

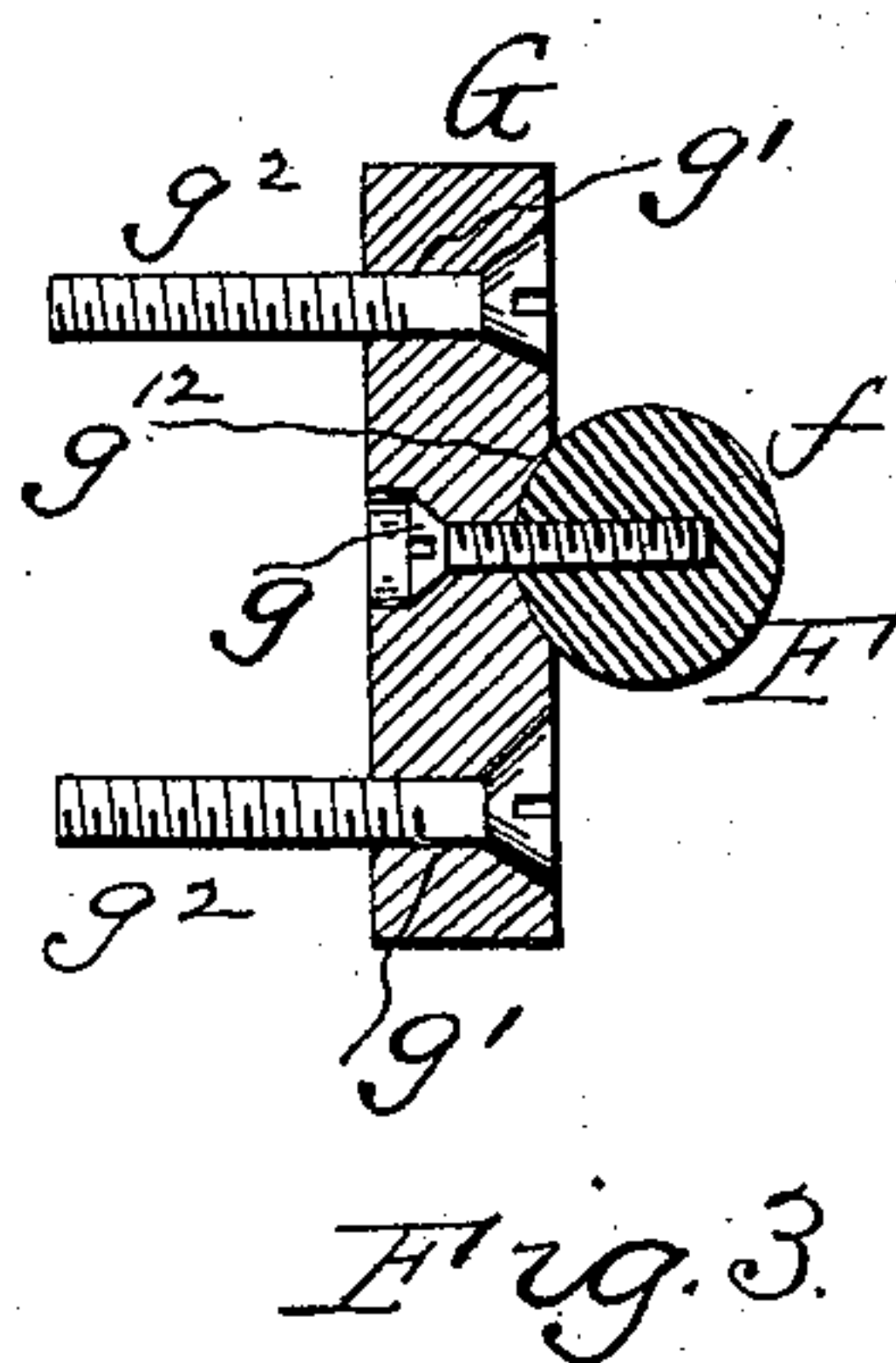
