

No. 689,815.

Patented Dec. 24, 1901.

G. L. FOWLER.
ELECTRIC RAILWAY.

(Application filed July 18, 1900. Renewed Apr. 25, 1901.)

(No Model.)

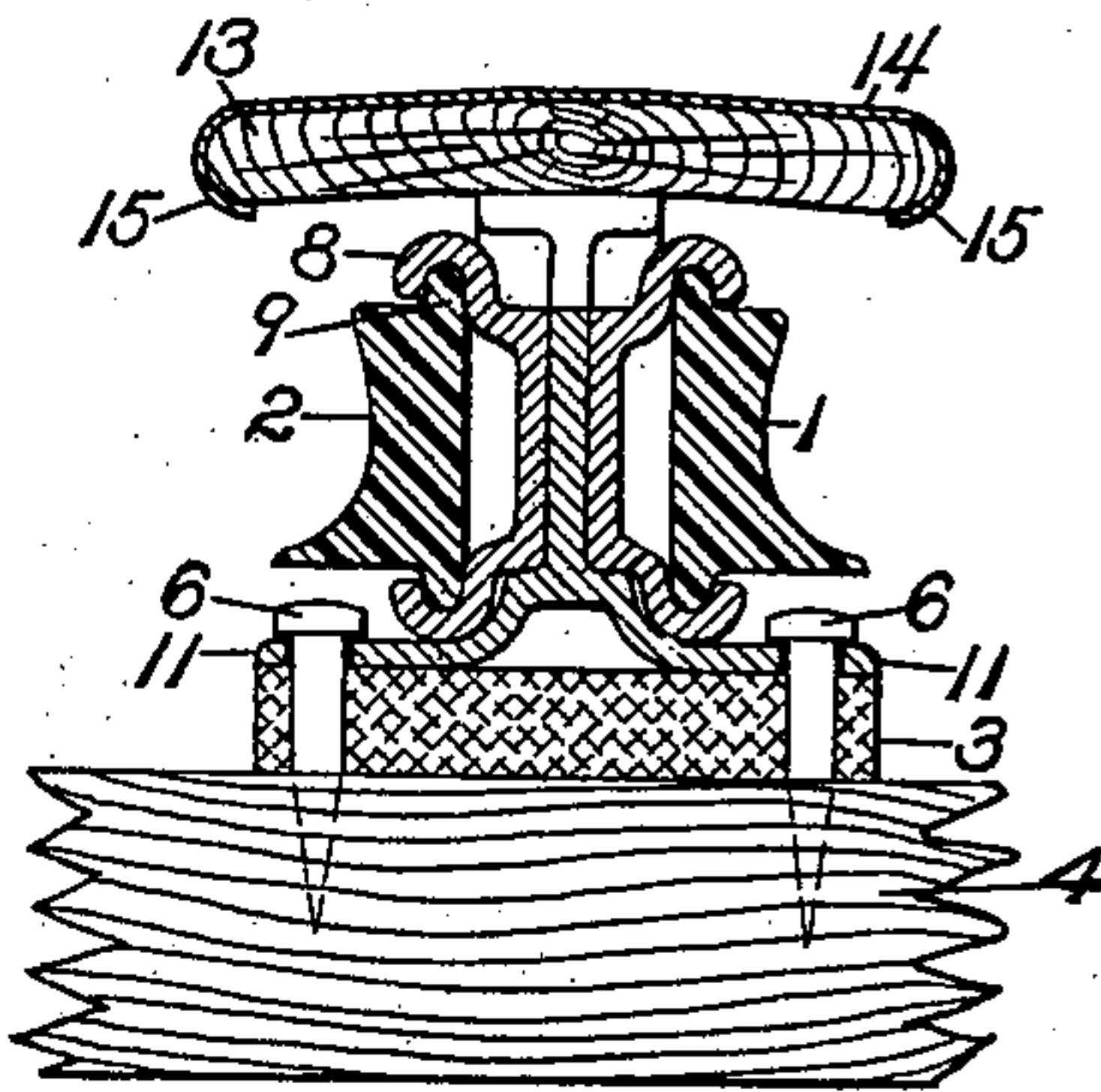


FIG. 1.

