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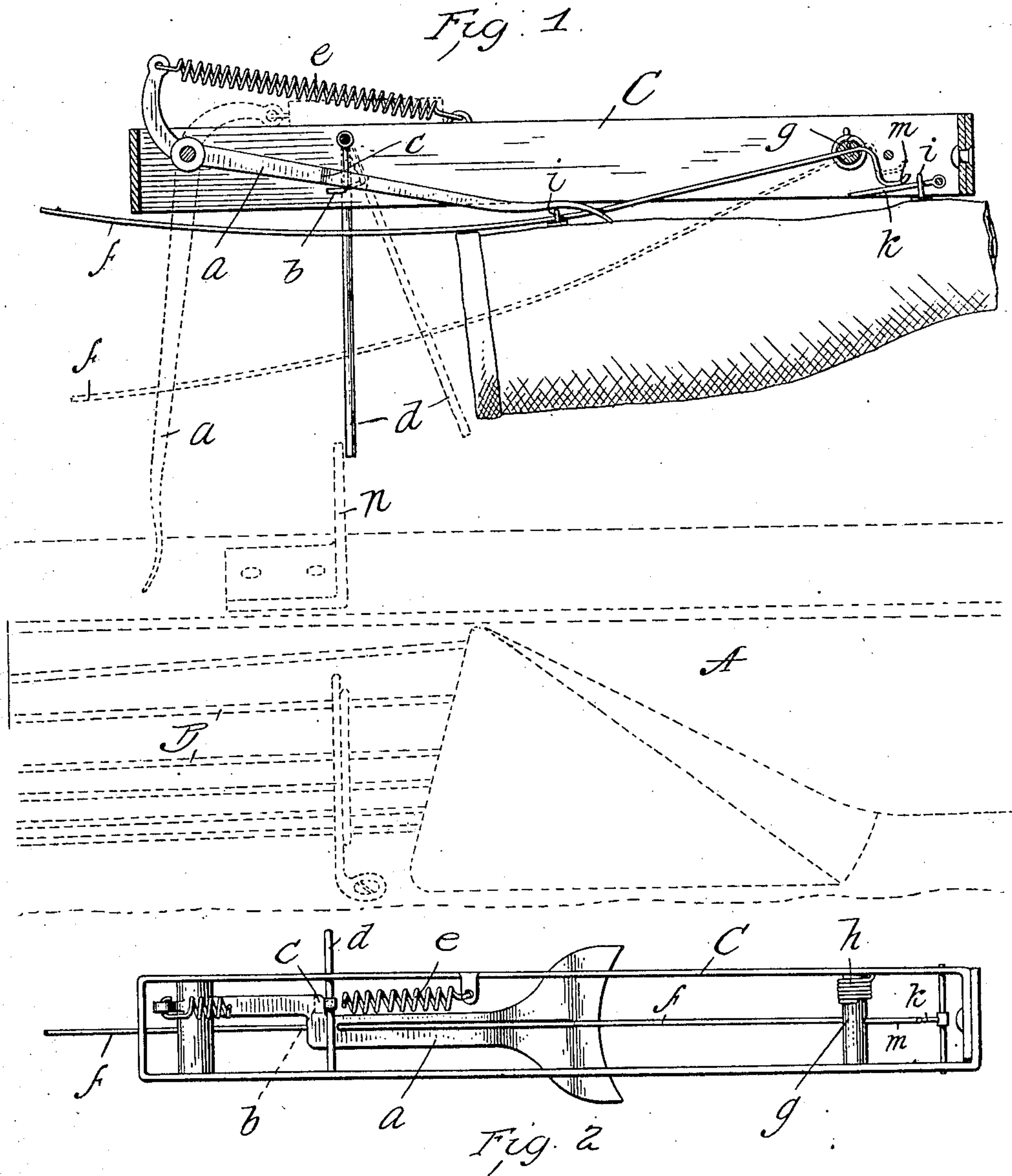
PATENTED NOV. 12, 1907.

