

H. J. HANSEN.  
MAIL BAG CATCHING AND DELIVERING APPARATUS.  
APPLICATION FILED AUG. 20, 1908.

943,071.

Patented Dec. 14, 1909.  
4 SHEETS—SHEET 1.

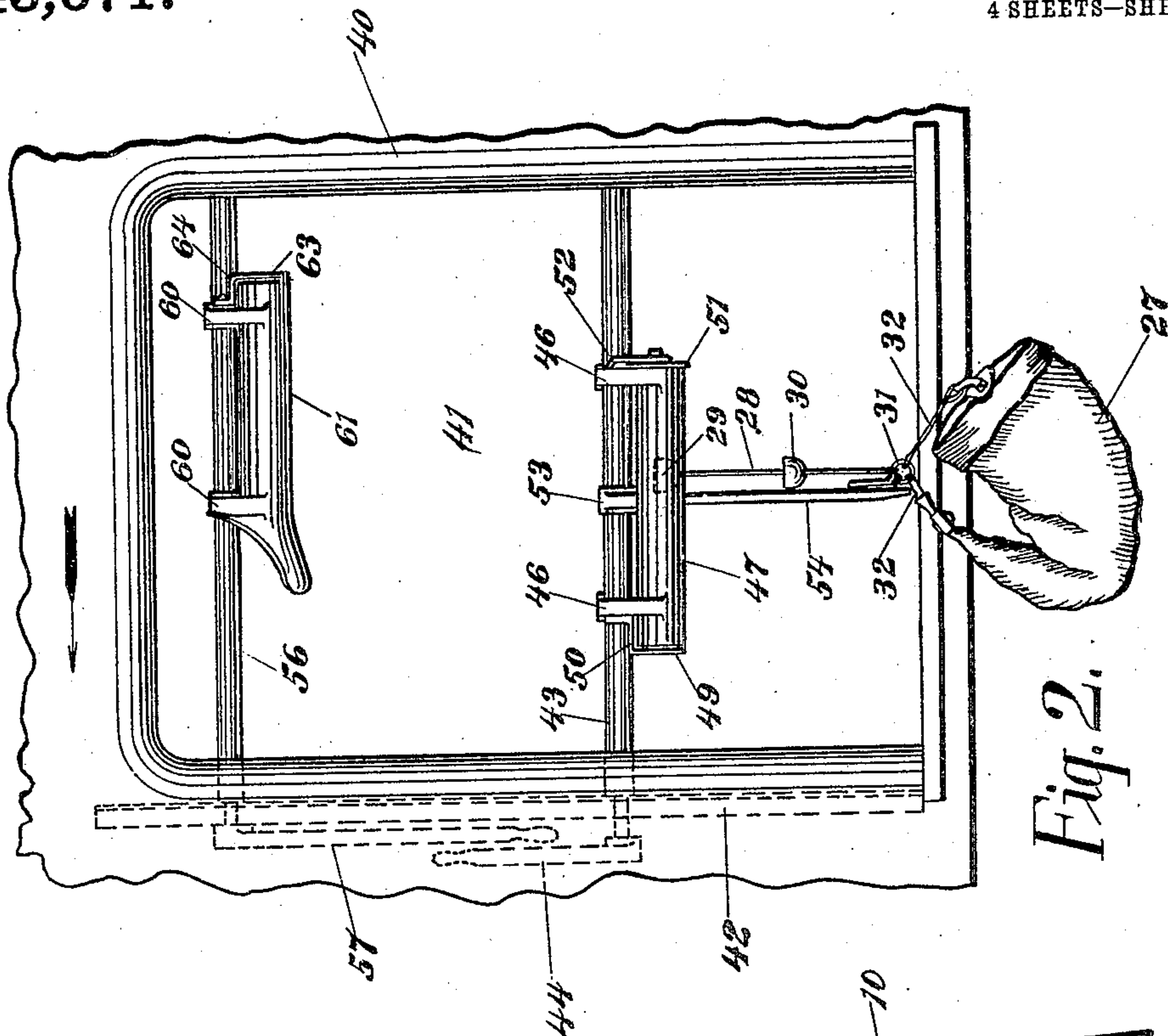


Fig. 2.

