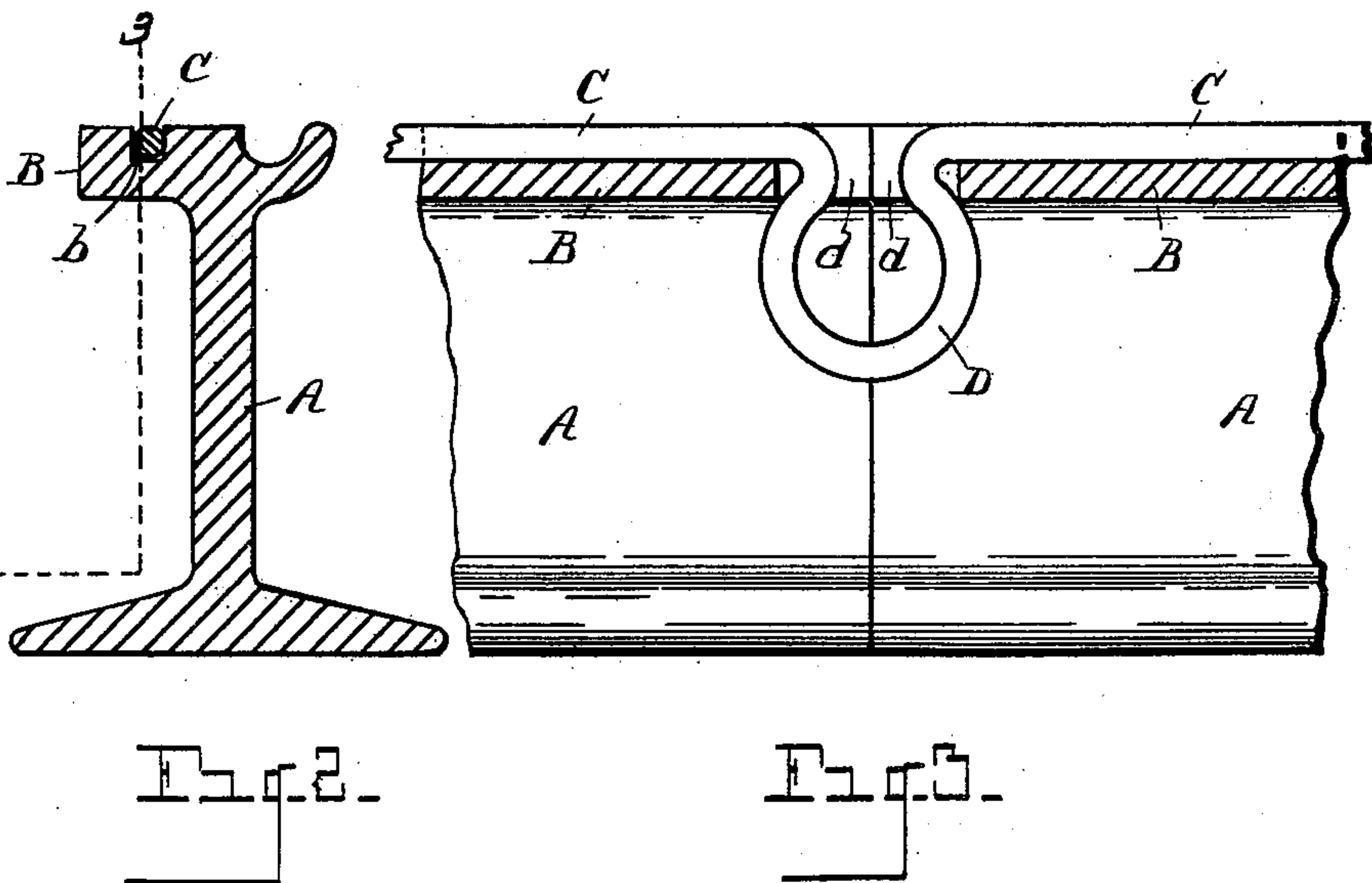
