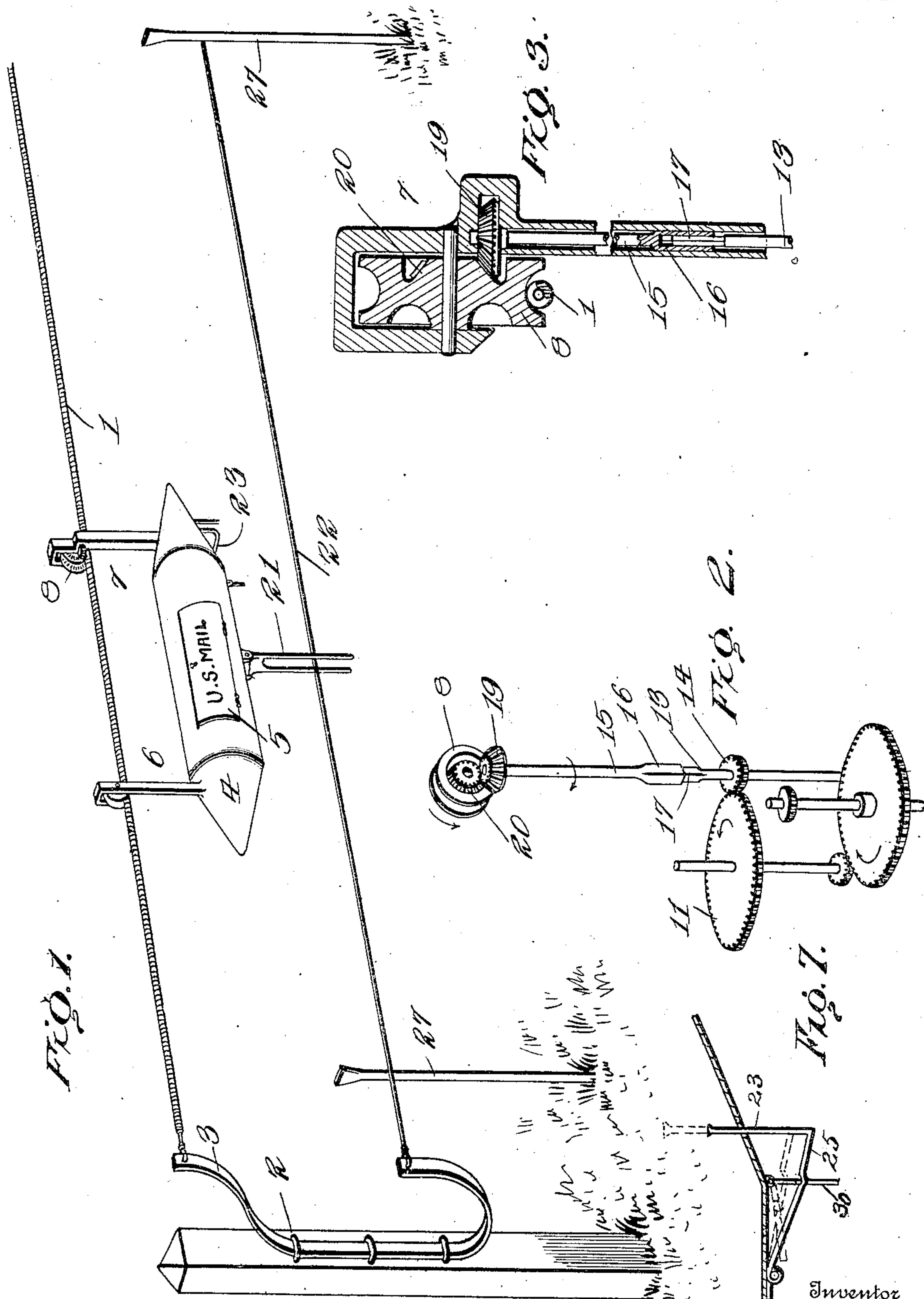


No. 835,677.

