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PATENTED MAY 3, 1904.

J. KRESS.

GUARD COVERING FOR THIRD RAILS OF ELECTRIC RAILWAYS.

APPLICATION FILED DEC. 30, 1903.

NO MODEL.

Fig: 1.

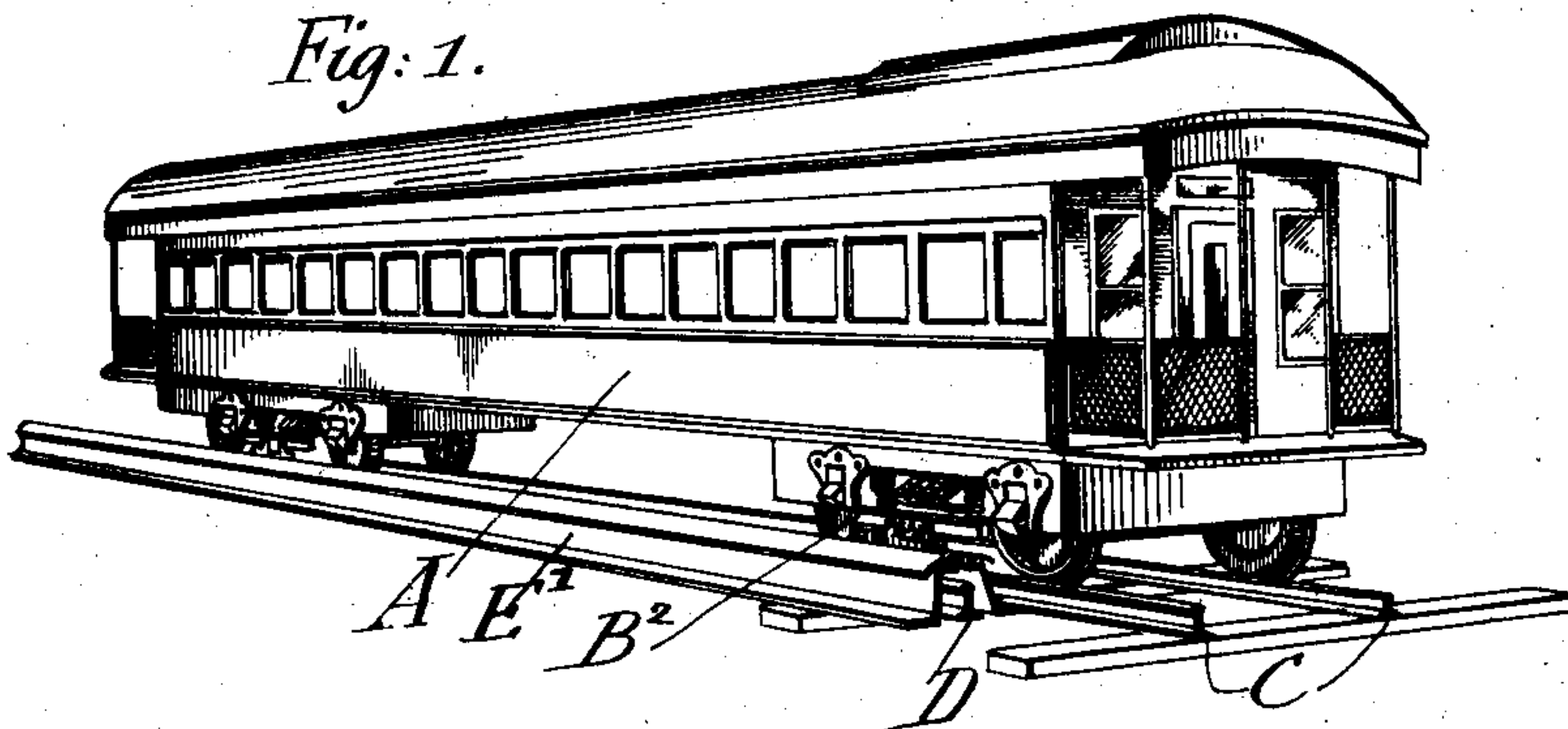


Fig: 2.

