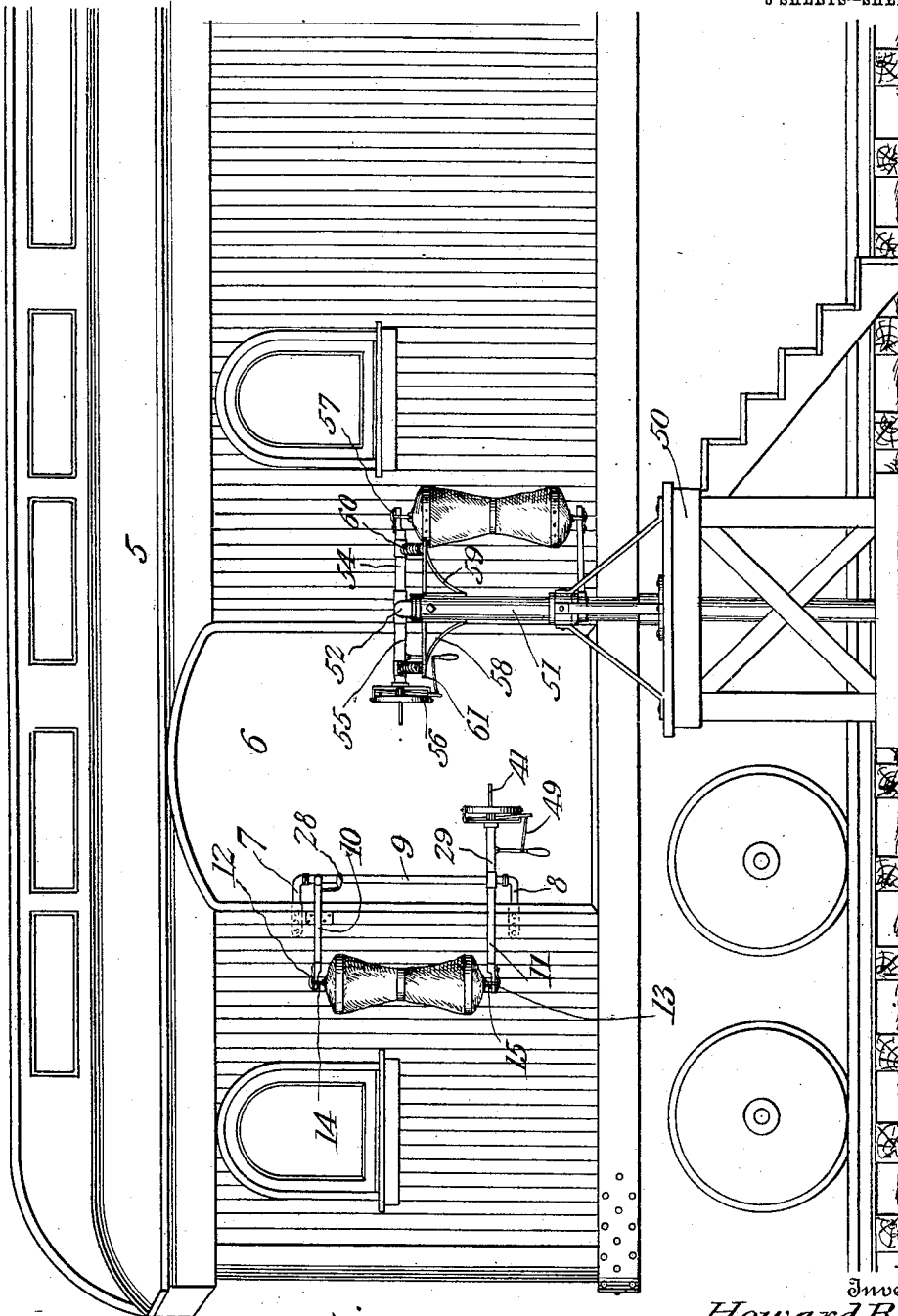


H. B. KYLE.
MAIL BAG CATCHING AND DELIVERING APPARATUS.
APPLICATION FILED JAN. 14, 1910.

969,065.

Patented Aug. 30, 1910.