PATENTED NOV. 13, 1906.

H. E. HALL.
MAIL CARRYING APPARATUS.
APPLICATION FILED FEB. 20, 1906.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 4.

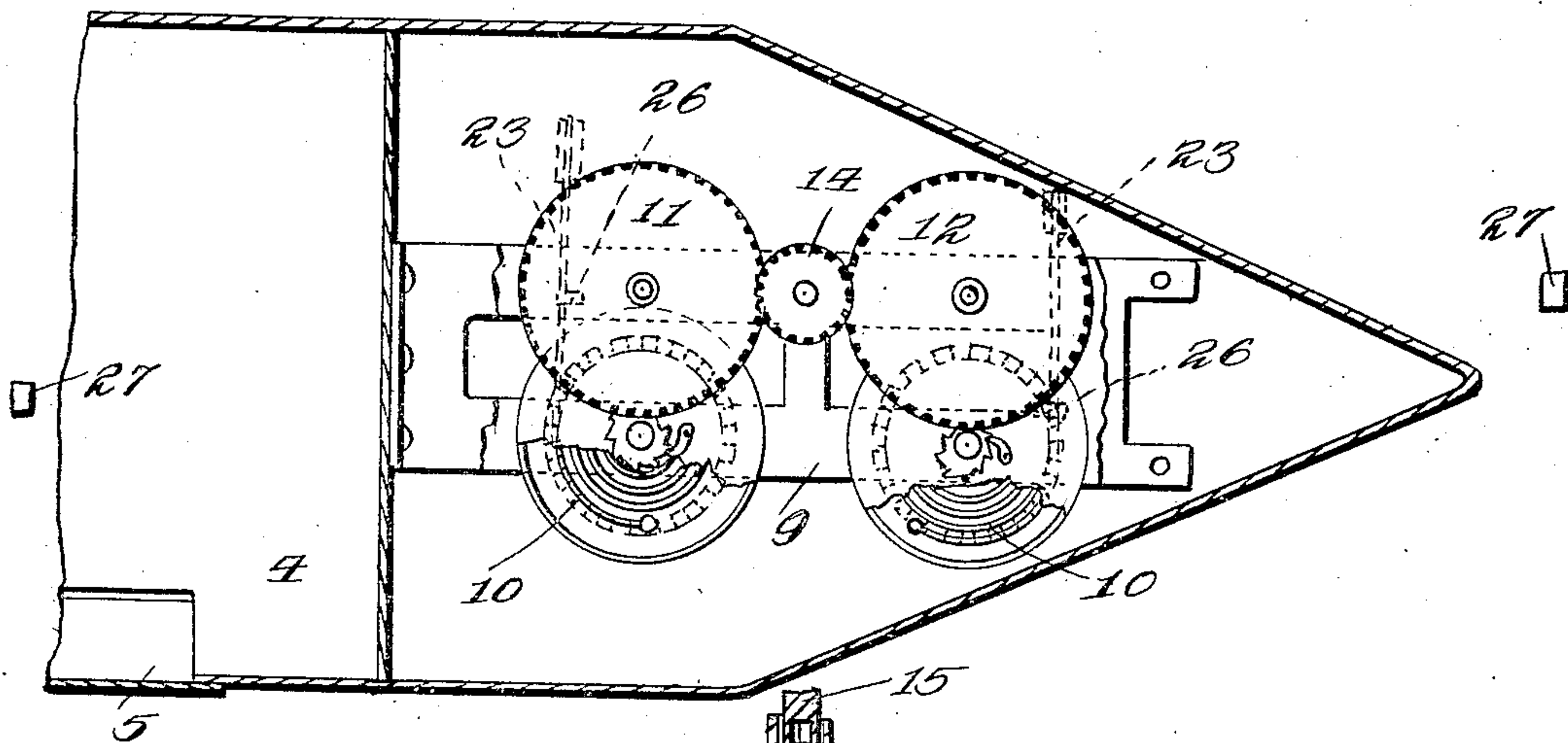


Fig. 5.

