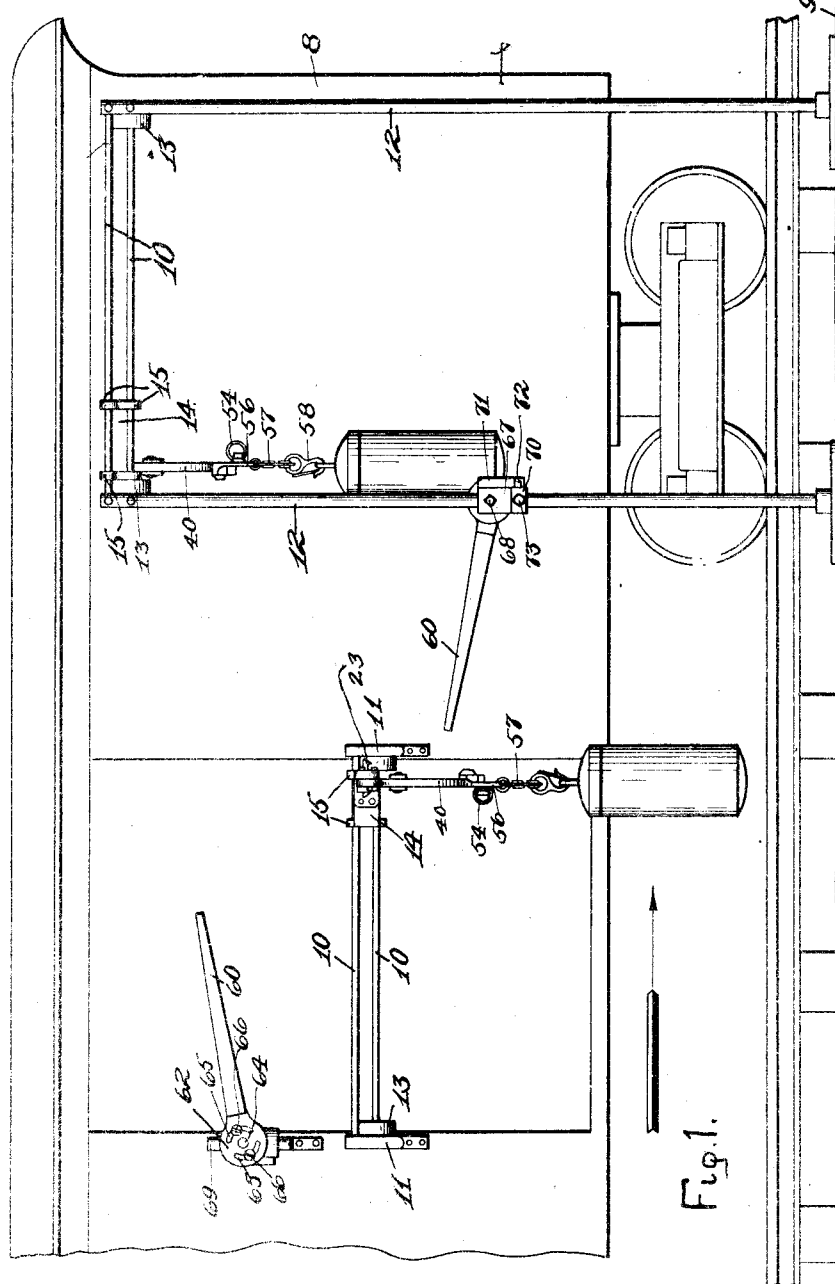


H. KERSHAW.
MAIL BAG CATCHING AND DELIVERING APPARATUS.
APPLICATION FILED FEB. 5, 1913.

1,058,759.

Patented Apr. 15, 1913.

3 SHEETS-SHEET 1.



WITNESSES:

[Signature]

[Signature]