L. J. EVANS.

MAIL BAG CATCHING AND DELIVERING DEVICE.

APPLICATION FILED DEC. 26, 1906.

3 SHEETS—SHEET 1.



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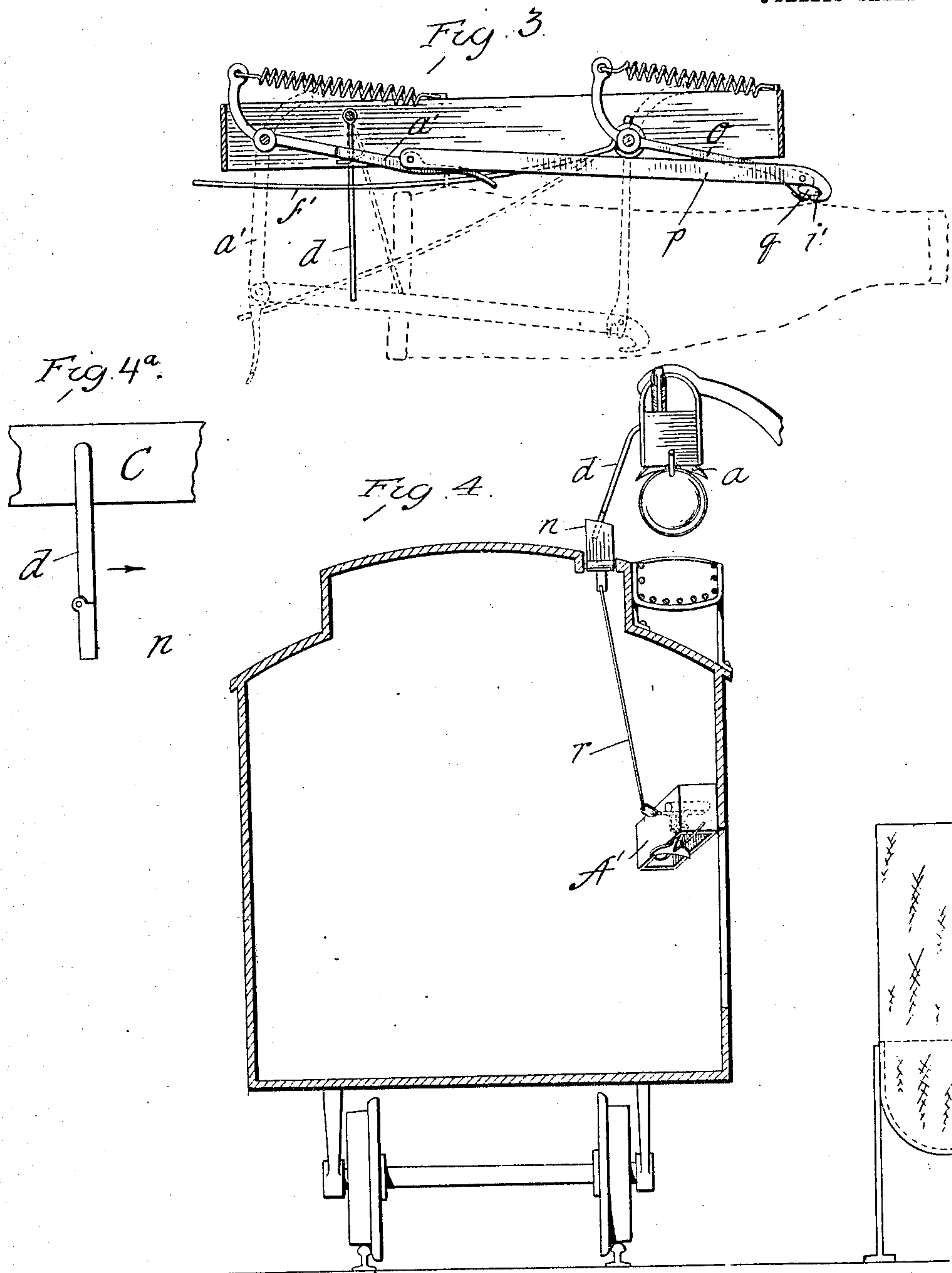