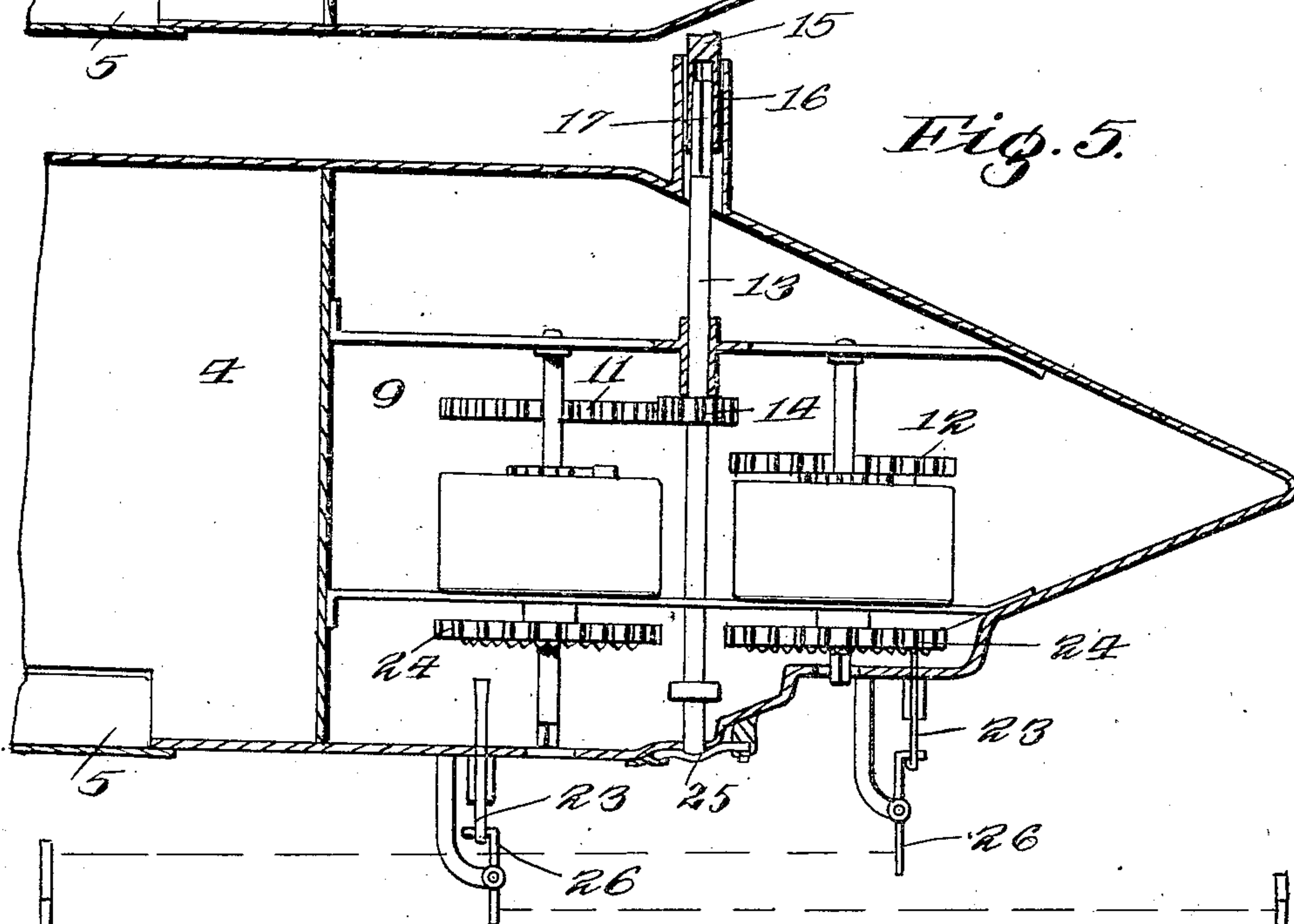