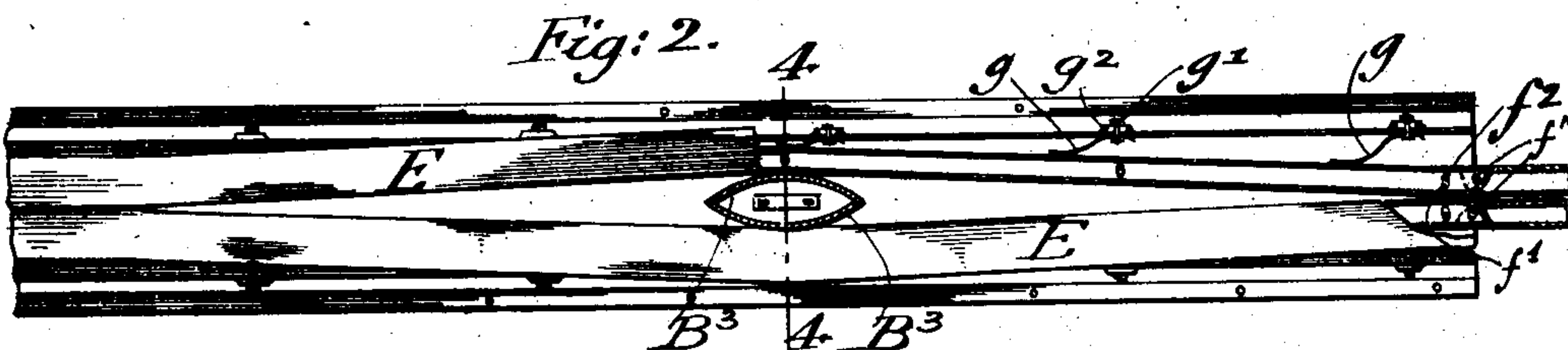


Fig: 3.

