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PATENTED APR. 7, 1903.

W. G. WAGENHALS.
THIRD RAIL ELECTRIC RAILWAY SYSTEM.

APPLICATION FILED JAN. 28, 1903.

NO MODEL.

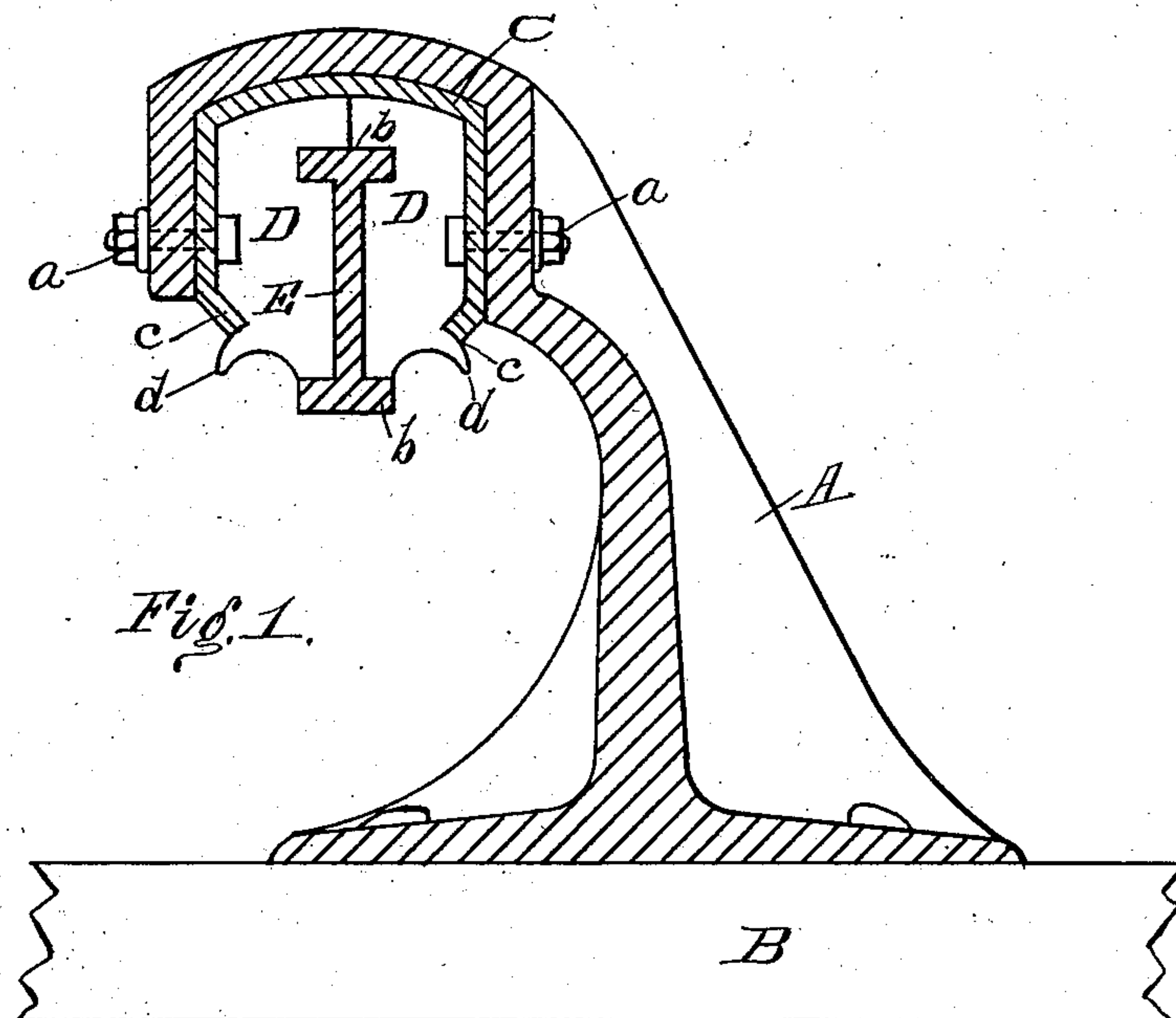


Fig. 1.