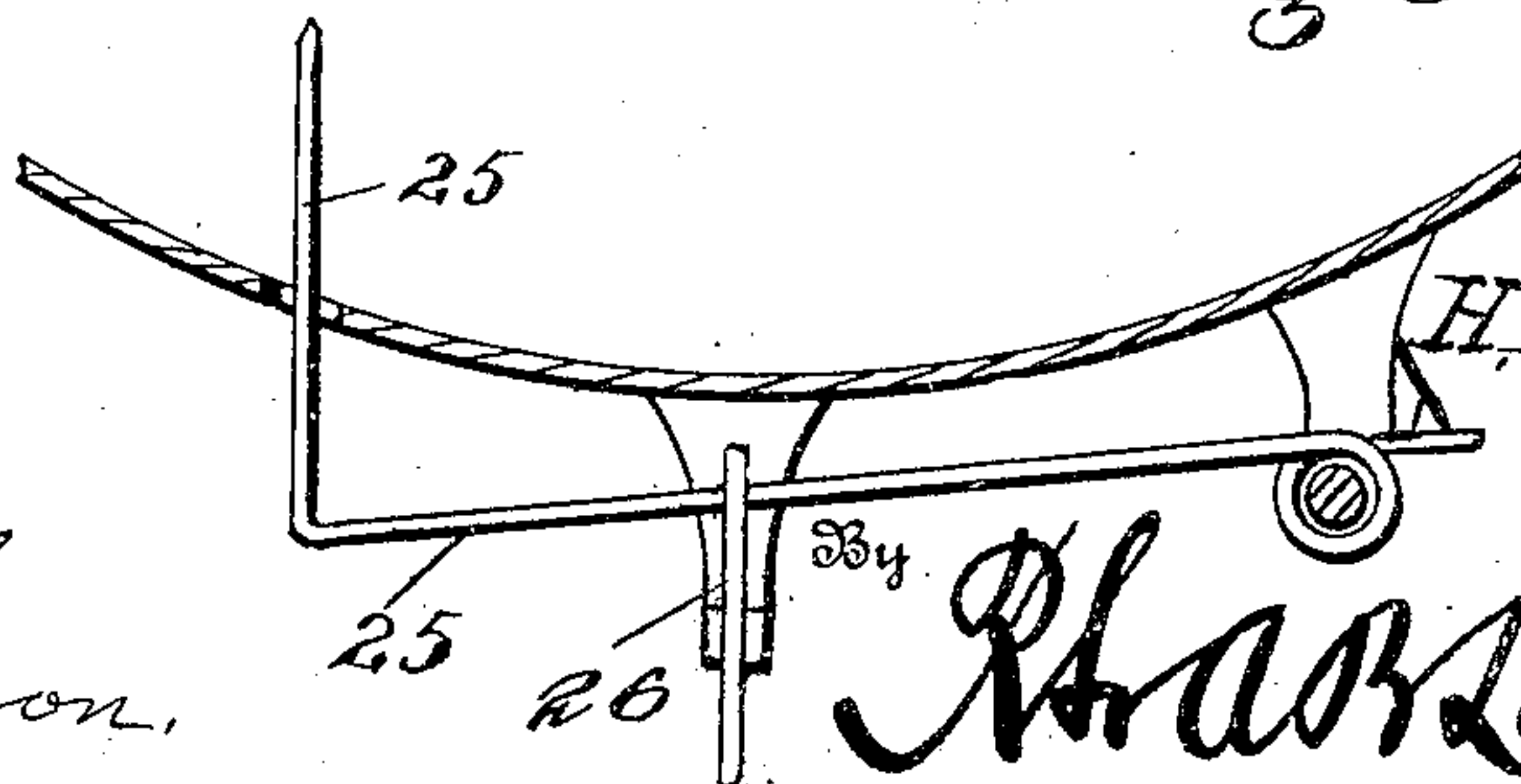


