

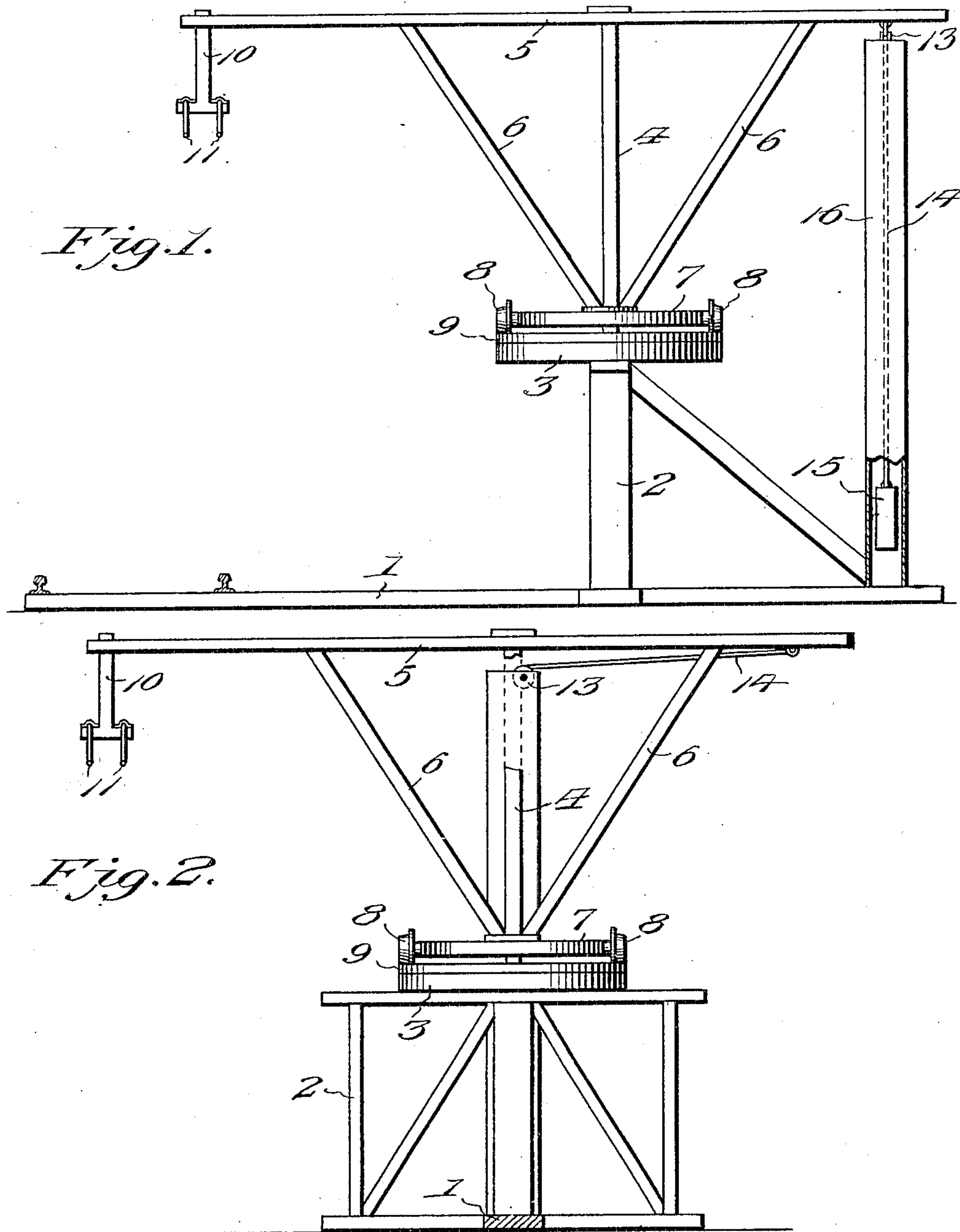
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PATENTED FEB. 5, 1907.

C. W. BELL.
MAIL BAG CATCHER AND DELIVERER.

APPLICATION FILED AUG. 2, 1905.