INVENTOR

H. Kershaw.

BY

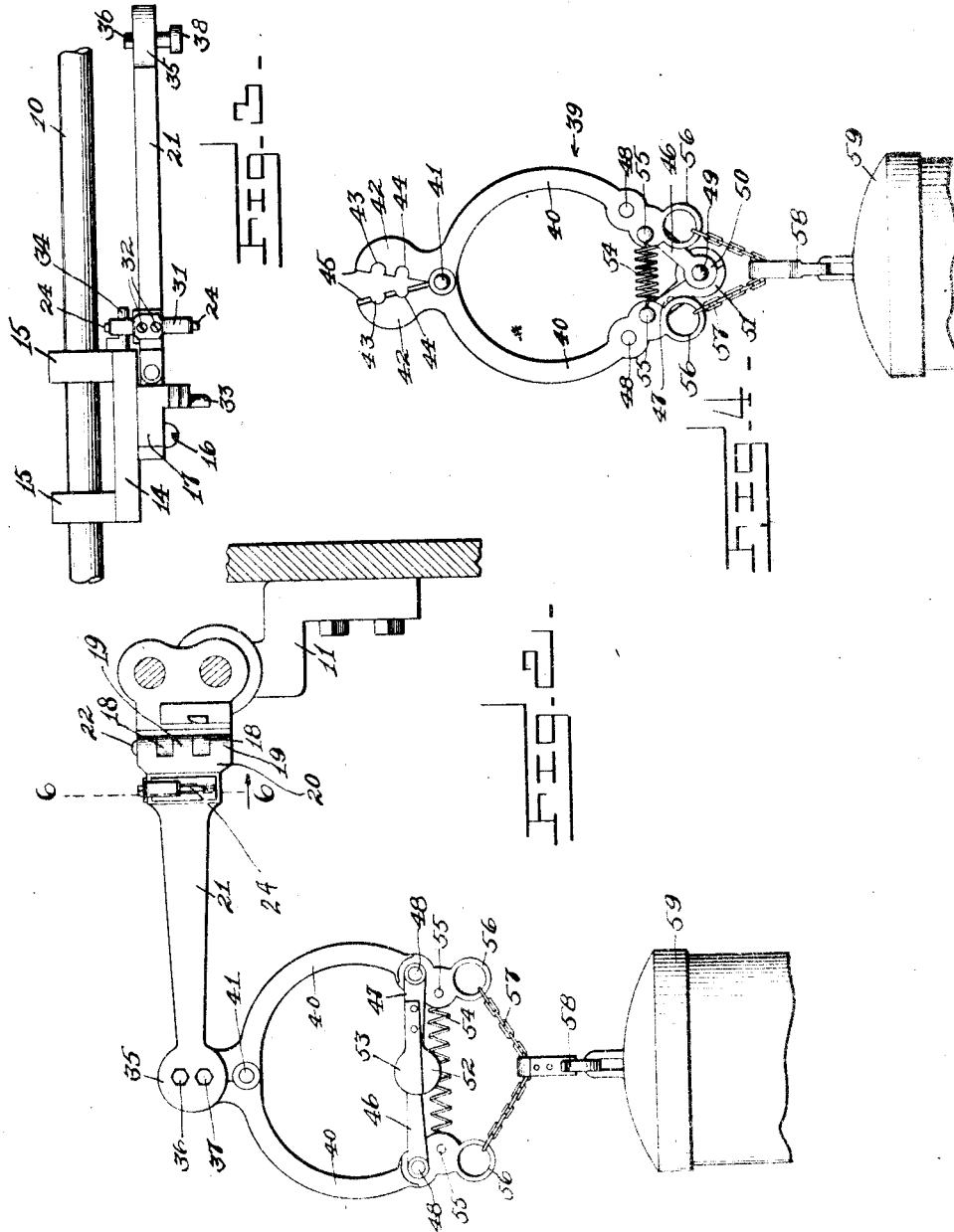
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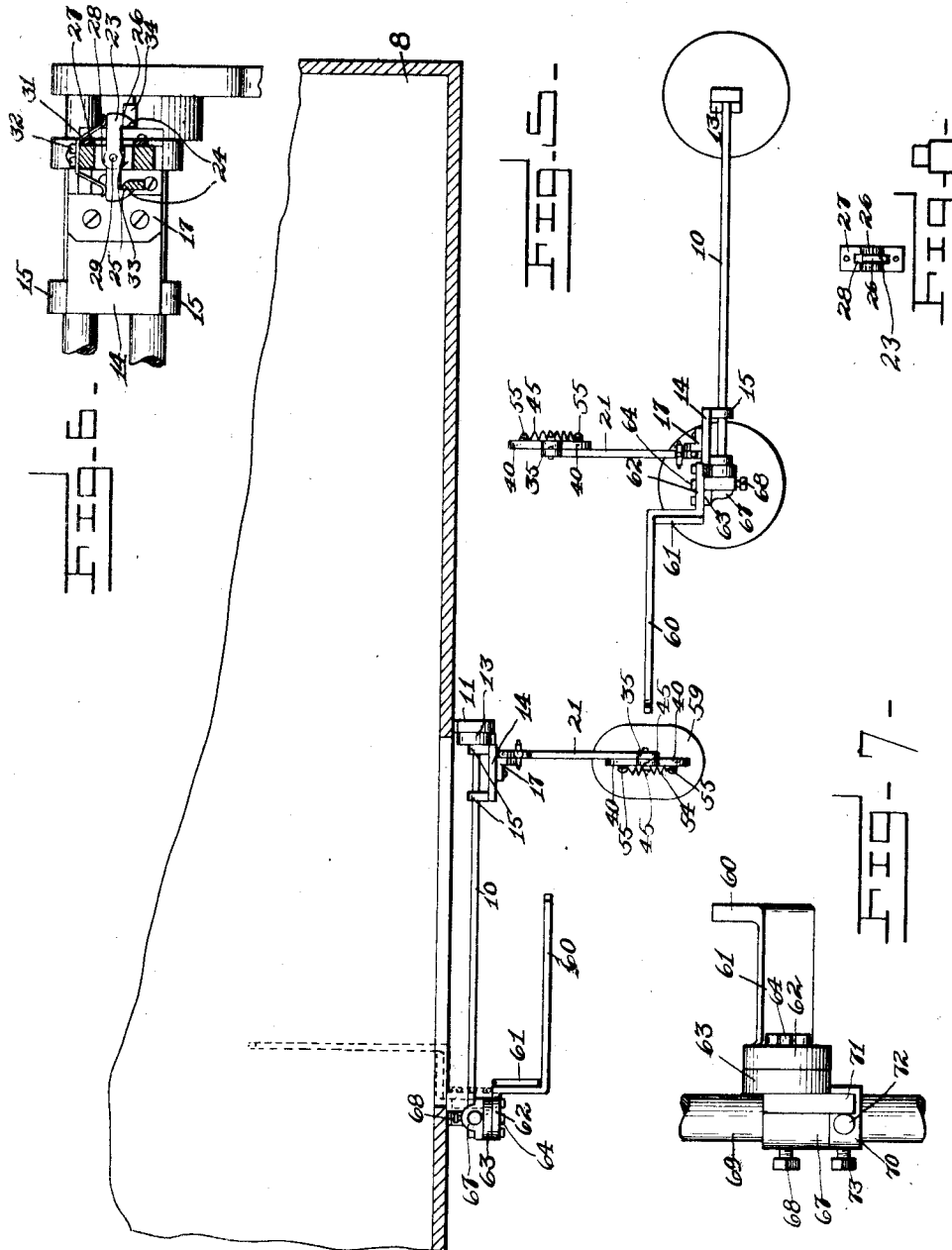
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UNITED STATES PATENT OFFICE.

