

J. SCOTT.
ELECTRIC CONDUCTOR FOR TROLLEY CARS.
APPLICATION FILED APR. 10, 1914.

1,104,225.

Patented July 21, 1914.

2 SHEETS—SHEET 1.

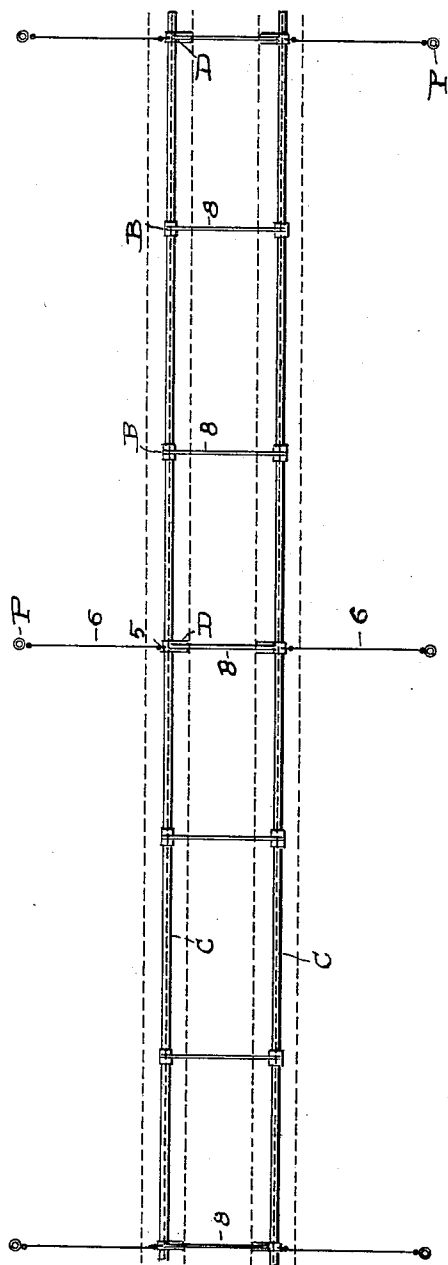


Fig 1.

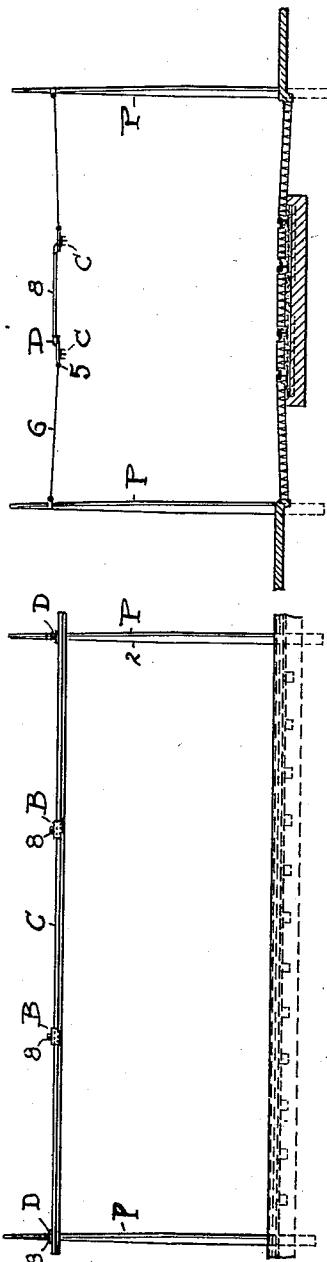


Fig 3.

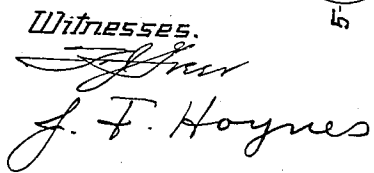
Fig 2.

Witnesses.
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2 SHEETS--SHEET 2.



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UNITED STATES PATENT OFFICE.

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ELECTRIC CONDUCTOR FOR TROLLEY-CARS.

1,104,225.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JAMES SCOTT, citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Electric Conductors for Trolley-Cars, of which the following is a specification.

This invention has reference to an improvement in electric conductors for trolley cars, and the invention consists in an electric current carrying medium which dispenses with the usual heavy supply cables along the overhead trolley lines generally in use and from which there are feeders or cross wires at intervals to the immediate trolley wire, and instead of such arrangement provides a single medium or line conductor which serves the double purpose of a cable and a line for the trolley, all substantially as shown and described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of a section of a double track system embodying my invention. Fig. 2 is a side elevation of a half of Fig. 1, showing the car track and posts and electric conductor as appears in the said view, and Fig. 3 is an end elevation of Fig. 1. Fig. 4, Sheet 2, is an enlarged elevation in cross section of my new and original current conductors and one of the transverse carriers or connections which are employed at intervals to support the same, as also seen in plan Fig. 1. Fig. 5 is a cross section corresponding in the main to Fig. 4 but taken on the cross line corresponding to a set of poles from which the conductor is supported and also showing a trolley wheel in working relation with said conductor. Fig. 6 is a perspective view of the said conductor. Fig. 7 is a modification of the conductor adapted to a sliding contact instead of a rolling contact by trolley. Fig. 8 is a modification of the conductor for trolley service.