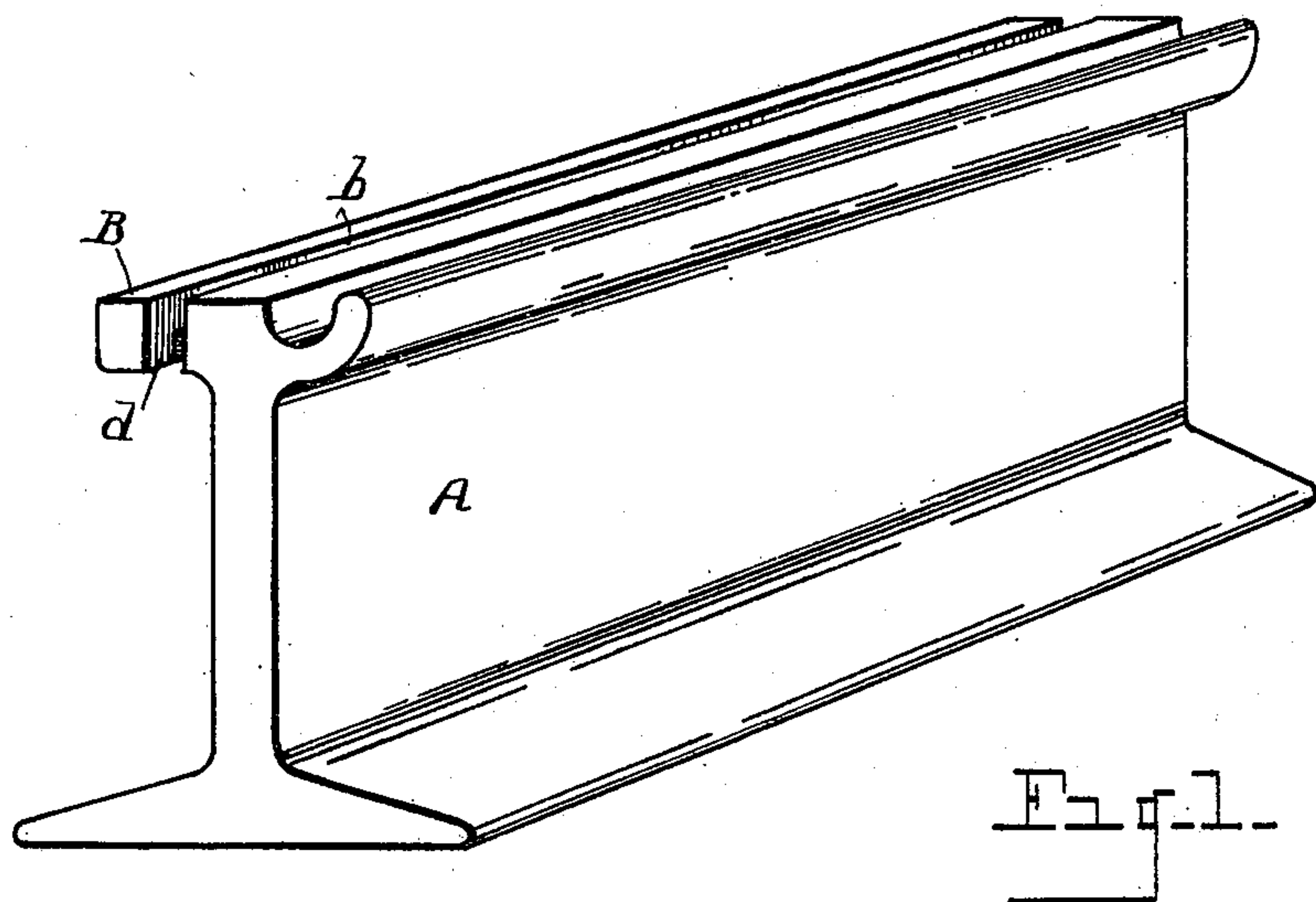