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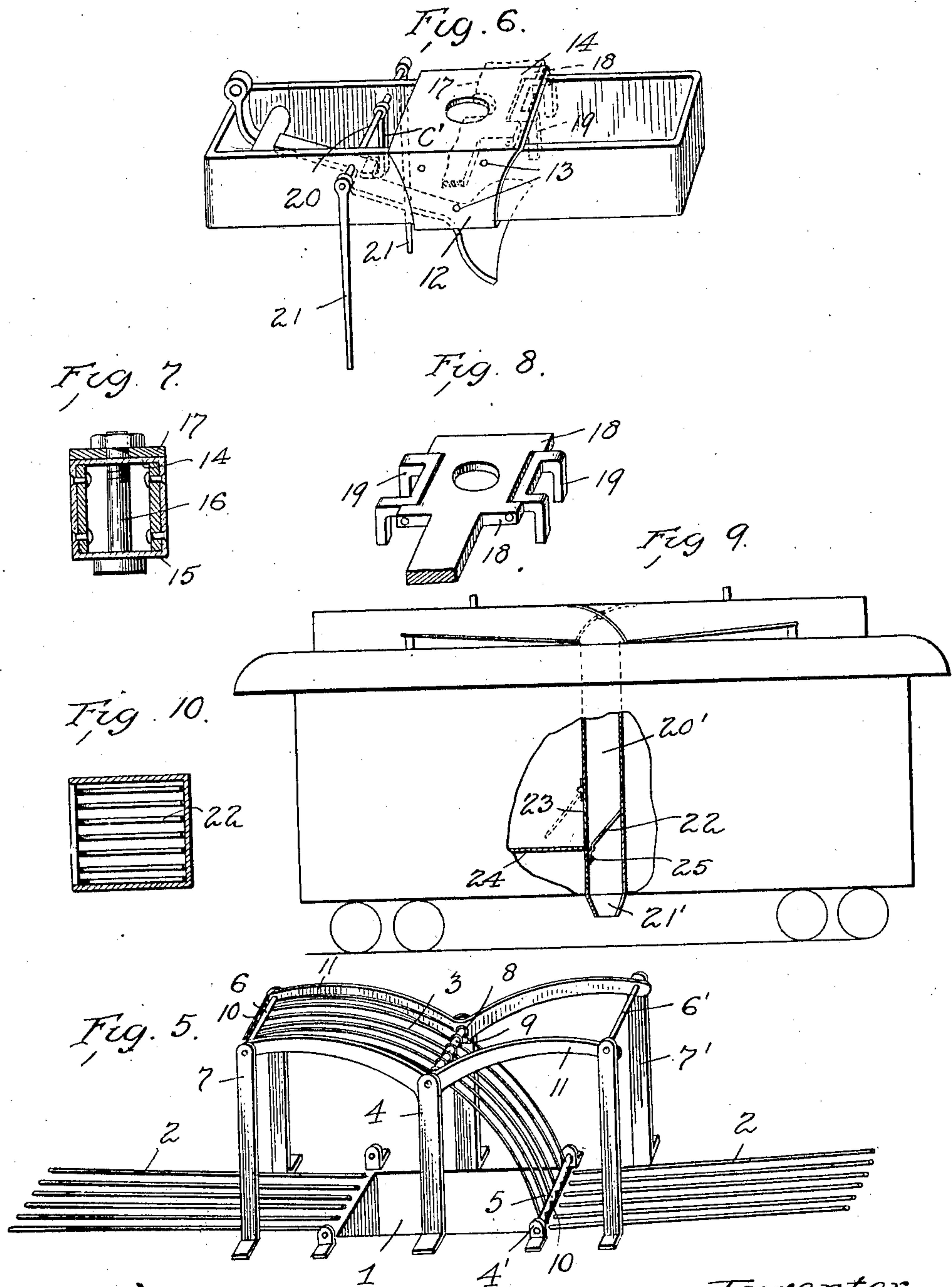
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3 SHEETS—SHEET 3.