Fig. 6.



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MAIL-CARRYING APPARATUS.

No. 835,677.

Specification of Letters Patent.

Patented Nov. 13, 1906.

Application filed February 20, 1906. Serial No. 302,146.

To all whom it may concern:

Be it known that I, HARRY E. HALL, a citizen of the United States, residing at Greenfield, in the county of Highland and State of Ohio, have invented certain new and useful Improvements in Mail-Carrying Apparatus, of which the following is a specification.

This invention embodies novel carrying apparatus particularly designed for use in rural districts for conveying mail to a dwelling from a distant point of deposit of such mail. As is well known, mail-boxes are customarily used in rural places to receive the mail distributed by the carrier, and this makes it necessary for persons to whom the mail is addressed to go from a dwelling to the box which is located near the road and which is usually some distance away from such dwelling. The above is disadvantageous for obvious reasons; and the object of this invention is to do away with the necessity of going to the trouble and inconvenience incident to this method of getting mail, the carrying apparatus comprising the invention being designed to operate between the point of deposit of the mail and the dwelling or other place to convey the mail to the latter.

The invention resides mainly in the peculiar form of the carrier, the motor mechanism employed therefor, the means for governing the operation of such mechanism, and other details of construction which will appear more fully hereinafter.

For a full description of the invention and the merits thereof, and also to acquire a knowledge of the details of construction of the means for effecting the result, reference is to be had to the following description and the accompanying drawings, in which—

Figure 1 is a view showing an apparatus constructed in accordance with the invention. Fig. 2 is a perspective view showing the arrangement of the parts of one of the trains of gearing and the connection thereof with the drive-shaft. Fig. 3 is a vertical sectional view bringing out more clearly the construction of the hanger, having the auxiliary drive-shaft, which is connected with one of the trolley-wheels for actuation thereof. Fig. 4 is a horizontal sectional view of the end of the carrier having the operating mechanisms therein. Fig. 5 is a vertical section of the mechanism shown in Fig. 4. Fig. 6 is a view, partially in section and partially in elevation, showing the brake mechanism more clearly.

Fig. 7 is a view showing a modification of the brake or stopping mechanism.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Generally speaking, it is contemplated to provide a track running from the point of deposit of the mail at the roadside, fence, or other place to the dwelling at which such mail should be received. The track is indicated at 1 and may be supported by suitable supporting-posts 2 at intervals in its length, brackets 3 being attached to the upper ends of said supporting-posts to support said track 1. The track 1 is preferably of wire. Arranged to travel on the track 1 is the carrier 4, which may be of any suitable shape, and composes a receptacle having a door 5 admitting of insertion of the mail into the carrier. The carrier is connected with the track 1 by means of hangers 6 and 7, each of said hangers having a trolley-wheel mounted thereon to travel along the track 1. The trolley-wheel of the hanger 7 is indicated at 8 and is preferably roughened at its grooved peripheral portion. The wire from which the track 1 is made is also preferably provided with a roughened surface by winding a finer wire transversely thereabout throughout its length, the traction between the trolley-wheel 8 and the track 1 being materially increased in this way. The wheel 8 is power-driven, and for this purpose a motor is arranged within the body of the carrier 4, said motor comprising a suitable frame 9, in which are mounted motor-springs 10, each adapted to operate a suitable train of gears. The trains of gearing operated by the springs 10 include gear-wheels 11 and 12, the gear-wheel 11 being arranged in a horizontal plane somewhat lower than that in which the wheel 12 is mounted.

