

(No Model.)

2 Sheets—Sheet 1.

F. TAYLOR.
ELECTRIC RAILWAY.

No. 544,198.

Patented Aug. 6, 1895.

Fig. 1.

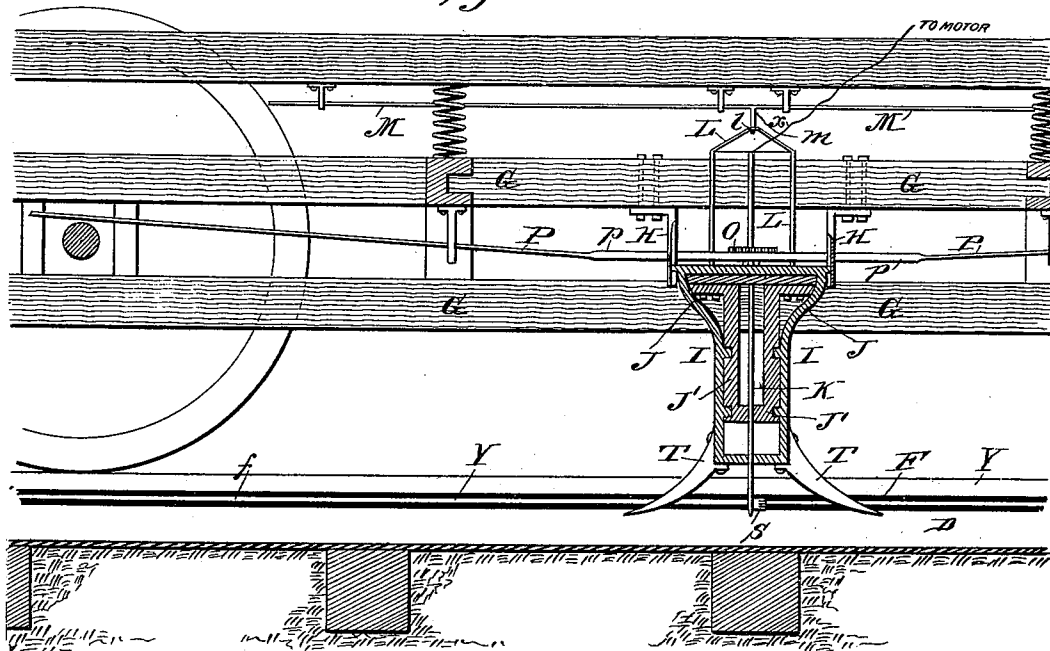
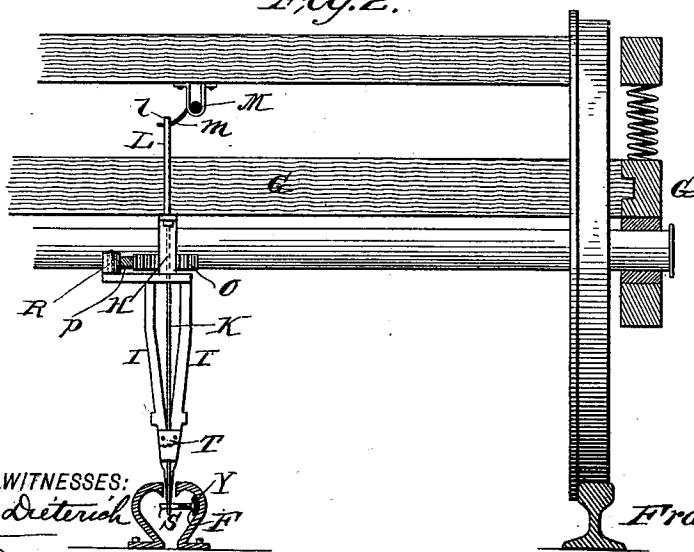


Fig. 2.



