No. 892,586. PATENTED JULY 7, 1908.

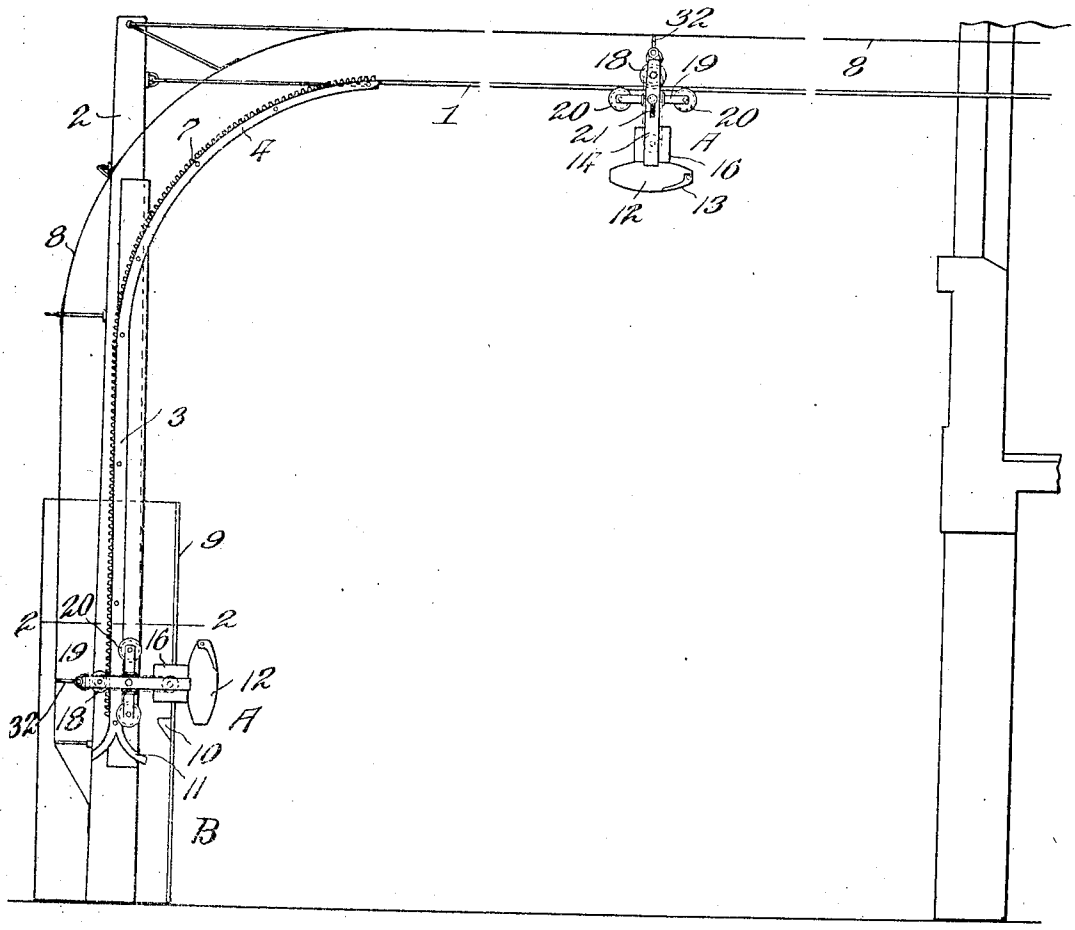
G. H. FERLIN.

AUTOMATIC ELECTRIC MOTOR DRIVEN MAIL AND PACKAGE DELIVERER.

APPLICATION FILED MAY 1, 1907.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