HENRY KERSHAW, OF KEARNEY, NEW JERSEY.

MAIL-BAG CATCHING AND DELIVERING APPARATUS.

1,058,759.

Specification of Letters Patent.

Patented Apr. 15, 1913.

Application filed February 5, 1913. Serial No. 746,381.

To all whom it may concern:

Be it known that I, HENRY KERSHAW, a subject of the King of Great Britain, residing at Kearney, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Mail-Bag Catching and Delivering Apparatus, of which the following is a specification.

My invention relates to mail bag catching and delivery apparatus.

An important object of my invention is to provide apparatus of the above mentioned character, which is simple in construction, will both catch and deliver the mail bag or bags with the least injury to the same, and which is easy to operate.

A further object of the invention is to provide novel means for securely and detachably holding the mail bag or bags upon the delivery means, whereby the bag or bags cannot be accidentally disconnected therefrom, and at the same time allowing them to be quickly and easily transferred to the catching means when such catching means is brought into the proper position.

A further object of the invention is to improve the construction of mail bag catching apparatuses in general with a view of increasing their efficiency and durability.

Other objects and advantages of this invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same, Figure 1 is a side view of two complete apparatuses, one carried by a car and the other arranged at a station. Fig. 2 is an enlarged side view, taken at a right angle to the showing in Fig. 1, of a swinging arm and associated elements included in the delivery means. Fig. 3 is a plan view of the same, the arm being disposed in its inner position. Fig. 4 is a side view of the bag or bags detachable connecting means, the same being shown in its open position to release the bag from the arm of the delivery means. Fig. 5 is a plan view of the two apparatuses, showing the parts thereof arranged so that each will deliver and catch a mail bag to and from the other. Fig. 6 is a detail section taken on line 6-6 of Fig. 2. Fig. 7 is an enlarged detail view of the connecting joint included in the catching means, and, Fig. 8 is a side

view of the supplemental plate and associated elements.

