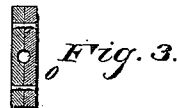
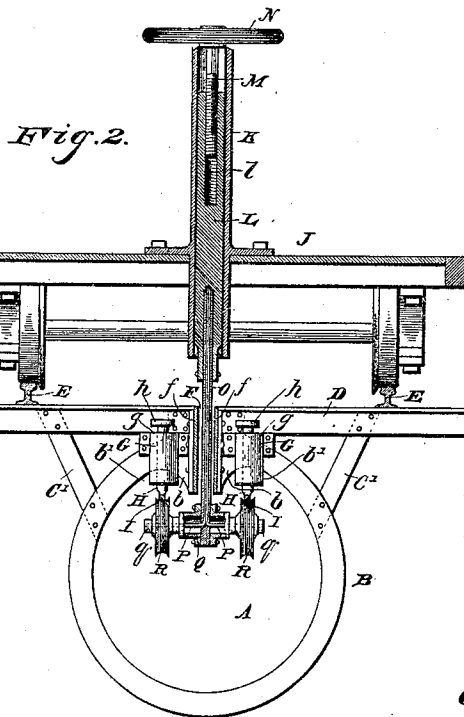
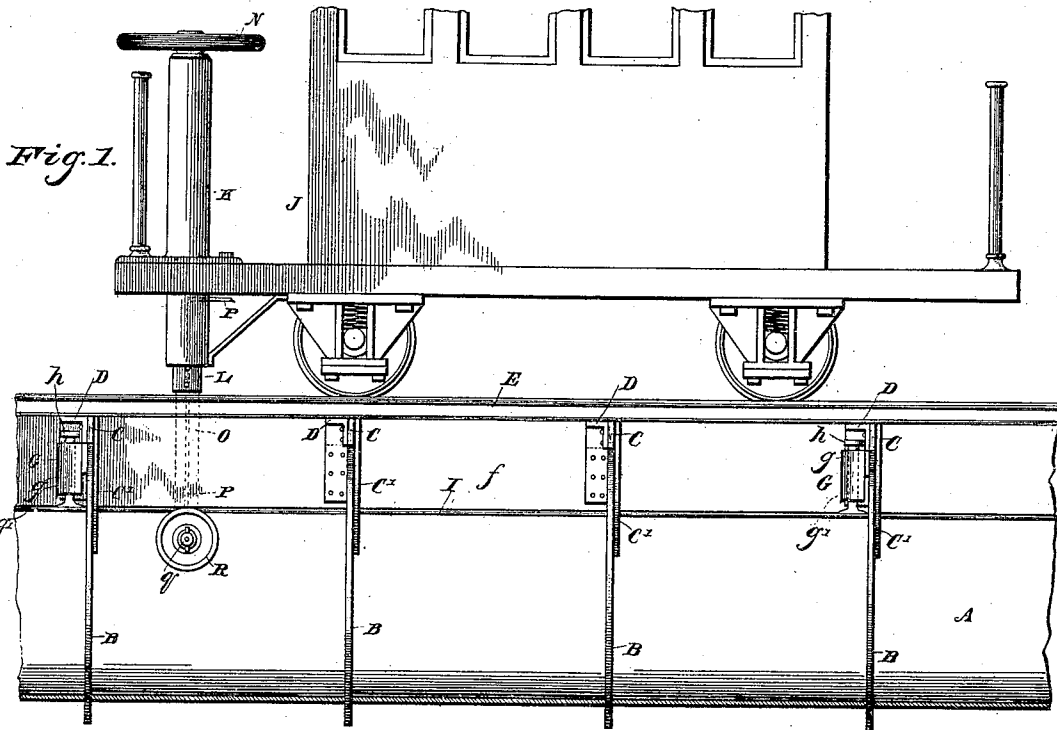


(No Model.)

C. H. BAKER.
ELECTRIC RAILWAY.

No. 480,004.

Patented Aug. 2, 1892.



Witnesses;

J. M. Thomas

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UNITED STATES PATENT OFFICE.

CHARLES H. BAKER, OF LAKE GENEVA, WISCONSIN.

ELECTRIC RAILWAY.

SPECIFICATION forming part of Letters Patent No. 480,004, dated August 2, 1892.

Application filed September 1, 1891. Serial No. 404,423. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. BAKER, a citizen of the United States, residing at Lake Geneva, in the county of Walworth and State of Wisconsin, have invented a new and useful Electric Railway, of which the following is a specification.

This invention relates to electric railways, and more especially to that class known as "conduit systems;" and it has for its object to so construct a conduit as to thoroughly protect the conducting-wires and at the same time to provide simple and efficient means whereby the electric current may be conducted from the conducting-wires within the conduit to the motor located upon the car-frame, the general object being to simplify and improve the constructions commonly in use; and with these and other objects in view the invention consists in the novel construction hereinafter more fully described, illustrated in the accompanying drawings, and specifically pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of a portion of an electrical conduit and an electric-motor car thereover combined and arranged in accordance with my invention. Fig. 2 is a vertical transverse sectional view of the same. Fig. 3 is a detail cross-section of the supporting and conducting hanger arm or plates.