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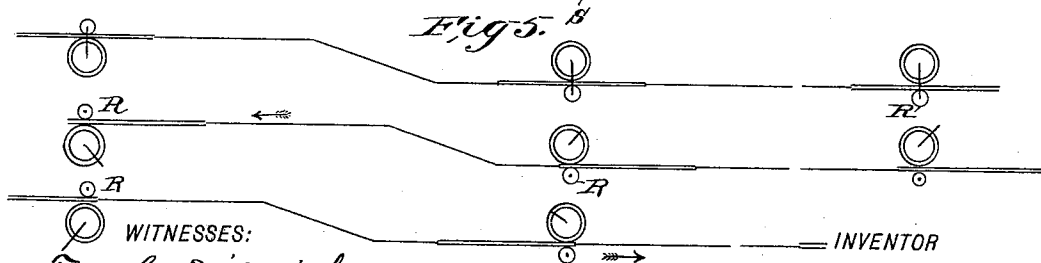
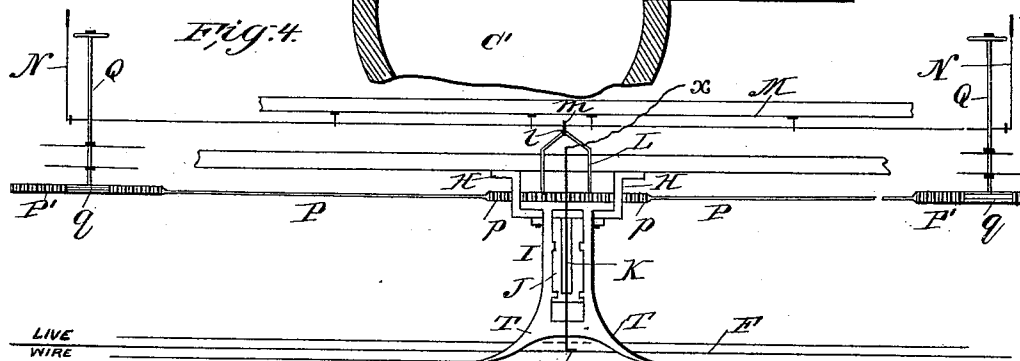
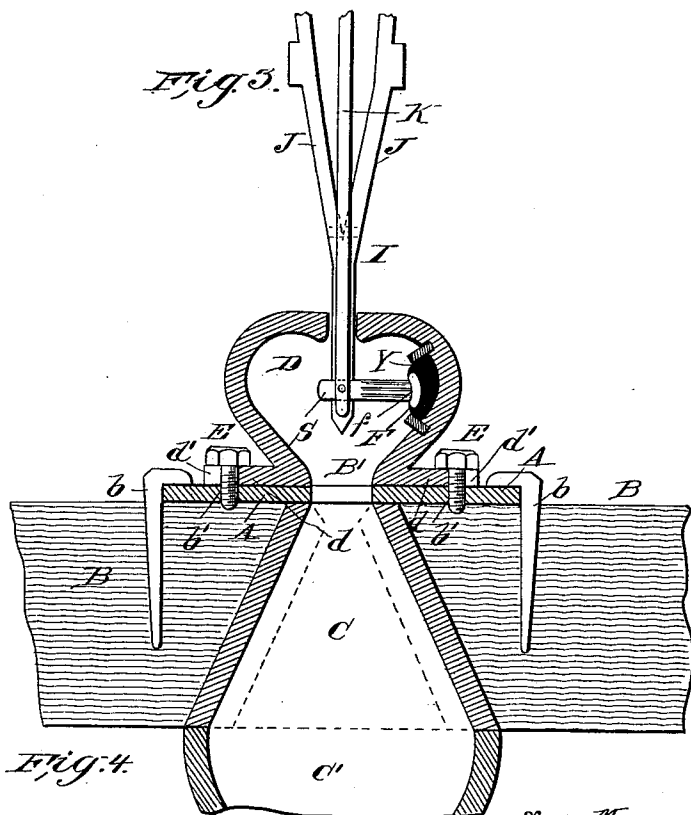
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UNITED STATES PATENT OFFICE.

FRANCIS TAYLOR, OF CHARLOTTE, NORTH CAROLINA, ASSIGNOR OF ONE-HALF TO IRVIN W. DURHAM, OF SAME PLACE.

ELECTRIC RAILWAY.

SPECIFICATION forming part of Letters Patent No. 544,198, dated August 6, 1895.

Application filed November 30, 1894. Serial No. 530,392. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS TAYLOR, residing at Charlotte, in the county of Mecklenburg and State of North Carolina, have invented certain new and useful Improvements in Electric Railways, of which the following is a specification.

My invention refers generally to an improved underground electric system, and refers more particularly to the detailed arrangement of the brush or current-transmitter carrying means and the arrangement of the conduit and the current wire-holding devices.

Primarily, my invention has for its object to provide a conduit so constructed as to be readily applied to existing road-beds, where the rails rest on wooden cross-ties, and which, when in place, can be easily repaired or replaced by new material when necessary.

The invention also has for its object to provide a conduit so shaped as to be easily manufactured, and when in position to protect the live wire from interference and the public from injury.

Furthermore, my invention has for its object to provide a brush or current-transmitter having a supporting-shank capable of being rotated and lifted vertically by the motorman on the car-platform, whereby the brush member can be reversed or brought in line with the conduit-slot and lifted out of such slot when desired.

With other objects in view, which hereinafter will be referred to, my invention consists in the peculiar combination and novel arrangement of parts, such as will be first described in detail and then be specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal section of the conduit, the road-bed, and a portion of a car-frame with my improved current-transmitting devices mounted thereon and held in their operative position. Fig. 2 is a cross-section of a portion of the car-frame and the conduit and the transmitting devices. Fig. 3 is an enlarged cross-section of the conduit and the lower end of the brush and brush-holder. Fig. 4 is a diagrammatic side view of a car-platform, a conduit, and the current

transmitting and adjusting devices; and Fig. 5 is a diagrammatic plan view thereof.

Referring to the accompanying drawings, A indicates a base-plate of sufficient width and thickness to support a conduit, which in practice is secured to the sleepers or wooden sills B by spikes *b*, and in turn has central or drain-slots B' at points between the sleepers, and at the edges threaded apertures *b' b'*, the said slots B' opening into the drain proper C, which is formed of sloping side portions, which are cut in between the sleepers, and a continuous semicircular bottom member C', which receives the dust and water which may enter through the slots B'.