Arranged between the gears 11 and 12 is a vertical drive-shaft 13, having a drive-gear 14 mounted thereon, said drive-shaft 13 being vertically movable and having a sliding or loose connection with an auxiliary vertical shaft 15 in vertical alinement therewith. The connection between the shafts 13 and 15 is established by means of providing a square socket 16 at the lower end of shaft 15, the upper end of shaft 13 being squared, as shown at 17, to enter the socket 16 to establish a rotative connection between the two shafts

13 and 15, though the shaft 13 may be raised and lowered to cause the gear 14 to mesh with either of the gears 11 and 12. The gears 11 and 12 are operated in reverse directions by means of the respective springs 10, to which they are connected, and this admits of reversal of the direction of rotation of the shaft 13 by moving the same to cause the gear 14 to mesh with one or the other of the gears 11 and 12, as necessary. The lower end of the shaft 13 is engaged by an adjustable member 18, which is pivoted to the under side of the carrier 4 and is adapted by movement thereof to adjust the shaft 13 vertically. The upper end of shaft 15 has a bevel-pinion 19 applied thereto, the teeth of which engage beveled teeth 20 on one side of the trolley-wheel 8, and when the shaft 13 is actuated motion is transmitted therefrom to the trolley-wheel 8, so as to drive the latter in either direction, and thereby actuate the carrier 4 back and forth on the track 1. The carrier 4 is guided in its movement on the track 1 by a guide member 21, of approximately U form, which is pivotally connected with the carrier and is pendent from the under side thereof. The sides of the guide member 21 receive a guide rail or wire 22 therebetween, and the action of the member 21 is obvious. The pivotal mounting of the member 21 is advantageous in that said member may readily pass over extensions at the lower portions of the brackets 3, which extensions are provided to support the guide-rail 22. When the extensions of the brackets 3 strike the member 21, the latter tilts or moves pivotally until it is carried over the extension by the onward movement of the carrier 4.

Suitable brake mechanism is provided in order to stop motor mechanism within the carrier as said carrier approaches the opposite ends of the track 1. This brake mechanism includes a brake-rod 23, projecting through a vertical opening in the bottom of the carrier 4, so that its upper end may engage with a roughened surface on the under side of the gear 24, one of which is directly operated by each spring 10. The rod 23 is connected at its lower end to a spring 25, attached to the under side of the carrier 4, said spring being operable by a trigger 26 to effect vertical movement of the rod 23 to engage and disengage the same from the member 24, with which it operates. When the carrier is in motion, the trigger 26 is normally in a vertical position, but is adapted to be tripped by an arm 27, carried by a post or other suitable support and located in the path of movement of the trigger, but some distance from an end of the track 1.

Describing the actual operation of the invention, it will be seen that when the operator desires to cause travel of the carrier over the track 1 it is only necessary to grasp

the trigger 26 and throw it into a vertical position, when by adjustment of the member 18 the shaft 13 will be moved to cause the gear 14 to engage one of the gears 11 and 12, which is now rotating. The driver or gear 19 will thus be actuated in the proper direction by the motor mechanism and the revolution of the trolley-wheel 8 will positively actuate the carrier 4 on the track 1. As the carrier 4 approaches its destination or the end of the track upon which it is advancing the arm 27 engages the vertically-arranged trigger 26 and, tripping the same, forces it downwardly toward the bottom of the carrier 4, this permitting the spring 25 to force the rod 23 against the under side of the gear 24, included in the train of gears connected with one of the gears 11 and 12—the one which is rotating. As soon as the member 23 engages the gear 24 said gear is stopped in its revolution, though the gear-wheels in the train connected therewith may still rotate by reason of the ratchet connection usually provided in gearing of this class. Power will be shut off in this way automatically, and the carrier will reach the end of the track through the impetus of its movement during the operation of the motor mechanism. The reverse movement of the carrier 4 is effected by simply releasing one of the gears 24 and connecting the shaft 13 by adjustment of the member 18 with the desired gear-wheel 11 and 12, so as to run the wheel 8 in the direction which will cause the carrier to travel toward that end of the track 1 at which it is desired to stop the same.

It will be understood that each of the wheels 24 will have a brake device to cooperate therewith, an arm 27 being located near opposite ends of the track 1 to cooperate with a respective one of the brake devices aforesaid.