3 SHEETS—SHEET 1.



Witnesses
Frank B. Hoffman, *fig. 1.*
John A. Doney, *fig. 1.*

Inventor
Howard B. Kyle

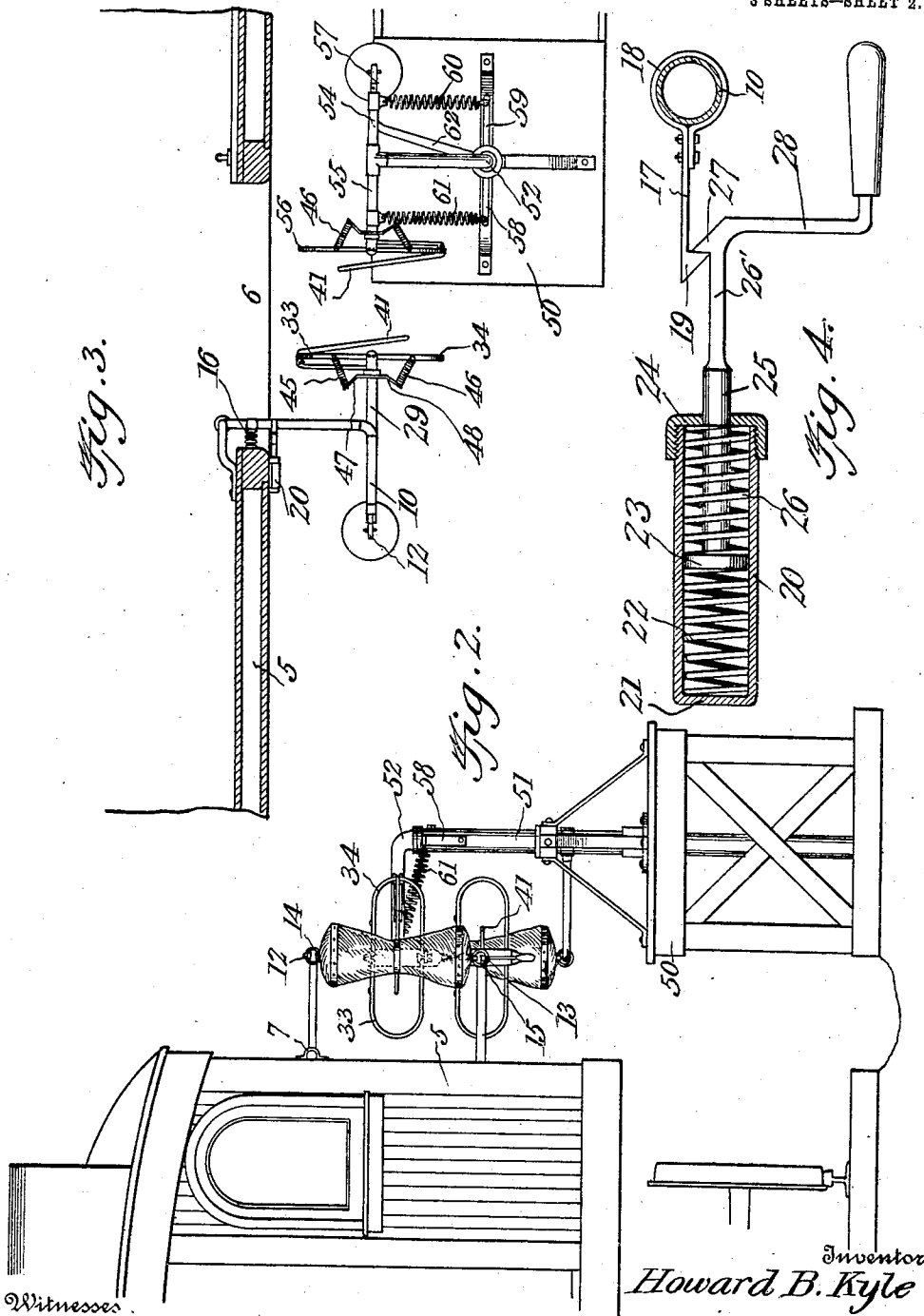
By Victor J. Evans
Attorney

H. B. KYLE.
MAIL BAG CATCHING AND DELIVERING APPARATUS.
APPLICATION FILED JAN. 14, 1910.

969,065.

