

No. 741,182.

PATENTED OCT. 13, 1903.

A. D. SWEGLE.

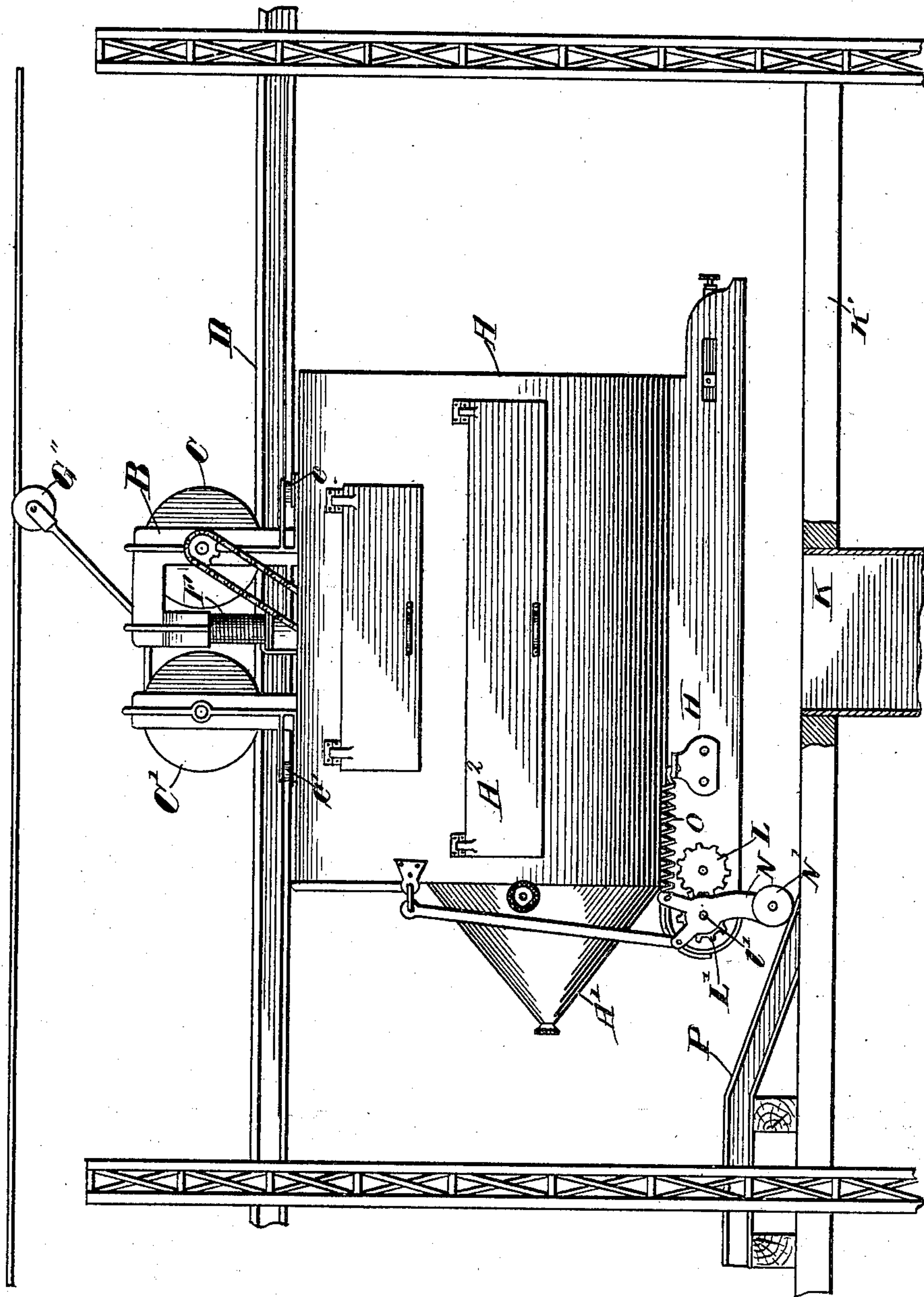
CARRIER FOR TRANSPORTING AND DELIVERING PARCELS.