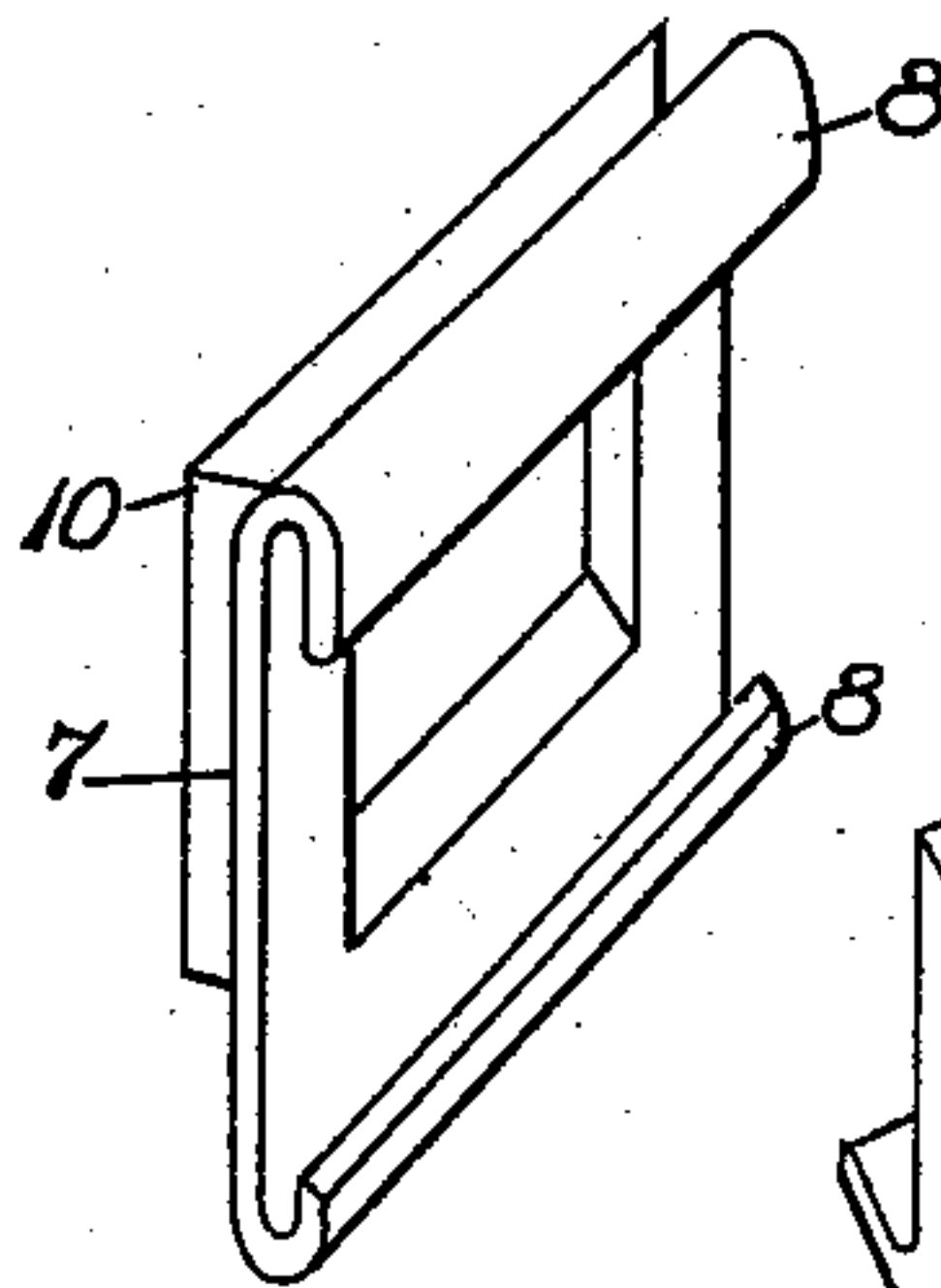


FIG. 4.

