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W. H. MOZINGO.

MEANS FOR COLLECTING AND DELIVERING MAIL.

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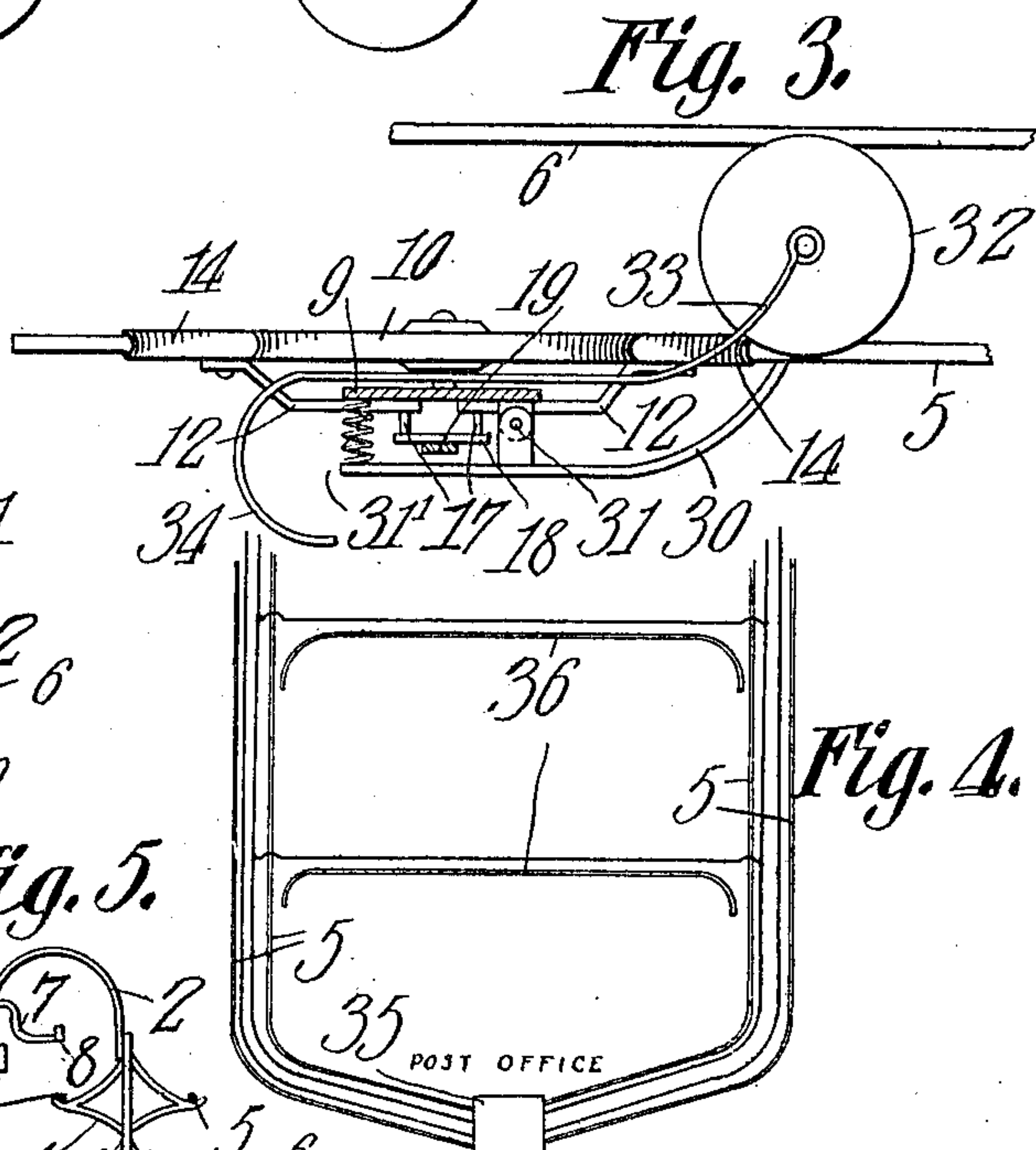