APPLICATION FILED JULY 18, 1902.

NO MODEL.

3 SHEETS—SHEET 1.

Fig. 1.



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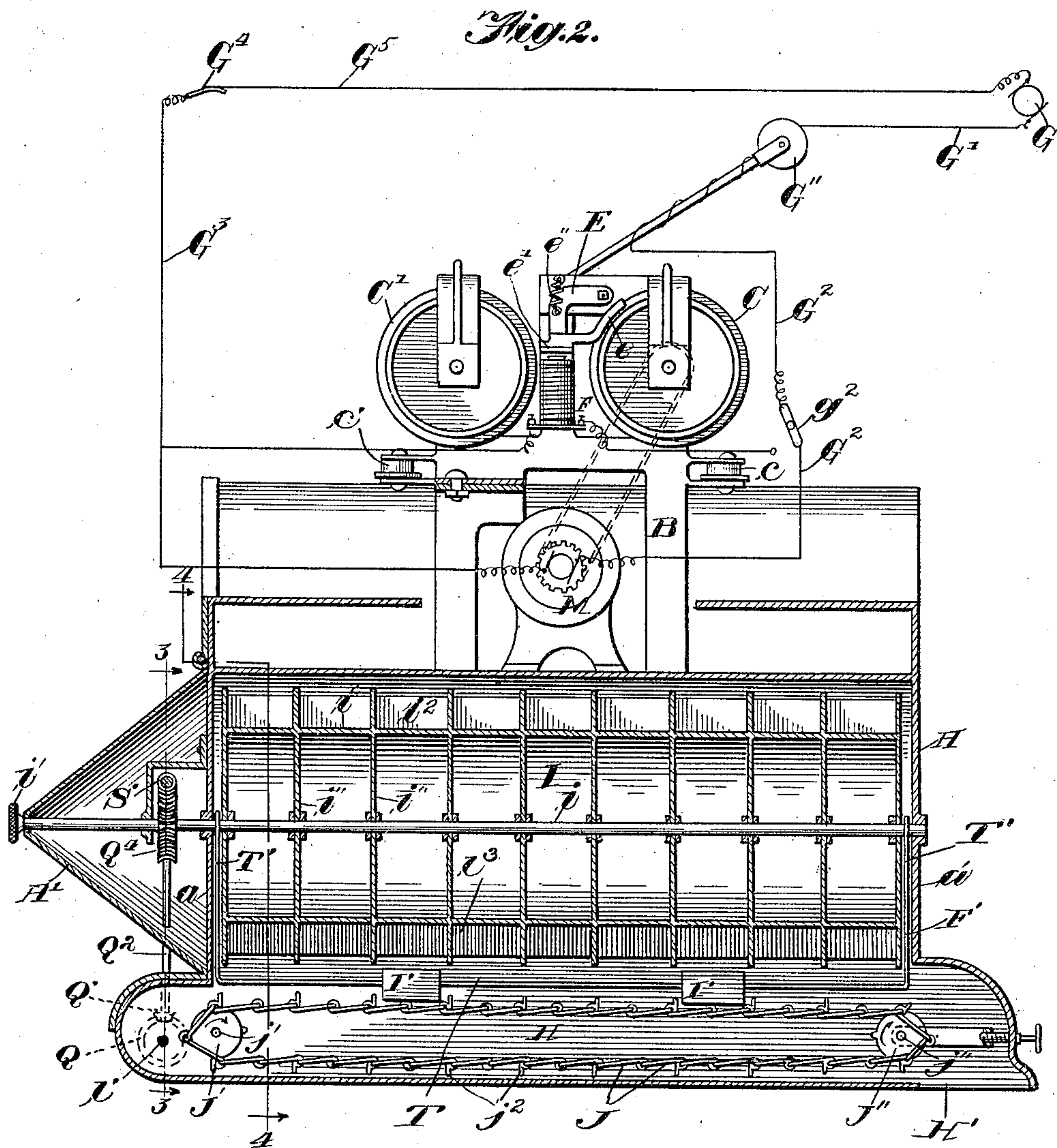
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3 SHEETS—SHEET 2.