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# UNITED STATES PATENT OFFICE.

LEWIS J. EVANS, OF KIRKWOOD, NEW YORK.

## MAIL-BAG CATCHING AND DELIVERING DEVICE.

No. 870,872.

Specification of Letters Patent.

Patented Nov. 12, 1907.

Application filed December 26, 1906. Serial No. 349,429.

To all whom it may concern:

Be it known that LEWIS J. EVANS, a citizen of the United States, residing at Kirkwood, New York, have invented certain new and useful Improvements in Mail-Bag Catching and Delivering Devices, of which the following is a specification.

My invention relates to improved means for catching or discharging mail bags in connection with railway trains.

The object of the invention is to assure the discharge of the bag into or from the car with certainty regardless of the speed of the car, and to this end I provide a bag holder which retains the bag in position until the retaining devices have been released by proper tripping mechanism, after which the bag is positively directed into or from the car by propelling means which are arranged to give the bag a downward and forward movement in discharging the bag.

In carrying out my invention I have found it necessary to keep the bag elevated in its normal position so as to clear the engineer's cab and other railway cars of unusual height, and I provide means which, on the tripping of the bag holding device, will not only release the bag from the devices but will also positively lower the bag to the line of the receiving chute upon the car and give the bag movement forward, the bag being guided in its downward and forward movement until safely within the receiving chute upon the car.

In applying the devices to the car for the ejecting of the bag therefrom the mechanism may be used either to throw the bag outward and downward or outward and upward, as may be found most desirable, in view of the local conditions.

In the accompanying drawings, Figure 1 shows a part of the top of a car in its relation to the bag holding mechanism, the full lines showing the parts just before tripping, while the dotted lines show the parts after tripping. Fig. 2 is a plan view of the bag holding mechanism. Fig. 3 is an elevation of a modified form of bag holder with its two positions shown, one in full lines and the other in dotted lines. Fig. 4 shows a car in its relation to the means for supporting the bag which is to be discharged into the car and in addition a bag holder located within the car for discharging the bag therefrom. Figs. 4<sup>a</sup>, 5, 6, 7, 8, 9 and 10 are details of modifications and extensions of the system of my invention.

In Letters Patent of the United States granted January 2, 1906 #808646 I have shown a chute located on the top of the car, adapted to receive the mail bag and to discharge the same within the car, this being preferred to the discharge of the bag into and out of the open door of the car for many reasons, and I utilize this form of inlet for the mail bag to the car in my present invention.

In Fig. 1 the top of the mail car is shown at A and the receiving chute for the mail bag at B preferably made of rods of iron or steel. This chute receives and delivers the bag into the car, as described in my former patent.

The bag holder consists of a frame C within which is pivoted a lever *a* held normally in the position shown in Fig. 1 in full lines, by a latch *b*, which engages under the shoulder *c* or offset of the lever *a*, this latch being a part of a trip lever *d*. The lever *a* is held up by the latch *c* in opposition to the tension of a spring *e*, the effect of this spring being on the release of the lever from the latch, to throw the lever *a* downward as in dotted lines in Fig. 1.

As shown in Fig. 2, the lever *a* is slotted for a portion of its length and in this elongated slot is fitted a rod *f*, one end of which is pivoted at *g*, to a shaft which is journaled in the frame C and is under the tension of a spring *h*, having a tendency to throw the free end of the rod *f* upwardly. The lower end of the lever *a* is flared or enlarged for a purpose hereinafter described.