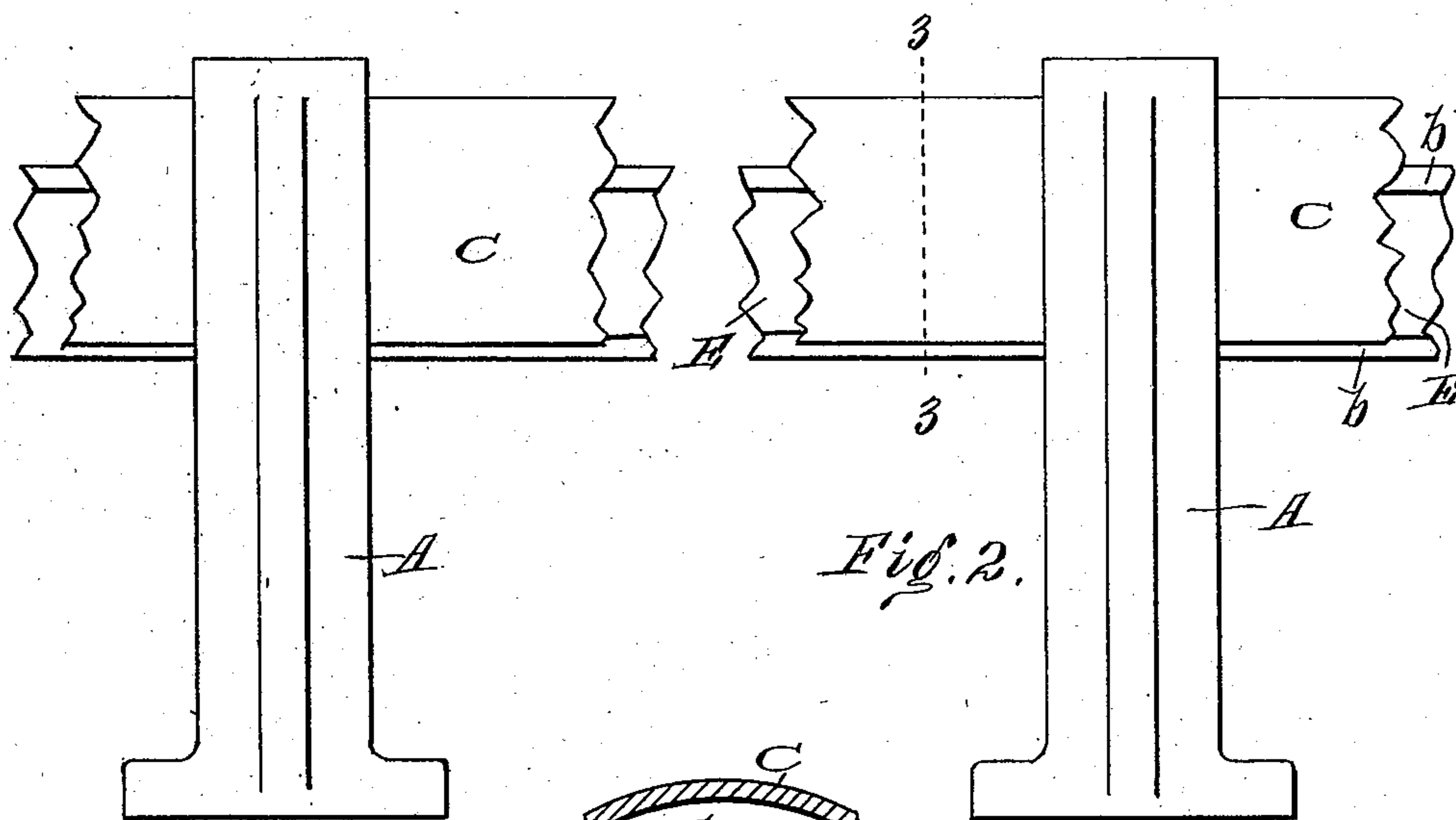


Fig. 2.

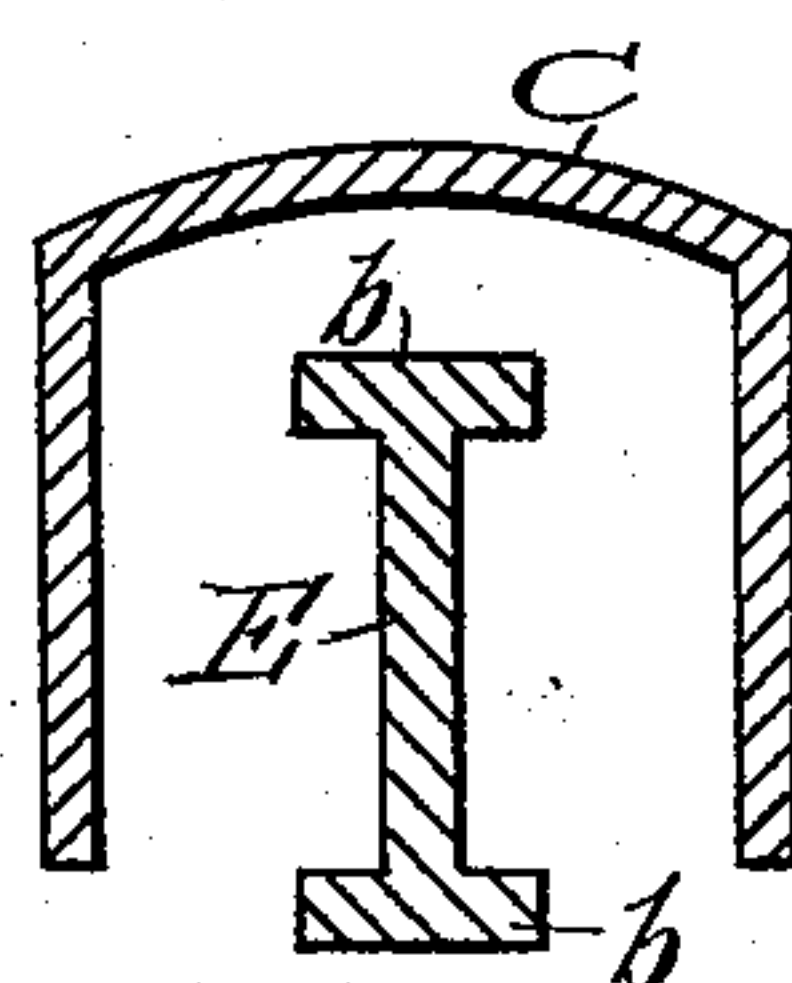


Fig. 3.