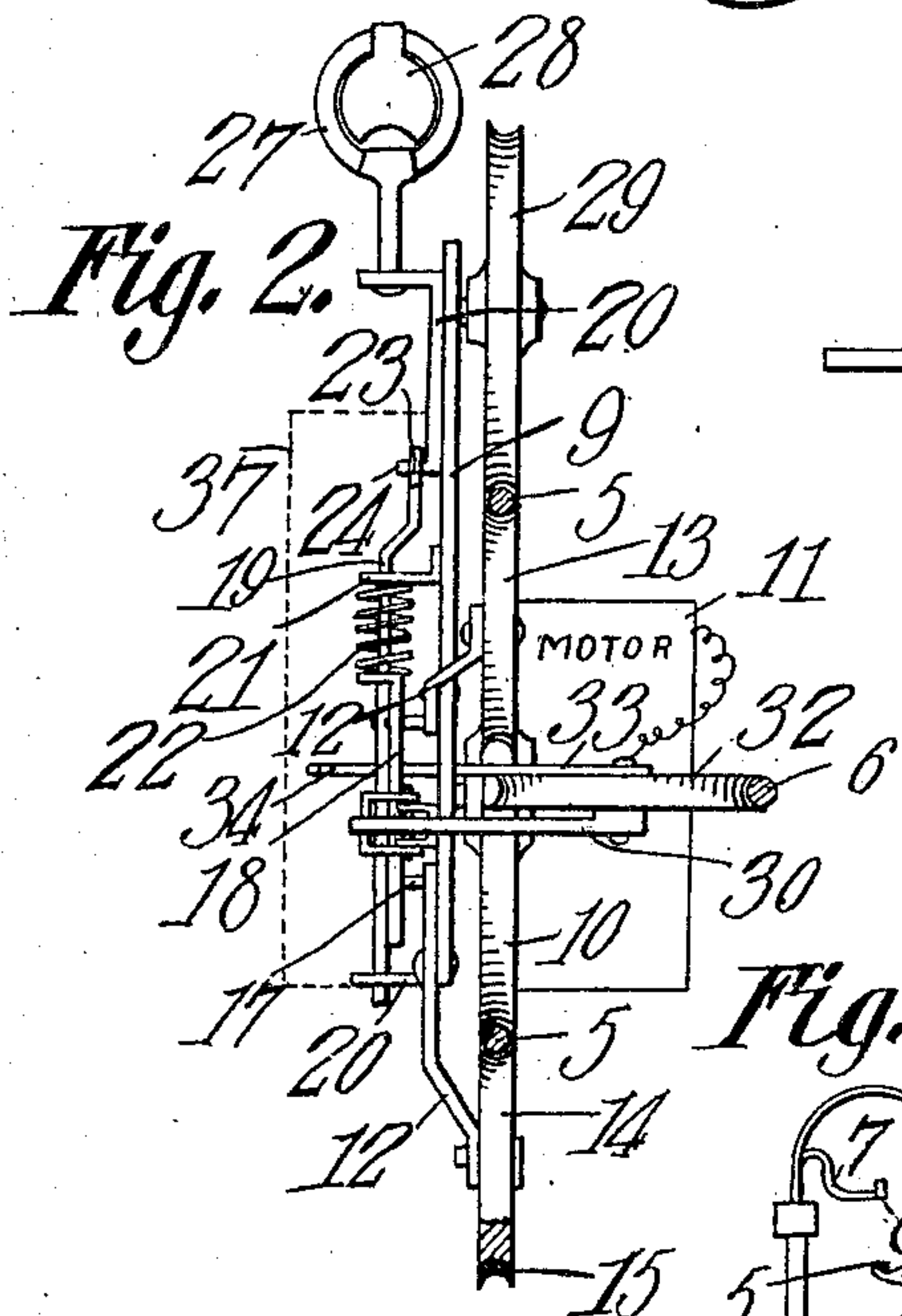
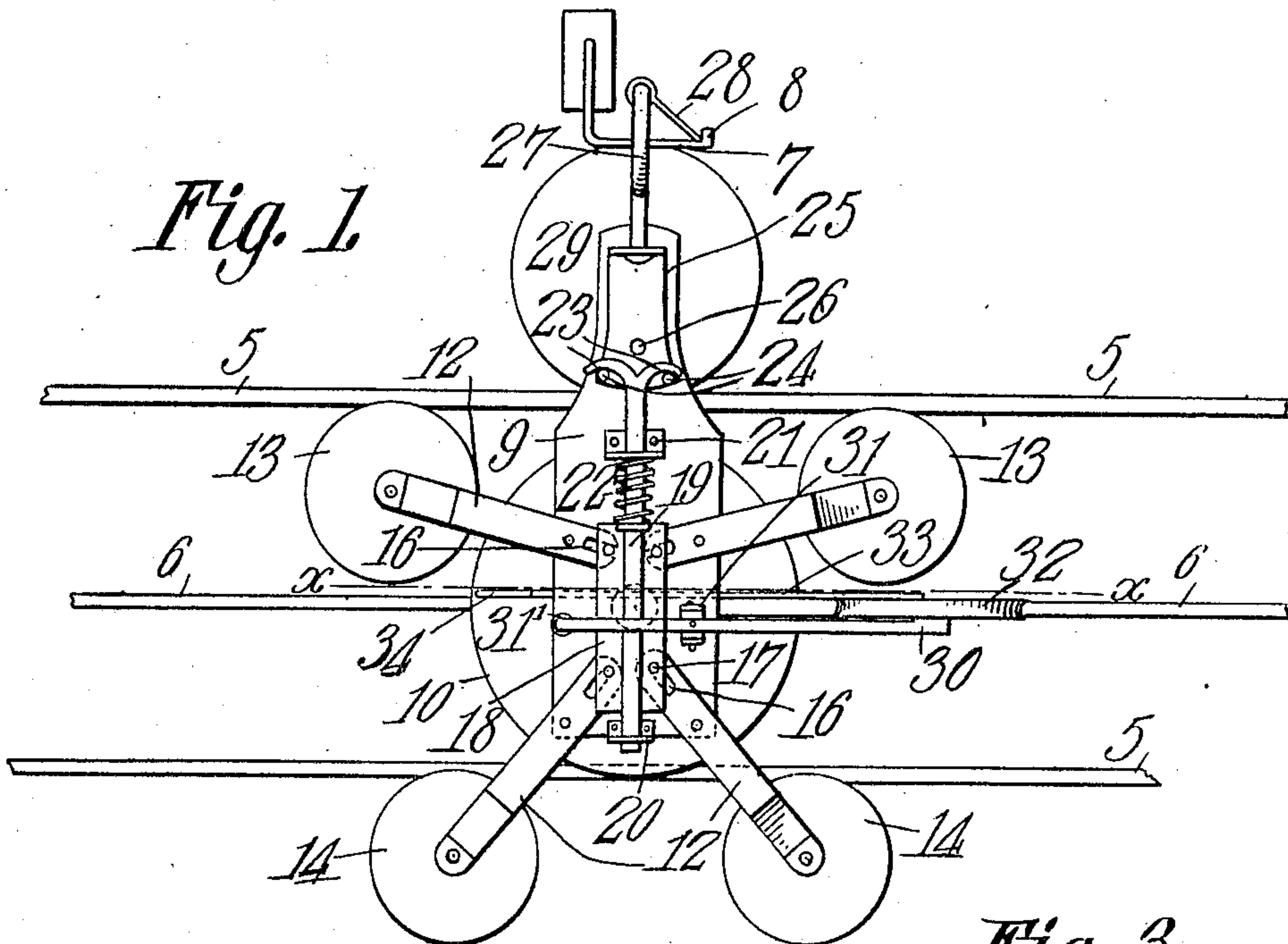