I have shown two apparatuses, one carried by a car 8 and the other arranged at a station 9. As these apparatuses are alike, except in the manner in which the same are connected with their supports, a detail description of one apparatus will suffice for both, a different description, however, being given of the manner in which each apparatus is connected with its support.

In the preferred embodiment of my invention, each apparatus comprises delivery means, including relatively stationary horizontal parallel rods 10. The rods 10 included in the apparatus carried by the car 8 are disposed adjacent the car door opening and are rigidly connected at their ends with brackets 11, which are in turn rigidly connected with the car. The rods 10 included in the station apparatus, are disposed above the rods 10 included in the car apparatus, and are connected at their ends with uprights or posts 12, as shown. Each lower rod 10 carries at its ends shock absorbers 13, which are preferably formed of rubber.

The delivery means in each apparatus, comprises a carriage 14, adapted to slide or move longitudinally of the horizontal guide rods 10, such carriage being provided with apertured ears 15, to receive the guide rods. Connected with each carriage 14, by means of screws or bolts 16, is a bracket 17, as shown. This bracket carries at one end thereof spaced knuckles 18, to fit between spaced knuckles 19, formed upon an enlarged head 20, which in turn is formed upon a horizontally swinging arm 21. The knuckles 18 and 19 are pivotally connected by a pintle 22. As clearly shown in Fig. 3, the bracket 17 is suitably spaced from the end of the carriage 14, which is adjacent the swinging arm 21. It is thus seen that the arm 21 is only capable of being swung through an arc of a circle of substantially 45°, the same engaging in its inner position the end of the carriage 14 and in its outer position the end of the bracket 17. Means are provided to detachably lock the swinging arm 21 in its outer and inner position. Such means comprises a double acting pawl 23, provided at its opposite ends with depending teeth 24. This double acting pawl operates within a transverse opening 25, formed through enlarged head 20. As clearly shown in Fig. 8, the double acting

pawl 23 is disposed between spaced apertured ears or knuckles 26, carried by a supplemental plate 27, said double acting pawl also operating through a slot 28 formed through the supplemental plate, as shown. A pin 29 passes through the apertured ears or knuckles 26, and serves to pivotally support the double acting pawl. The ears or knuckles 26 extend into the opening 25, as shown. The supplemental plate 27 is detachably and rigidly connected with the enlarged head 20 by means of screws or the like. A curved leaf spring 31, is disposed above the head 20 and connected therewith, as shown at 32, to extend downwardly and engage the opposite ends of the double acting pawl, to normally retain the same in a horizontal position. It is thus seen that when the arm 21 is swung to its outer position, the outer depending tooth 24 will engage with a fixed catch, finger or lug 33, formed upon or connected with the bracket 17, thus serving to lock the arm 21 in the outer position, as more clearly shown in Fig. 6. When the arm 21 is swung to its inner position, as more clearly shown in Fig. 3, the inner depending tooth 24 will engage with a fixed or stationary catch, finger or lug 34, connected with one end of the carriage 14, to lock the arm in the inner position. It is obvious that the arm 21 may be readily released when locked in either its outer or inner position, by proper manipulation of the double acting pawl 24. Each arm 21 is provided at its outer end with a head 35, carrying spaced upper and lower extensions or bolts 36 and 37, preferably disposed in the same vertical plane. The bolt 36 is provided with an enlarged head 38, while the bolt 37 preferably has no head.

The numeral 39 designates detachable means for connecting a mail bag or mail bags with the arm 21. Such detachable connecting means comprises a pair of swinging members or arms 40, pivotally connected at their upper ends, as shown at 41. These arms 40 are curved longitudinally outwardly for providing a large space therebetween. Formed upon the upper ends of the curved arms 40 are co-acting jaws 42, having openings 43 and 44 formed therethrough, to receive respectively the bolts 36 and 37. The jaws 42 are provided upon their inner engaging faces with interfitting tongues 45, as shown. Pivotally connected with the lower portions of the curved arms 40, are inwardly extending arms 46 and 47, as shown at 48. The arms 46 and 47 are pivotally connected at their inner ends, as shown at 49. The arm 46 is provided at its inner end with a cylindrical head 50, fitting within a curved extension 51 of the arm 47, said arm 47 being provided with a head 52, the bolt 49 passing through the heads 50 and 52. When the arms 46 and 47 are swung upwardly

their inner pivot point 49 is disposed in a horizontal plane slightly above the pivot points 48, the free end of the curved extension 51 engaging with the arm 46 adjacent the head 49, to positively limit the further upward movement of the arms 46 and 47.