The mail bag is of the usual construction, or may be, and has supporting loops *i*, one of which is threaded on the projecting end of the rod *f* in front of the lever *a*, and is drawn back upon the rod until the lever is substantially in its horizontal position and locked. The rear loop of the mail bag is held upon a stationary projection *k*, having slight downward inclination so as to allow the loop to slip off easily and the loop is held in place normally by having an extension of the rod *f* beyond its pivot bent downwardly so as to normally rest upon the projection *k* and prevent the displacement of the loop until the extension *m* of the rod *f* is lifted. It will thus be seen that in the position shown in full lines in Fig. 1, the bag is safely supported and is in position to be discharged into the postal car as soon as the train comes along. The car has upon it a lug or projection *n* which comes in contact with the trip arm *d* moving the same backward as shown in dotted lines, and thus releasing the lever *a*, which allows the spring *e* to exert its force so as to depress the end of the lever *a*, which is in contact with the bag immediately in rear of the first supporting loop and the result is that as this arm works with a swinging movement the rod *f* is depressed to the limit of the slot in the lever *a*, through the weight of the bag and the added force of the fork of the lever in contact with the bag, the lever *a* forcing the bag not only downwardly but forwardly with a strong impulse. On the first depression of the rod *f* the rear end thereof *m* is lifted out of the path of the rear loop of the mail bag which easily slips off from its retaining device *k* under the forward impulse and the result is that the bag is not only depressed from its elevated normal position to get within the lines of the receiving chute upon the car, but it is also sent forward by the same action while being



safely guided until it is ready to be received into the chute and discharged into the car. The rod *f* serves as a guide to the bag during this forward movement and prevents the bag from dropping prior to its reaching a safe point of disconnection, this being one of the objections to the construction shown in my former patent. The rod *f* serving as a guide is returned by its spring *h* to its normal position as soon as the depressing lever *a* has been restored to its normal position as shown in the full lines in Fig. 1.

It will thus be seen that according to my present invention the bag holder normally holds the bag in a position elevated above the cars of unusual height so that there will be no interference therewith, and when the postal car is reached the tripping of the releasing mechanism will not only lower the bag holding means with the bag carried thereby to the lower level of the postal car, but give it its forward impulse while being guided so as to direct it into the receiving chute. This enables the device to be used with trains going at varying rates of speed as the forward impetus given the bag will land it safely into the receiving chute whether the train is moving fast or slow.

I have shown in Fig. 3 a modification of the bag holder from that shown in Fig. 1. In this form I use substantially the same depressing lever *a'* with the guiding rod *f'* and tripping mechanism *d*, and in addition thereto I use a rear support *o* under the tension of a spring *e'* and having its lower end pivoted to a bar *p* extending between the arm *o* and the lever *a*. The end of the bar *p* is hooked and this coincides with a hook on the end of the arm *o* so as to form a support *q* for the rear loop *i'* of the mail bag when the parts are in the normal position shown in full lines in Fig. 3. As soon as the trip is operated the parts assume the position shown in dotted lines, the rear loop of the mail bag being released when the parts reach the position shown in dotted lines, as in this position the parts forming the hook have separated and the loop simply slips off in the continued forward movement of the bag.

In Fig. 4 I have shown a sectional view of a car and the relation which the bag supporting means holds to the car when in position to have the bag discharged thereinto. The trip for the releasing mechanism is shown in this figure at *d* and the releasing device *n* is, as stated, secured to the car. The bag holder within the car is shown at *A'* and is of precisely the structure already described. It is preferably located at an angle to the car wall so as to discharge the bag through an opening therein outwardly from the car into a chute adapted to receive it, which may be of any convenient arrangement. The trip for the bag holder within the car may be operated by hand, or I may if desired connect this with a chain or wire *r* to an extension of the projection *n* and by giving this projection slight movement I first cause, by the one trip device the action of the mechanism within the car to discharge the bag therefrom and immediately follow this with the action of the trip lever *d* without the car to cause the discharge of the bag held by the holder outside. Any other means however, may be employed to cause the successive action of the devices within and without the car and they may be acted upon in any order.