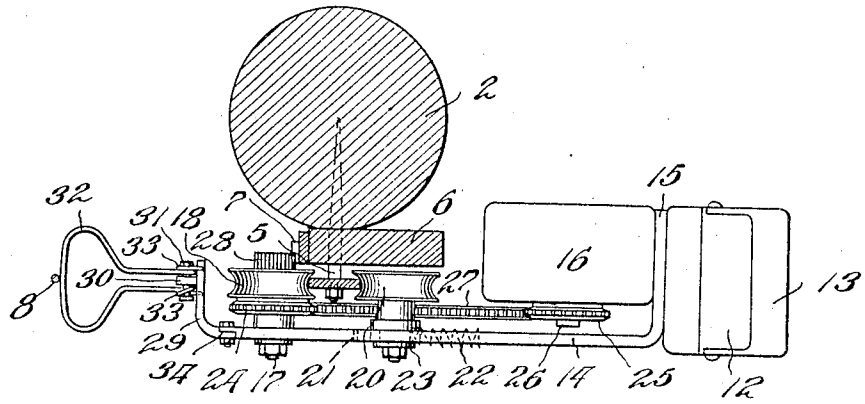
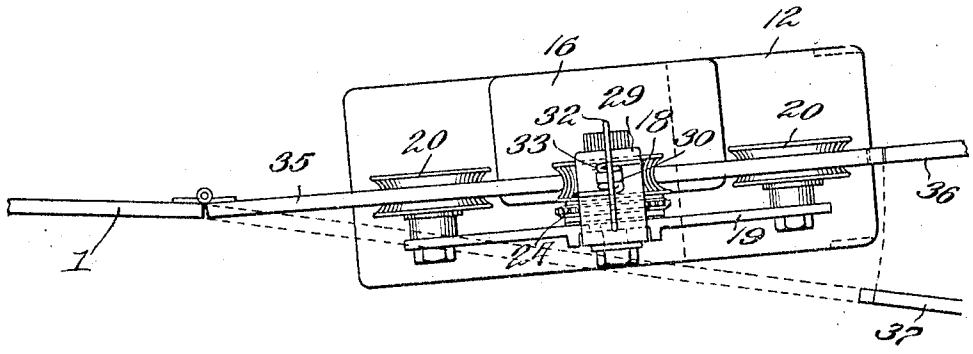


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

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AUTOMATIC ELECTRIC-MOTOR-DRIVEN MAIL AND PACKAGE DELIVERER.

No. 892,586. Specification of Letters Patent. Patented July 7, 1908.

Application filed May 1, 1907. Serial No. 371,323.

To all whom it may concern:

Be it known that I, GEORGE H. FERLIN, a citizen of the United States, residing at San Diego, in the county of San Diego, State of California, have invented new and useful Improvements in Automatic Electric-Motor-Driven Mail and Package Deliverers, of which the following is a specification.

This invention relates to mail or package delivering apparatus of that type in which the carriers are each equipped with a propelling motor for moving the carrier from station to station, and relates more particularly to the traction mechanism for such carriers adapted particularly for use in connection with electric motors.

The invention has for one of its objects to improve and simplify the construction and operation of apparatus of this character so as to be comparatively easy and inexpensive to manufacture and install, and reliable and efficient in service.

A further object of the invention is the provision of a package delivery apparatus in which the carriers are mounted to run over a track, there being a propeller wheel on each carrier which is driven by suitable gearing from the motor included in the carrier.

Another object of the invention is the employment of a rack and pinion mechanism used in connection with the track, whereby the carrier can move vertically toward or from a station to the main portion of the track.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawings, which illustrate one of the embodiments of the invention, Figure 1 is a side elevation of the apparatus showing the terminal of an aerial or overhead track system with the carriers thereon. Fig. 2 is an enlarged sectional view on line 2—2, Fig. 1. Fig. 3 is a plan view of one of the carriers showing the same passing over a switch connecting a branch to the main track of the system.

Similar reference characters are employed to designate corresponding parts throughout the several views.

In the present instance, I have elected to illustrate the invention as an overhead or aerial system but it is to be understood that the invention is not necessarily limited in this respect.

Referring to the drawing, 1 designates a track consisting of a cable or the like which is strung on poles or other suitable supports 2 and on which the carriers A are adapted to travel. At each station, as at B, is a vertically-extending rail 3 that forms a part of the track on which the carrier travels, and the upper portion of this rail is curved as at 4 so as to permit the carrier to pass to the station from the track, or vice versa, thereby permitting the carriers to be brought within convenient reach of the attendants at the stations to place in or remove from the holders packages, mail or the like. The vertical portions 3 or continuations of the track 1 are secured to the posts 2 in any suitable manner, as for instance, by spikes 5, and disposed between each post and adjacent vertical portion 3 is a member 6 that carries a rack 7 which follows the contour of the rail or vertical portion 3. Suspended on the posts 2 in parallelism with the track over which the carriers pass is a current supply wire 8 which furnishes current for driving the motors of the various carriers. At each station is arranged a shield 9 for preventing persons from coming into contact with the current conducting parts of the apparatus, and on this shield (as shown in Fig. 1) is a stop 10 disposed in the path of the motor so as to limit the downward movement of the latter when the carrier reaches the station. Also to retard the movement of the carrier, the lower end of the rail 2 is spread at 11.