As above indicated, this invention is designed to dispense entirely with the usual insulated copper feed wire heretofore necessarily employed in trolley service and to substitute a single conductor C in or over the center of the line where the trolley wire has been stretched heretofore and which is adapted to serve as both feed and trolley wire in one piece or part. Furthermore in addition to serving as a single and exclusive con-

ductor for all the electrical current on the line I have fashioned the same so as to serve also as a guard or protector for the trolley and its contact 2, thus bringing several functions into this single part. To these ends the said conductor is constructed of copper rolled into approximately a T shape except that the stem or web portion 2 at the middle is but slightly deeper or longer than the side guards or wings 3, and the body or back of the conductor is of such width as to permit the trolley wheel W to run well within the protecting wings at both sides. Web 2 is therefore under protection at all times from snow or sleet as well as from accumulations of moisture and ice. This construction of conductor works a material economy in an installation as compared with the separate feed cable and trolley wire system, and brings said parts within a single unit of considerably less total cost and of materially greater efficiency, as must be obvious. That is, the present conductor is in effect a feed-cable and trolley line in one, as the total cross section of copper in the conductor is sufficient to carry the current without feed wires, which eliminates the expense of insulation and extra equipment and installation, and there are no lateral feed wires.

A modification in the shape of the conductor is shown in Fig. 8 where the wings 3 flare and the central stem 2 is substantially V shape, and this shape may possibly be preferable but its use is the same as the form shown in Figs. 4 and 5. Fig. 7 shows a style of conductor in which there are three depending portions 4 corresponding to the three in Figs. 4 and 5 but all these are of the same depth and serve for sliding contact while in the other views the contact is only on the middle portion 2 by wheel.

In erecting my system I employ suitable poles P at intervals on both sides of the car track and connect carrying means for said conductor with the tops thereof. These means are somewhat diagrammatically set forth in Figs. 1, 2 and 3 and comprise two kinds of conductor carrying members B and D respectively. The carriers D are constructed to make connection with the said poles through the eyelets 5 or their equivalent for the stay wires 6 and have the conductor C bolted through to the body thereof while the inner ends of said carriers have flanged portions 7 connected by wooden or

equivalent strips or bars 8 which make a practically rigid cross connection between said carriers from side to side and help hold the two conductors in right working relations. The two carrying members B and D are alike except that the members B have no connection with the poles and are provided with depending side flanges 10 by which they are clamped upon or over the wings 3 of the conductor and hence do not need bolts to secure the conductor thereto. Both carriers might be made alike in this particular. Obviously the total support for the conductor should be such as to hold it up in proper working relation and to prevent undue sagging, and hence a very strong cross connection between poles through said carriers B is required. The said conductor body is comparatively wide and thin, or of plate shape, closed across its back to shed moisture and provided with guards at its sides to shield the trolley runway at the middle. Any supporting means must hold the conductor level horizontally and carry it on a suitable working plane and the rigid lateral arms of the carriers B and D help to effect such support. Any suitable tie or connection 8 may be used, and also any suitable wire or cable 6 laterally to the poles. A double track system is illustrated but the same principle would apply to a single track road or to three or more tracks.

What I claim is:

1. An electrical conductor for trolley lines having a comparatively thin laterally spread body provided with downwardly extending guards along its side edges and a central web of approximately the same depth as said guards and constructed to form a runway for a trolley wheel.

2. A current conductor for trolley lines adapted to carry all the current on the line in the sense of a supply cable and provided with a runway at its middle for a trolley

and guards along its sides to shield said runway.

3. A conductor for an electric current in trolley car lines having a substantially plate-shaped body adapted to be supported in a horizontal position and provided with three several depending portions uniformly spaced apart, one of said portions being at the middle and one at each edge of said body.

4. A conductor for electric trolley lines adapted to convey all the current on the line and having a comparatively wide body provided with a downward projection at its middle adapted to make running contact for a trolley wheel and provided with depending guards at its sides, in combination with means to suspend said conductor in a horizontal position.

5. An electrical conductor for trolley lines consisting of a conducting member having a laterally spread body provided with a depending web at its center adapted to be contacted by a trolley wheel and having depending guards along its edges, in combination with carriers at intervals rigidly engaged with said conductor and means therewith to sustain the conductor in a horizontal position.

6. An electrical installation for trolley lines comprising a substantially plate-shaped conductor provided with a runway at its bottom for a trolley wheel and side guards for said runway, in combination with supports at intervals fixed rigidly to said conductor and laterally disposed ties adapted to sustain said conductor in horizontal position.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES SCOTT.

Witnesses:

R. B. MOSER,

F. C. HARROLD.