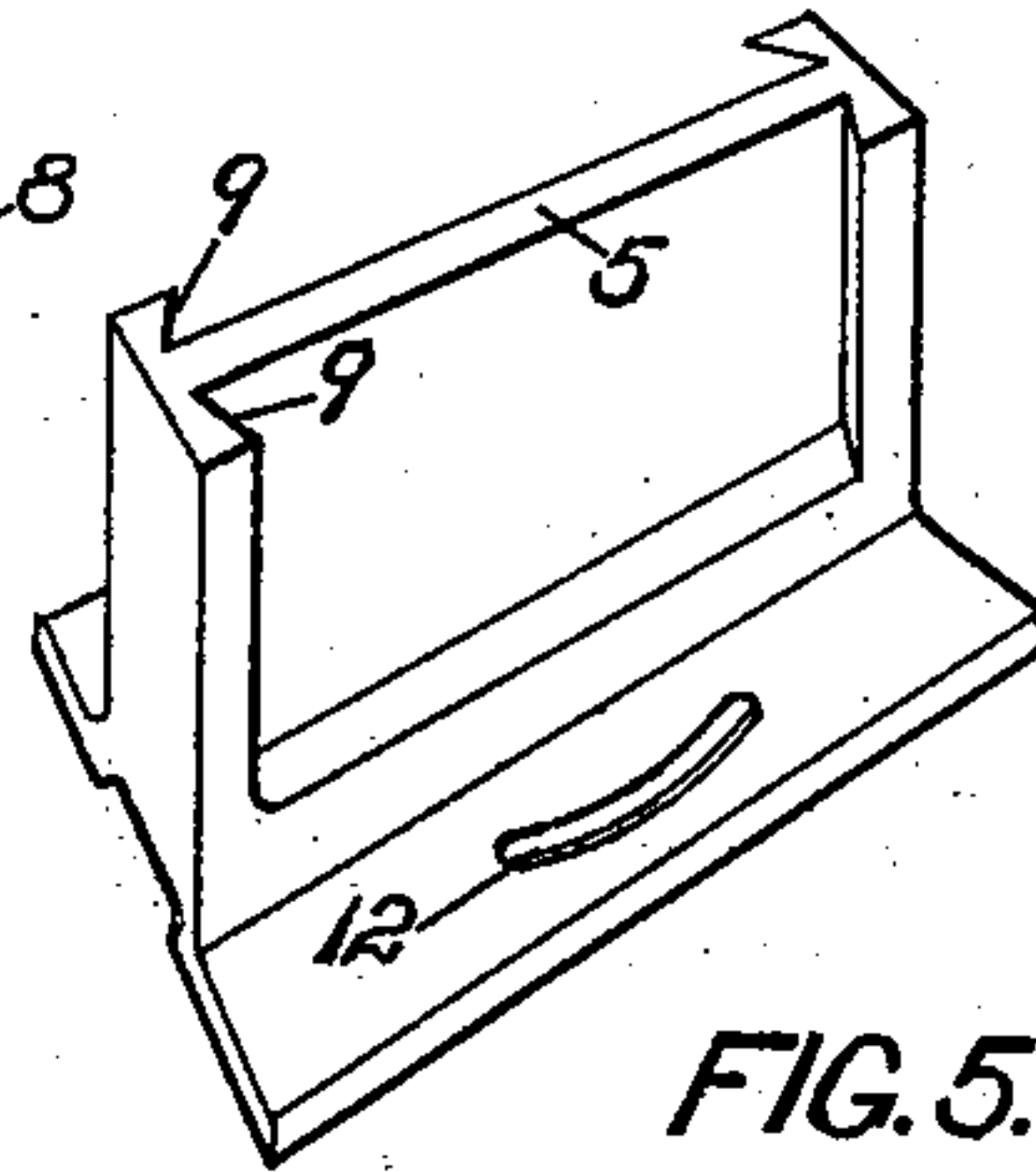


FIG. 5.