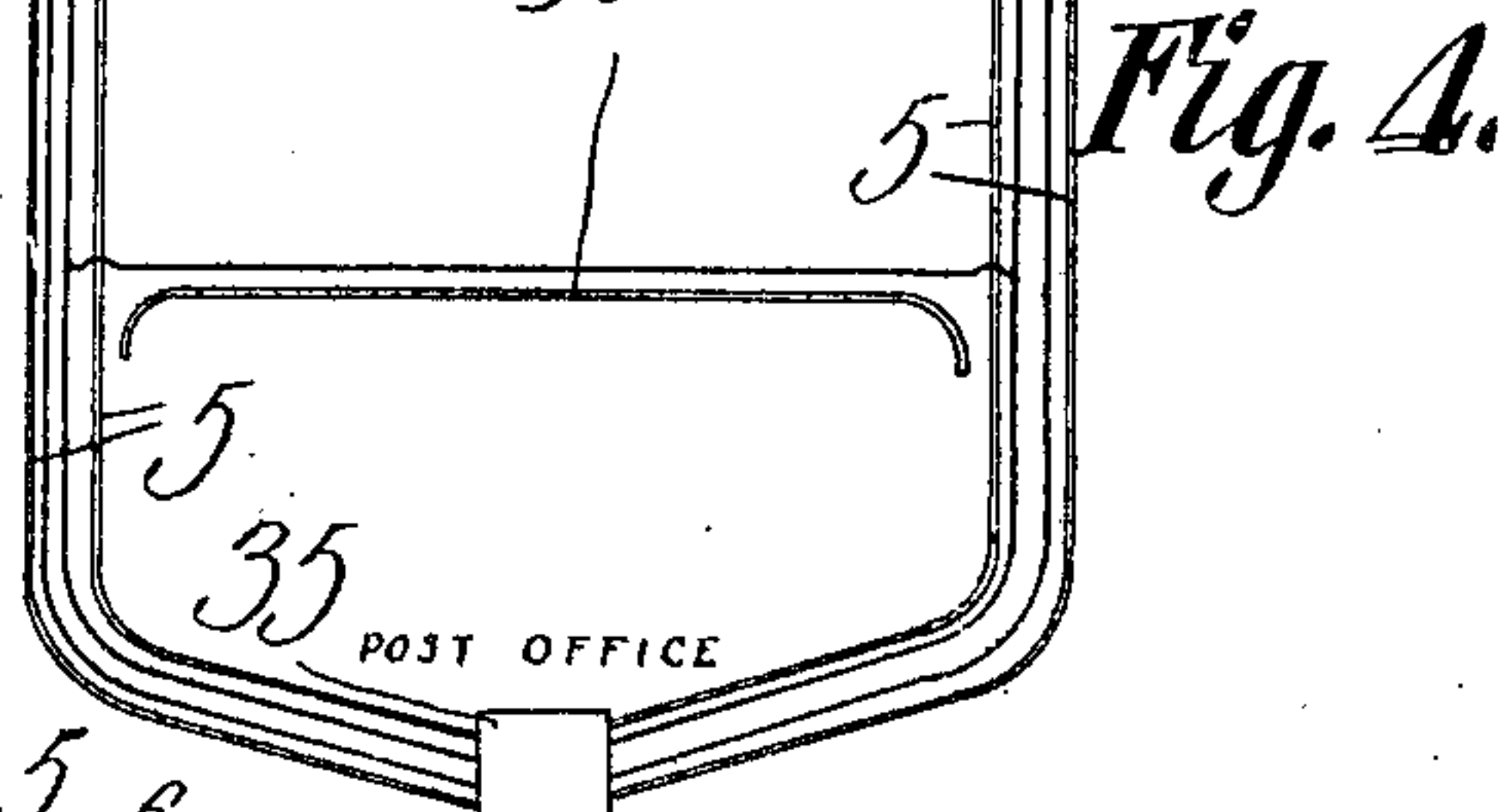
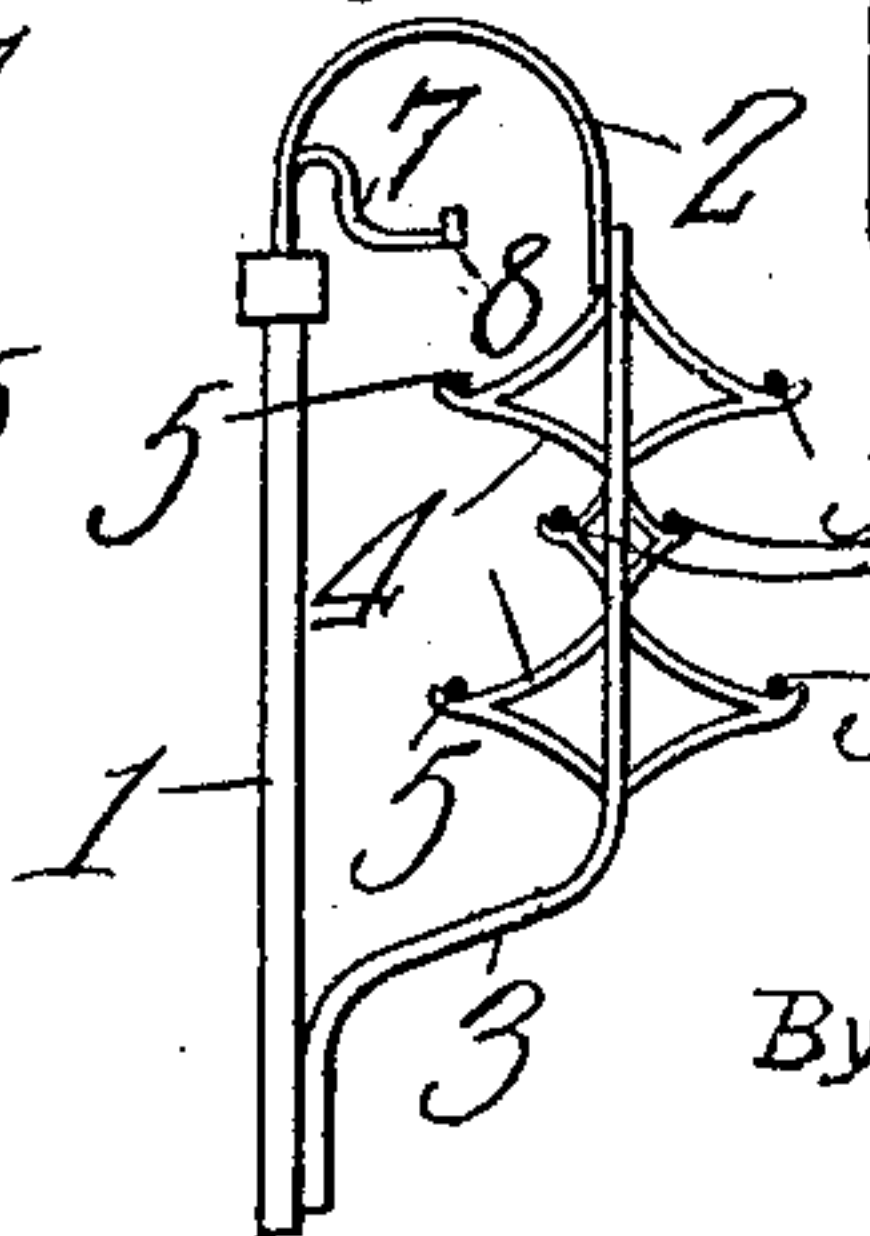