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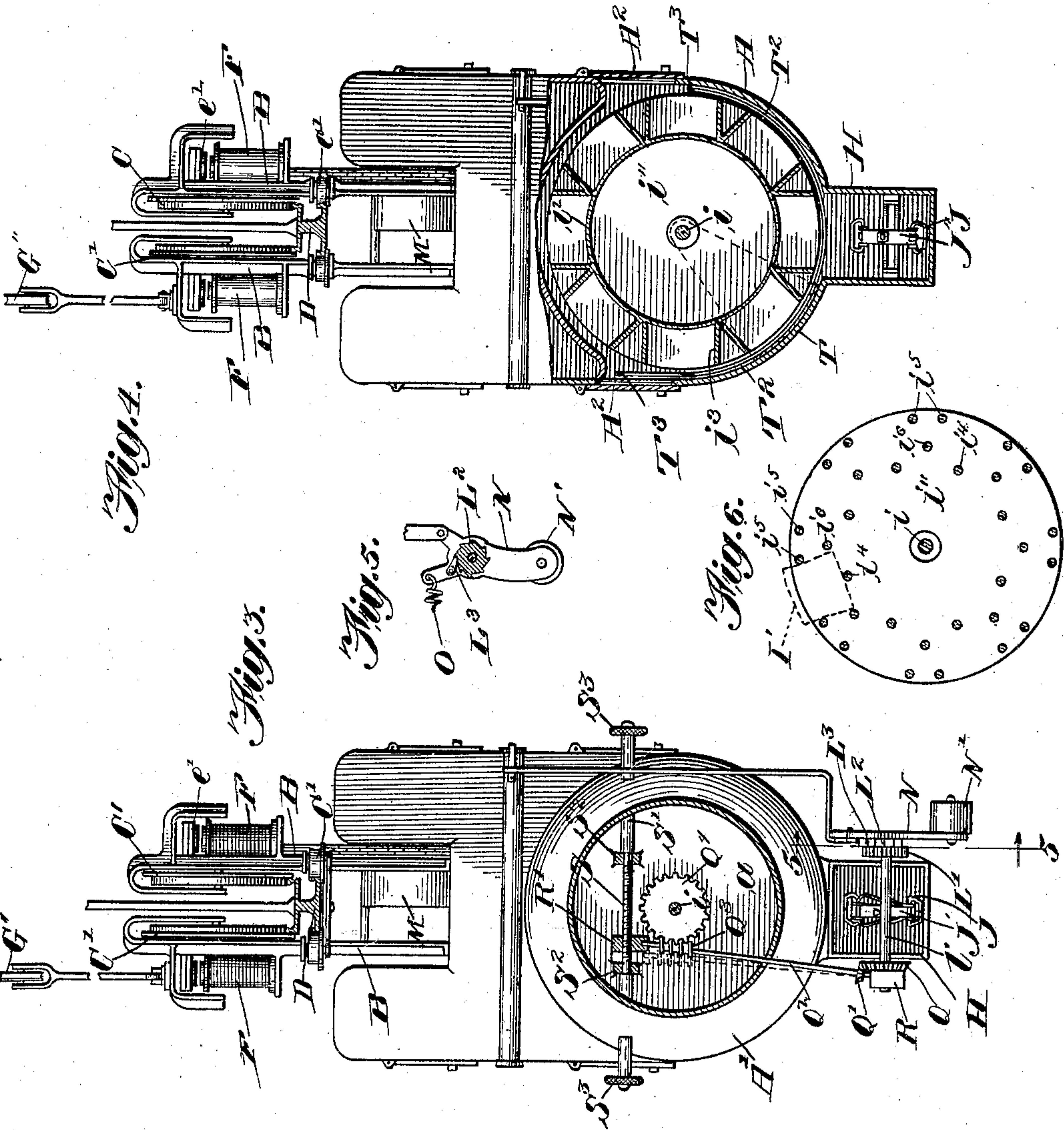
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3 SHEETS—SHEET 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

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CARRIER FOR TRANSPORTING AND DELIVERING PARCELS.