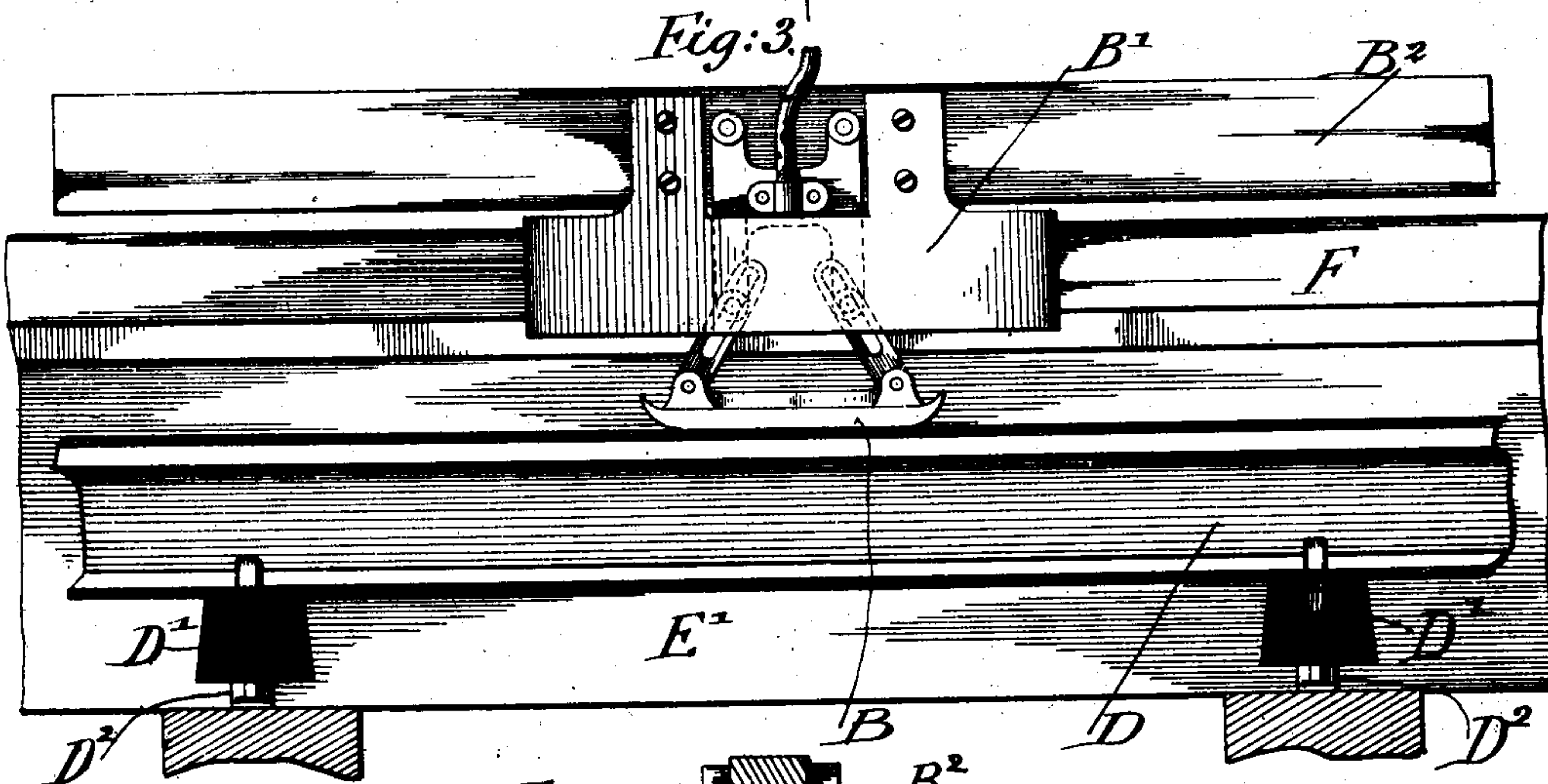
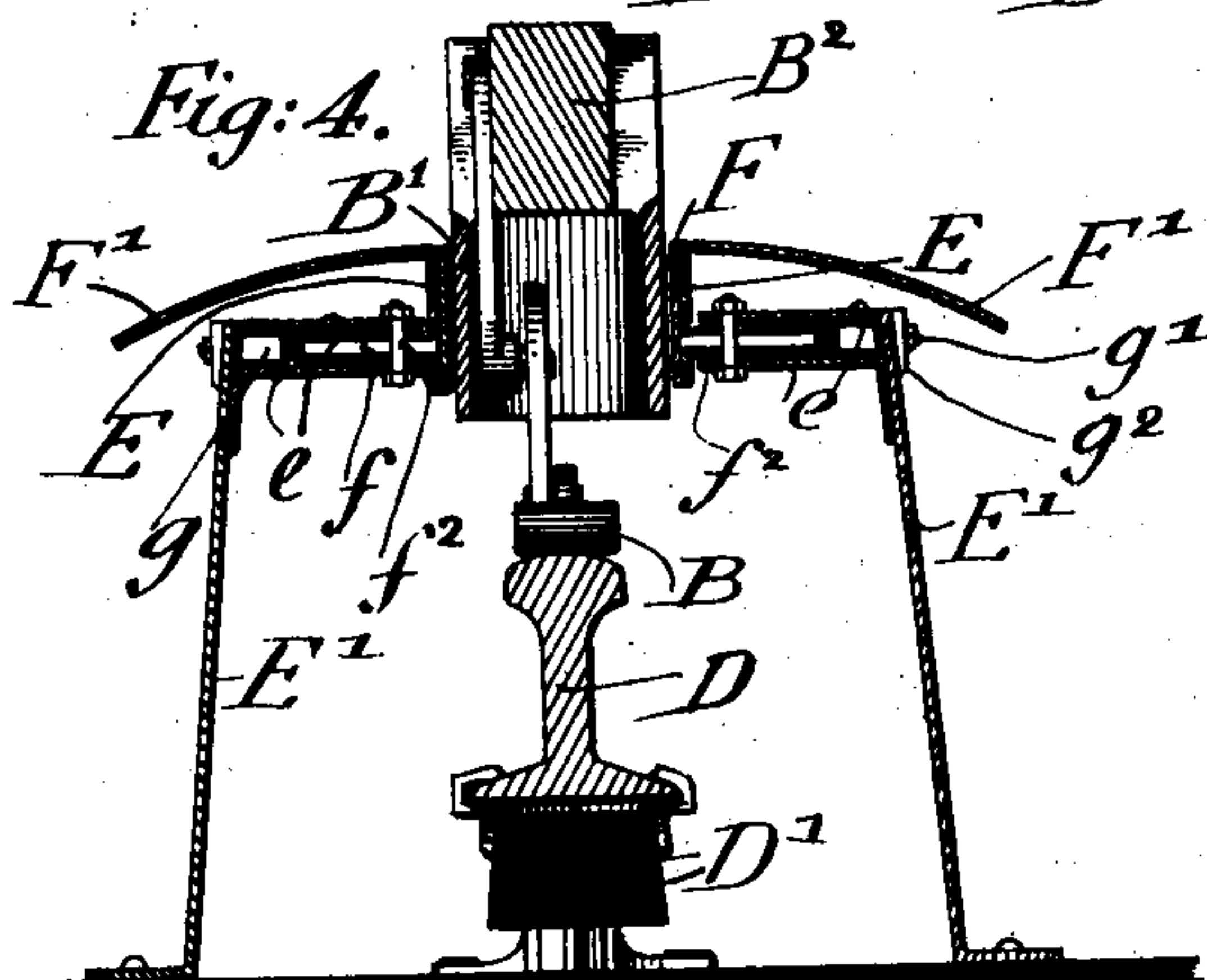