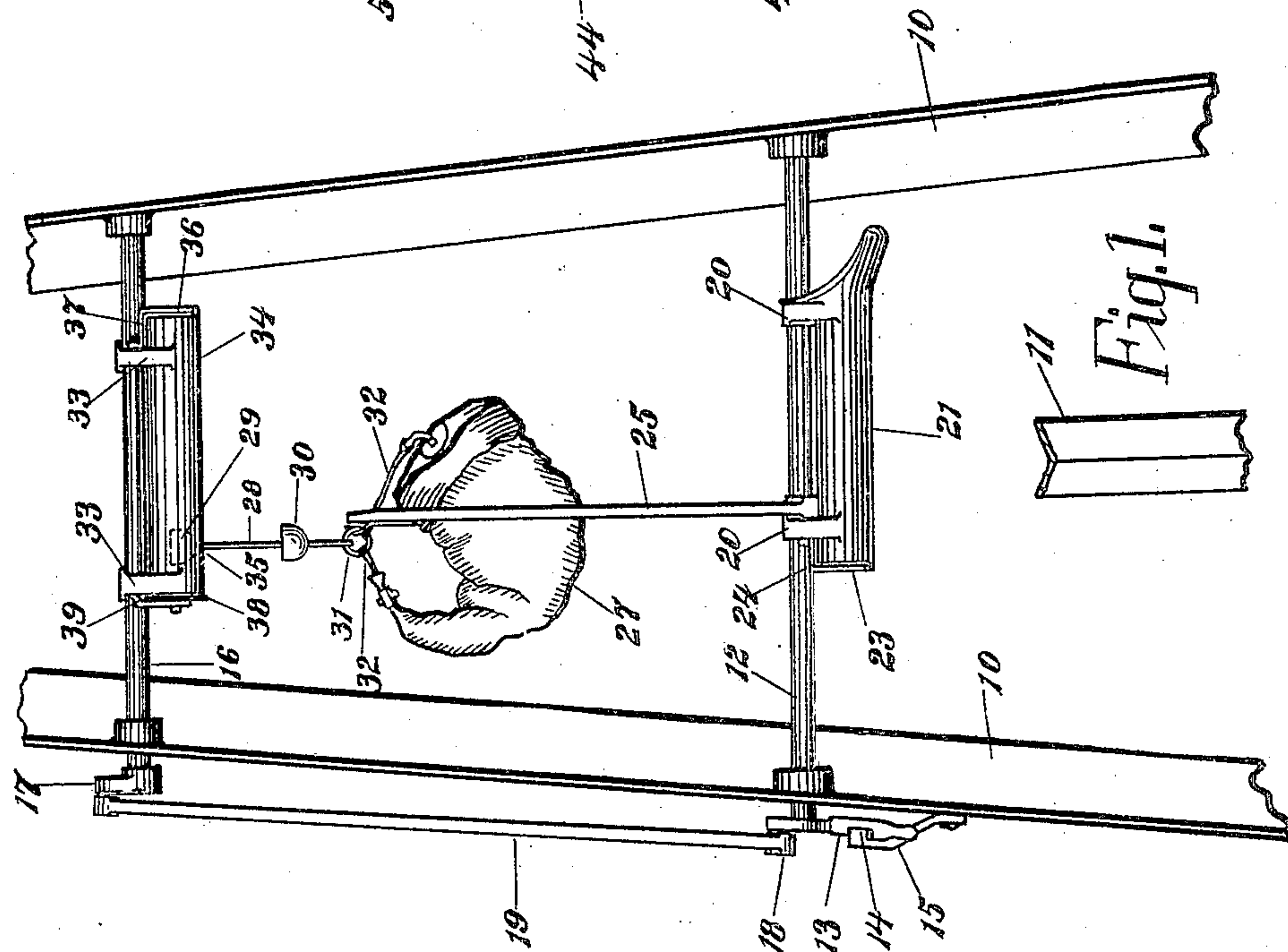


Fig. 1.