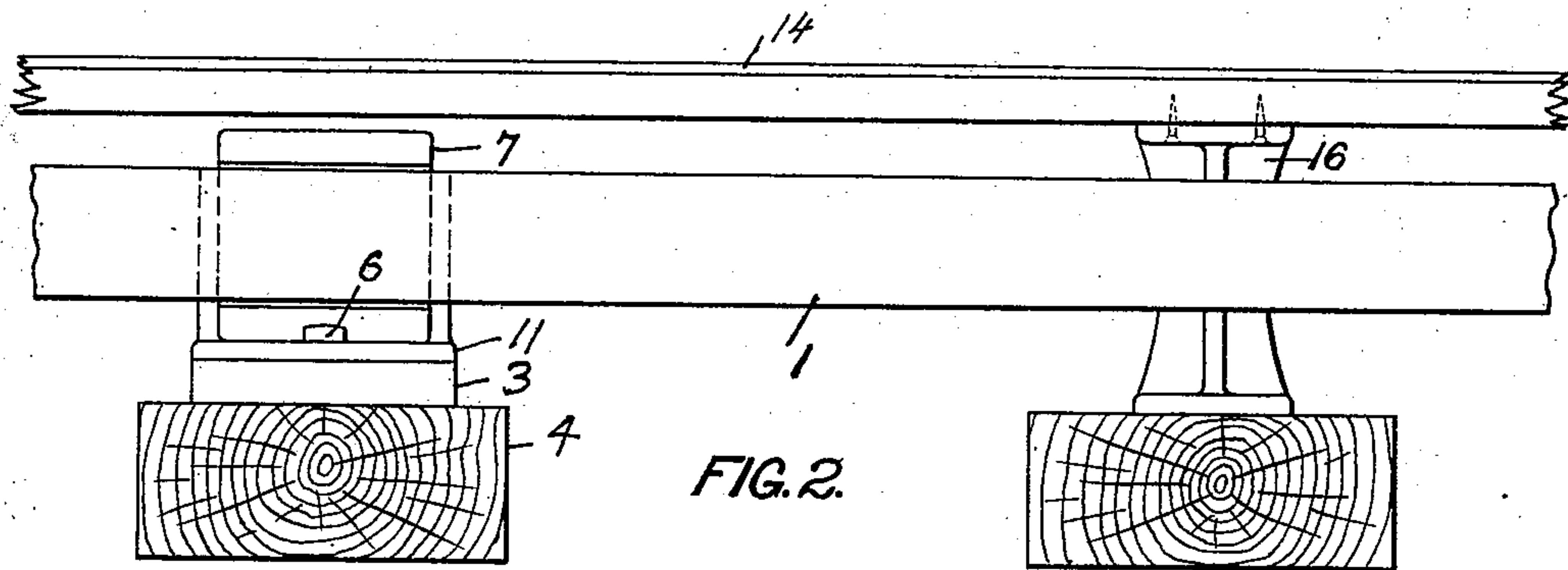


FIG. 2.