(No Model.)

F. T. MATHER.
TRACK BOND FOR ELECTRIC RAILWAYS.

No. 598,947.

Patented Feb. 15, 1898.



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WITNESSES

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FRANK T. MATHER, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-HALF TO
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TRACK-BOND FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 598,947, dated February 15, 1898.

Application filed June 29, 1896. Renewed December 24, 1897. Serial No. 663,399. (No model.)

To all whom it may concern:

Be it known that I, FRANK T. MATHER, a citizen of the United States, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Track-Bonds for Electric Railways; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

15 This invention relates to track-bonds for electric railways; and it consists in the construction and arrangement of parts hereinafter fully set forth, and pointed out particularly in the claims.

20 The object of the invention is to provide simple and effective means for providing an electrical continuity of the track by means of a suitable bond of ample capacity to carry the return-current so as to insure a return to the dynamo of all unexpended energy.

25 A further object is to provide for accommodating all longitudinal or transverse motion between the meeting ends of the rail-sections, so as to obviate any injury to the bond connecting said sections. This object is attained by the device illustrated in the accompanying drawings, in which—

35 Figure 1 is a perspective view of a girder grooved rail commonly employed in building street-railway tracks, the tread of said rail being provided with a longitudinal slot in which my improved bond or conductor is laid. Fig. 2 is a transverse section through a rail having my improved bond inserted in the tread thereof. Fig. 3 is a vertical longitudinal section as on line 3 3 of Fig. 2, showing the depending loop in the conductor at the junction of the rails of the track.

45 Referring to the letters of reference, A designates a girder-rail of ordinary construction provided with the laterally-extending tread B. Formed longitudinally of the tread in the upper face of each rail-section is a groove *b*, of suitable size and depth, in which is laid a continuous bond or conductor C, of copper or other substance of suitable conductivity.

This copper conductor will be of such size as to permit it to be forced into said groove and will be of such length as to extend the entire length of the track, thereby affording an unbroken electrical conductor of ample area extending through the rails from one end of the track to the other.

To provide for the expansion and contraction of the rails of the track without injury to the conductor and to obviate the possibility of the shearing off of said conductor by any lateral movement between the meeting ends of the rails, the slot *b* is cut entirely through the flange of the tread at the ends of each rail-section, as clearly shown at *d*. This permits me to drop the conductor through the opening and form a loop D therein which depends below the flange of the tread between the meeting ends of the rail-sections, as clearly shown in Fig. 3, whereby ample provision is made for either longitudinal or transverse motion between the rail ends without injury to the conductor.

This bond, as will be seen, is simple and inexpensive, requiring but little labor in laying it, and when once inserted in the groove of the rails a perfect electrical continuity of the track is established.

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

1. In a track-bond for electric railways, the combination with the rails of the track having a lateral tread and provided with a continuous groove running longitudinally of the tread, the rails of the track having square ends which are placed together so as to form a tight joint, the groove in the flange of said rails passing entirely through said flange adjacent to the ends of the rail-sections, the electrical conductor in said groove and extending the entire length of the track, said conductor at the junction of the rail-sections having a loop which depends through the opening cut through the flange of the rail.

2. In a track-bond for electric railways, the combination with the rails of the track having a continuous groove formed in the flange thereof, said groove at each end of the rail-sections passing through said flange, the flexible conductor lying in said groove and having

a loop formed therein at the junction of the rail-sections which loop depends through the opening in the flange of the rail formed by cutting through said groove at the ends of
5 the rail-sections.

3. In a track-bond for electric railways, the combination with the rail-sections provided with a flanged tread having a continuous groove formed in the upper face thereof, said
10 groove passing entirely through said flange at the ends of each of the rail-sections, the continuous electrical conductor lying in said

groove and having a loop formed therein at the junction of each of the rail-sections which loop depends through the opening formed by
15 cutting the groove through the flange of the tread at the ends of the rails.

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

FRANK T. MATHER.

Witnesses:

E. S. WHEELER,

M. A. MARTIN.