Patented Aug. 30, 1910.

3 SHEETS—SHEET 2.



Witnesses.

Frank B. Hoffman.
John A. Donagan.

Inventor
Howard B. Kyle

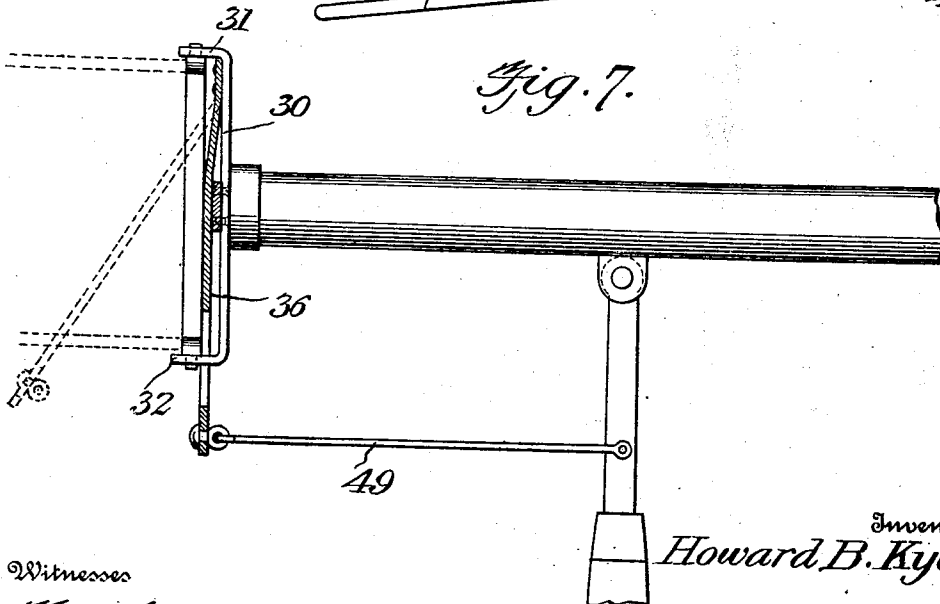
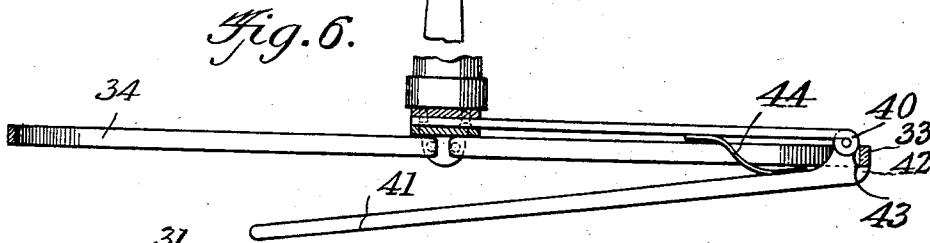
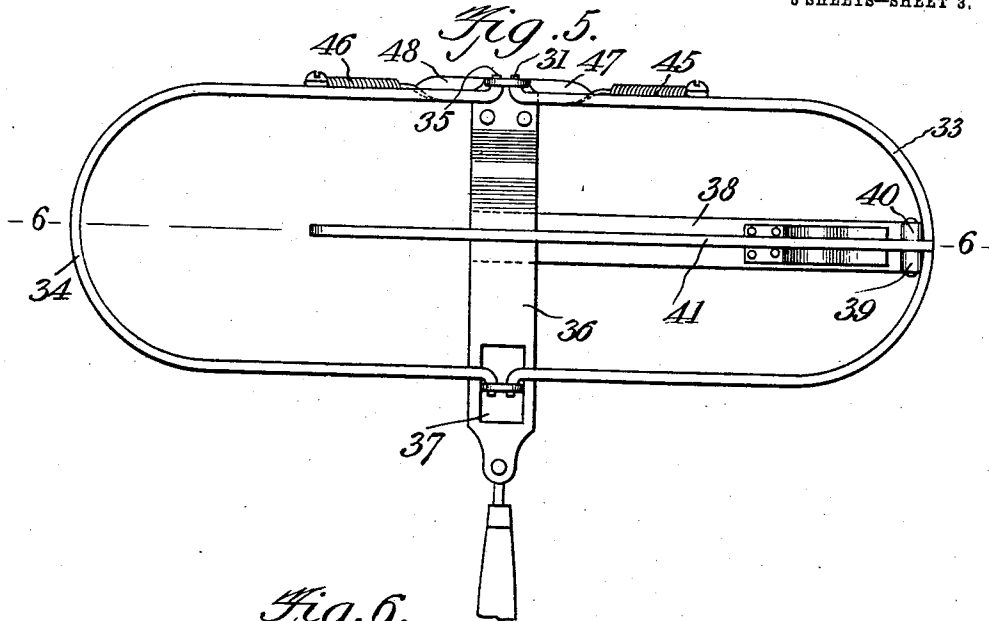
By Victor J. Evans
Attorney