Referring to the accompanying drawings, A represents an underground conduit formed by the usual excavations and in a size which adapts it to accommodate the necessary construction contemplated by this invention. Located at regularly-spaced intervals within the conduit are placed the circular frames B, conforming to the shape in which it is desired to construct the conduit, and terminating at their upper ends, which do not meet but are left a sufficient space apart to form a slot in the downwardly-bent portions *b*, which form double arches *b'* on opposite sides of the top opening formed between the adjacent ends of said ring frame or main arch. Securing angle-plates C and brace-bars C' secure the said circular frame, to the transverse ties D by means of bolts or rivets, thus rigidly holding said frames in their vertical upright positions, and which are bedded in any suitable material which may be desired to be used in lin-

ing or forming the interior walls of the conduit. The said transverse ties support the ordinary rails E and terminate even with the ends *b* of the ring arch, and thus complete the central longitudinal slot F, which is formed between the long slot-plates *f*, secured to the inner ends of said ties and ring arch by means of bolts or other securing means. Such construction, with the deep side plates, forming the central longitudinal slot, not only serves to accommodate the means for connecting the conductors with the electric motor, but also to serve to precipitate all water from the surface into the bottom of the conduit and incloses the arches *b*, which protect the conducting-wires on either side of the slotted opening.

At suitable intervals along the conduit are secured the brackets G, having a cylindrical or tubular body *g* and a longitudinal perforation *g'*, extending through said circular body, said brackets being riveted in pairs to the adjacent ends of the ring arches and directly over and depending into the inclosed arches *b'*, formed between the slot-plates *f* and the inner ends *b* of the ring frames. Loosely mounted within the perforations of said brackets are the sliding hangers H, adapted to work within said brackets and provided at their upper ends with the flanged heads *h*, which prevent the same from dropping out of said brackets, and are designed to support at their lower ends the longitudinal conducting-wires I, which may be secured to said vertically-sliding hangers, which are of course suitably insulated in any suitable and convenient manner.

An ordinary electric-motor car J is designed to travel over the rails supported upon the transverse ties and is designed to obtain power from the conducting-wires located in the conduit therebeneath. Upon the platform of the car is suitably secured a tubular upright K, within which is located the vertically sliding or adjustable bar or support L, provided at its upper end within said tubular upright with an interiorly screw-threaded recess *l*, that is designed to be engaged by the screw M, working in the head of said upright and operated by an ordinary hand-wheel N, by means of which the operator may raise or lower said support or sliding bar, as may be desired. Suitably bolted or secured to the lower end of said upright is

the depending, conducting, and supporting hanger O, which, as shown, is constructed of two oppositely-grooved plates securely riveted together to form a longitudinal circular perforation or way through said hanger to accommodate the electric conducting-wires P, which place the electric motor secured to the car-frame in circuit with the conducting-wires located within the conduit. The said hanger supports upon its lower end, projecting through the longitudinal slot of the conduit, the right-angularly disposed double shaft Q, the interior of which is hollow and communicates with the opening in the hanger-plates, whereby the electric wires may pass therethrough and out to the hollow spindle ends *q* thereof, which carry the revolving contact-wheels R, which revolve upon said spindle end and are in contact with the conducting-wires therein, being normally held up against the main conducting-wires I by means of the screw hand-wheel referred to when the electric-motor car is in motion.

It can be readily seen that, when desired, by a slight manipulation of the hand-screw by the operator that the circuit may be opened and closed, as may be desired, to control the movements of the motor-car, the vertically-sliding hangers supporting the main conducting-wires allowing for an easy and certain contact without any undue pressure upon the conducting-wires by the contact-wheels.

The construction and operation of my improved conduit and contact devices are now thought to be apparent without further description.

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 car and motor, of the conduit-rings having spaced ends extending downwardly and forming supplemental arches on opposite sides of said space at the top of the conduit, side plates secured to opposite sides of said ends and forming a longitudinal way or slot, vertically-adjustable hangers suspended within said supplemental arches, conducting-wires supported by said hangers, and means for removably engaging said wires and connecting the same with the electric motor, substantially as set forth.

2. In an electric railway, the combination, with the motor-car, of the conduit-rings provided with supplemental arches located on

opposite sides of the slot, perforated cylindrical brackets secured over said arches, vertically-sliding hangers supported within said brackets and provided with upper flanged heads and supporting the main conducting-wires at their lower ends within the conduit, vertically-adjustable contact-rollers supported within the conduit from the car-frame, means for adjusting said rollers, and wires passing from said rollers to the motor, substantially as set forth.

3. In an electric railway, the combination, with the motor-car, of the conduit having the longitudinal slot and the ring arches having the supplemental arches located on opposite sides of said slot, hangers adjustably suspended within said supplemental arches, conducting-wires supported by said hangers, the grooved or perforated hanger and conductor suspended from the motor-car through the slot, a right-angularly-disposed hollow shaft secured to the lower end of said hanger within the conduit, revolving contact-wheels mounted upon each end of said shaft and adapted to engage said conducting-wires, means for vertically adjusting said shaft and contact-wheels, and wires passing from said wheels to the motor, substantially as set forth.

4. In an electric railway, the combination of the conduit having a longitudinal slot and supplemental arches located on opposite sides of said slot, hangers adjustably suspended within said supplemental arches, conducting-wires supported by said hangers, the car-frame provided with a tubular upright, a sliding shaft located within said upright and vertically adjustable therein, the longitudinally perforated or grooved hanger and conductor-bar secured to the lower end of said shaft and projecting within said slot, a right-angularly-disposed hollow shaft suspended from the lower end of said hanger within the conduit and provided with hollow spindle ends in communication with the interior bore of said hanger, and revolving contact-wheels mounted upon said hollow spindle, substantially as set forth.

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

CHARLES H. BAKER.

Witnesses:

GEO. F. SHERMAN,
O. SEYMOUR.