Fig: 4.



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# UNITED STATES PATENT OFFICE.

JOHN KRESS, OF NEW ROCHELLE, NEW YORK.

## GUARD-COVERING FOR THIRD RAILS OF ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 758,977, dated May 3, 1904.

Application filed December 30, 1903. Serial No. 187,162. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN KRESS, a citizen of the United States, residing in New Rochelle, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Guard-Coverings for Third Rails of Electric Railways, of which the following is a specification.

This invention relates to certain improvements in third rails, and more particularly to guard-coverings for the third or live rails of electric railways so as to prevent danger of accidents arising from contact with the third rail.

The invention has for its object to provide a guard-covering for the third rail of electric railways which can be applied to the third rail without alteration of the contact-shoes now in use and which is so constructed that the third rail is covered, so as to prevent snow or rain from coming in contact with the same, and so prevent the formation of a sleet covering thereon.

For this purpose the invention consists of a guard-covering for third rails, which will be fully described hereinafter, and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a perspective view of the ordinary car-track, third rail, and my improved covering for the third rail shown in position for use. Fig. 2 is a plan view of my improved guard-covering for the third rail, shown with a part broken away and with the plow-shaped casing of the contact-shoe in horizontal section. Fig. 3 is a side elevation of the third rail, shown in contact with the shoe, one-half of the guard-section being removed; and Fig. 4 is a vertical transverse section on line 4 4, Fig. 2, drawn on a larger scale.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents a car for electric railways, which is provided at its sides with a contact-shoe B of the usual construction. The track-rails C are supported on cross-ties in the usual manner, while the conducting or third rail D is arranged at one side of the track-rails C and is insulated from the ground or other support by insulators D,

of porcelain, earthenware, or other suitable material. The insulators D' are secured to suitable supports D<sup>2</sup>, which in turn are attached to the cross-ties. The support of the contact-shoe B is inclosed by a plow-shaped frame or casing B', of suitable sheet metal, which is attached to a beam B<sup>2</sup>, supported by the car-frame, as shown in Fig. 3. The plow-shaped casing is composed of two convex side plates B<sup>3</sup> B<sup>3</sup>, that abut at their front and rear edges, as shown clearly in Fig. 2. The plow-shaped casing can also be made of one suitable integral casting and may be then suitably attached to the car-frame.