3 SHEETS—SHEET 1.



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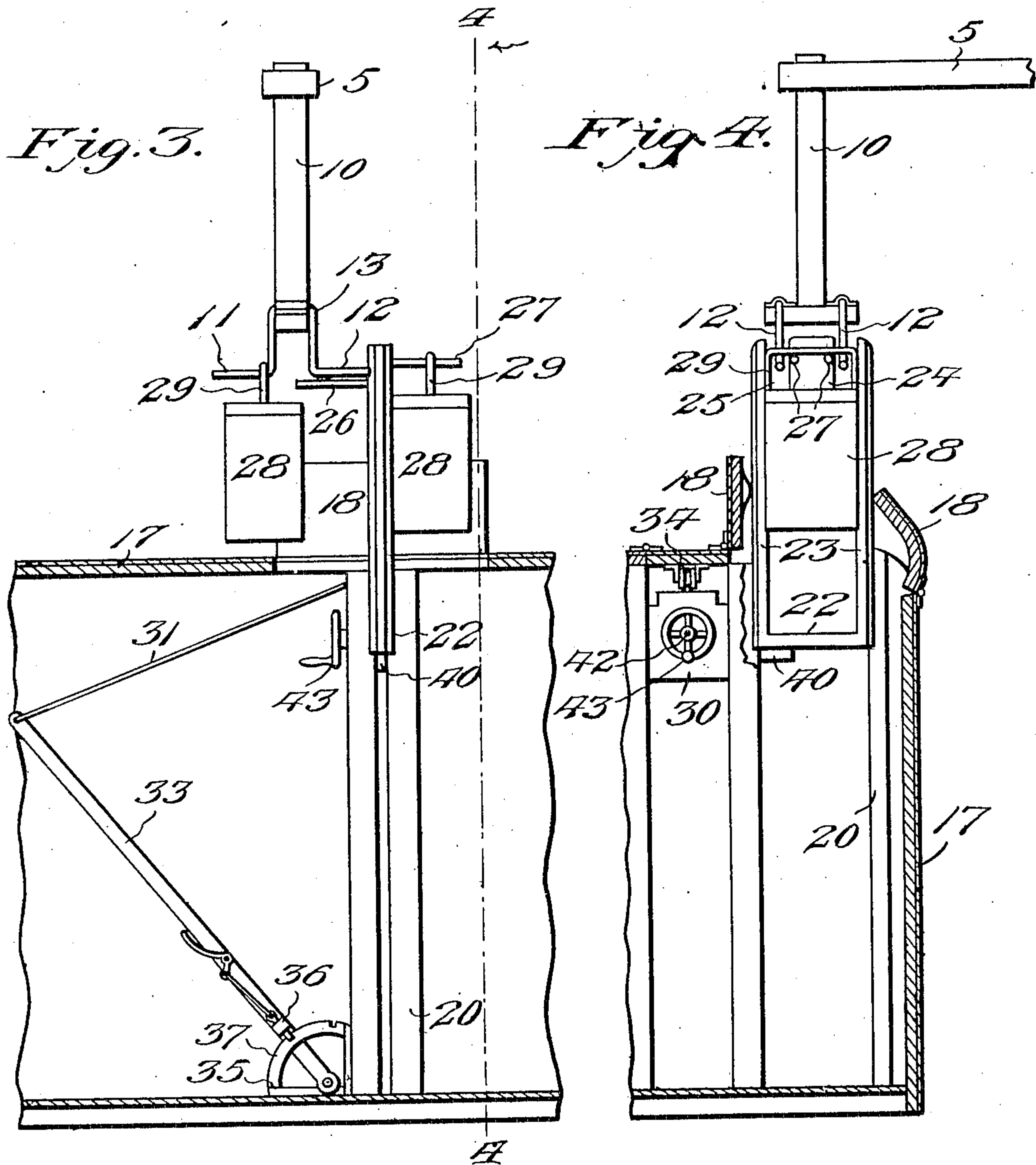