In Fig. 7 a modification of the stopping mechanism is shown in which the springs 25 will be arranged longitudinally upon the under side of the carrier, being of substantially the same construction as hereinbefore described. The trigger or tripping member of each spring 25, however, is different and consists of a lever 30, pivoted at its upper end to the under side of the carrier and having a projection extending laterally therefrom intermediate of its ends to engage with the member 25 so as to hold said member 25 in such a position that its rod or extension 23 is not in contact with the gear 24. When the lever 30 is tripped, however, it is caused to assume a position flat against the under side of the carrier, and thus admits of proper cooperation of the parts 23 and 24.

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

1. In carrier apparatus, the combination of a track, a carrier arranged to travel thereon, a motor for the carrier embodying inde-

pendent reversely-operable drive mechanisms, and a driver for the carrier arranged for connection with either of said mechanisms as specified.

5 2. In carrier apparatus, the combination of a track, a carrier arranged to travel thereon, a motor for the carrier embodying independent reversely-operable drive mechanisms, a trolley-wheel supporting the carrier, a
10 driver for said trolley-wheel, and means for connecting the driver with either of the operating mechanisms aforesaid to propel the carrier in either of opposite directions.

3. In carrier apparatus, the combination
15 of a track, a carrier arranged to travel thereon, a motor for the carrier embodying independent reversely-operable drive mechanisms, a trolley-wheel supporting the carrier, a driver embodying a drive-shaft, and means
20 for adjusting said shaft to connect the same with either of the operating mechanisms to propel the carrier in either of opposite directions.

4. In carrier apparatus, the combination
25 of a track, a carrier adapted to travel over said track, a motor for said carrier embodying independently-operable trains of gearing, a driver for the carrier arranged for connection to either of said trains of gearing, and
30 means for operating said trains of gearing in reverse directions.

5. In carrier apparatus, the combination of a track, a carrier adapted to travel over said track, a motor for said carrier embodying independently-operable trains of gearing,
35 a driver for the carrier embodying a drive-shaft, a drive-gear mounted on said drive-shaft and arranged for connection with either of the trains of gearing aforesaid, and means
40 for actuating said trains of gearing in reverse directions.

6. In carrier apparatus, the combination of a track, a carrier adapted to travel over said track, a motor for said carrier embodying independently-operable trains of gearing,
45 a driver for the carrier arranged for connection to either of said trains of gearing, and means for operating said trains of gearing in reverse directions.

tion to either of said trains of gearing, means for operating said trains of gearing in reverse directions, and brake means for the trains of gearing.

7. In carrier apparatus, the combination of a track, a carrier arranged to travel thereon, a motor for the carrier embodying independent reversely-operable drive mechanisms, a driver for the carrier arranged for connection with either of said mechanisms as specified, and automatically-operable brake means for each of the operating mechanisms.

8. In carrier apparatus, the combination of a track, a carrier adapted to travel thereover, a motor for the carrier comprising independent reversely-actuated operating mechanisms to effect propulsion of said carrier, and means for automatically braking each of said mechanisms as the carrier approaches
65 opposite extremities of its movement.

9. In carrier apparatus, the combination of a track, a carrier adapted to travel thereon, trolley-wheels supporting said carrier on the track, a guide-wire for the carrier, and a
70 guide member pivoted to the carrier for movement about an axis transverse to the line of movement of the carrier and coacting with the guide-wire as specified.

10. In carrier apparatus, the combination
75 of a track, a carrier adapted to travel thereover, trolley-wheels supporting the carrier on the track, a guide-wire below the carrier and parallel with the track, and a guide member of U shape pivoted at its upper end to the carrier for movement about an axis transverse
80 to the line of movement thereof, the opposite sides of the guide member being arranged upon opposite sides of the guide-wire for cooperation as specified.

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

HARRY E. HALL. [L. S.]

Witnesses:

M. F. MARSH,

VIRGIL HENRY.