The third rail D is inclosed by my improved guard-covering, which consists of two yielding and spring-actuated guard-sections E, that are guided at the upper ends of side plates E', the side walls being flanged at the lower end and attached to the cross-ties in any suitable manner. The upper ends of the side walls are provided with parallel flanges e, which are attached to said side walls and which serve for guiding the shanks f' of the laterally-movable and spring-actuated guard-sockets provided with contact-plates F. The shanks f' are preferably made of U shape and provided with transverse slots f'', so as to be guided in the stationary rods f<sup>2</sup> of the flanges e. The yielding guard-sections E are made tapering or rounded off at the ingoing ends, as shown at the right-hand end of Fig. 2, so as to permit the ready entrance of the plow-shaped frame of the contact-shoe. The guard-sections may be made in different lengths, each having a tapering or rounded-off end, which ends may be pivotally connected, as shown at f<sup>10</sup> in Fig. 2, so as to form one large section the whole length of the rail and still be yieldingly arranged. The guard-plates are provided with convex outwardly-extending inclined plates F', which serve for the purpose of shedding the rain and protecting the fastening-rivets of the flanges below the same. The ends of the shanks f' of the guard-plates F are acted upon by the free ends of flat springs g, the opposite ends of which are attached by fastening-screws g' and washer-plates g<sup>2</sup> to the side walls, as shown in Figs. 2 and 4. By the adjustment of the fastening-



screws the springs may be held securely against the side plates E', causing thereby the springs to be held in stiff condition, whereby the shanks pressed by the springs are caused to abut each other. The loosening of the screws will cause the springs to be held loosely in position, so that they will not forcibly press against the shanks. The springs of the guard-plates are adapted to press the faces of the same tightly against each other, and prevent thereby any access of rain or melting snow in the winter time to the third rail, which is located below the same, while in the summer time the screws *g'* are loosened and the shanks kept separated. My improved covering is made in sections of suitable length and joined together by rivets at their overlapping ends, while the ends of the guard-plates are rounded off, so that when the plow-shaped frame of the shoe enters between the same the guard-plates are pressed sidewise against the tension of their springs and permit the shoe to form contact with the third rail while the shoe moves forward over the same. The front end of the frame of the contact-shoe opens the guard-plates, which are closed after the shoe has passed forward between the contact-plates. The side walls of the guard-covering, as well as the guard-plates and curved water-shedding flanges, are made in suitable lengths, so as to be conveniently assembled.

My improved covering for third rails may be manufactured and installed at a small cost and applied either to electric railways in use or when installing the third rail. It prevents, by the contact of the guard-plates above the third rail, the entrance of water, so as to prevent a short-circuiting, which is feared by firemen when utilizing the elevated structure for fighting a fire in houses adjacent thereto. It furthermore prevents the formation of sleet on the third rail due to the solidification of snow or rain on the rail, by which the regular operation is interrupted, and, lastly, the noise attending the sliding of contact-shoe over the third rail is considerably diminished or deadened, owing to the entire inclosure of the third rail by my improved guard-covering.

I claim as new and desire to secure by Letters Patent—

1. A guard-covering for third rails, consisting of upright plates at both sides of said rails and insulated from the same forming side

walls, flanges at the upper ends of said side walls, guard-plates guided laterally in the flanges, and curved outwardly - extending flanges attached to said guard-plates, substantially as set forth.

2. A guard-covering for third rails, consisting of upright side walls at both sides of the third rail, flanges at the upper ends of the side walls having stationary rods placed at suitable intervals, and spring-actuated guard-plates movable in the flanges and having slots engaged by the rods of the flanges, substantially as set forth.

3. A guard-covering for third rails, consisting of upright side walls at both sides of the third rail suitably fastened but insulated from the same, guard-plates guided at the upper ends of said side walls and pivotally connected at their ends and having curved or tapering ingoing ends, substantially as set forth.

4. The combination, with a contact-shoe of an electric-railway car provided with a plow-shaped frame formed of convex side walls, of a guard-covering for the third rail consisting of upright side walls, flanges at the upper ends of the same, spring-actuated guard-plates guided in the flanges, and curved outwardly-extending flanges attached to the guard-plates, substantially as set forth.

5. The combination, with the contact-shoe of an electric-railway car provided with a plow-shaped frame formed of convex side walls, of a guard-covering for the third rail, consisting of upright side walls, spring-actuated guard-plates guided at the upper end of said side walls, said guard-plates being connected at their adjacent overlapping ends by pivot-joints for yielding to the passage of the plow-shaped frame of the contact-shoe, substantially as set forth.

6. A guard-covering for third rails, consisting of upright side walls, flanges at the upper ends of the same, a plurality of guard-plates guided laterally in the flanges and arranged end to end, said ends being curved or of tapering shape, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JOHN KRESS.

Witnesses:

PAUL GOEPEL,  
C. P. GOEPEL.