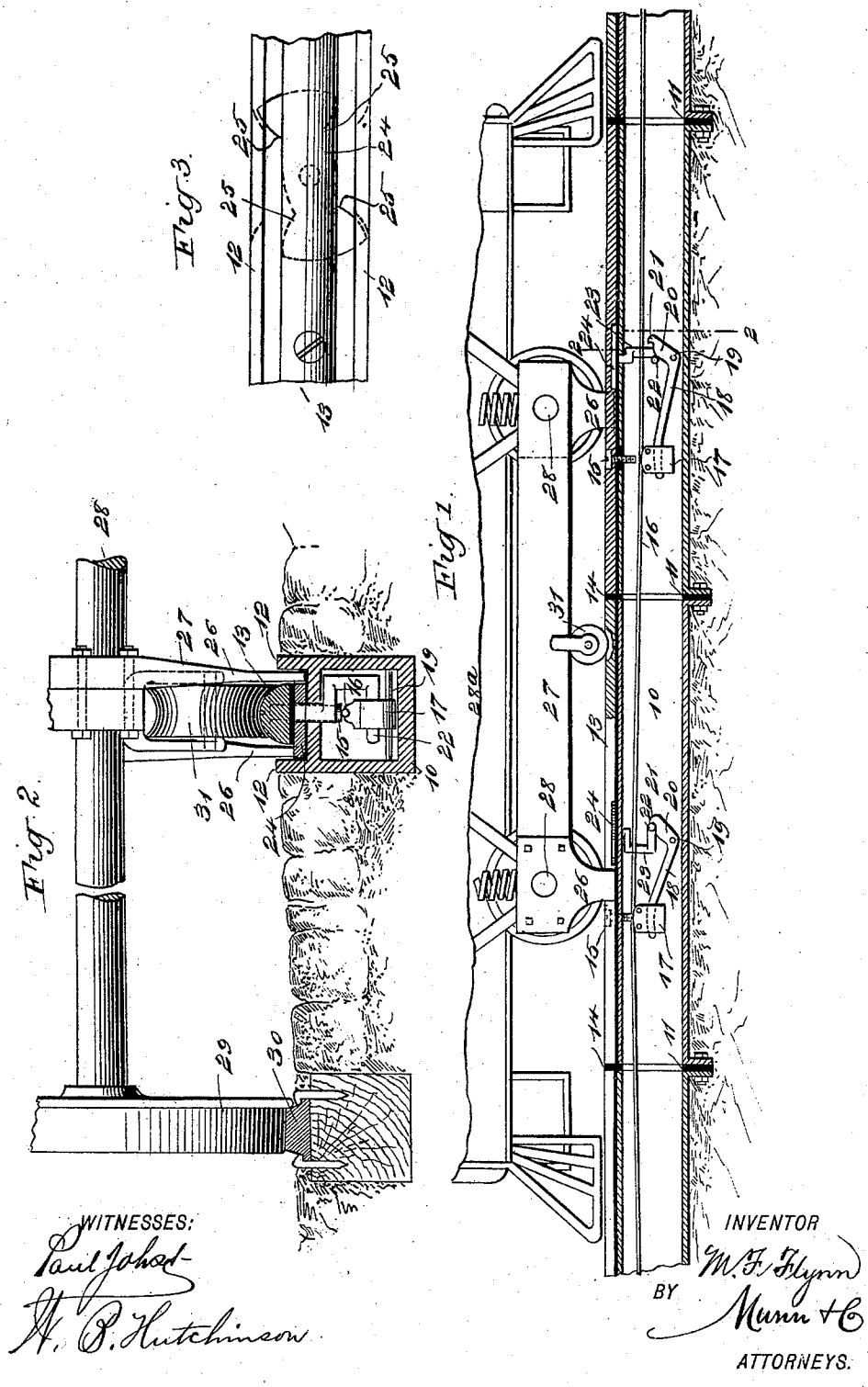
(No Model.)

M. F. FLYNN.

CONDUIT ELECTRIC RAILWAY.

No. 534,986. Patented Feb. 26, 1895.



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CONDUIT ELECTRIC RAILWAY.

SPECIFICATION forming part of Letters Patent No. 534,986, dated February 26, 1895.

Application filed May 24, 1894. Serial No. 512,294. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL F. FLYNN, of Stamford, in the county of Fairfield and State of Connecticut, have invented a new and Improved Electric Railway, of which the following is a full, clear, and exact description.

My invention relates to improvements in electric railways; and the object of my invention is to produce an extremely cheap, simple and practical electric railway, which has a small surface conduit arranged to carry a live wire in such a way as to prevent grounding and loss of current, which has a surface trolley rail with which easy contact may be made, which is provided with means for throwing sections of the trolley rail into circuit with the line wire as the car travels over the said rail, which is also provided with means for automatically cutting out the trolley rail as the car leaves a section thereof, which consequently leaves the trolley rail normally out of circuit so that there is no danger from its being above the surface of the ground, and which is adapted to provide means for propelling a car in a very inexpensive and convenient manner.