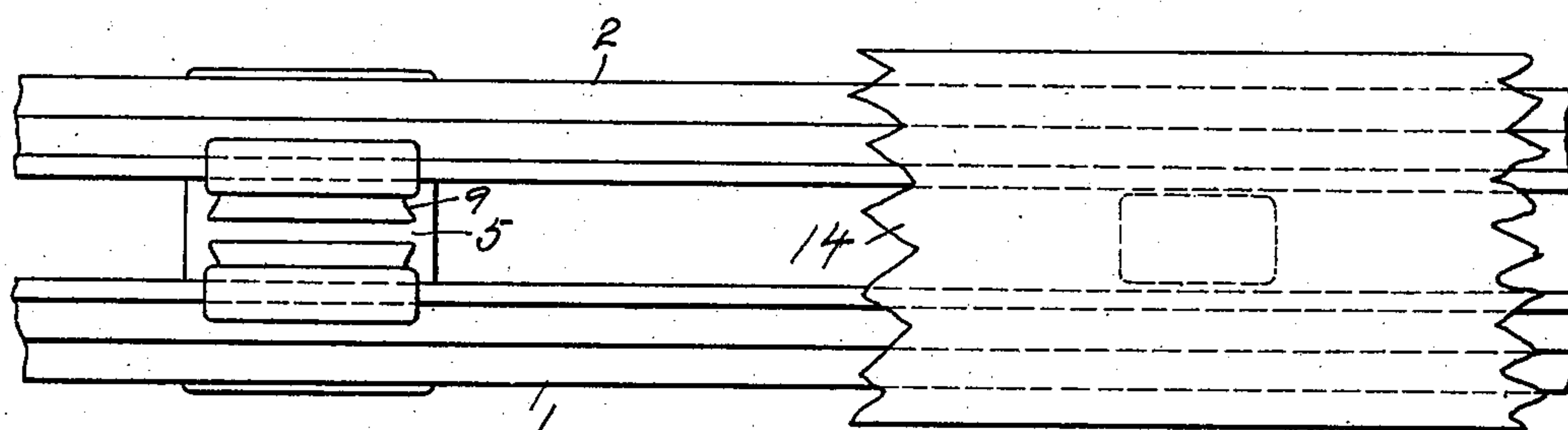


FIG. 3.

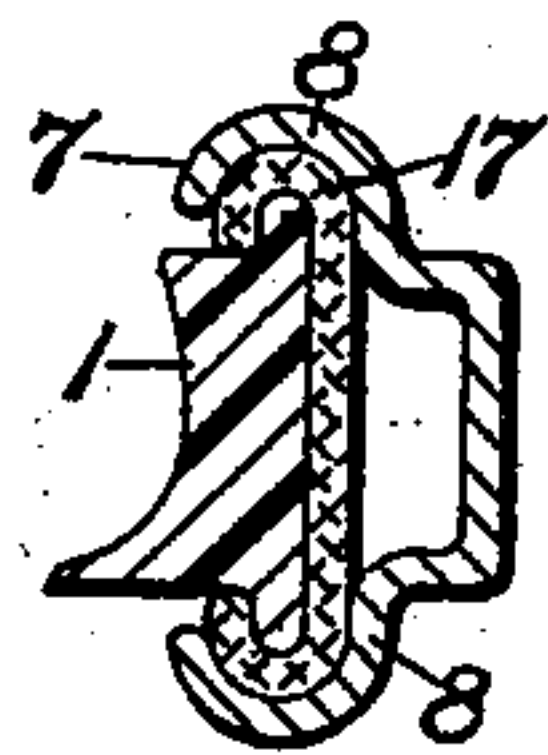


FIG. 6.

WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE L. FOWLER, OF NEW YORK, N. Y., ASSIGNOR TO THE CENTRAL ELECTRIC CONSTRUCTION COMPANY, A CORPORATION OF WEST VIRGINIA.

ELECTRIC RAILWAY.

SPECIFICATION forming part of Letters Patent No. 689,815, dated December 24, 1901.

Application filed July 18, 1900. Renewed April 25, 1901. Serial No. 57,512. (No model.)

To all whom it may concern:

Be it known that I, GEORGE L. FOWLER, a citizen of the United States, and a resident of the city, county, and State of New York, have
5 invented certain new and useful Improvements in Electric Railways, of which the following is a specification.

