

(No Model.)

S. H. SHORT.

ELECTRIC CONNECTION FOR TRACK WIRING.

No. 445,479.

Patented Jan. 27, 1891.

FIG I

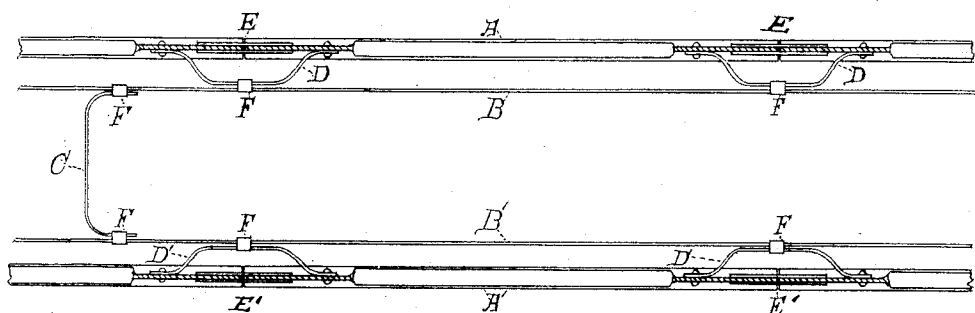


FIG II

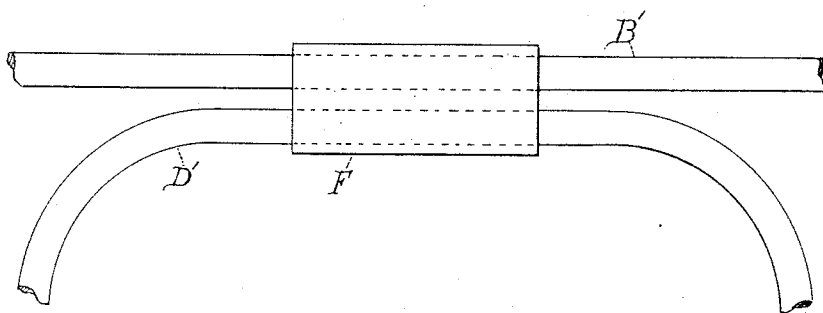


FIG III

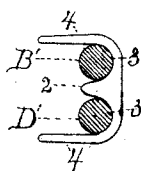
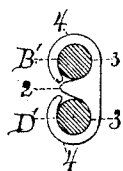


FIG IV



Witnesses
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UNITED STATES PATENT OFFICE.

SIDNEY H. SHORT, OF CLEVELAND, OHIO, ASSIGNOR TO THE SHORT
ELECTRIC RAILWAY COMPANY, OF SAME PLACE.

ELECTRIC CONNECTION FOR TRACK-WIRING.

SPECIFICATION forming part of Letters Patent No. 445,479, dated January 27, 1891.

Application filed October 10, 1890. Serial No. 367,725. (No model.)

To all whom it may concern:

Be it known that I, SIDNEY H. SHORT, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Track-Wiring for Electrical Railways, and Connectors Therefor; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates more particularly to the tracks of electric railways, which are used as the return-conductors for the electricity, (supplied by a suitable trolley-line;) but the improvements constituting the same are included for all the uses to which they may severally be adapted. The rails in these return-conductor tracks are ordinarily connected with a track-wire, which need not be insulated, and is preferably protected by a coating of pitch or like material, and which is connected with each of the rails by lateral wires fastened to said rails. The joints between the rails render the track imperfect as a conductor, and the track-wire establishes a good connection with each rail or section of the conductor.

In accordance with the present invention a new or improved connector is employed to join the lateral wires to the main wire; and the invention also comprises certain improvements in the arrangement of the main wire, (or wires, one for each line of rails being preferably employed,) branch wires, and track.

In the accompanying drawings, which form part of this specification, Figure I is a plan of a section of track wired in accordance with the invention. Fig. II is a plan showing one of the new or improved connectors in place on a larger scale; and Figs. III and IV are end views of a connector detached, Fig. III showing it before and Fig. IV after application.

For each line of rails A A' (which line may be regarded as constituting a sectional conductor) there is a main-track wire B B', respectively, which is cross-connected with the other track-wire by branches C at intervals, and is connected with its own track-rails (being placed near to said rails) by branch wires

D D', respectively, at each joint E E'. The branches D D' are arranged each to span the corresponding rail-joint E E', their ends being connected electrically and secured mechanically to the rails near their abutting ends in any known or suitable way—as, for example, by wrapping the end of the wire about the end of a rivet which has been passed through the web of the rail and then upsetting said end to clamp the wire against the web of the rail and applying solder. The branch wires D D' are connected in the middle with the main wires electrically and mechanically by means of the connectors F, so that each rail or section of the return-conductor is in permanent electrical connection with the track-wires B B'. The connectors F have grooved or open-sided sockets to receive the wires, which sockets can then be clamped or clamped and soldered to retain the wires securely with a good electrical connection. By the use of the grooved connectors, or connectors with open-sided sockets, these can be applied in the middle or any intermediate part of both wires. Similar connectors are also used to secure the ends of the cross-wires C to the track-wires B B'. For the connectors preference is given to the form shown in Figs. III and IV. Each connector of this form has a central rib 2 between the two grooves or open-sided sockets 3, and a lip 4 on the outside of each, the said lip being of such depth that it can be folded down upon or wrapped around the wire placed in said groove or socket 3.

It is evident that the branch wires D D' might each be composed of two pieces; but the single wires, each extending around the rail-joint and fastened at the middle to the main-track wires, are more easily applied, require only one connector for each rail-joint, and are specially included in the invention. Their use is included with one or more track-wires. It should also be observed that the invention extends generally to the double cross-connected track-wires secured by branch wires to the track-rails irrespective of the precise means for connecting the wires with each other or with the track-rails, although the arrangement with grooved or open-sided connectors, and particularly the connectors

of substantially the structure shown in Figs. III and IV, is specially included, with or without the use of continuous branch wires fastened to the rails at their respective ends and to the track-wires at their middle. The duplicate cross-connected main-track wires have the advantage over a single wire of allowing shorter branch wires D D'. The connectors of Figs. III and IV may of course be used for coupling electrical wires in various connections, although specially designed for use on track-wires.

The trolley-line for supplying the electricity to the motor-cars on the track may be supplied from an overhead wire in the usual way.

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

1. In combination with the track of an electric railway, the cross-connected main-track wires, each connected with the adjacent line of rails through branch wires electrically connected with and mechanically fastened to said main-track wires, substantially as described.

2. In combination with a line of rails or sectional conductor, a main-track wire or parallel conductor and branch wires secured at their ends to said rails or conductor-sections

on opposite sides of the joints and at their middle to said main-track wire, substantially as described.

3. The conducting system or track-wiring, comprising a main-track wire or wires, branch wires, and grooved or open-sided connectors having the said wires fixed in the grooves or sockets of said connectors, which thus couple the branch wires with the main-track wires, substantially as described.

4. The described connector, having a rib between two grooves or sockets and lips outside the same adapted to be folded down upon or wrapped around the wires on opposite sides of said rib, substantially as set forth.

5. In combination with electrical wires, the described electrical and mechanical connectors, having each a rib between two grooves or sockets and lips outside the same, said wires being retained in said grooves or sockets by the folded-over lips, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

SIDNEY H. SHORT.

Witnesses:

A. B. CALHOUN,
W. A. PALLANT.