspended from said track, and means for conducting a mail bag from a moving train, substantially as and for the purpose described.

7. A mail-bag delivery apparatus, comprising in combination a mail-car crane, a stationary receiving structure having therein parallel rails terminated in an endless guide and support for a moving mail bag, and means preventing its accidental discharge and permitting its manual detachment therefrom, substantially as described.

8. A mail-bag delivery apparatus, comprising in combination a mail-car crane, a stationary receiving structure having therein parallel rails terminating in an endless guide and support for a moving mail bag, the inner rail of which is provided with tangential slots, through which the mail bag may be

manually removed, substantially as and for the purpose described.

9. A mail-bag delivery apparatus, comprising in combination a mail-car crane, a stationary receiving structure having therein an endless support for a mail bag, means for conducting a mail bag from a moving train thereto, a delivery device secured to the receiving structure and a single post supporting said device and a portion of said structure, substantially as described.

10. A mail-bag delivery apparatus, comprising in combination a mail-car crane, a stationary receiving structure having therein an endless support for a mail bag, means for conducting a mail bag thereto from a moving train, and a mail-bag delivery device secured to said support and provided with a tortuous guide receiving and supporting the mail bag to be discharged therefrom, substantially as described.

In witness whereof, I have hereunto set my hand and affixed my seal, this 30 day of September, A. D. 1907.

ARTHUR E. KAILER. [L. s.]

Witnesses:

HARVEY E. KAILER,  
JOE YENDER, Jr.