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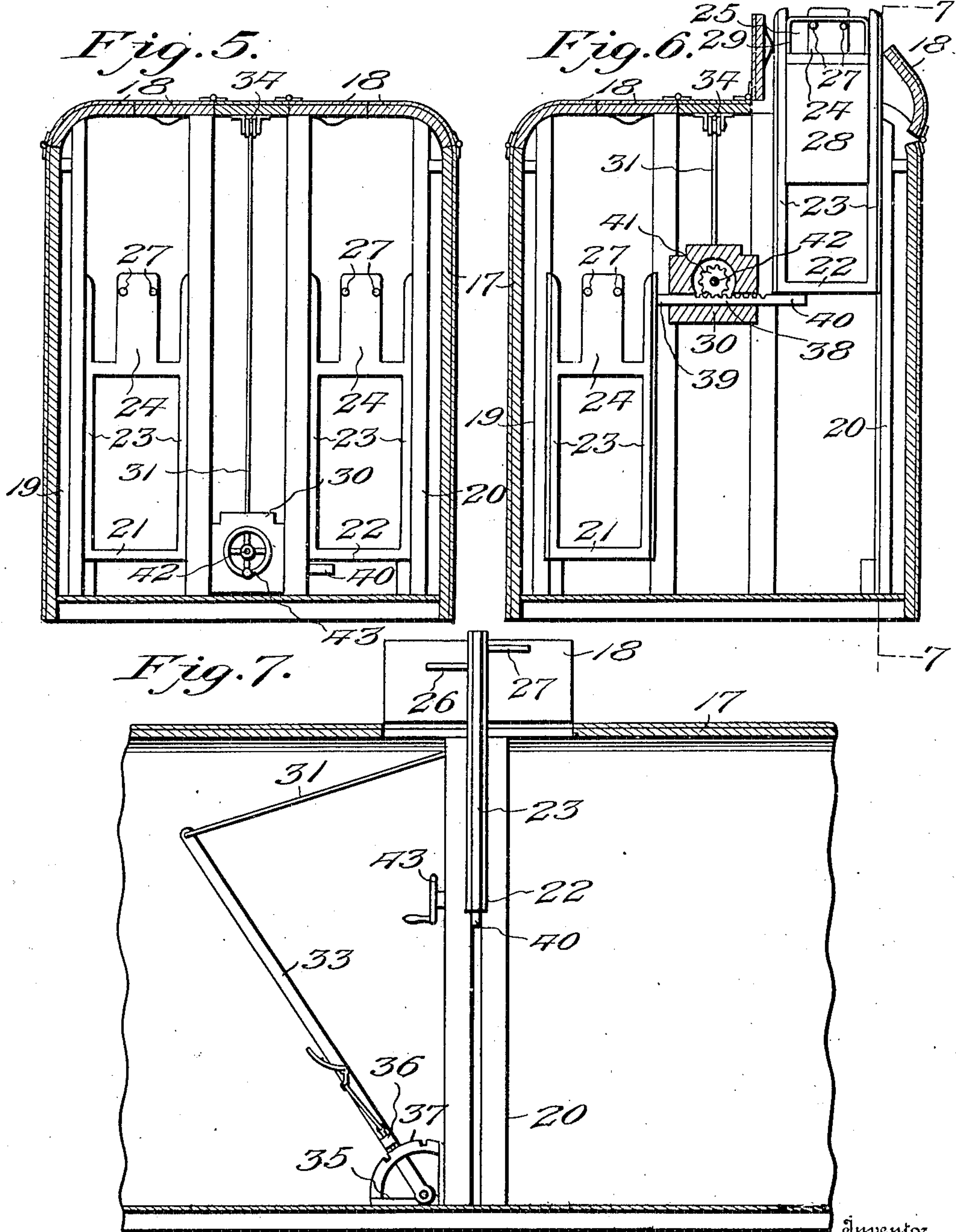
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