Fig. 5.



WITNESSES:

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MEANS FOR COLLECTING AND DELIVERING MAIL.

No. 871,431.

Specification of Letters Patent.

Patented Nov. 19, 1907.

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To all whom it may concern:

Be it known that I, WILLIAM H. MOZINGO, a citizen of the United States, residing at Hurdland, in the county of Knox and State of Missouri, have invented a new and useful Means for Collecting and Delivering Mail, of which the following is a specification.

This invention has reference to improvements in means for collecting and delivering mail, and its object is to provide a simple means whereby the railway mail service may be replaced at small cost, both for installation and operation.

The invention consists essentially in aerial tracks of light, simple construction such as cables or piping, together with trucks or cars adapted to such tracks and capable of moving thereon at great speed, with electric driving means receiving current from adjacent conductors through trolley connections therewith.

In accordance with the present invention provision is made whereby the trucks may be automatically stopped at predetermined points for the removal of mail-bags and the placing thereon of other mail-bags, after which the trucks may be again returned to the central point from which the several routes ramify.

The invention will be fully understood from the following detailed description, taken in connection with the accompanying drawings forming part of this specification, in which,—

Figure 1 is a face view of one of the trucks, with parts removed Fig. 2 is an end view thereof, showing the supporting tracks and electric conductor in section; Fig. 3 is a cross section on the line $x-x$ of Fig. 1; Fig. 4 is a diagrammatic view of a distributing system; and Fig. 5 is a detail view of the upper end of one of the supporting posts.

The system to which this invention is directed being an aerial system, the tracks and other line structures are mounted upon posts or other supports, and in Fig. 5 such a post 1 is shown. To the upper end of the post is attached a bracket 2 returning downward alongside the post for a distance parallel therewith and then intumed toward the post, as shown at 3, and this bracket is finally secured to the post. Upon the bracket 2 at appropriate points are other brackets 4 supporting tracks 5 extending along the line of

way and made of cable or pipes or rods. The tracks 5 are arranged in pairs, one track being above the other, and where it is desirable to have return tracks adjacent one to the other, one pair of tracks 5 may be arranged on one side of the bracket 2 and another pair of tracks 5 may be arranged on the other side of the bracket 2. Where but one pair of tracks 5 is used the bracket 2 may be omitted and the direct supporting brackets 4 of the tracks may be attached to the posts 1. Or, again, the pairs of tracks 5 may be attached to opposite sides of the posts 1. Between the individual members of each pair of tracks 5 is a suitable electric conductor 6 composed of a bare conducting wire suitably insulated at each supporting point after the manner of trolley wires. Above the tracks 5 at predetermined points and supported by the brackets 2 or directly by the posts 1 are catch brackets 7, each provided with a head 8 at its free end, and these brackets 7 may be so shaped as to have a certain amount of elasticity. The purpose of these brackets 7 will appear further on.

Referring, now, more particularly to Figs. 1, 2 and 3, there is shown in these figures the truck or carriage designed to travel upon the tracks 5 and support the mail bags. This truck or carriage is provided with a supporting plate 9 upon which is journaled a main drive wheel 10 having a grooved periphery arranged to engage the lower track 5 of the pair of tracks. This drive wheel 10 is under the control of an electric motor 11 of any suitable type and only indicated in Fig. 2 of the drawing without any special structure being shown therein.

Pivotally secured to the plate 9 are four arms 12, two arms being secured to the plate above the axis of the drive wheel 10 and two being secured to the plate below the axis of the drive wheel 10. The upper pair of arms carry at their ends grooved rollers 13, one on each side of the vertical plane of the axis of the drive wheel, which rollers under-ride the upper track 5. The lower pair of arms 12 carry at their outer ends grooved rollers 14, one on each side of the vertical plane cutting the axis of the drive wheel 10, and these rollers 14 under ride the lower track 5. All the rollers may have their peripheral grooves lined with rubber or other suitable material, indicated at 15,

Fig. 2. The inner ends of the arms 12 are each provided with a longitudinal slot 16 in which engages a pin 17 fast on a plate 18 movable longitudinally with reference to the plate 9. This plate 18 is carried by a rod 19, the lower end of which extends through a guide bracket 20 on the plate 9 and the upper end of which extends through another guide bracket 21 on the plate 9. Between the plate 18 and the bracket 21 the rod 19 is surrounded by a spring 22 tending at all times to force the plate downward. Above the bracket 21 the rod 19 is formed with two oppositely-extending hook-like fingers 23 in which engage pins 24 on a rock plate 25 pivoted at 26 on the main supporting plate 9. This rock plate 25 carries at its upper end above the plate 9 an eye 27 in which is arranged a pendent plate 28. This eye 27 is in the path of the catch brackets 7 before referred to. Journaled in the upper end of the plate 9 is an idler roller 29 arranged to ride on top of the upper track 5. The tendency of the spring 22 is to move the plate 18 downward. This will tend to move the rollers 13 against the upper track 5 and the rollers 14 against the lower track 5. This movement will force the drive wheel 10 into contact with the upper face of the lower track 5, while the idler 29 rests upon the upper surface of the upper track 5.