I have provided means whereby my system may be used in connection with a single track road and for

this purpose I employ a chute capable of being reversed and also bag holding mechanism which is also adapted to be reversed so that the same actions which take place when the train is running in one direction may be performed when the train is running in the opposite direction by reversing the position of the said chute and bag holding and controlling mechanism.

In Fig. 5 I show the reversible chute and this is adapted to operate in connection with an opening 1 in the top of the car located about midway of the length of the car. This chute comprises the inclined frames or gratings 2 leading to the opening 1 from each side longitudinally of the car. Above the opening, the chute proper, marked 3 is pivoted centrally of its length. This chute or frame when in one position extends from one edge of the opening upwardly, at an inclination over the opening and to a point beyond the other edge presenting a space or opening thereunder of sufficient size to receive the bag which is directed by the inclined frame of the chute downwardly into the car. This frame is pivotally supported in standards 4 so that by swinging it from the position shown in Fig. 5 its left hand end will be brought down to the edge of the car opening and its right hand end will be raised so that when the car is traveling in an opposite direction from that for which the frame was formerly set, it will, as before, direct the mail bag into the car through the opening 1. In order to hold the inclined chute or frame in either of its inclined positions, I provide lugs or ears 4' on the car roof at the opposite end of the opening 1 and I pass through these ears or lugs a locking rod 5 which, overlying the edge of the inclined frame, will hold the same down at this point to maintain it rigidly in position. When the frame is adjusted to this position, its opposite end bears upwardly against a rod 6 permanently held in standards 7 and a similar rod 6' held permanently in standards 7' performs a similar function when the frame is adjusted to a position opposite that shown in Fig. 5 and then the lock rod 5 is removed from the ears at the right of the opening and placed in the ears at the left of the opening to hold the frame down at this end.

The chute or frame is preferably composed of rods or wires bent so as to form a circular eye at the center and having preferably semi-circular turned up ends in which the locking rod 5 lies. The eyes 8 at the center of the rods receive the cross shaft or pivot rod 9. The extreme ends of the rods or wires composing the frame are connected by a tie rod or brace 10. The standards 4, 7, and 7' are all connected together by arms 11 and these are preferably curved to conform to the curve of the chute frame. While I have shown the chute frame as supported and operating in an open frame work it will be understood that I do not limit myself in this particular as suitable inclosing side plates may be employed.

I show in Figs. 6, 7, and 8 means whereby the supporting frame of the bag holding and operating mechanism may be reversibly supported on the sweep. For this purpose the frame at its central portion is provided with an encircling band 12 which is riveted at 13 to the sides of the frame. This band or encircling member provides upper and lower cross pieces 14 and 15 for the frame and through these cross pieces a pivot bolt 16



passes, it passing also through an enlarged head 17 at the end of the sweep. This head overlies the bag holding frame and at its ends it carries in ears or lugs 18 retainers 19 having portions passing down along side of the frame and acting to hold the same in position for action. When it is desired to set the frame for a train running in the opposite direction from that for which the frame was formerly set, it is simply necessary to throw back the retainers 19 swinging the frame on the pivot bolt 16 and when its reversed position has been assumed to then drop down the retainers 19 which will hold the frame rigidly against movement or displacement. The retainers drop down by gravity and require no special manipulation or setting by the operator. With this reversible frame it is necessary to provide special trigger or latch means so as to operate when the frame is set in either position and for this purpose I provide a cross shaft 20 having the trigger arms 21 extending down along side of the frame on each side thereof, and the latch *c'* as before extends down from the intermediate portion of the shaft to engage with the bag holding arm.