SPECIFICATION forming part of Letters Patent No. 741,182, dated October 13, 1903.

Application filed July 18, 1902. Serial No. 116,130. (No model.)

To all whom it may concern:

Be it known that I, ABRAM D. SWEGLE, a citizen of the United States, residing at Fayette, in the county of Howard and State of Missouri, have invented certain new and useful Improvements in Carriers for Transporting and Delivering Parcels, of which the following is a specification.

The present invention relates to a carrier by which a number of parcels may be transported from a sending-station and delivered one at a time at different points or stations along the line without stopping the carrier in transit.

The carrying out of the invention contemplates the use of means for supporting, propelling, and stopping the carrier, and while a suitable truck, a track-rail supporting it, and an electrical system including a motor and a brake device for propelling and stopping the carrier are shown these features form no part of the invention of this application. They are the subjects of separate applications, bearing Serial Nos. 116,128 and 116,129, of even date herewith, and Serial Nos. 142,494 and 142,500, respectively, filed February 9, 1903.

The carrying out of the invention also contemplates the use of means whereby the carrier without stopping in transit may pick up parcels at different points or stations along the line, and while portions of this collecting mechanism are shown in the drawings it is not herein claimed, as it is made the subject of my application of even date, Serial No. 116,131.

The invention of the present application is confined to the means for storing within the carrier a number of parcels and for automatically delivering them as aforesaid. It contemplates an intermittently-movable device for holding the parcels, means for intermittently moving said device, and trips arranged at the various points or stations along the line at which the parcels are to be delivered one at a time, said trips being adapted to cooperate with the parcel-holding device, so that at each station one parcel is delivered and

the parcel intended for delivery at the next station is brought into position for delivery when said station is reached.

I believe myself to be the first to provide a carrier having means for accomplishing these results, and while I have shown in the drawings the means which I prefer to use still I desire to have it understood that in its broadest aspect the invention is not limited to minor details in the construction of the device.

In the accompanying drawings, which are made a part of this specification, Figure 1 is a side elevation of a carrier embodying the invention, a portion of the track-rail and portions of the station devices being also shown. Fig. 2 is a sectional elevation thereof, the mechanism for carrying and delivering the parcels being shown in section upon a vertical plane which passes through the longitudinal axis thereof, while the other mechanism is shown in side elevation. Figs. 3 and 4 are vertical transverse sections thereof on the lines 3 3 and 4 4, respectively, Fig. 2, looking in the direction of the arrows. Fig. 5 is a vertical section of a portion thereof on the line 5 5, Fig. 3, looking in the direction of the arrow. Fig. 6 is a view of one of the parts under a slight modification.

A represents the shell of the carrier, which is supported by the hangers B, depending from the traction-wheels C and C' of a truck which is mounted to run upon a supporting track-rail D, the truck being provided also with guard-wheels c and c', adapted to engage the track-rail D. To the frame of the truck is fulcrumed a lever E, carrying a brake shoe e, adapted to contact with friction-surfaces on the wheels C, and an armature e', arranged in operative relation to a magnet F, which when energized causes the brake to be applied in opposition to the force of a spring e'', by which the brake is normally held off.

M is a motor by which the carrier is propelled through the medium of a suitable connection with one or more of the traction-wheels. The motor derives its current from

a stationary generator G through the medium of a line-wire G' , a trolley G'' , a wire G^2 , and a switch g^2 , through which the wire G^2 may be completed, the current after leaving the
 5 motor being returned through a wire G^3 , a sliding contact G^4 , and a wire G^5 .