Extending laterally across the plate 9 below the axis of the drive wheel 10 is an arm 30 pivoted at 31 to the plate 9 near one side thereof and having its end adjacent to the other side of the plate urged therefrom by a spring 31'. This arm is bent in the direction of the tracks 5 and at its end remote from the end engaged by the spring 31' carries a trolley wheel 32 arranged to make contact with the trolley wire 6 and a rod 33, fast to the axis of the wheel 32, is carried back past the plate 9 and terminates in a hooked end 34 so arranged that when the eye 27 is engaged by a catch hook 7 the hook 34 on the end of the arm 33 will be engaged by the bracket 2 and the trolley wheel will be pulled away from the conductor 6, thus breaking the circuit at this point. It will be understood, of course, that the trolley wheel 32 is suitably insulated and that current is transmitted from said trolley wheel 32 to the motor 11 by suitable conductors. The return circuit from the motor may be through the lower track 5 or the upper track 5, or the return circuit may be simply grounded through the general structure of the truck or carriage and the tracks 5.

When the truck or carriage is traveling along under the impulse of the motor and the stop-catch or hook 7 is encountered, the eye 27 will engage the rear portion of the catch 7 and the continued travel of the carriage will cause the swinging of the plate 25 upon the pivot 26. This will cause one of the

pins 24 to engage one of the hooked fingers 23 and lift the rod 19 and plate 18 against the action of the spring 22. This upward movement of the plate 18 will cause the downward swing of the rollers 13 and 14, thus disengaging them from both tracks 5. At the same time the engagement of the bracket 2 with the hook 34 moves the trolley wheel out of contact with the conductor 6 and the circuit to the motor is broken. The shock of the sudden stop will throw the carriage away from the tracks 5, and this may be aided by the shape of the brackets 7 which may be so constructed as to cause the further movement of the truck away from the tracks 5 when once disengaged therefrom. In order that the rebound of the truck may not throw it off the catch hook 7 the plate 28 is provided, which, being pendent from the upper end of the eye 27, will ride upon the upper surface of the bracket 7 and on the rebound will catch the head 8 and thus lock the truck from further movement of rebound.

When the mail-bag has been removed from the carriage or truck after the latter has been stopped and another mail-bag has been placed on the carriage, or even without placing another mail-bag on the carriage, the latter can be again replaced upon the track by a suitable manipulation of the eye 27 to compress the spring 22 and on the release of the parts the trolley wheel 32 will make contact with the conductor 6 and the motor will be again energized and the truck or carriage will proceed on its journey, either to continue the same in the original direction or it may be placed upon the other track and returned to the point of destination, assuming, of course, that the other track is used as a return track.

In Fig. 4 is shown a diagrammatic representation of a system of distribution in accordance with my invention. The distributing office is represented at 35, from which there are outgoing tracks 5 that may extend to any distance desired. At different points the outgoing tracks may be connected by a cross track 36 on to which the cars or trucks from the main track may be shunted through suitable switches, to be automatically thrown by the approach of the trucks or cars. It is not deemed necessary to show these switches, since any of the well known types may be used for this purpose.

It is contemplated by the present invention to substitute trunk lines of tracks 5 wherever the railway mail service is now in operation and also to extend such trunk lines in other directions not now reached by the railroads, while the branch lines may distribute mail-sacks to outlying points in all directions. There may be trunk lines between large cities and distributing lines from such cities to smaller towns and communities.

Because of the simple structure, the cost of

installation is a comparatively small item, and the operating expenses are very low.

In order to protect the working parts of the truck or carriage, a suitable casing 37, indicated in dotted lines in Fig. 2, may be applied to the plate 9, and to this casing 37 the mail-sacks may be hung.

It will be understood, of course, that this system may be used for other purposes than simply the collecting and delivery of mail, and can replace the railway express service. Because of the small cost of installing this system, it may be adapted to rural free delivery, and the trucks or carriages may be so arranged as to be switched off at individual houses by automatic switches of known construction. In such case the catch hooks 7 and eyes 27 may be so arranged that they will be switched only at predetermined stations.