H. B. KYLE.
MAIL BAG CATCHING AND DELIVERING APPARATUS.
APPLICATION FILED JAN. 14, 1910.

969,065.

Patented Aug. 30, 1910.

3 SHEETS—SHEET 3.



Witnesses

Frank B. Hoffman.
John A. Doney.

Inventor
Howard B. Kyle

By *Victor J. Evans*
Attorney

UNITED STATES PATENT OFFICE.

HOWARD B. KYLE, OF YORK, PENNSYLVANIA.

MAIL-BAG CATCHING AND DELIVERING APPARATUS.

969,065.

Specification of Letters Patent.

Patented Aug. 30, 1910.

Application filed January 14, 1910. Serial No. 538,055.

To all whom it may concern:

Be it known that I, HOWARD B. KYLE, a citizen of the United States, residing at York, in the county of York and State of Pennsylvania, have invented new and useful Improvements in Mail-Bag Catching and Delivering Apparatus, of which the following is a specification.

This invention relates to improvements in combined mail bag catching and delivering apparatus and has for its object the provision of a device of that kind comprising a pair of bag catchers one of which is carried by the mail car and the other arranged on the station platform and so positioned that a pair of bags held by the car and a crane arranged at the station will be received by the catchers carried by the car and crane, whereby the mail is transferred from the car and from the station to the car without the danger of mutilating the bags and destroying the contents thereof or interfering in any way with the speed of the train.

Another object is the provision of an improved form of crane to be attached to the car body and a latch for securing the frame outwardly from the car body and so constructed that when the catcher on the car moves into engagement with the bag at the station the crane will yield and the catch operate to restore the crane to its normal position.

A further object is the provision of an improved form of catcher comprising a pair of spring-actuated jaws and a trigger for holding said jaws in open position and operable by impact with the mail bag to release the said jaws.

A still further object is the provision of an improved form of crane to be attached to the ground and adapted to yield upon impact with the bag carried by the car and thence to be gradually brought to rest in its normal position.

With these and other objects in view, which will more fully hereinafter appear, the present invention consists in certain novel details of construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings and more particularly pointed out in the appended claims; it being understood that various changes in the form, proportion, size, and minor details of the device may be made, within the scope of the appended

claims, without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, forming a part of the specification;—Figure 1 is a plan view of the device also showing a portion of a car in said elevation, and a platform in side elevation and the improved device applied to the car and said platform. Fig. 2 is an end elevation of the device showing the portion of a car body and also showing the platform with the attachment applied to the car body and platform. Fig. 3 is a plan view of the device also showing a portion of the car body in sectional plan and the platform in plan view and the device applied to the car body and platform. Fig. 4 is a side elevation of the latch and keeper for maintaining the car crane in outward position and also showing the latch cylinder in longitudinal section and the springs for steadying the latch. Fig. 5 is a detail front elevation of the bag receiver. Fig. 6 is a sectional plan view on the line 6—6 of Fig. 5. Fig. 7 is a side elevation of the bag receiver also showing a fragment of its support with the operating lever in side elevation and the spring and trigger in section.