To these ends my invention consists of certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a broken central longitudinal section through the conduit of my improved railway, and the view shows also the trolley connection with the trolley rail and line wire. Fig. 2 is a cross section on the line 2—2 of Fig. 1; and Fig. 3 is a broken sectional plan of the conduit and the trolley rail thereon.

The conduit 10 is comparatively small and shallow and is preferably rectangular in cross section, the conduit being hard and water-tight and made up in sections which are preferably insulated from each other, as shown at 11 in Fig. 1. The conduit has longitudinal top flanges 12 at opposite sides which serve as guides for the trolley plow, as hereinafter described, and on the conduit is arranged the trolley rail 13 which is insulated from the conduit and is made up in sections insulated from each other, as shown at 14, these sections being preferably about half as long as the car and they are connected in such a way with the main line that but one section is in circuit at a time.

Each section of the rail 13 is provided with a conducting pin or screw 15, which extends downward through the conduit top and is held directly above the live wire or feeder 16 which extends longitudinally through the conduit. The wire 16 is held on insulators 17 which are arranged below the wire and below the contact screws or pins 15, each insulator being carried on a lever 18 which is fulcrumed at its elbow, as shown at 19, and has one arm 20 extending upward and provided with a cam surface terminating in a sort of hook 21, this cam surface and hook of the lever being adapted to engage the crank 22 on the bent arm 23 which extends upward through the conduit top and is fastened to a cam plate 24 which turns in a recess beneath the trolley wire and is notched on opposite sides, as shown at 25, to enable it to be struck effectively by the trolley plow 26 which depends from a frame 27 carried by the axles 28 of the car 28^a, these plows being located beneath the front and rear axles of the car and they are arranged so that one of them travels on one side of the rail 13 and the other on the opposite side, the two plows extending downward between the rail and the side flanges 12 of the conduit which thus serve as guides.

The axles 28 of the car are mounted in the usual wheels 29 which run on rails 30 also of any approved kind, and the conduit is arranged at any convenient point between the rails. As the car runs along the track, the forward plow 26 strikes one of the shoulders of the cam plate 24 and swings the plate and the bent arm 23, so as to force the crank 22 of said arm against the cam surface and hook of the lever 18, thus tilting the lever and throwing up the insulator 17 carried thereby, which presses the wire 16 against the adjacent contact screw or pin 15, so that the current passes from the wire through the screw to the trolley wheel 31, from which it may be taken by the motor in any usual way.

As the car progresses, the trolley wheel comes in contact with the next section of the trolley rail through which the current is

switched, as above described, while the rear plow strikes the cam plate 24, of the section just passed by the trolley wheel, and throws the said cam plate back to its original position, thus permiting the insulator and wire to drop and thereby cut out the first section of the trolley rail, and it will be seen that this operation is kept up along the entire line, each section of the trolley rail being first cut in and then cut out by means of the plows and cam plates with their accessories.

It will be seen from the above description that the construction is of the simplest nature, that the trolley rail is entirely out of circuit except at the moment that the car is in connection with a certain section, and consequently that there is no danger of a person getting into injurious contact with the said rail.

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

1. In an electric railway, the combination, with the closed conduit and the line wire therein, of the trolley rail on the conduit, having contact surfaces above the line wire, tilting levers arranged below the line wire and adapted to carry the wire upward against the contact screws, and an operating mechanism extending from the levers up through the conduit in the path of the trolley for actuating the levers by the movement of a passing trolley, substantially as described.

2. The combination, with the conduit and the line wire therein, of the trolley rail on the conduit, the depending contacts connected with the rail and suspended above the line wire, vertically movable insulators supporting the wire beneath the contacts, and a lever mechanism provided with an operating rock shaft extending up through the conduit and provided with a plate or arm in the path of and actuated by the passing of a trolley and adapted to move the insulators and wire upward, substantially as described.

3. The combination, with the conduit, the line wire therein, the trolley rail, and the contacts connected to the rail and arranged above the line wire, tilting levers arranged beneath the wire, insulators carried by the levers and supporting the wires beneath the contacts, oscillating cam plates projecting from the sides of the trolley rail, and a crank connection between the cam plates and the tilting levers, whereby the moving of a plate tilts the lever, substantially as described.

4. The combination, with the conduit having parallel top flanges, of the trolley rail arranged between the flanges, the trolley having plows to travel between the flanges and the rail, the oscillating plates arranged beneath the rail and extending into the paths of the plows, the line wire in the conduit, and means actuated by the movement of the plate to switch the current from the line wire to the trolley rail, substantially as described.

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