CLARENCE W. BELL, OF ALEXANDRIA, INDIANA.

MAIL-BAG CATCHER AND DELIVERER.

No. 843,433.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed August 2, 1905. Serial No. 272,427.

To all whom it may concern:

Be it known that I, CLARENCE W. BELL, a citizen of the United States of America, residing at Alexandria, in the county of Madison and State of Indiana, have invented new and useful Improvements in Mail-Bag Catchers and Deliverers, of which the following is a specification.

This invention relates to certain new and useful improvements in mail-bag catchers and deliverers, the object in view being to provide simple, efficient, and conveniently-operated means for delivering bags of mail from traveling cars to stations along the line of way, and vice versa; and, further, to provide bag catching and delivering devices for mail-cars which may be applied to existing cars without material change in the construction thereof.

With these and other objects in view the invention consists of the novel construction and combination of parts, hereinafter fully described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of the crane member of the mail bag catcher and deliverer, showing the arm thereof arranged in projected position to deliver or receive a bag to or from a car. Fig. 2 is a front elevation thereof, showing the arm swung to the position it assumes when a bag from a car is delivered thereto. Fig. 3 is a longitudinal section through the body of a mail-car, showing one of the bag-holding frames on the car elevated and supporting a bag to be delivered to the crane, the latter also supporting a bag to be caught by the frame and delivered to the car. Fig. 4 is a cross-section on the line 4 4 of Fig. 3. Fig. 5 is a cross-section through the body of the car, showing the normal position of the elements carried thereby. Fig. 6 is a similar view, the carriage also appearing in section, showing one of the bag-holding frames elevated; and Fig. 7 is a longitudinal section on the line 7 7 of Fig. 6.

I will first describe the stationary member or device located at the stations along the line of a railway to deliver and remove the bags of mail from a traveling car, and then the coacting catching and delivering devices on the car.

The numeral 1 in the drawings represents a base from which rises a suitably-braced hollow post or standard 2, carrying the stationary member 3 of a turn-table. Ex-

tending into this post is a mast or shaft 4, carrying a crane-arm 5, reinforced therefrom by braces 6. This mast or shaft also carries the rotary member 7 of the turn-table, which is provided with rollers 8 to traverse the annular track 9 on the stationary member 3, by which the mast and crane-arm are mounted to have free rotary movement. The outer or forward end of the crane-arm carries a supporting-head 10, provided with pairs of spaced parallel fingers 11 and 12, projecting from opposite sides thereof in a plane transverse or at right angles to the arm 5. Each finger is horizontally disposed and carried by a vertical arm 13, hanging pendent from the head 10, thus disposing said fingers below the plane of the head. The rear end of the crane-arm 5 is attached to a cord or chain 14, carrying a weight 15, movable in a suitable casing or guideway 16.

The crane is mounted in practice alongside the rails of the trackway with the arm 5 projecting at right angles to the rails and the head 10 disposed in position to lie above the roof of the car. The fingers 11 may act as supporting-fingers to sustain a mail-bag which is to be removed by the catcher on a car and the fingers 12 as catcher-fingers to remove a mail-bag to be delivered from the car. This is the operation in practice where a crane is disposed adjacent to each track of a double-track railway; but when a single-crane is used for catching and delivering mail from and to cars operating on a single-track railway the fingers 11 and 12 may operate alternately as catcher and delivery fingers, according to the direction of travel of the particular car, as will be readily understood. When the bag carried by a traveling car is transferred to one of the sets of fingers 11 or 12, the crane-arm 5 swings on an arc away from the track under the impact or thrust of the bag, which movement is limited by the weight 15 and is then returned by said weight to its normal position. The action of the weight prevents the crane-arm from being swung too violently or becoming broken and rendered inoperative.

Each mail-car is provided with means to cooperate with the crane for catching and delivering mail-bags. The car-body 17 is provided in its top at any point along the length thereof, but preferably at the center, with doors 18, a set of such doors being disposed on each side of the longitudinal center of the

car. These doors are adapted to be closed by gravity and to be automatically opened by the bag-supporting devices. Arranged within the body are sets of guides 19 and 20, disposed below the respective sets of doors, and arranged to travel in said guides are sliding bag-holding frames 21 and 22 of proper weight to drop by gravity when unsupported. Each frame is provided with projecting contacts 23 to engage and open the doors and between said contacts with a supporting post or projection 24. The projection 24 is of less width than the distance between the door-opening projections 23, to leave intervening spaces or passages 25 for the reception of the fingers 11 and 12 of the crane, and these fingers are properly spaced to clear the supporting-post 24. The post 24 carries sets of oppositely-projecting pairs of fingers 26 and 27, the fingers 26 being adapted to support a bag to be delivered to the crane and the fingers 27 to remove the bag held by the crane and to be delivered to the car. Each mail-bag 28 will be provided with a bail 29 to adapt it to be suspended from the supporting-fingers of the crane or bag-holding frame, as shown.