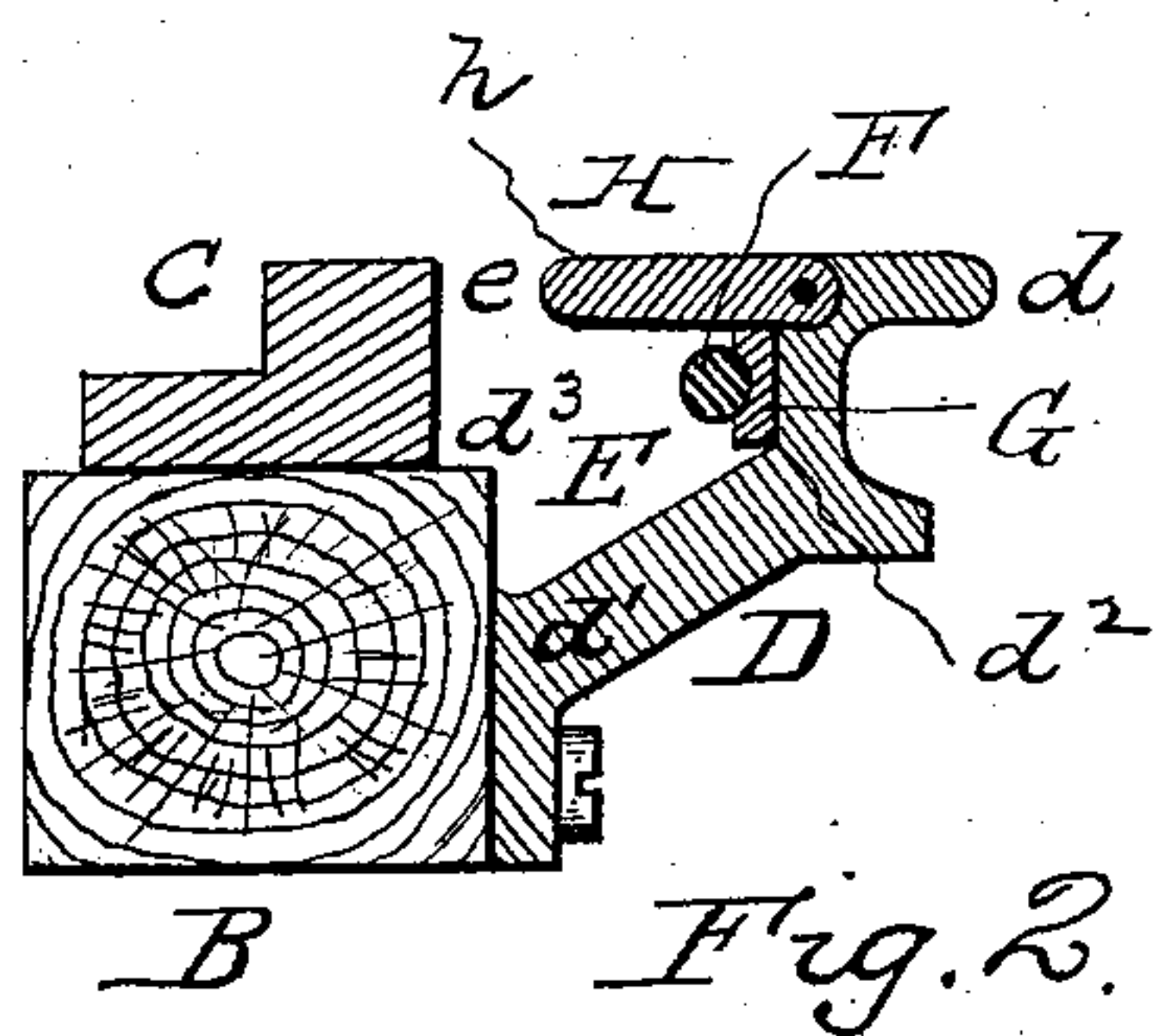