Similar numerals of reference are employed to designate corresponding parts throughout.

The car body is designated in general by the numeral 5 and the door-way by the numeral 6.

That part of the device which is applied to the car will be first described and by reference to Figs. 1 to 3 inclusive is shown to consist of a pair of arms 7 and 8, the inner ends of which are secured to one side of the door frame and the outer ends of which are curved in opposite directions and are provided with openings for the reception of the crane standard 9 which is journaled in the said arms. Extending laterally from the upper end portion of the crane standard 9 and in a horizontal plane is an arm 10, and extending laterally from the lower end portion of the crane standard 9 is a similar arm 11 parallel with the upper arm 10. These arms will subsequently be termed the bag holding arms and their outer end portions are reduced and on their upper and lower faces are provided with spring catches 12 and 13, the intermediate portions of which are bowed and the free end portions

of which extend to the extremities of the arms. The distance between the arms 10 and 11 will correspond to the distance between the eyes 14 and 15 at the opposite ends of an ordinary mail bag. The eyes 14 and 15 are passed over the free ends of the arms 11 and 12 and between the bowed portions of the spring catches and adjacent faces of the arms.

It might here be stated that the arms 10 and 11 are right angular in contour and are so positioned on the crane standard 9 that when the arms are moved outwardly through the door-way 6 the outer portions of the arms will be parallel with and spaced from the car body and extend in a rearward direction.

In order that the arms may be held in their outward position and yield upon impact with the bag arranged on the station the following construction is employed:—

By reference now to Fig. 3 it will be seen when the arms extend outwardly through the door-way a considerable space will exist between the adjacent side of the frame and inner end portions of the arms and fixedly secured to the said inner end portion of the upper arm is a coil spring 16, the length of which corresponds to the distance between the said arm and adjacent side of the door frame so that upon impact with the bag and when the arms move rearwardly the said spring will be compressed, whereby danger of the arms snapping will be eliminated. Fixedly secured to the inner end portion of the upper arm 10 and at a point slightly in advance of the outer face of the car when the said arm extends through the door of the car is what will subsequently be termed a keeper. This member includes a shank portion 17 one end of which is provided with an eye 18 which embraces the arm 10, while the opposite arm of which is provided with a depending nose 19. Fixedly secured to the outer face of the car body and adjacent to the side of the door frame is a cylinder 20, one end of which is permanently sealed as shown at 21. Arranged within the cylinder and corresponding to approximately one-half the length of the cylinder is a helical compression spring 22 and slidably fitted in the cylinder and bearing on the spring 22 is a plunger 23. The opposite end of the cylinder or that adjacent to the side of the door is exteriorly screw threaded and receives an interiorly threaded cap 24 having a central opening in alinement with the axis of the cylinder. The plunger 23 is provided with a rod 25 which extends through the opening in the cap 24 and arranged within the cylinder with its opposite ends bearing on the plunger and cap 24 is a helical compression spring 26. The outer end portion of the plunger rod 25 terminates in a reduced resilient shank 26', the

shank 26' terminating in an upwardly directed nose 27 adapted to engage with the nose 19 of the keeper 17. That portion of the shank 26' in advance of the nose 27 is bent downwardly and thence outwardly to provide an operating handle 28. The plunger and its rod, the nose 27, and the operating handle 28 will subsequently be termed a reciprocating latch.

From the foregoing it is evident when the keeper is in engagement with the latch and the crane moves into engagement with the bag suspended from the station platform and yields from the impact with the bag and compresses the spring 16 in the manner before described, the nose 19 will move rearwardly from engagement with the nose 27.

It will be apparent that the crane will oscillate for a short time after the impact with the bag so that when it moves in a direction opposite to the first movement caused by the impact the nose 19 will be moved into engagement with the nose 27, whereby the plunger will be moved against the action of the spring 26 and when moved in the opposite direction the spring 22 will be compressed. It will be evident with the employment of these springs that the crane will, in a comparatively short time be brought to rest.

The bag catching mechanism carried by the car crane will now be described.