In order to raise and lower the frames 21 and 22 to throw either into or out of operation, raising and lowering mechanism is provided. This comprises a sliding carriage or traveler 30, slidable on the inner guide members of the sets of guides 19 and 20 and supported by a hoisting cable or cord 31, attached at one end thereto and at the opposite end to an operating-lever 33, said cord or cable being supported and guided by a suitable pulley or sheave 34. The lever 33 is pivoted at its lower end to a bracket 35 and provided with a dog or latch 36 to engage a toothed segment 37, carried by said bracket to lock the lever in adjusted position. When the lever is swung outwardly, the carriage or traveler 30 will be elevated, and when the lever is swung inwardly or in the reverse direction the traveler will be free to descend by gravity. The traveler is provided with a transverse bore or passage in which is slidably mounted a rack 38, the terminals of which form supporting and lifting arms 39 and 40. The rack is of such length that when shifted to the limit of its movement in one direction or the other the arm 39 will lie in the path of movement of the bag-holder 21, or the arm 40 will lie in the path of movement of the bag-holder 22, so that the arm 39 may be adjusted beneath the holder 21 and the arm 40 beneath the holder 22. The traveler 30 is also bored to form a chamber in which is mounted an adjustable pinion 41, engaging the rack, said pinion being mounted upon a shaft 42, having an operating crank wheel or handle 43. It is thereby apparent that by turning the pinion the shifting rack or elevating member 38 may be ar-

ranged to project beneath either bag-holding frame or below both bag-holding frames when the latter are in lowered position.

In the drawings I have shown the bag-holding frame 22 elevated to cooperate with the crane, and it will be seen that the elevation of said frame forces the doors 18 open, thus allowing the frame to project through the top of the car. A mail-bag is shown also supported upon the fingers 27 of said frame 22 for delivery to the crane, and another mail-bag is shown suspended from the delivery-fingers 11 of the crane to be transferred to the holding-frame for delivery to the car. Assuming the car to be moving in the direction of the arrow illustrated in Fig. 3, it will be apparent that the fingers 26 of the holder 22 will engage the bail of the mail-bag supported by the fingers 11 of the crane and release the same therefrom, while the fingers 12 of the crane will engage the bail of the bags supported by the fingers 27 of the frame 22 and detach the same therefrom, the bags thus being respectively transferred from the car to the crane and from the crane to the car as the latter travels past the mail-station. The operation of the crane when the bag from the car has been delivered thereto has been already described, and it will be understood that when the crane-arm 5 swings outwardly the bag previously supported thereby will have been transferred to the fingers 26 and will lie above the opening in the top of the car adapted to be closed by the doors 18. After the bag has been caught by the frame 22 the latter may be lowered into the car for the convenient removal of the bag by simply restoring the operating-lever 33 to its normal position, whereupon the frame and traveler 30 will both descend by gravity and the doors 18 will automatically close to cover the opening in the roof. The holding-frame 21 may be engaged and operated in like manner for use when the crane faces that side of the car.

It will thus be seen that my invention provides simple and convenient and easily-operated mail-bag catching and delivering mechanism, whereby bags of mail may be transferred from traveling cars to stations along the line of way, and vice versa; and, further, that the operating mechanism on the cars may be applied to existing cars without materially changing the construction of the latter and that it may be conveniently manipulated by the mail-clerks.