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THIRD-RAIL ELECTRIC-RAILWAY SYSTEM.

SPECIFICATION forming part of Letters Patent No. 724,762, dated April 7, 1903.

Application filed January 28, 1903. Serial No. 140,890. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM G. WAGENHALS, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Third-Rail Electric-Railway Systems, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a certain novel and useful construction for supporting and protecting the electric conductor in that system of electric railways in which the current for propelling the cars is supplied to the car through suitable contact devices from a continuous third rail located between or at the side of the rails of the car-track.

The purpose of my invention is to provide an effective method of guarding and protecting the conducting-rail from the effects of the weather and accumulations of snow and ice and to prevent contact therewith by persons and animals crossing or using the car-track.

The invention also has for its object to supply a certain novel construction of conducting-rail by which the durability of the rail shall be very largely increased and whereby when the rail is worn by contact on its contacting face the rail may be inverted to supply a new contact-surface without in any way changing or altering the construction for supporting and protecting the rail.

In the drawings, Figure 1 is a transverse section through one of the supporting-chairs for the third rail. Fig. 2 is a side elevation of my third-rail construction. Fig. 3 is a cross-section on the lines 3 3 of Fig. 2.

A represents malleable-iron chairs for supporting the continuous third rail, spiked to the cross-ties B at suitable intervals—say every ten feet or so.

C is a rolled-steel cover or protector for the third rail, made in suitable lengths and running continuously the length of the conductor. This continuous cover is secured to the chairs A in any suitable way, preferably by bolts *a a*.

D D are insulating-blocks made of suitable insulating material constructed in halves and formed with a suitable groove for receiving the conducting-rail on their abutting faces

and also provided with a suitable groove to fit over the heads of the bolts *a a*, by which the cover is secured to the supporting-chairs. 55

E is the conductor or third rail, made of suitable conducting material and rolled in the shape of an I or T beam with the heads *b b* symmetrical.

The supporting-chairs and the protecting-cover having been fixed in place, the third rail is raised to position with the insulating-blocks D D in position on the rail, and the insulating-blocks are then slid along the rail into position at the supporting-chairs, and the system is ready for use. 65

Throughout the length between the supporting-chairs the depending sides of the cover C are vertical, as shown in Fig. 3; but at the chairs the lower edges of the sides of the cover C are bent in, as shown at *c c* in Fig. 1, to grasp and hold the reëntering surface of the insulating-blocks. The outer and lower edges of the insulating-blocks are provided with depending lips *d d* to serve as a petticoat to prevent water from making any connection between the cover and the third rail and to cause any water that may collect to drop off at the petticoat-flange. As will be seen from the foregoing description, my construction of third rail is exceedingly simple to erect and the cover C forms a perfect protection against any accumulations of snow and ice and from any accidental contact with the third rail by those crossing the tracks. The insulation at the chairs is by the insulating-blocks, while air-insulation is provided between the supporting-chairs. 80

When the lower contact-surface of the third rail becomes worn out in use, the third rail can at once be inverted, so that the life of the rail is doubled, and this inversion of the rail can be had and the rail properly supported exactly as in the original construction. 85

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is— 95

1. In an electric third-rail system, the combination, with the conducting-rail, of supporting-chairs, a continuous protecting-cover with depending sides secured to the chairs, insulating-blocks grooved to receive and sustain the third rail, with reëntering flanges on 100

the depending sides of the cover to grasp and hold the insulating - blocks in place, said blocks provided with petticoat-flanges to prevent moisture accumulating on the lower
5 surface of the insulators, substantially as described.

2. In an electric third-rail system, a continuous third-rail conductor, having a web portion, with similar expanded contact portions at each end of the web portion, and
10 means for sustaining said third rail in position, whereby when worn the third rail may be inverted for further use, substantially as described.

15 3. In an electric third-rail system, the com-

bination, with an I-beam conducting-rail adapted to be inverted for use when worn on one contacting surface, of supporting-chairs, a continuous protecting-cover with depending sides secured to the chairs, insulating- 20 blocks grooved to receive and support the I-beam, with reëntering flanges on the depending sides of the cover to grasp and hold the insulating-blocks in place, substantially as described.

WILLIAM G. WAGENHALS.

Attest:

W. S. KYLE,
E. G. SEAMER.