The numeral 53 designates a shield which is rigidly mounted upon the arm 47, and extends upwardly to cover and protect the heads 50 and 52, for a purpose to be herein-after more fully described.

Connected with the curved arms 40 below the pivot points 48 is a retractile coil spring 54, as shown at 55. It is thus seen that when the arms 46 and 47 are moved to their upper position, they together with the spring 54 will securely lock the arms 40 in their outermost position. Any increased inward pull upon the lower ends of the arms 40 serves to more securely hold the arms 46 and 47 in their uppermost position, which will in turn more securely lock said arms 40, in their outer position.

The arms 40 are provided at their extreme lower ends with rings or eyes 56, for receiving a chain 57 or the like, which carries a hook 58, having connection with a mail bag 59. Although I have shown only one mail bag connected with the chain 57 it is obvious that two or more mail bags may be just as easily connected therewith.

In each apparatus, the catching means comprises a fork 60, having an off-set portion 61 at one end thereof, which carries an enlarged head 62. This head 62 is pivotally mounted upon a carriage 63, by a bolt 64, to swing in a vertical plane. The head 62 is provided with curved slots 65, for receiving clamping or locking bolts 66, which are connected with the carriage 63. It is thus seen that the fork 60 may be vertically adjusted to the desired angle and securely locked in such desired angular position by proper manipulation of the bolts 66. The carriage 63 includes a sleeve 67, carrying clamping bolt 68. In the car apparatus, the sleeve 67 is mounted upon a stub-shaft 69, which is rigidly mounted upon the car. It is thus seen that the fork 60 may be swung in a horizontal plane into and out of the car door opening, as the sleeve 67 is free to turn upon the stub-shaft 69, the same being supported by a fixed ring or collar 70. The sleeve 67 carries a depending arm 71, adapted to engage with stops 72 and 73. When the fork is swung to its outer position, the depending arm 71 will engage the stop 72 and in its inner position with stop 73, which stop 73 may be in the form of a bolt. In the station apparatus, the rotatable sleeve 67 and the fixed ring 70 are mounted upon the post 12. All other parts of the construction remain the same.

The operation of delivering the mail bag from the car delivery means to the station

catching means, is as follows:—When the fork 60 included in the station apparatus comes into the opening between the arms 40 of the train apparatus, such fork 60 will engage the shield 53, whereby the arms 40 and 47 will be swung downwardly. The entire mail bag attaching means together with the mail bag is of course caught upon the fork 60. Prior to the above described operation, the carriage 14 and associated elements were arranged at the forward ends of the guide rods 10, with respect to the direction of travel of the car. It is obvious that when the fork 60 engages the shield 53, such carriage will be free to move longitudinally in a reverse direction to the direction of travel of the car, whereby the delivery of the mail bag will be effected with the least shocks or injuries to the same and parts of the apparatus. In the event that the carriage 14 be moved longitudinally for the entire length of the guide rods 10, the same will engage the shock absorbing means 13 and be stopped thereby.

In the operation of delivering the mail bag to the car catching means from the station delivering means, the carriage 14 and associated elements are arranged at the rear end of the guide rods 10 with respect to the direction of travel of the car. It is thus seen that when the fork 60 of the car catching means engages with the shield 53, the carriage 14 and associated elements will be free to be moved longitudinally in the direction of travel of the car, during the disengagement of the mail bag connecting means 39 from the arm 21. The mail bag connecting means and the mail bag will of course be caught upon the fork 60, with the least shock or injury to the mail bag and parts of the apparatus. The fork 60 may now be swung inwardly through the car door opening, if desired.

It is to be understood that the form of my invention, herewith shown and described, is to be taken as a preferred example of the same, and that certain changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus fully described my invention, I claim:—

1. In apparatus of the character described, a carriage, an arm pivotally connected therewith, stationary catches connected with the carriage and disposed upon opposite sides of the arm, a double acting pawl pivotally connected with the arm and adapted to alternately engage with the stationary catches, means for detachably connecting a mail bag with the arm and catching means to disconnect the mail bag from the arm.

2. In apparatus of the character described, a carriage, an arm pivotally connected there-

with to swing in a substantially horizontal plane and provided with a transverse opening, a double acting pawl pivotally mounted within the transverse opening, catches to be engaged by the double acting pawl and connected with the carriage upon opposite sides of the arm, means to detachably connect a mail bag with the arm, and means to operate the detachable connecting means.