The conduit proper D is formed in cross-section, substantially as shown, its base flanges *d d* being provided with slots *d' d'*, through which pass the securing-bolts E E, which fit the threaded apertures *b' b'* in the base-plate A, as shown.

On one side of the inner face of the conduit is secured a non-conducting member F, in which is seated and nearly incased therein the live wire Y, the front face of which is, however, exposed, as at *f*, the entire length of the conduit.

G indicates the supplemental car-truck frame, which is mounted upon the car-axes in the usual manner, and from which extend pendent bracket members H H, on which is supported for vertical adjustment the brush or trolley supporting frame I. This frame, which is normally held supported on the brackets H H, comprises an inverted yoke-like portion J and a central guide portion J', in which is held to rotate the brush or transmitter-shank K, the upper end of which extends to near the bottom of the car and connects with the motor-wire X, as shown.

L L indicate a frame bolted at its lower end to the guide portion J' and provided at the upper end with an eye or loop portion *l*, which fits on a crank member *m* of a rock-rod M, which extends longitudinally under the car, preferably to each platform, at which point it is connected with a rocking lever N, as shown.

O indicates a toothed wheel fixedly connected to the shank K at a point above the frame portion J', which engages a rack por-

tion p on a longitudinally-reciprocating rod P held in suitable brackets on the car-body, and which extends to each end of the car-platform, at which point it has rack portions $p' p'$, with which mesh toothed wheels $q q$ on the lower ends of the operating-rods $Q Q$.

The rack-rod P has a limited vertical movement in its supporting-brackets, and has its central rack portion held in engagement with the toothed wheel on the brush-shank by means of a guide-pulley R . (See Figs. 2 and 5.)

S indicates the brush, which is secured to the shank K , as most clearly shown in Fig. 3.

$T T$ indicate plow or guide portions which are bolted to the lower end of the trolley or transmitter frame, which serve to protect the shank or wire-carrier K and to eject anything that may get into the conduit-slot. The points of the plow in practice are made of chilled steel. The lower drain member is preferably of terra-cotta and can be applied without taking up the cross-ties or impairing the stability of the same.

From the foregoing description, taken in connection with the drawings, it will be seen that by constructing and arranging the several parts as described the live wire is so placed that it can be conveniently used for supplying electricity to the motor on the car, and yet so connected as to prevent it becoming a source of danger.

The system can be easily and cheaply applied to roads and cars on which the overhead trolley has been used.

In the event of repairs being needed all parts are easily removed. Owing to the simplicity of construction the broken or worn-out parts can be readily and economically replaced.

The shank or conductor under the car is entirely under the control of the motorman at either end of the car, who can reverse the brush or lift the same entirely out of the conduit at will.

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

1. In an electric railway, the combination with the slotted conduit, having a live wire at one side, of a rotatable brush carrier having a contact member or brush projected horizontally therefrom, said carrier being vertically movable, the said contact member being of a less thickness than the width of the conduit slot, whereby such member is adapted to be lifted out of the conduit slot, when adjusted in line therewith, and the carrier is drawn upward as specified.

2. In an electric railway system, the combination with a conduit and the live wire held on one of the side walls thereof, of the car

frame, a vertically movable frame suspended therefrom, having plow members projected at the front and rear into the conduit slot, a shank member or transmitter held to rotate in the said frame, and the brush secured to the lower end of the shank, and projected at an angle therefrom to engage the live wire substantially as shown and for the purposes described.

3. In an electric railway, the combination with a conduit having the live wire held at one side of the slot of a rotatable transmitting shank, having a brush at the lower end to engage the wire, a vertically movable frame supported on the car body, for carrying the said shank and mechanism operated from the car platform for raising the said frame, and for rotating the shank substantially as shown and described.

4. In an electric railway a brush or current transmitter member, in combination with the conduit, and the live wire held at one side of the slot, said transmitter comprising a rotatable shank having a brush detachably secured to the lower end thereof projected at an angle therefrom, and mechanism for turning such brush member in line with the conduit slot and for raising such brush and shank out of the conduit substantially as shown and described.

5. In an electric railway, the combination with a conduit having the live wire at one side of the slot, and the motor carrying frame, of the vertically movable transmitter frame, the crank shaft connected therewith, and having an operating lever, the brush carrying shank held to rotate in the said frame, and having a toothed wheel, and a longitudinally reciprocating bar held on the car frame, and having a rack member meshing with the said wheel and means for reciprocating the said bar from the car platform as specified.

6. In an electric railway, the combination with the truck frame of the car body, a yoke like frame supported and vertically movable on the truck frame, means for adjusting the said yoke frame from the car body, a brush carrying shank held to rotate in the yoke frame, said shank having a toothed wheel, a longitudinally reciprocating rod having a central rack portion held to engage the aforesaid toothed wheel and rack portions at its ends, and hand operated shafts projected down from the car platform having toothed wheels meshing with such end rack sections, all arranged substantially as shown and for the purposes specified.

FRANCIS TAYLOR.

Witnesses:

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