By reference to Figs. 1 to 3 inclusive it will be seen that extending in advance of the bent portion of the lower rod 11 is an arm 29 the outer end of which is provided with a bearing plate 30. The bearing plate 30 is preferably formed of a single piece of sheet metal oblong in contour and has its medial portion fixedly secured to the outer end of the arm 29. The bearing plate 30 is arranged in a vertical plane and portions adjacent to its opposite ends are bent forwardly and at right angles as shown at 31 and 32. The gripping jaws are designated by the numerals 33 and 34 and are each preferably formed of a single piece of sheet metal bent into substantially a U-shape, the free terminals of the opposite limbs of which are bent laterally and rounded as shown at 35 in Fig. 5, these rounded portions entering openings in the forwardly bent portions 31 and 32 of the bearing plate 30. With this construction it is evident that the jaws are pivotally mounted on the bearing plate and move in a horizontal plane and in opposite directions. The jaws are actuated to close by means of a leaf spring 36. This member extends parallel with the bearing plate 30 and has its upper end fixedly secured to the outer face and at the upper end of the said bearing plate below the forward extension 31, while its lower end portion is provided with a rectangular opening 37 which receives the lower extension

sion 32 of the bearing plate; while the lower end of the spring extends considerably below the said lower extension 32. The spring 36 is flexed outwardly from the bearing plate as shown in Fig. 7 and by virtue of this formation the spring will be tensioned when the jaws 33 and 34 are moved outwardly, due to the fact that when the said jaws are closed the free end portion of the spring will move outwardly sufficiently far so that the sides of the opening 37 will be considerably in advance of the pivotal points of said jaws. Thus it will be seen that when the said jaws are opened their lower sides will bear on the sides of the opening 37, whereby the spring will be tensioned.

In order to hold the jaws in open position against the action of the spring 36 the following construction is employed:—Extending laterally from the medial portion of the bearing plate 30 is an arm 38, corresponding in length, approximately to the length of one of the jaws. The outer end portion of this arm is provided with a pair of spaced lugs 39 and 40, between which is arranged the engaging end of a trigger 41. The trigger is preferably formed of a single piece of metal and adjacent to its engaging end is provided with a lateral lug 42 which is received by the space between the lugs 39 and 40, these lugs having alining openings for the reception of a pivot pin which passes therethrough and through the lug 42. A shoulder 43 will be formed at the outer end of the trigger to engage with the jaw 33 when the said portion of the trigger extends considerably beyond the bearing plate 30 and the trigger has a body extending forwardly and in a plane oblique to the horizontal plane of the jaws when the latter are in open position. The trigger is yieldingly held against movement when in engagement with the jaw 33 by means of a leaf spring 44 one end of which is secured to the bar 38 while the opposite end of which bears on the inner side of the trigger.

By virtue of the disposition of the trigger it will be evident that when the jaws are in open position as shown in Figs. 5 and 6 and a train approaches a bag at the station the outer side of the trigger will first move into engagement with the said bag, whereby the free end of the trigger will be depressed thus moving its opposite end from engagement with the jaw 33 whereupon the spring 36 will move outwardly and the jaws move to closing position in the manner before described.

In order that the jaws may be opened automatically when the sides of the opening are moved from engagement with the jaws a pair of helical retractile springs 45 and 46 are employed. These members have their terminals pivoted to the medial portions of

the upper sides of the jaws 33 and 34 and two lateral extensions 47 and 48 extending in opposite directions from the upper end of the bearing plate 30. The combined forces exerted by the springs 45 and 46 will be considerably less than the force exerted by the spring 36 so that the energy in these springs will be insufficient to open the jaws against the action of the spring 36. When however the latter is moved rearwardly the springs 45 and 46 will retract the jaws and move them into engagement with the trigger as before described.

I have provided an operating handle for moving the spring 36 which in the present instance is shown to be pivoted to and depending from the arm to which the jaws are secured. Connection between the medial portion of this lever and the lower end of the spring 36 is established by means of a link 49. Thus it will be seen when the operating lever is moved in one direction the spring 36 will be likewise moved whereupon the springs 45 and 46 will open the jaws as before described.