With the exception of the shell A all the parts above described are preferably constructed and arranged to operate in the manner shown and described in my application
 10 aforesaid. They are shown in this present application simply for the purpose of illustrating a complete device; but the invention of this application is not limited to their details in construction.

The part of the shell with which the present invention is concerned is preferably cylindrical or approximately cylindrical in cross-section, excepting that at its under side the
 20 circular form is departed from and the walls are deflected downward to form a trough or chute H , which is of somewhat greater length than the shell and extends beyond its front and rear end walls a and a' , respectively. Within the cylindrical or approximately cylindrical portion of the shell is a
 25 revoluble drum I , supported by a shaft i , which is journaled in the ends a and a' of the shell and at its forward end projects a considerable distance, the projecting portion being covered and inclosed by a conical cap
 30 A' , the forward extremity of the shaft being provided with a hand-wheel i' , by which the shaft, and consequently the drum, may be manually rotated. The drum may consist of
 35 a plurality of circular disks i'' , secured to the shaft, a plurality of tubular rings or short cylinders i^2 , arranged between and secured to the disks, and a plurality of partitions i^3 ,
 40 arranged between the disks and extending from the rings i^2 outward to the peripheries of the disks. These parts when assembled constitute, in effect and in fact, a drum having the general form of a cylinder provided in
 45 its outer face with a number of pockets disposed in intersecting rows extending both longitudinally and circumferentially. As shown in the drawings, the drum has seventy-two pockets arranged in nine circumferential
 50 and eight longitudinal rows. These pockets are completely open at the periphery of the drum, and preferably the longitudinal sides of each of them are parallel with a tangent of the drum, so that as each of the pockets reaches
 55 its lowermost position at the under side of the drum its longitudinal sides will be vertical. In order to make the pockets of this shape, each is separated from the next by a partition of
 60 V shape in cross-section, and where the drum is made of sheet metal each of these partitions may be made by bending strips of sheet metal to V shape, as clearly shown in Fig. 4. The drum may, however, be made of the disks
 65 i'' and a number of rods or heavy wire passed through them, so as to lie parallel with the shaft i , as shown in Fig. 6. In this figure what constitutes, in effect, the bottom of each

pocket consists of a single rod or wire i^4 , and what constitutes each side of each pocket consists of two rods i^5 and i^6 , arranged in a
 70 plane parallel with the radius. In this form each pocket is separated from the next by three of such rods arranged at the angles of an imaginary triangle.

Of whatever construction the drum may be
 75 each of the pockets is adapted to contain an article or a receptacle containing an article to be transported. For the sake of certainty in the operation of the device I prefer to provide a specially-constructed receptacle I' ,
 80 adapted to occupy each of the pockets. This receptacle may be in the form of a box which conforms to the shape of the pocket and which fits it sufficiently close to prevent its being
 85 turned or displaced, but at the same time has sufficient freedom to fall out of the pocket by its own weight when the pocket arrives at a position immediately over the trough or chute H .

That part of the shell which is below the
 90 horizontal plane of the shaft i is concentric with the axis of said shaft, and its radius and the radius of the drum are such that but little space is left between them, so that as the drum revolves the parcels or receptacles on
 95 its descending side will rest upon the shell and be thereby held in place in the pockets until reaching a position for delivery into the chute or trough H , as already described. For this reason each of the receptacles preferably has a top which is curved to conform
 100 to the inner surfaces of the shell. With a drum and shell thus constructed it is manifest that as the drum revolves one after another of the longitudinal rows of pockets will
 105 in succession be brought to a position immediately over and registering with the top of the trough or chute H . Assuming that the drum is initially loaded to its full capacity, it follows that the contents of all of the pockets
 110 of each longitudinal row will under the conditions just described be dropped into the chute. When so dropped, they fall upon an endless conveyer J , which is divided into sections corresponding in number and relative
 115 location with the circumferential rows of pockets. This conveyer preferably consists of a chain in the nature of a sprocket-chain running over the wheels J' and J'' in the nature of sprocket-wheels, carried by shafts j'
 120 and j'' , rotatively supported by the shell. The chain is provided at proper intervals with projections j^2 , which fall opposite the disks i'' and, as just stated, divide it into sections corresponding with the circumferential rows
 125 of pockets. One of the parcels or receptacles will fall on each of these sections, and as the sprocket-wheels are rotated in the direction of the arrows placed upon them all of the parcels or receptacles resting upon the conveyer
 130 will be carried toward the rear end of the chute, said rear end being open at bottom, as shown at H' , so that as the parcels or receptacles are discharged by the conveyer