Each carrier comprises a receptacle or holder 12 of any suitable shape and provided with a door 13. The holder is mounted on the lower end of an L-shaped supporting member or frame 14, and secured to the laterally-extending arm 15 at the opposite side from the holder is an electric motor 16 of any suitable type. On the upper end of the frame 14 is bolted a fixed axle 17 that carries a propelling wheel 18 that has a

grooved periphery for riding over the track 1 and the vertical extensions 3 thereof. On the frame is a slidably mounted cross-piece 19 forming laterally-extending arms on the extremities of which are grooved rollers 20 that engage the track and coöperate wth the wheel 18 to retain the carrier in position, the weight of the motor and holder 12 being so distributed as to maintain the frame 14 in vertical position when the carrier is traveling on the horizontal portion of the track. The frame 14 is formed with a slot 21 in which is arranged a spring 22 that operated on a block 23 that is fixed on the cross piece and extends into the slot so as to yieldingly hold the wheels 20 in engagement with the track, and at the same time cause the propelling wheel 18 to frictionally grip the track for effectively propelling carrier. Secured to the propelling wheel 18 is a sprocket wheel 24 which lies in the same plane with the sprocket wheel of the shaft 26 of the motor, and passing around the sprocket wheel is a chain 27 whereby power is imparted to the driving wheel 18 from the motor. Also on the wheel 18 is a pinion 28 located at such a point as to be brought into mesh with the teeth of the rack 7 at each station of the system, so as to permit the carriers to pass to the vertically-extending portions of the track. It is to be noted that these vertically-extending portions 3 are wider than the diameter of the main portion 1 of the track so that as the carrier leaves the track 1 and passes on the portion 3, the wheels 20 are spread away from the driving wheel 18 so that the spring 22 will be compressed and thus cause the wheels to grip the rail or portion 3 and gradually diminish the speed of the carrier. On the upper extremity of the frame 14 is an arm 29 that is provided with a stud 30 and on the stud is a bolt 31 that carries a current-collecting device 32 arranged to bear on the current supply wire 8, said device being formed with coiled portions 33 so as to give flexibility thereto. The arm 29 is insulated as at 34 from the frame 14, and connected with the motor in any suitable manner to one terminal of the motor to supply current thereto, and the other terminal may be grounded on the frame 14 so that current will pass by way of the wheels 20 to the track 1 which will form the return conductor of the circuit. In Fig. 3, a track switch 35 is provided so as to switch the car to either branch 36, or 37, this switch being operated by any suitable means under the control of the attendant.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof. I desire to have it understood that the apparatus shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims.

Having thus described the invention, what I claim is:—

1. In an apparatus of the class described, the combination of a track having an approximately vertical portion, a rack disposed along the vertical portion, a carrier provided with propelling means, wheels on the carriage engaging the track at opposite sides thereof, and a pinion on the carrier adapted to mesh with the rack for propelling the carrier over the vertical portion of the track.

2. In an apparatus of the class described, the combination of a horizontally-extending track, a carrier having wheels engaging under and over the track, an approximately vertically-extending rail having one end curved into tangential relation to the track and over which the carrier travels, and means for propelling the carrier on said rail.

3. In an apparatus of the class described, the combination of a track having horizontal and vertical extending portions, the vertically-extending portion being thicker than the other, a carrier movable over the track, wheels on the carrier yieldingly urged toward each other and engaging the track at opposite sides, means on the carrier for driving one of the wheels, and additional means for driving the carrier on the vertical portion of the track.

4. In an apparatus of the class described, the combination of a track arranged to extend from one station to another, a vertically-extending rail at a station and curved at one extremity into tangential relation with the track, a rack disposed parallel with the rail, a current-supply wire following the contour of the track and rail, a carrier, propelling means on the carrier, and a pinion driven by the propelling mechanism and arranged to mesh with the rack.

5. In an apparatus of the class described, the combination of a track, a rack disposed along a portion thereof, a carrier, a holder thereon, a motor on the carrier, a driving wheel on the carrier and engaging the track, driving connections between the motor and wheel, a pinion rotating with the said wheel and arranged to mesh with the rack, a cross piece on the carrier, wheels thereon for engaging the track at the side opposite from the driving wheel, and means for yieldingly urging the wheels into engagement with the opposite sides of the track.

6. The combination of a track, with a carriage movable thereon, said carriage com-

prising a frame, wheels mounted on the frame and arranged to engage the track at opposite sides thereof, yielding means for maintaining the wheels into engagement with the track, a motor on the frame, a sprocket and chain mechanism between the motor and one of the wheels, a package holder mounted on the frame, and a current-collecting device mounted on the frame.

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