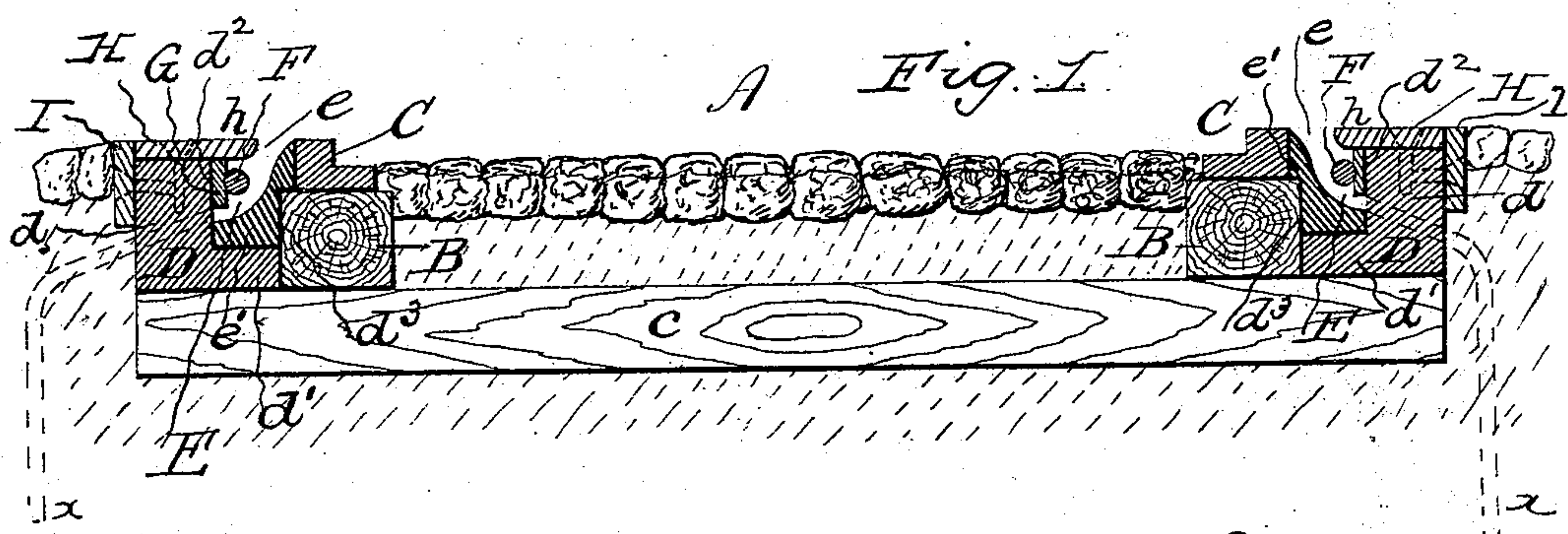
(No Model.)