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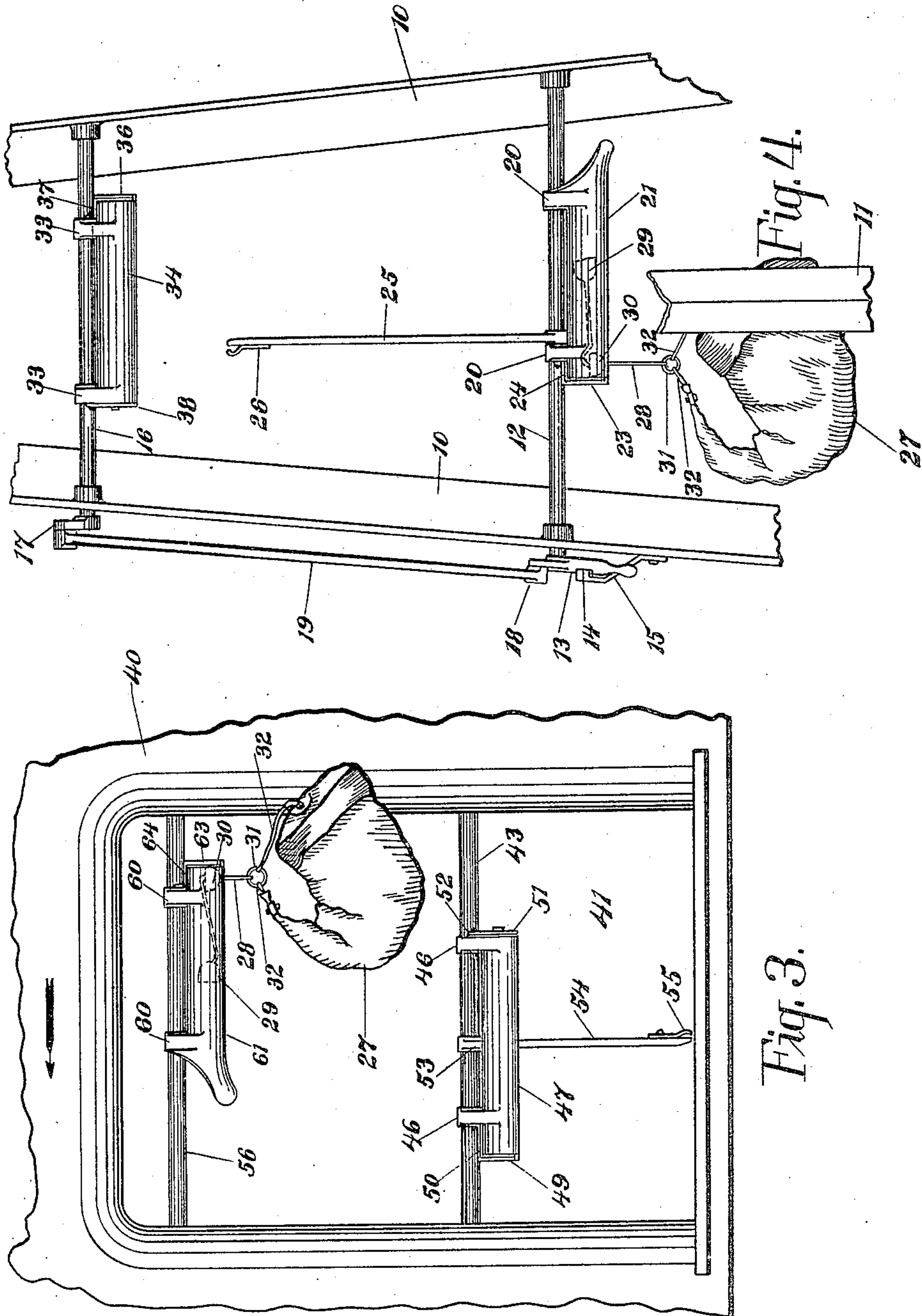
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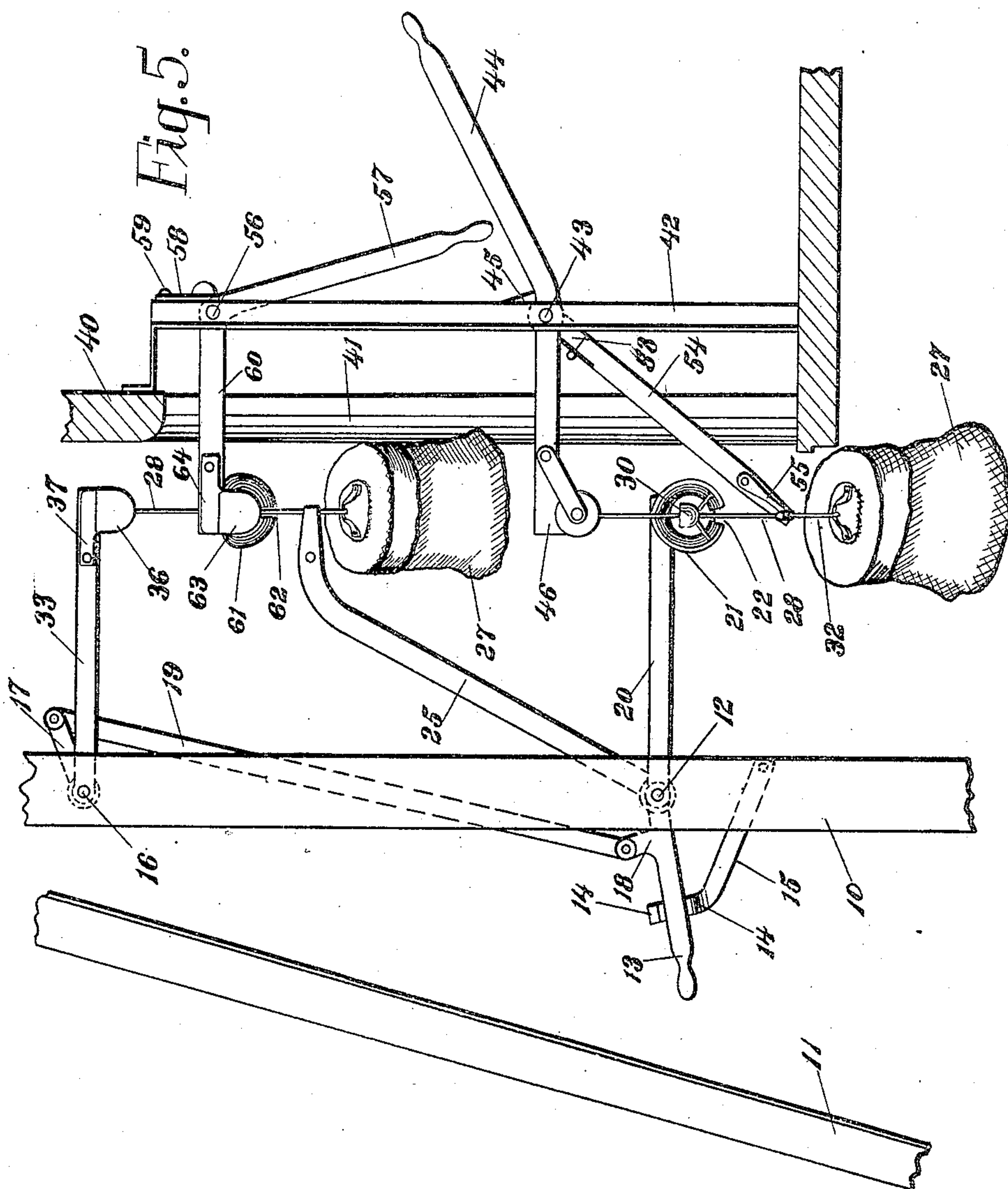
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4 SHEETS—SHEET 3.