3. In apparatus of the character described, a support, an arm pivotally connected therewith to swing in a substantially horizontal plane and provided with a transverse opening adjacent the support, a double acting pawl pivotally connected with the arm and operating within the transverse opening, stationary catches connected with the support upon opposite sides of the arm to be engaged by the double acting pawl, a spring to normally hold the double acting pawl in its horizontal position, means detachably connecting a mail bag with the arm and means to operate the mail bag connecting means.

4. In apparatus of the character described, an arm pivotally connected therewith to swing in a substantially horizontal plane and provided with a transverse opening adjacent the support, a supplemental plate carrying spaced apertured ears extending into the transverse opening, a double acting pawl mounted between the spaced apertured ears, a pin passing through the spaced apertured ears and the double acting pawl, a leaf spring connected with the arm and extending downwardly at its opposite ends to engage the opposite ends of the double acting pawl, stationary catches connected with the support and disposed upon opposite sides of the arm to be engaged by the double acting pawl, means for detachably connecting a mail bag with the arm, and means for operating the mail bag connecting means.

5. In apparatus of the character described, a plurality of substantially horizontally arranged spaced guide rods, a carriage mounted to move longitudinally of the guide rods and provided with apertured ears for receiving the same, an arm pivotally connected with the carriage to swing in a substantially horizontal plane with relation thereto, means to lock the arm in its inner and outer positions with relation to the carriage, means for detachably connecting a mail bag with the arm, and means to operate the mail bag connecting means.

6. In apparatus of the character described, a suitably supported arm, a laterally extending element connected therewith, a pair of non-crossing pivoted arms carrying jaws adapted to engage with the laterally extending element, mail bag attaching means connected with the arms, means to hold the arms in their outer positions, and means to operate the last named means.

7. In apparatus of the character described, a suitably supported arm, a securing element connected therewith, pivotally connected arms having jaws rigidly connected therewith and disposed upon the same side of the pivot point with the arms carrying them, and adapted to engage the securing elements, a pair of pivoted arms pivotally connected with the lower portions of the first named pivoted arms, means to engage the pair of pivoted arms to swing the same in one direction, and mail bag attaching means connected with the first named pivoted arms.

8. In apparatus of the character described, a suitably supported arm, a securing element connected therewith, pivoted arms, jaws connected with the pivoted arms and adapted to engage with the securing element, inwardly extending arms pivotally connected at their inner ends and connected with the first named arms at their outer ends, means to limit the upward movement of the inwardly extending arms, means to move the inwardly extending arms in one direction, and mail bag attaching means connected with the first named arms at points below the pivotal connection of the same with the inwardly extending arms.

9. In apparatus of the character described, a suitably supported arm, a securing element connected therewith, pivoted outwardly curved arms, jaws connected with the pivoted outwardly curved arms and adapted to engage the securing element, inwardly extending arms connected with the curved arms near the lower ends thereof and pivotally connected with each other at their inner ends, a spring connected with the curved arms below the point of pivotal connection between the curved arms and the inwardly extending arms to draw the curved arms inwardly, the mail bag attaching means connected with the curved arms below the connection that the same have with the spring, and means to move the inwardly extending arms in one direction.

10. In apparatus of the character described, a suitably supported arm, a plurality of laterally extending securing elements connected therewith and disposed in spaced relation in a substantially vertical plane, a pair of pivoted clamping jaws having openings formed therein to receive the laterally extending securing elements, arms connected with the clamping jaws, means to normally retain the arms in their outer positions, means to operate the first named means, and mail bag attaching means connected with said arms.

11. In apparatus of the character described, a suitably supported arm, a device detachably connected therewith and having an opening formed therethrough, mail bag attaching means connected with the device, a catching fork to enter the opening of the device and operate parts thereof, a support with which the catching fork is pivotally connected to swing in a substantially vertical plane, and means to clamp the fork in adjustment at different vertical angular positions.

12. In apparatus of the character described, a suitably supported arm, a device detachably connected therewith and having an opening formed therethrough, mail bag attaching means connected with the device, a catching fork to enter the opening of the device and operate parts thereof, a horizontally swinging support, means pivotally connecting the catching fork with the horizontally swinging support so that said fork may be swung in a vertical plane, means to lock the fork in adjustment at different vertical angular positions, and means to lock the horizontally swinging support in adjustment at different horizontal positions.

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

HENRY KERSHAW.

Witnesses:

CHARLES C. BAIERLE,
CHARLES R. COOK.