Having now described the structure of the car crane we come to the station crane. In this instance a platform 50 is arranged adjacent to the railway track and rising from this platform is a tubular standard 51. Loosely fitted in the tubular standard 51 is a crane standard 52, that portion of which extending above the standard is bent outwardly and at right angles and extends to a point in the path of movement of the jaws carried by the car crane and overlies an angular arm secured to the lower end of the standard 51. The outwardly bent portion of the crane standard terminates in a pair of oppositely extending arms 54 and 55 normally extending in a plane parallel with the railroad track and in alinement with the middle of the space between the arms 10 and 11 of the car crane. The arm 55 which extends to the left in Fig. 1 is provided at its outer end with a bag catcher comprising a pair of jaws 56 identical to the jaws just described, while the opposite arm 54 is reduced and provided with a spring latch 57 similar to the spring latches 12 and 13, and designed to receive and hold the eye of a mail bag similar to the arms 10 and 11. Extending from opposite sides of the upper end portion of the standard 51 are a pair of brackets 58 and 59 and connection between these brackets and the opposite end portions of the arms 54 and 55 is established by means of a pair of helical retractile springs 60 and 61.

It might here be stated that the same mechanism employed for closing and opening the jaws of the bag catcher on the station crane is identical to that carried by the car crane therefore a detail description of the same need not be given. It will be evi-

dent however owing to the disposition of the arms 54 and 55 and the springs 60 and 61 when the catcher carried by the station crane engages with the mail bag carried by the car crane that the impact will oscillate the crane standard 52 whereupon the springs 60 and 61 will be tensioned and operate to soon restore the station crane to its normal position.

10 From the foregoing it can be seen that I have provided a device which is comparatively simple in structure and inexpensive in manufacture, embodying few parts and these so arranged that the danger of derangement will be reduced to a minimum.

I claim:—

1. In a mail bag catching and delivering apparatus, the combination with a car body having a door opening, a crane swiveled in the door opening, a bag catcher carried by the crane; of a buffer spring carried by the crane to engage with the door frame when the crane extends outwardly through the door opening, a keeper carried by the crane, and means carried by the car body to engage the keeper and operating to bring the crane to rest after the keeper engages a mail bag.

2. In a mail bag catching and delivering apparatus, the combination with a car body having a door opening, a crane swiveled in the door opening, a bag catcher carried by the crane, of a buffer spring carried by the crane to engage with the door frame when the crane extends outwardly through the door opening, a keeper carried by the crane and a reciprocating latch to engage the keeper and operating to bring the crane to rest after the keeper engages the mail bag.

3. In a mail bag catching and delivering apparatus, the combination with a car body having a door opening, a crane swiveled in the door opening, a bag catcher carried by the crane; of a buffer spring carried by the crane to engage with the door frame when

the crane extends outwardly through the door opening, a keeper carried by the crane, a cylinder secured to the outer face of the car body, a spring-pressed reciprocating latch arranged in the cylinder to engage the keeper and operating to check the movement of the crane after the catcher engages a mail bag.

4. In a mail bag catching and delivering apparatus, the combination with the door frame of a car, a crane swiveled to the door frame, and bag holders carried by the frame; of a pair of gripping jaws pivoted to the crane in advance of the bag holders, a spring for closing said jaws, and a pivoted trigger having one end adapted to engage with one of said jaws and hold both of said jaws open against the action of the spring, the free end portion of the said trigger extending in advance of said jaws when the latter are open and operable by impact with the mail bag, whereby its opposite end is moved from engagement with said jaws.

5. In a mail bag catching and delivering apparatus, the combination with bag holding crane, of a bag catcher including in its construction a pair of jaws pivoted to the crane, a leaf spring having one end secured to the crane and its opposite end provided with an opening to receive a portion of the jaws, the sides of said opening bearing on the said jaws and operating to hold the latter in closed position, an operating lever for moving the said leaf spring from engagement with said jaws, and a trigger to engage one of said jaws and maintain the jaws in open position.

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

HOWARD B. KYLE.

Witnesses:

W. S. WARNER,
E. F. WOLTMAN.