they will fall through said opening and preferably into a chute K, extending downward from the elevated platform K' at the station.

It is the intention to impart to the conveyer an intermittent or step-by-step movement, the movement at each step being just sufficient to advance the conveyer through a space equal to one of its divisions, so that at each such step a single parcel or receptacle will be delivered through the opening H'. For the purpose of producing this intermittent movement of the conveyer its shaft j' carries a pinion L, meshing with a pinion L', keyed to a counter-shaft l' , which counter-shaft carries also a ratchet-wheel L², engaged by a spring-pressed pawl L³, carried by a lever N, said lever being loosely mounted upon the shaft l' , so as to be capable of oscillating thereon. The lever is held in normal position by a coiled spring O, the arrangement being such that the spring produces that movement of the lever which retrieves the pawl and returns it to normal position. The lever is preferably provided with an anti-frictional roller N', adapted to contact with a suitably-fixed trip located in the line of its travel. This trip is shown in the drawings as consisting of an incline P, supported by the platform K' and so arranged that as the carrier advances in the direction of the arrow the roller N' will come in contact with the incline P, and thus the lever N will be moved, its movement being transmitted to the conveyer through the pawl L³, the ratchet-wheel L², the pinions L' and L, the shaft j' , and the sprocket-wheel J'. It will be understood that one of these tripping inclines or some other suitable tripping devices is located at each station or point along the line at which it is desired to deliver a parcel. As the carrier advances from station to station all the parcels resting upon the conveyer will be moved toward the delivery end of the conveyer, and the rearmost one will be discharged through the opening H' at each intermittent movement until the last one is delivered. When this takes place, the drum will have moved to a position to discharge the contents of another longitudinal row of pockets onto the conveyer. This movement of the drum is derived from the lever N through the medium of the counter-shaft l' , a beveled pinion Q, carried by it, a second beveled pinion Q', meshing therewith and carried by a shaft Q², a worm Q³, carried by the shaft Q², and a worm-wheel Q⁴, carried by the shaft i . This transmitting-gearing is so timed that the movements of the lever N necessary to cause the conveyer to discharge its full complement of parcels will also produce the angular movement of the drum through the number of degrees included between radii passing through the centers of adjacent pockets. As shown in the drawings, the conveyer has provision for nine receptacles, so that it takes nine successive intermittent step-by-step movements to discharge them, while the drum has eight

longitudinal rows of pockets, so that as the nine movements of the conveyer are taking place nine corresponding movements of the drum will take place, and these nine movements of the drum will be just sufficient to move it through one-eighth of a revolution.

For the purpose of loading the drum the sides of the shell are provided with openings covered by doors A², extending far enough to give access to all of the nine circumferential rows of pockets. The loading may be done from either or both sides, and in order that the drum may be manually turned for the purpose of bringing each of the eight longitudinal rows of pockets into position for being loaded means are provided for disconnecting the gearing, already described, through which the drum derives its automatic movement. To this end the lower end of the shaft Q³ is stepped in a bearing carried by a bracket R, while its upper end is journaled in a bearing carried by a block R', mounted upon a threaded portion S of a shaft S', which is journaled in brackets S², supported by the shell, so that the shaft is capable of rotary but incapable of endwise movement, each end of the shaft being provided with a hand-wheel S³, by which it may be turned. By thus turning the shaft S' in the proper direction the worm Q³ is moved out of engagement with the worm-wheel Q⁴, as indicated by dotted lines in Fig. 3, and this leaves the drum free to be turned manually either by seizing it through one of the openings in the side of the shell or by turning the hand-wheel i' at the end of the shaft i .

