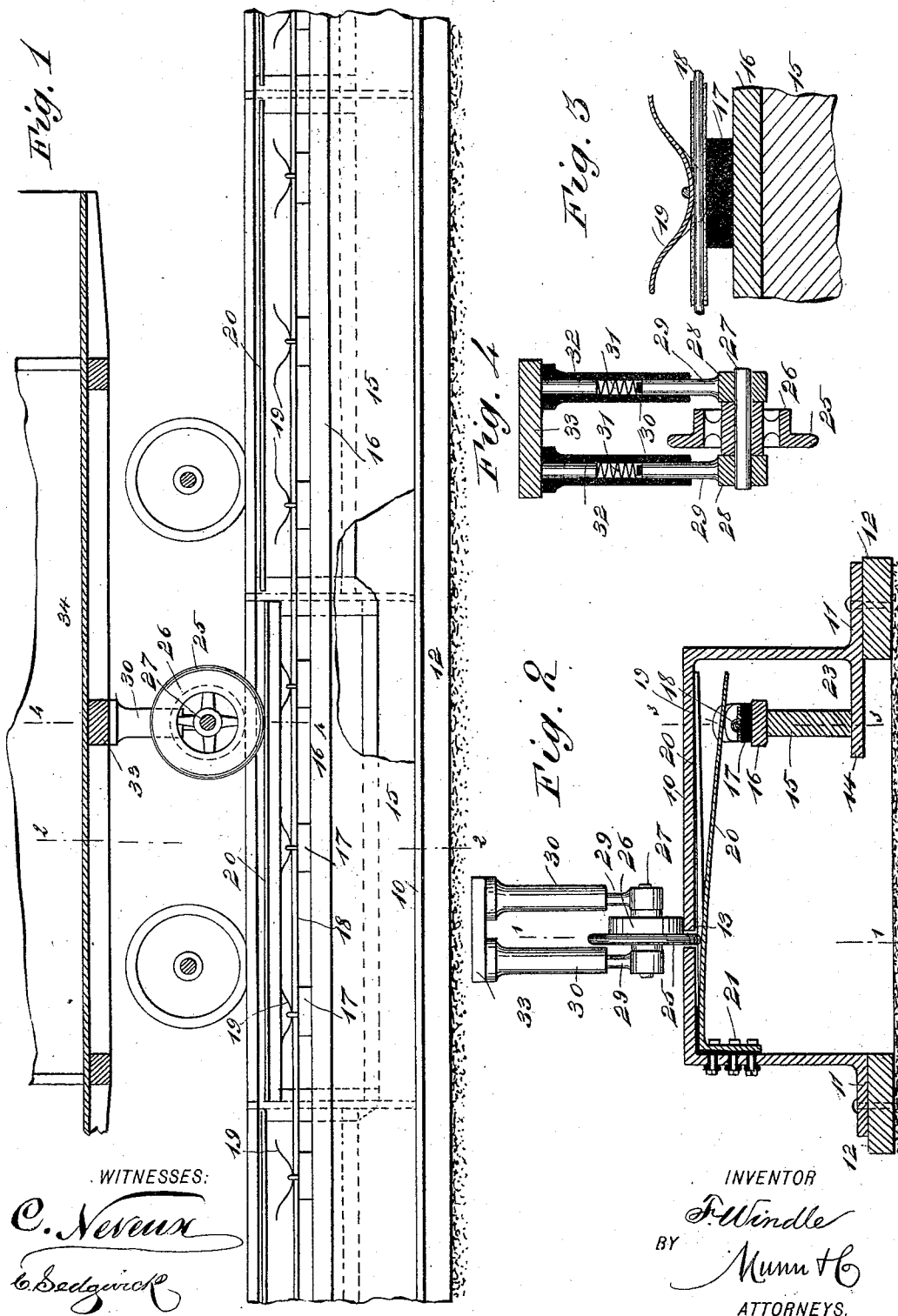


(No Model.)

F. WINDLE.
CLOSED CONDUIT FOR ELECTRIC RAILWAYS.

No. 532,302.

Patented Jan. 8, 1895.



WITNESSES:

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FRANK WINDLE, OF PHILADELPHIA, PENNSYLVANIA.

CLOSED CONDUIT FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 532,302, dated January 8, 1895.

Application filed March 8, 1894. Serial No. 502,856. (No model.)