I claim:—

1. In a system of the character described, two tracks arranged one above the other, a truck or carriage, a drive wheel mounted upon the carriage and engaging one track, guide wheels engaging the drive wheel track in opposition thereto, elastic means for holding the drive wheel and opposing wheels in contact with the track, a trolley wire arranged to one side of the main track, a trolley wheel movable into and out of engagement with the trolley wire in a plane at right angles to the plane cutting the supporting tracks, and an electric motor also mounted upon the carriage for actuating the drive wheel and receiving current from the trolley conductor through the trolley wheel.

2. In an apparatus of the character described, a suitable frame, a drive wheel and motor therefor mounted upon said frame and arranged to engage a supporting track, pivoted arms mounted on said frame and carrying rollers arranged to engage the track in opposition to the drive wheel, a sliding member engaging the pivoted arms to move them to and from the track, a spring tending to hold the rollers in engagement with the track, and a pivoted plate carried by the frame and acting on the arms supporting the rollers in opposition to the spring to move said rollers out of engagement with the track.

3. In a system of the character described, two aerial tracks arranged one above the other, a truck or carriage, a drive wheel on said truck and arranged to travel on one of the tracks, an idler wheel arranged to travel on the other track, a pair of rollers arranged to engage the drive wheel track in opposition to said drive wheel, another pair of rollers arranged to engage the idler track in opposition to said idler, a movable member engaging all the roller supports, a spring tending to move the rollers into engagement with their

respective tracks, a pivoted member engaging the spring-controlled member and movable around its pivot in either direction to move the spring-controlled member, a ring or eye carried by said pivoted member, and a fixed catch in the line of travel of the truck or carriage and located to enter the eye and stop the carriage.

4. In a system of the character described, two aerial tracks arranged one above the other, a truck or carriage, a drive wheel on said truck and arranged to travel on one of the tracks, an idler wheel arranged to travel on the other track, a pair of rollers arranged to engage the drive wheel track in opposition to said drive wheel, another pair of rollers arranged to engage the idler track in opposition to said idler, a movable member engaging all the roller supports, a spring tending to move the rollers into engagement with their respective tracks, a pivoted member engaging the spring-controlled member and movable around its pivot in either direction to move the spring-controlled member, a ring or eye carried by said pivoted member, a fixed catch in the line of travel of the truck or carriage and located to enter the eye and stop the carriage, an electric motor on the carriage for actuating the drive wheel, a trolley wire arranged to one side of the vertical plane cutting the tracks, a pivoted arm movable in a plane at right angles to the plane cutting the tracks, a spring tending to move said arm in one direction, a trolley wheel in said arm, and another arm engaging said trolley wheel and arranged to be engaged by a fixed member along the line of way in the path of said arm.

5. In a system of the class described, fixed catch hooks along the line of way, each hook being provided with a shoulder at its free end, tracks also arranged along the line of way, a truck or carriage movable on said tracks, a ring or eye on said carriage arranged to receive a catch hook, and a gravity latch carried by said eye and arranged to engage the headed end of the catch hook to prevent the eye from escaping therefrom on the reverse movement of the carriage.

6. In a system of the character described, a pair of longitudinal tracks and a carriage adapted thereto composed of a drive wheel arranged to travel on one of the tracks, an idler wheel arranged to travel on the corresponding side of the other track, and clamp wheels or rollers arranged on both sides of the drive wheel and adapted to simultaneously engage the tracks in opposition to the drive wheel and idler.

7. In a system of the character described, a pair of longitudinal tracks and a carriage adapted thereto composed of a drive wheel arranged to travel on one of the tracks, an idler wheel arranged to travel on the corre-

sponding side of the other track, clamp
wheels or rollers arranged on both sides of
the drive wheel and adapted to simultane-
ously engage the tracks in opposition to the
5 drive wheel and idler, pivoted supports for
said rollers, a common connection for said
pivoted supports, a spring acting on all the
rollers simultaneously and tending to hold
them in engagement with the tracks, and

means for disengaging the rollers from the 10
tracks in opposition to the spring.

In testimony that I claim the foregoing as
my own, I have hereto affixed my signature
in the presence of two witnesses.

WILLIAM H. MOZINGO.

Witnesses:

HOMER BLACK,

HOMER STRICKLER.