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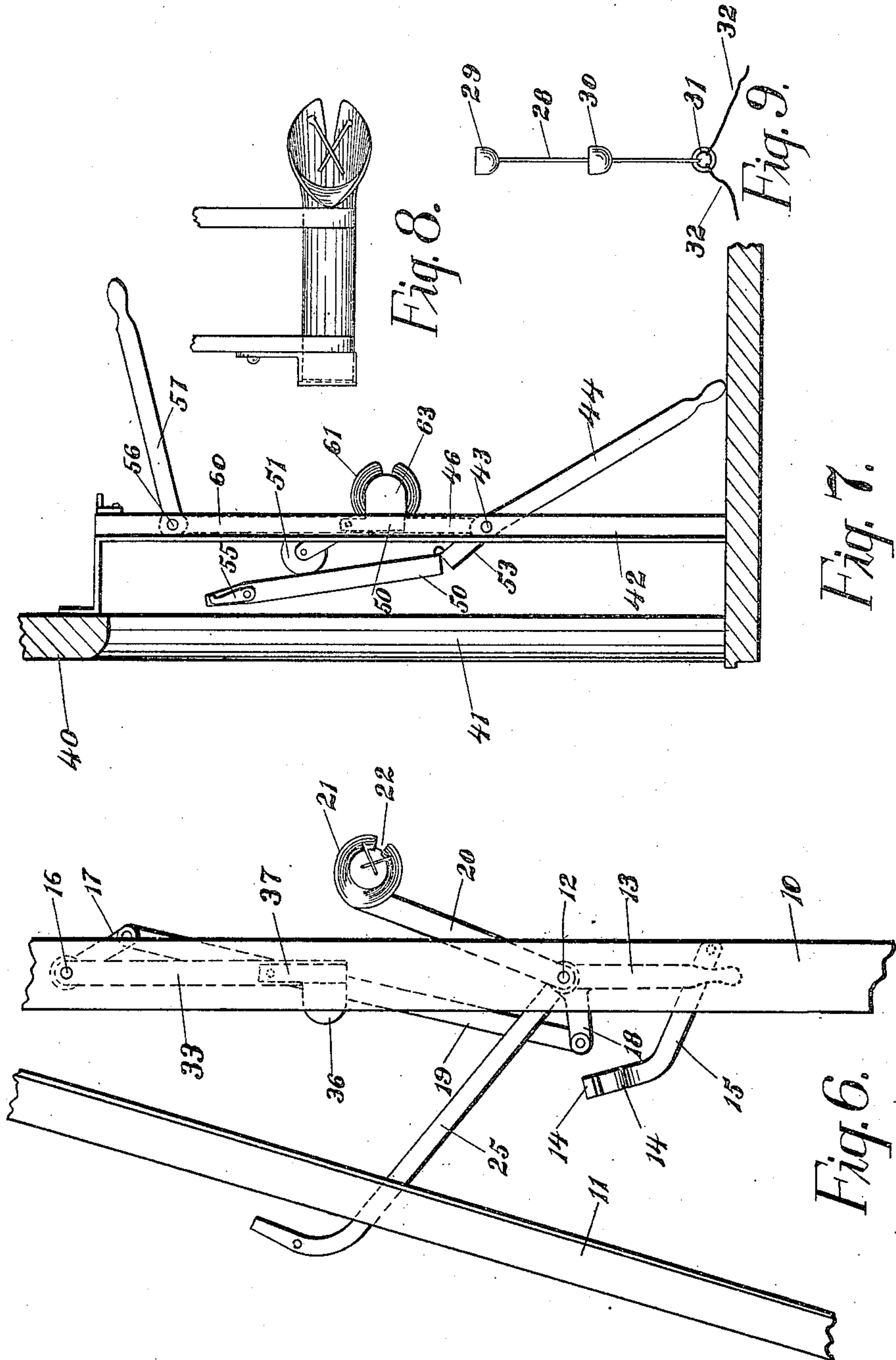


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# UNITED STATES PATENT OFFICE.

HANS J. HANSEN, OF RACINE, WISCONSIN.

MAIL-BAG CATCHING AND DELIVERING APPARATUS.

943,071.

Specification of Letters Patent.

Patented Dec. 14, 1909.

Application filed August 20, 1908. Serial No. 449,566.

*To all whom it may concern:*

Be it known that I, HANS J. HANSEN, residing in Racine, in the county of Racine and State of Wisconsin, have invented new and

5 useful Improvements in Mail-Bag Catching and Delivering Apparatuses, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

10 My invention has relation to improvements in mail bag catching and delivering apparatuses.

The object of the invention is to provide an improved form of mail bag catching and

15 delivering apparatus of not only comparatively simple construction, but furthermore a construction in which the operation is most efficient and certain, thereby insuring the proper delivery of the mail bag from the car

20 to the station, and the proper delivery of a mail bag from the station to the car.

With the above primary object, and other incidental objects, in view, the invention consists of the devices and parts, or their

25 equivalents, as hereinafter set forth.