To all whom it may concern:

Be it known that I, FRANK WINDLE, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, 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 conduit electric railways; and the object of my invention is to produce a very simple and comparatively inexpensive system, which employs a shallow conduit carrying the line wire and which is provided with a series of contact strips held normally out of circuit, but pressed automatically into circuit by the passage of a car, so that only certain sections of the strips are energized at any one time, thus rendering the system very safe and preventing any great loss of energy.

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 part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a longitudinal section on the line 1—1 of Fig. 2, showing the car in sectional elevation and showing a portion of the conduit mechanism in elevation. Fig. 2 is a cross section on the line 2—2 of Fig. 1. Fig. 3 is an enlarged detail sectional view, showing the manner in which the line wire is supported and the way in which one of the contact springs is connected with it, the view being taken on the line 3—3 in Fig. 2; and Fig. 4 is a detail vertical section on the line 4—4 of Fig. 1.

The conduit 10 is of metal and is a conductor, the conduit being made up in a series of sections, and it has preferably at its lower opposite edges base flanges 11 adapted to rest upon wooden supports 12, and it also has, at the top the customary slot 13, and near the bottom and on one side a ledge 14 adapted to support the longitudinal timber or hanger 15, which is provided with a plate 16 at the top on which, at frequent intervals, are secured insulating blocks 17 which carry the line wire 18, this being insulated at all points except just above the blocks 17, at which points it is

in contact with springs 19 having upwardly-curved and oppositely extending arms which are adapted to contact with and close the circuit through the contact plates 20, these plates being spring plates which lie normally against the top of the conduit, the plates being arranged longitudinally end to end and each plate having one end secured, as shown at 21, to one side of the conduit, and insulated therefrom while the plate itself projects beneath the slot 13 and above the conductor 18 and contact spring 19.

The contact plates 20 are adapted to be successively pressed down by the flange 25 of the trolley wheel 26 which flange is adapted to enter and run in the slot 13, and when a plate is pressed into contact with the springs 19, the circuit passes from the line wire 18 through the springs, the contact plate, and the trolley to the motor in the usual way. The wheel 26 is provided with a suitable axle 27, which is hung in the lower end 28 of the arms 29 which project upward into the insulating hangers or dash pots 30, the arms being normally pressed downward by springs 31, which are arranged between the upper ends of the arms and guide pins 32 which are secured to a supporting plate 33 above. This arrangement affords a yielding support for the trolley wheel, enabling the car to have the necessary up and down movement without bringing too much pressure on the wheel. The support 33 is secured to the under side of the car 34 and the current may be taken from the trolley in any ordinary manner.

It will be noticed that, as the trolley runs along with the flange 25 in the slot 13, the spring plates 20 are successively depressed, so that the current is sent successively through them and through the trolley to the motor, but all the plates except the one immediately beneath the car are held normally upward out of contact with the springs 19 so that there is no current passing through them and the line is perfectly safe.

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

1. In an electric railway, the combination with a slotted conduit, spring plates extending beneath the slot thereof, and a trolley for depressing the said plates, of a conductor in

the conduit, and springs arranged at intervals in contact with the conductor and having upwardly curved arms with which the spring plates engage substantially as described.

5 2. In an electric railway, the combination with a slotted conduit, spring plates secured to the conduit and extending beneath the slot thereof, a trolley for depressing the spring plates, of a longitudinal support in the conduit, a conductor insulated from the said support, and springs in contact with the conductor, and having upwardly curved and oppositely extending arms with which the spring plates engage substantially as described.

10 3. In an electric railway, the combination with a slotted conduit and spring plates secured to the conduit and extending beneath the slot thereof, of a yielding supported and flanged trolley for depressing the said plates, 15
20 a conductor supported in the conduit beneath

the free end of the spring plates, and springs arranged at intervals in contact with the conductor and with which the spring plates engage when depressed by the trolley, substantially as described.

25 4. In an electric railway, the combination with a slotted conduit, a conductor arranged therein, and spring plates adapted to make electrical connection with the conductor, of a flange wheel, arms in which the axle of the 30 wheel is mounted, hollow insulating hangers into which the arms project, a supporting plate provided with arms projecting also into the hollow hangers, and springs arranged in hangers between the said arms, substantially 35 as described.

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Witnesses:

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