In order to prevent the parcels from falling out of the pockets of the drum and onto the conveyer while the drum is being loaded, a valve T is provided. This valve consists of a segment of a tube of such radius that it fits snugly between the periphery of the drum and the shell A, and it is carried by hangers T', disposed between the ends of the drum and the ends of the shell and suspended from the shaft i . From this valve curved rods T², which follow the curvature of the shell, extend upward, and the rods at opposite ends of the valve are connected by rods T³, which are accessible through the openings in the sides of the shell, so that the operator may manipulate the valve from either side of the carrier. When the loading is completed, the valve is moved out of its operative position and into the position in which it is shown in the drawings, leaving the top of the chute open for the reception of the parcels.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a device of the class described, the combination with a suitable shell and means for supporting and propelling it, of a movable parcel-holding device carried by the shell and means for intermittently moving said parcel-holding device for discharging its contents, said means including trips arranged at differ-

ent points along the line, a movable part carried by the shell and adapted to impinge upon and be moved by said trips, and means for transmitting movement from said movable part to the parcel-holding device, substantially as described.

2. In a device of the class described, the combination with a suitable shell and means for supporting and propelling it, of a movable parcel-holding device carried by the shell, and means for moving said device for discharging its contents said means including trips arranged at different points along the line, a lever carried by the shell and adapted to impinge upon and be operated by said trips, and means for transmitting movement from said lever to the parcel-holding device, substantially as described.

3. In a device of the class described, the combination with a suitable shell and means for supporting and propelling it, of a movable parcel-holding device carried by the shell and means for moving it for discharging its contents, said means including trips arranged at different points along the line, a movable part carried by the shell and adapted to impinge upon and be moved by said trips, and gearing interposed between said movable part and the parcel-holding device for transmitting movement from the former to the latter, substantially as described.

4. In a device of the class described, the combination with a suitable shell and means for supporting it, of an intermittently-movable parcel-holding device having a number of compartments, and means for intermittently moving it for discharging the contents of its compartments in succession, said means including trips arranged at different points along the line, a movable part carried by the shell and adapted to impinge upon and be moved by said trips, and means for transmitting movement from said movable part to the parcel-holding device, substantially as described.

5. In a device of the class described, the combination with a shell and means for supporting and propelling it, of an endless conveyer supported by the shell and adapted to hold a number of parcels, and means for moving said conveyer for discharging the parcels, said means including trips arranged at different points along the line, a movable part carried by the shell and adapted to impinge upon and be moved by said trips and means for transmitting movement from said movable part to the conveyer, substantially as described.

6. In a device of the class described, the combination with a suitable shell and means for supporting and propelling it, of an endless conveyer supported by the shell and having a number of compartments adapted to hold a number of parcels, and means for intermittently moving said conveyer for discharging the parcels in succession, said means including trips arranged at different points

along the line, a movable part carried by the shell and adapted to impinge upon and be moved by said trips, and means carried by the shell for transmitting movement from said movable part from the conveyer, substantially as described.

7. In a device of the class described, the combination with a suitable shell and means for supporting and propelling it of an intermittently-movable endless conveyer carried by the shell and adapted to hold a number of parcels and means for intermittently moving said conveyer for discharging the parcels, said means including trips arranged at different points along the line, a lever carried by the shell and adapted to impinge upon and be moved by said trips and gearing interposed between said lever and the conveyer whereby the movement of the lever is transmitted to the conveyer, substantially as described.