J. F. McLAUGHLIN.

ELECTRIC RAILWAY.

No. 332,928.

Patented Dec. 22, 1885.



WITNESSES:

Wm H Van Staveland  
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INVENTOR,

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# UNITED STATES PATENT OFFICE.

JAMES F. McLAUGHLIN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR, BY  
MESNE ASSIGNMENTS, TO THE NATIONAL ELECTRIC RAILWAY SYSTEM,  
(LIMITED,) OF SAME PLACE.

## ELECTRIC RAILWAY.

SPECIFICATION forming part of Letters Patent No. 332,928, dated December 22, 1885.

Application filed July 1, 1885. Serial No. 170,331. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES F. McLAUGHLIN, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented  
5 certain Improvements in Electrical Railways, of which the following is a specification.

My invention consists of certain improvements in the construction of the conduits for the roadway of an electrical railway, as fully  
10 described hereinafter.

In the accompanying drawings, Figure 1 is a transverse section of the roadway of an electrical railway embodying my improvements. Fig. 2 is a transverse section, drawn to an enlarged scale, of a modification; and Fig. 3 is a  
15 section, drawn to an enlarged scale, of one of the line-conductors and its insulating-plate, with their attaching devices.

My improvements have more especial reference to that class of electrical railways in which the conductors are carried in the conduit or conduits alongside of or between the tracks, and in the drawings I have illustrated the two conduits placed outside of the tracks,  
20 but closely adjacent thereto.

A is the roadway between the two tracks C C, which are mounted on the usual longitudinal stringers, B B, supported by the cross-ties *c*. Adjacent to the stringers, and in this  
30 case outside thereof, I arrange L-shaped bars D, which are supported on the cross-ties *c*, as shown in Fig. 1, and which may also be bolted to the stringers, as shown in the modification, Fig. 2. The vertical portions *d* of the bars extend up to nearly on a level with the tops of the rails, and are provided with top plates or covers, H, which may be bolted or otherwise secured thereto, as shown in Fig. 1; or these cover-plates may be hinged to the  
40 bars D, as shown in Fig. 2, the edges *h* of these plates or covers projecting over and forming protecting sheds for the electrical conductors carried in the conduit, as hereinafter described. Between the edges of these cover-plates and the opposite sides of the conduit, which I have shown as formed by the stringers and rails, is left a space, *e*, to form the longitudinal slot for the passage of the contact-rod suspended from the motor-car.

If desired, cement or other suitable bars, *e'*,  
50 may be placed in the conduits on the bottom and sides, bounded by stringers and track-rails, to protect the said stringers from the water, and to provide smooth inclined or curved sides, which will allow water and débris to pass off through lateral passages *x*, as indicated by dotted lines in Fig. 1.

If desired, strengthening-plates I may be secured to the outer sides of the bars D, as shown in Fig. 1, this being more particularly  
60 desirable when the said bars are of wood, as shown in said figure. Where the bars D are of metal, as in the modification, Fig. 2, the additional plates, I, are not essential, as the bars may then be rolled or cast with strengthening ribs or flanges.

The electrical line-conductors I prefer to make of wire rods, round in cross section, as illustrated more fully in Fig. 3; but they may be of rectangular or any other suitable section.  
70 These conductors are secured to the inner sides, *d'*, of the upright portions *d* of the bars D through the medium of insulating strips or plates G. The conductors are secured to the insulating strips or plates by means of screws *g*, entering into the back of the conductors, but not passing through the same, so as to leave their outer surfaces perfectly smooth, and the insulating-strips are then secured to the bars D by screws *g'*.

Where the round conductors are employed, the strips of insulating material are grooved, as shown at *g''*, Fig. 3, to receive the conductors.

I claim as my invention—

1. The combination of the stringers and rails with L-shaped bars D, carrying the conductors, and forming, with the said stringers and rails, conduits therefor, and cross-ties carrying both stringers and bars, substantially  
85 as described.

2. The combination of the track-rails and stringers with bars D, carrying the conductors and bolted to said stringers, and supporting cross-ties for the stringers and bars, substantially as set forth.

3. The combination of the rails C, stringers, and cross-ties with L-shaped bars D, insulat-

ing-strips G, secured to the bars, and electrical conductors F, carried by the strips, substantially as described.

4. The combination of the rails, stringers,  
5 and cross-ties with the L-shaped bars D, carrying the electrical conductors, and covers H, together forming the conduit, substantially as described.

5. The combination of the rails, stringers,  
10 and cross-ties with the L-shaped bars D, con-

ductors F, and cement bars *e'*, in the conduit on the side adjacent to the stringers, substantially as set forth.

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

JAMES F. McLAUGHLIN.

Witnesses:

S. J. VAN STAVOREN,  
CHAS. F. VAN HORN.