In the accompanying drawings, Figure 1 is an elevation of the mail bag catching and delivering apparatus used at the station, showing the parts in position to deliver a

30 mail bag to a car and to receive a mail bag from the car; Fig. 2 is a side elevation of a fragment of a car, showing the mail bag delivering and catching apparatus pertaining

35 to the car in position to deliver a mail bag at the station, and to receive a mail bag from the station; Fig. 3 is a similar view to

40 Fig. 2, but showing a bag delivered from the car apparatus, and a bag caught or received by the car apparatus; Fig. 4 is a similar

45 view to Fig. 1, but showing the station apparatus as having received a bag from the car, and as having delivered a bag to the car; Fig. 5 is a view showing the parts illus-

50 trated in Figs. 1 and 2, that is, the station apparatus and the car apparatus, the view looking in a direction at right angles to the position of the parts shown in Figs. 1 and

2; Fig. 6 is a view of the station apparatus at right angles to Fig. 1, but showing the retrieved position of the several parts; Fig. 7 is a view of a fragment of the car and the mail delivering and receiving apparatus carried thereby, at right angles to Fig. 2, and showing the retrieved or drawn in position

of the parts; Fig. 8 is a detail view of one of 55 the mail bag suspending tubes; and Fig. 9 is a detail view of the mail bag suspending device.

Referring first to the apparatus located at the station, the frame or support may be of 60 any desirable construction, but I prefer to provide a frame consisting of the two legs or standards 10, 10, and a third leg or standard 11, the latter forming a brace or support, and the entire structure being substan- 65 tially in the form of a tripod. Turnable in the members 10, 10 is a lower rock-shaft 12. One end of this shaft is extended slightly beyond one of the uprights, and is provided with a crank 13, which is adapted 70 normally to be releasably held between fingers 14, 14 extending laterally from a spring arm 15, as shown most clearly in Fig. 5. The shaft is slidable longitudinally for a short distance in its bearings, and when 75 slid in one direction the crank arm is brought from between the fingers 14, and is then free to be turned. Also journaled in the uprights 10 is an upper rock-shaft 16. One end of this shaft is also extended, and 80 said extended end provided with a crank 17. The lower crank 13 is provided with a lug 18, and a link 19 is pivotally connected at its lower end to this lug and at its upper end to the crank 17. 85

Extending from the rock-shaft 12 in a direction toward the track upon which the cars run are arms 20, 20. These arms at their outer ends support and have secured thereto a tube 21. The under side of this 90 tube is provided longitudinally with a slot 22 (see Figs. 5 and 6) and the mouth or inlet of the tube is of flaring form, with the upper side of the flared end open and cut away or tapered downwardly to the 95 extreme inlet end or mouth (see Figs. 1 and 4). This open flared end of the tube is at the end of the tube which is nearest to the direction of the advancing train. The opposite end of the tube is also open, but is 100 adapted to be closed by means of a gate 23, said gate provided with a short arm 24 which is pivoted to one of the arms 20. When the short arm is turned down, the gate 23 closes this end of the tube, and when said 105 short arm is turned upwardly on its pivot the gate is thrown to an open position.

Mounted rigidly on shaft 12, and extend-



ing therefrom at an incline, is a bag-holding or steadying arm 25. The outer end of this arm is advisably bent at an angle in a direction toward the track, and has secured thereto a spring arm 26, said spring arm having its free end curved into approximate hook form.

The mail bags are indicated by the numeral 27. The bag suspending devices each consist of a cord 28, of wire, or other suitable material. Each of these cords or wires is provided at its upper end with a button 29, and at an intermediate point with another button 30. To the lower end of each of these cords is connected a ring 31. From each ring leads other wires or strands 32, 32, which are adapted to be connected to opposite ends of the mail bag, as clearly shown in the drawings.

Rigidly secured to the upper shaft 16 of the station apparatus are arms 33, 33. These arms at their outer ends support a tube 34 provided on its under side, and longitudinally thereof, with a slot 35. The tube 34 is not provided with a downwardly tapered and flaring mouth, as in the case of tube 21. One end of tube 34 is closed by means of a gate 36, provided with a short arm 37, said short arm being pivoted to one of the arms 33. The opposite end of this tube is closed by means of a cap 38 attached to the end of a spring arm 39, the action of said spring arm being to normally hold the cap in a closing position.

The car which is shown in fragment in Figs. 2, 3, 5 and 7 of the drawings, and indicated by the numeral 40, is provided with the usual side opening 41. Within the car, and standing out from the inner face of the side of the car, and substantially parallel with the side edges of the opening 41, are standards 42, 42. In these standards is journaled a lower shaft 43, one of the extended ends of said shaft carrying a crank or handle 44, said crank or handle being normally held at the position shown in Fig. 5 by reason of the engagement therewith of a lug 45 provided on one of the standards 42. Projecting outwardly from the shaft 43 are two arms 46, 46, said arms supporting at their outer ends a tube 47, the underside of said tube being provided with a longitudinal slot 48. A gate 49 is pivoted at the end of this tube which first approaches the station, and this gate, as in the case of the other tubes, is provided with a short arm 60 which is pivoted to one of the arms 46. The opposite end of tube 47 is closed by a cap 51 which has connected thereto one end of a spring arm 52, the opposite end of said spring arm being connected to one of the arms 46 projecting from the shaft 43. Extending from shaft 43 is a lug 53, and pivoted to this lug is a bag-holding arm 54. To the outer end of this arm is pivoted a