8. In a device of the class described, the combination with a suitable shell and means for supporting and propelling it, of an endless conveyer supported by the shell and having a number of compartments adapted to hold a number of parcels, means for intermittently moving said conveyer for discharging the contents of its several compartments in succession, a second parcel-holding device carried by the shell and having a number of compartments adapted to be brought to register with the compartments of the conveyer, and means for discharging the parcels from said second parcel-holding device into the compartments of the conveyer, substantially as described.

9. In a device of the class described, the combination with a suitable shell and means for supporting and propelling it, of an endless conveyer adapted to hold a number of parcels, a revoluble drum having pockets adapted to hold a number of parcels, said drum being arranged in operative relation to the conveyer and adapted to deliver said parcels onto the conveyer, and means including trips arranged at different points along the line and devices carried by the shell and adapted to cooperate with said trips for operating the conveyer and the drum, whereby the conveyer discharges its parcels at different points along the line and whereby the drum discharges its parcels onto the conveyer, substantially as described.

10. In a device of the class described, the combination with a suitable shell and means for supporting and propelling it, of a movable device carried by the shell and adapted to hold a number of parcels, a number of trips arranged at different points along the line, a trip-lever carried by the shell and adapted to be engaged by said trips, a spring-pressed pawl carried by the lever, a ratchet-wheel engaged by the pawl, and means operated by said ratchet-wheel for moving the parcel-holding device and thereby discharging the parcels, substantially as described.

11. In a device of the class described, the

combination with a suitable shell and means for supporting and propelling it, of an endless conveyer carried by the shell and having projections dividing it into a number of separate sections, each section being adapted to hold a parcel, and means for intermittently moving the conveyer, said means including a number of trips arranged along the line and a movable part carried by the shell and adapted to impinge upon and be moved by said trips, and means for transmitting movement from said movable part to the endless conveyer, substantially as described.

12. In a device of the class described, the combination with a suitable shell and means for supporting and propelling it, of a drum having a circumferential series of pockets, a number of trips arranged at different points along the line and means carried by the shell and adapted to cooperate with said trips for revolving the drum, substantially as described.

13. In a device of the class described, the combination with a suitable shell and means for supporting and propelling it, of a drum having pockets arranged in intersecting longitudinal and circumferential rows, and means for revolving the drum, substantially as described.

14. In a device of the class described, the combination with a suitable shell and means for supporting and propelling it, of an endless conveyer, a drum having a circumferential row of pockets, a number of trips arranged along the line, and means carried by the shell and adapted to cooperate with said trips for moving the conveyer and drum, substantially as described.

15. In a device of the class described, the combination with a suitable shell and means for supporting and propelling it, of an endless conveyer, a revoluble drum having pockets arranged in circumferential and longitudinal rows, the conveyer being arranged directly beneath the drum and parallel with its axis, means for intermittently moving the

conveyer, and means for revolving the drum, substantially as described.

16. In a device of the class described, the combination with a suitable shell and means for supporting and propelling it, said shell having at its lower side a trough or chute, an endless conveyer arranged in said trough or chute, a drum arranged above said chute or trough and having pockets, and means for moving the conveyer and drum, substantially as described.

17. In a device of the class described, the combination with a suitable shell and means for supporting and propelling it, said shell having at its lower side a trough or chute open at the top, of a conveyer arranged in said trough, a revoluble drum arranged above said trough and having pockets, a valve adapted to be placed in position to close the top side of the chute or trough, and means for moving the conveyer and drum, substantially as described.

18. In a device of the class described, the combination with a suitable shell and means for supporting and propelling it, of a drum, a number of trips arranged along the line, a device carried by the shell and adapted to cooperate with said trips, and gearing for transmitting movement from said device to the drum, said gearing being separable, substantially as described.

19. In a device of the class described, the combination with a suitable shell and means for supporting and propelling it, of a drum, a shaft supporting it, a worm-wheel carried by the shaft, a worm engaging the wheel, a shaft carrying said worm, a trip-lever, means for transmitting movement from the trip-lever to the worm-shaft, and a number of trips arranged along the line and adapted to cooperate with the trip-lever, substantially as described.

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