In Fig. 9 I show the reversible chute in its relation to the car in which the chute is arranged over the substantially central opening leading to the vertical chute or box 20'. This chute extends from the top of the car down through the same and through the floor, being open at its lower end at 21' where the sides of the chute are contracted. In this chute an inclined grating 22, Figs. 9 and 10, is arranged and opposite this grating the chute is provided with a hinged door 23 so that the bag, in falling through the chute, will strike the inclined grating and will be directed against the hinged door, which opening under the impact will permit the bag to be discharged onto a table 24. This movement will take place whether the car be running in one direction or the other. The chute being open at the bottom will allow snow, sleet or rain to pass downwardly and out without entering the interior of the car, and as the hinged door is normally closed, the interior of the car will be protected from the elements and will be kept at the desired temperature.

The lower end of the bars forming the inclined grating, are connected with the chute at a point 25 below the surface of the table 24 so that any moisture collected on these inclined bars will be carried to a point below the door opening and thus prevent it from being discharged on to the table.

It will be understood that the reversible feature of my invention is not confined in its application, to the means for delivering the mail bag to the car but may be carried out in connection with the means for delivering the bag from the car.

What I claim is:—

55 1. A mail bag holder, comprising a support for the bag, locking means for holding the bag in normal position, and means for ejecting the bag from the holder by a two fold or sweeping action and means for guiding said bag during its ejection from the holder, substantially as described.

2. A mail bag holder to be fixed adjacent the track 60 comprising supporting means, means for locking the bag in an elevated position adapted to be operated by a part on the car and means for imparting to the bag a downward and forward movement to the moving car on the release of the locking mechanism, substantially as described. 65

3. A mail bag holder, comprising a supporting frame, supports for the front and rear portions of the bag carried thereby, releasing means and means for imparting to the bag a downward and forward movement while the bag 70 is being guided, substantially as described.

4. A mail bag holder comprising a supporting frame, a mail bag held therein in an elevated position, means for depressing and impelling forward said bag and tripping means, substantially as described. 75

5. A mail bag holder supported without the car; a second holder within the car, means for discharging the bag from the holders and a trip on the car for actuating both discharge mechanisms, substantially as described.

6. In combination with a car, a chute to receive the bag and direct it into the top of the car, said chute being located on the car top and being reversible to act when the car is running in either direction, substantially as described. 80

7. In combination with a car having an opening in its top and a reversible chute centrally pivoted over the opening and shiftable into inclined position in either one direction or the other and means for locking the said chute or frame in either of its inclined positions, substantially as described. 85 90

8. In combination the supporting frame, the reversible chute frame, the ears on the top of the car and the holding rod passing through the said ears over the end of the frame, said frame being reversible, substantially as described. 95

9. In combination with a support without the car and fixed adjacent the track, a bag holding frame and means whereby the said frame may be reversed and holding and impelling mechanism carried by the said frame for holding and delivering the bag to the moving car, said mechanism operating in either position of the said frame, substantially as described. 100

10. In combination with a support without the car, a frame pivoted thereon to depend therefrom and turn in a horizontal plane to be reversed in position and bag holding and impelling mechanism carried by the said frame to act with a car running in either direction, substantially as described. 105

11. In combination a suitable support, a frame pivoted thereto, mechanism carried by the frame for holding and delivering a bag and the retainers pivoted to the support and adapted to embrace the frame, substantially as described. 110

12. In combination with a car, a chute having an inlet opening at the upper part of the car and an outlet at a lower point for the escape of rain and snow, and a grating in the said chute, to direct the mail bag into the car, substantially as described. 115

13. In combination with a car, a chute having an inlet at the upper part of the car, and a lower outlet for the elements and a grating extending in inclined position across the chute, and a door normally closed and arranged to open automatically under the impact of the mail bag through which door the said bag is discharged into the car, substantially as described. 120 125

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

LEWIS J. EVANS.

Witnesses:

EDWARD N. SARTON,  
HENRY E. COOPER.