hooked spring finger 55. Also journaled between the standards 42 is an upper shaft 56. On one end of this shaft is mounted a crank 57. This crank is held at the position shown in Fig. 5 by the engagement therewith of the lower free end of a spring arm 58, said arm being pivoted at its upper end on a pivot pin 59 to one of the standards 42. Projecting outwardly from the shaft 56 are two arms 60, 60, said arms supporting at their outer ends a tube 61. This tube is exactly similar in construction to the tube 21 of the station apparatus, that is to say, it is provided through its bottom with a longitudinal slot 62, and one end thereof is formed into a flaring mouth with the upper surface at this end tapered and cut downwardly to the flared portion. This flaring mouth in the case of the tube 61, however, points in a direction corresponding to the direction of the travel of the train, while the flaring mouth in the case of tube 21 points in the opposite direction. The other end of the tube 61 is normally covered by means of a gate 63, which gate is provided with a short arm 64, said short arm being pivoted to one of the arms 60.

Figs. 6 and 7 show the different parts as adjusted to the position they occupy when not in use. Referring, first, to the parts at the station, it is to be stated that in order to adjust the said parts to the position shown in Fig. 6, the crank or handle 13 is grasped and the shaft 12 pulled or moved longitudinally in a direction to release said crank from engagement with the fingers 14, 14 of the arm 15. The crank is then turned downwardly, and this will rotate the shaft 12 in a direction to turn the arms 20, 20 and the tube 21 carried thereby upwardly, and the arm 25 backwardly toward the bracing leg 11. By the down movement of the crank 13 in the manner just described, the upper shaft is also turned by reason of the action of the link 19. The turning of the upper shaft, however, is in a direction to swing the arms 33 of said shaft and consequently the tube 34 carried by said arms downwardly to the position shown in Fig. 6.

In regard to the action necessary to be taken to throw the mechanism carried by the car out of operating position and into the car, as illustrated in Fig. 7, it is to be stated that this is done by turning the arm 58 outwardly laterally on its pivot. This releases the handle 57 and permits the shaft 56 to turn inwardly and drop down the arms 60 and the tube 61. The handle 44 is next turned downwardly, and this has the effect of rotating shaft 43 in a direction to throw arms 46 and tube 47 upwardly. The next step is to turn the bag-holding arm 54 inwardly on its pivot. When it is desired to set the station apparatus and the car apparatus at the operative positions shown in



Fig. 5, the reverse operation to that just explained is of course necessary.

The mail bag at the station is suspended from the upper tube 34. This suspension is accomplished by turning the gate 36 to an open position, enabling the upper button 29 of the bag-suspending device to be readily inserted in the end of the tube, the said bag-suspending wire or cord extending through the longitudinal slot 29. After the bag is suspended in this manner, the gate of course is again closed. The next step is to bring the upper spring finger 26 of the bag-holding arm 25 into engagement with one of the strands 32 of the bag-suspending mechanism. The arm 25 therefore prevents the mail bag from swaying or swinging in windy weather.

In regard to the mail bag carried by the car, this is suspended from the lower tube 47, and the said suspension is accomplished by opening gate 51 and passing the upper button of the bag-suspending device into the tube. After this the gate of course is again closed. The spring finger 55 of the bag-holding arm 54 is now brought into engagement with one of the strands of the bag-suspending device, as clearly shown in Fig. 5. It will be assumed that the car 40 is traveling in the direction of the arrow, Fig. 2. When said car reaches the station the flared mouth of the lower tube 21 of the station apparatus engaged the button 30 of the suspending device for the mail bag carried by the car, and this button is thereby caused to enter the tube 21. In regard to the bag carried by the upper tube 34 of the station device, the flared mouth of the upper tube 61 of the car apparatus engages the intermediate button 30 of the suspending device for the mail bag at the station, and said button is caused to pass into the tube 61. With the continued travel of the car, the upper button of the suspending device of the mail bag relating to the car is carried from within the tube 47, the pull necessarily opening the cap 51 against the action of the spring arm 52, and permitting of the exit of said button. The upper button of the suspending device of the mail bag carried at the station is also pulled out of the upper station tube 34 in exactly the same manner. Fig. 3 of the drawings illustrates the mail bag at the station as having been transferred to the car apparatus, and Fig. 4 illustrates the mail bag of the car as having been transferred to the station.

It is preferred that the gates and caps herein before described be provided at the ends of the tubes, in order to prevent wind from carrying the buttons out of the tubes before the required time, and which would be liable to occur if such gates and caps were not provided.

What I claim as my invention is:

1. The combination of a frame, a shaft mounted in said frame and provided with a portion projecting therefrom at an angle thereto, an open ended tube carried at the outer end of said projecting portion, the said tube provided throughout its length and on its under side with a longitudinal slot.

2. The combination of a frame, a shaft mounted in said frame and provided with a portion projecting therefrom at an angle thereto, an open ended tube carried at the outer end of said projecting portion, the said tube provided throughout its length, and on its under side with a longitudinal slot, and a bag-holding arm extending from the shaft and provided with means for engaging the bag-suspending device.