Having thus described the invention, what is claimed as new is—

1. In a mail-bag catcher and deliverer, the combination with a relatively stationary element provided with oppositely-projecting pairs of catching and delivering fingers, of a traveling element provided with a support carrying oppositely-projecting pairs of contacting catching and delivering fingers, and means for raising and lowering said support.

2. The combination with a relatively stationary element provided with pairs of catching and delivering fingers, of a traveling element provided with coacting pairs of catching and delivering fingers, the fingers of the pairs being arranged in parallel relation, and the fingers of one of the elements spaced apart a greater distance than the fingers of the other element.

3. In a mail-bag catching and delivering mechanism, coacting stationary and movable elements, each provided with pairs of oppositely-projecting catching and delivering fingers, the fingers of each pair being arranged in parallel relation and the fingers of one element spaced apart a greater distance than the fingers of the other element.

4. In a mail-bag catcher and deliverer, the combination with a relatively stationary element provided with catching and delivering devices, of a traveling element provided with coacting catching and delivering devices, a vertically-movable frame on the traveling element carrying the catching and delivering devices thereof, means for raising and lowering the said frame, and means for locking the same in raised position.

5. In a mail-bag catcher and deliverer, the combination with a relatively stationary element provided with catching and delivering devices, of a traveling element provided with coacting catching and delivering devices, a closure carried by the traveling element, a vertically-movable frame adapted to automatically open said closure to allow the same to project from the traveling element, said frame being vertically movable on the traveling element, and carrying the catching and delivering devices thereof, and means for raising and lowering said frame.

6. In a mail-bag catcher and deliverer, the combination with a relatively stationary element provided with catching and delivering devices, of a traveling element provided with coacting catching and delivering devices, doors on the traveling element, a vertically-movable frame carried by the frame and adapted when elevated to open said doors and project therethrough, said frame carrying the catching and delivering devices of the traveling element, and means for raising and lowering said frame.

7. In a mail-bag catcher and deliverer, the combination with a relatively stationary element provided with catching and delivering devices, of a traveling element provided with coacting catching and delivering devices, a vertically-movable frame mounted on the traveling element and carrying the catching and delivering devices thereof, a traveler for raising and lowering said frame, and means for operating said traveler.

8. In a mail-bag catcher and deliverer, the combination with a traveling element provided with mail-bag catching and delivering

devices, of a relatively stationary element provided with coacting mail-bag catching and delivering devices, said relatively stationary element being yielding, mounted to swing in a horizontal plane and cushion the impact of the bag caught thereby.

9. A mail-bag catching and delivering mechanism, coöperating relatively fixed and movable elements, each element provided with oppositely-projecting pairs of spaced catching and delivering fingers, the fingers of one pair being spaced a greater distance apart than the fingers of the other pair, the fingers of one pair also being arranged in the same plane and the fingers of the other pair in different planes.

10. In a mail-bag catcher and deliverer, a car provided with projectable and retractable mail-bag supports, and an interposed device normally out of connection with and engageable with either support to project the same at will.

11. In a mail-bag catcher and deliverer, a car provided with vertically-movable bag-holding frames provided with catching and delivering devices, an interposed traveler, and means for connecting the traveler with either frame for projection, substantially as described.

12. In a mail-bag catcher and deliverer, a car provided with a pair of vertically-movable bag-supporting frames having catching and delivering devices, an interposed traveler, an element carried by the traveler and adapted to be projected into engagement with either frame, means for operating said element, and means for raising and lowering the traveler.

13. In a mail-bag catcher and deliverer, a car having an opening in the roof thereof, a vertically-movable catching and delivering device adapted to be projected through said opening, means for manipulating said device, and a closure for said opening.

14. In a mail-bag catcher and deliverer, a car provided with openings in the roof thereof, vertically-movable catching and delivering devices adapted to be projected through said openings, and a common operating mechanism for projecting either catching and delivering device at will.

15. In a mail-bag catcher and deliverer, a car provided with projectable and retractable mail-bag supports, and operating means independent of connection with either support and having a member adjustable to engage one or the other at will, whereby either support may be projected and retracted independent of the other.

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

CLARENCE W. BELL.

Witnesses:

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D. C. CHIPMAN.