3. The combination of a frame, a shaft mounted in said frame and provided with a portion projecting therefrom at an angle thereto, an open ended tube carried at the outer end of said projecting portion, the said tube provided throughout its length and on its under side with a longitudinal slot, and one of said open ends being in the form of a flaring mouth.

4. The combination of a frame, a shaft mounted in said frame, said shaft provided with a portion projecting therefrom at an angle thereto, an open ended tube carried at the outer end of the projecting portion, the said tube provided throughout its length and on its under side with a longitudinal slot, a cap applied to one end of the tube, and means for moving said cap so as to adjust the same to open or close the end of the tube.

5. The combination of a frame, a shaft mounted in said frame, said shaft provided with a portion projecting therefrom at an angle thereto, an open ended tube carried at the outer end of the projecting portion, the said tube provided throughout its length, and on its under side, with a longitudinal slot, caps applied to the opposite open ends of the tube, and means for moving said caps so as to adjust the same to open or close the ends of the tube.

6. The combination of a frame, a rock-shaft mounted in the frame, the shaft provided with a portion projecting therefrom at an angle thereto, said projecting portion supporting at its outer end an open ended tube, said tube provided throughout its length, and on its under side with a longitudinal slot, the said projecting portion and its tube extending horizontally from the rock-shaft, when said rock-shaft is turned in one direction, and said projecting portion and its tube extending from the rock-shaft in a substantially vertical direction, when said rock-shaft is turned in the opposite direction.

7. The combination of a frame located at a station, or other point alongside of a track-way, a shaft journaled in said frame, one end of the shaft provided with a crank, a



catch which the crank is adapted to releasably engage, a projection or frame extending from the shaft, and an open ended tube at the outer end of said projecting portion, the said tube provided throughout its length and on its under side with a longitudinal slot, and said projecting portion and its tube adapted to be held at a horizontal position, when the crank of the rock-shaft is in engagement with the catch.

8. The combination of a frame located at a station, or other point alongside a trackway, a shaft journaled in said frame and slidable in its bearings, one end of said shaft provided with a crank, an arm provided with laterally projecting fingers between which the crank is adapted to be releasably held, a projection or frame extending from the shaft, and an open ended tube at the outer end of said projecting portion, the said tube provided throughout its length and on its under side with a longitudinal slot, and said projecting portion and its tube adapted to be held at a horizontal position, when the crank of the rock-shaft is engaging between the lateral fingers.

9. The combination of a frame located at a station, or other point alongside a trackway, a shaft journaled in said frame, one end of the shaft provided with a crank, a catch which the crank is adapted to releasably engage, a projection or frame extending from the shaft, and an open ended tube at the outer end of said projecting portion, the said tube provided throughout its length on its under side with a longitudinal slot, and one end of said tube being in the form of a flaring mouth.

10. The combination of a frame located at a station, or other point alongside of a trackway, a rock-shaft journaled in said frame, one end of the shaft provided with a crank, a catch which the crank is adapted to releasably engage, a projection or frame extending from the shaft, an open ended tube at the outer end of said projecting portion, the said tube provided throughout its length and on its under side with a longitudinal slot, and a bag holding arm extending from the rock-shaft and provided with means for engaging the bag suspending device.

11. In a bag catching and delivering apparatus, the combination of a frame located at a station, or other point alongside of a trackway, a lower rock-shaft journaled in said frame, one end of said shaft provided with a crank, a catch which the crank is adapted to releasably engage, a projection or frame extending from said shaft, an open ended tube at the outer end of said projecting portion, the said tube provided throughout its length and on its under side with a longitudinal slot, an upper rock-shaft journaled in the frame, one of the ends of

said shaft provided with a crank, a link connecting said crank with the crank of the lower rock-shaft, a projection or frame extending from the upper rock-shaft, and an open ended tube at the outer end of said projection or frame, the said tube provided throughout its length and on its under side with a longitudinal slot.

12. In a bag catching and delivering apparatus, the combination of a frame located at a station, or other point alongside of a trackway, a lower rock-shaft journaled in said frame, one end of said shaft provided with a crank, a catch which the crank is adapted to releasably engage, a projection or frame extending from said shaft, an upper rock-shaft journaled in the frame, one of the ends of said shaft provided with a crank, a link connecting said crank with the crank of the lower rock-shaft, projections or frames extending from the respective rock-shafts, and open ended tubes carried at the outer ends of the respective projections or frames, one of the open ends of one of said tubes being in the form of a flaring mouth, and each tube provided throughout its length and on its under side with a longitudinal slot.

13. In a bag catching and delivering apparatus, the combination of a frame located at a station, or other point alongside of the trackway, a lower rock-shaft journaled in said frame, one end of the shaft provided with a crank, a catch which the crank is adapted to releasably engage, a projection or frame extending from said shaft, an upper rock-shaft journaled in the frame, one of the ends of said shaft provided with a crank, a link connecting said crank with the crank of the lower rock-shaft, projections or frames extending from the respective rock-shafts, open ended tubes carried at the outer ends of the respective projections or frames, each tube provided throughout its length and on the under side thereof with a longitudinal slot, and a mail bag suspending device carried in one of the tubes and extending through the slot thereof.

14. The combination of a car provided in its side with an opening, a rock-shaft turnable in bearings within the car at a point to the rear of the opening, one of the ends of said rock-shaft provided with a crank, a projection or frame extending from said rock-shaft, an open ended tube supported at the outer end of the projection or frame, said tube provided on its under side and throughout its length with a longitudinal slot, and a catch releasably engaging the crank of the rock-shaft and normally holding said rock-shaft at such position that the projection or frame and its supporting tube extend outwardly from the shaft in a horizontal or substantially horizontal plane.



15. The combination of a car provided in its side with an opening, a rock-shaft turnable in bearings within the car and at a point to the rear of the opening, a projection or frame extending from said rock-shaft, an open ended tube supported at the other end of the projection or frame, the said tube provided on its under side and throughout its length with a longitudinal slot, and a bag holding arm pivoted to the rock-shaft and normally extending outwardly therefrom.

16. The combination of a car provided in its side with an opening, a rock-shaft turnable in bearings within the car and at a point to the rear of the opening, a projection or frame extending outwardly from the rock-shaft, and an open ended tube supported at the outer end of the projection or frame said tube provided in its bottom and throughout its length with a longitudinal slot, and the open end of the tube which points toward the forward end of the car in its travel being in the form of a flaring mouth.

17. The combination of a car provided in its side with an opening, an upper rock-shaft turnable in bearings within the car and located at a point to the rear of the opening, a projection or frame extending outwardly from the rock-shaft, an open ended tube supported at the outer end of the projection or frame, said tube provided throughout its length and in the bottom thereof with a longitudinal slot, a crank or handle on one of the ends of the rock-shaft, and a catch adapted to engage and to be disengaged from the crank or handle, said catch when engaging the crank or handle adapted to hold the rock-shaft in such position that the projection or frame and the tube carried thereby will extend out from the shaft in substantially a horizontal position.

18. In a bag catching and delivering apparatus, the combination of a car provided in its side with an opening, a lower rock-shaft turnable in bearings within the car and located at a point to the rear of the opening, a projection or frame extending from said rock-shaft, an open ended tube supported at the outer end of the projection or frame, said tube provided throughout its length and on its under side with a longitudinal slot, means for releasably holding the rock-shaft in such position that the projection or frame and the tube carried thereby will extend outwardly in substantially a horizontal plane, an upper rock-shaft turnable in bearings within the car and also located at a point to the rear of the opening, a projection or frame extending outwardly from the upper rock-shaft, an open ended tube supported at the outer end of said projection or frame, the said tube provided throughout its length and in the bottom thereof with a longitudinal slot, and means

for releasably holding the upper rock-shaft in such position that the projection or frame and the tube carried thereby will extend outwardly in substantially a horizontal plane.

19. In a bag catching and delivering apparatus, the combination of a frame located at a station, or other point alongside of a trackway, a lower rock-shaft journaled in said frame, a projection or frame extending from said shaft, an open ended tube supported at the outer end of the projection or frame, said tube provided throughout its length and in the bottom thereof with a longitudinal slot, an upper rock-shaft journaled in the frame, a projection or frame extending from the upper rock-shaft, an open ended tube supported at the outer end of said projection or frame, the said tube provided throughout its length and on its under side with a longitudinal slot, a car provided in its side with an opening, a lower rock-shaft turnable in bearings within the car and located at a point to the rear of the opening, a projection or frame extending from said rock-shaft, an open ended tube supported at the outer end of the projection or frame, the said tube provided throughout its length and on its under side with a longitudinal slot, an upper rock-shaft turnable in bearings within the car and also located at a point to the rear of the opening, a projection or frame extending outwardly from the rock-shaft, and an open ended tube supported at the outer end of the projection or frame, said tube provided throughout its length and in the bottom thereof with a longitudinal slot.

20. In a bag catching and delivering apparatus, the combination of a frame located at a station, or other point alongside of a trackway, a lower rock-shaft journaled in said frame, a projection or frame extending from said shaft, an open ended tube supported at the outer end of the projection or frame, said tube provided throughout its length and its bottom with a longitudinal slot, an upper rock-shaft journaled in the frame, a projection or frame extending from the upper rock-shaft, an open ended tube supported at the outer end of the projection or frame, said tube provided throughout its length and on its under side with a longitudinal slot, a mail bag suspending device engaging one of the tubes and extending through the longitudinal slot thereof, a car provided in its side with an opening, a lower rock-shaft turnable in bearings within the car and located at a point to the rear of the opening, a projection or frame extending from said rock-shaft, an open ended tube supported at the outer end of the projection or frame, said tube provided throughout its length and on its under side with a longitudinal slot, an upper rock-shaft turnable in



bearings within the car and also located at a point to the rear of the opening, a projection or frame extending outwardly from said upper rock-shaft, an open ended tube  
5 supported at the outer end of the projection or support, said tube provided throughout its length in the bottom thereof with a longitudinal slot, and mail bag suspending means engaging one of the car tubes and

extending through the longitudinal slot 10 thereof.

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

HANS J. HANSEN.

Witnesses:

A. L. MORSELL,  
ALMA A. KLUG.