My invention relates to electric railways, and more particularly to that type of electric
10 railways in which the conductor provided to supply motive power to the cars is located at or near the surface of the roadway structure.

My invention has for its object to provide for such conductor or "third rail," as it is
15 sometimes called, a simple and efficient support which will permit the necessary relative movement between the conductor and the roadway structure, also to provide such a support which is particularly adapted to be used
20 in connection with the conductors of the double-contact variety, also to provide for such a conductor a cover or shield which will protect the same from the elements and prevent accidental contact therewith by external ob-
25 jects and which at the same time will not interfere with the relative movement between the conductor and the roadway structure, and to otherwise improve and simplify and render more practical the construction of electric
30 railways of the type referred to.

My invention consists in the novel features of construction and combination of parts herein described.

The accompanying drawings, which are referred to herein and form a part hereof, illustrate, by way of example, several embodiments of my invention and serve, in connection with the description herein, to explain the principles of my invention and the best
40 mode contemplated by me for applying those principles.

In the drawings, Figure 1 represents a transverse section of the conductor and the shield therefor, taken through one of the supports
45 for the conductor. Fig. 2 is a side elevation illustrating the relation between the supports for the conductor and the shield. Fig. 3 is a plan view of the same. Figs. 4 and 5 are perspective views illustrating details of the conductor-support, and Fig. 6 is a sectional view illustrating a modification.

Like reference-numerals refer to like parts.

My invention is particularly adapted to conductors of the double-contact type—that is to say, those conductors which are arranged be-
55 tween the track-rails and are provided with oppositely-arranged contact-surfaces adapted to be engaged by a double-contact trolley device—such as that shown, for example, in the patent granted to B. C. Seaton August 30, 1898, Serial No. 610,092. As shown, the conductor consists of a pair of conductor-rails 1 and 2, of suitable material and cross-section. A series of separated insulating-supports are provided for the conductor-rails, each of
60 which supports comprises a block of insulating material 3, which rests directly on a sleeper 4 of the roadway structure, and a standard 5, which rests on the block 3, said parts being secured in place by suitable bolts or spikes 6. 70
The standards 5 are connected to the conductor-rails by means of suitable brackets 7, which are provided in the construction shown with upper and lower seats 8, adapted to engage the oppositely-arranged flanges 9 of the conductor-rails. In electric railways of the type
75 described it is necessary to provide for a vertical movement between the conductor and the roadway structure in order to prevent the rails from being broken away from their supports by the inevitable give or yield in the roadway structure under the weight of the cars or trains. Vertical movement between the conductor and roadway structure is provided in the present construction by loosely
80 connecting the brackets 7 with the standards 5. This is accomplished by providing the standards 5 with suitable undercut or dovetail seats 9, with which the corresponding projections 10 from the brackets are adapted to
85 be loosely engaged. By this construction not only is a vertical movement between the conductor as a whole and the roadway structure provided, but a vertical movement between the sections 1 and 2 of the conductor is also pro-
90 vided. In other words, the conductor-rails are freely supported independently of each other as regards a vertical movement between themselves and the roadway structure, and the standards 5 simply acting to prevent lateral
95 displacement of the conductor-rails. In order that the standards 5 may be adjusted, so as

to prevent binding of the brackets therein, the bases 11 of the standards are provided with elongated openings 12 for the grooves or spikes 6, which openings 12 are preferably formed on the arc of a circle struck from the center of the standards 5.

In order to protect the conductor from the weather and from accidental contact by external objects, a continuous shield 13 is provided, which shield is extended over the top of both the conductor-rails and is projected laterally therefrom on each side far enough to prevent moisture from dripping onto said rails. The shield, as indicated, is constructed of wood, which is provided with a sheath 14 of sheet metal, having its outer edges turned down around and under the outer edges of the boards, as illustrated. By this construction the sheath may be secured to the boards forming the shield without the use of screws or other similar fastening devices, which are apt to become loose and project above the surface of the shield, where they are apt to be caught by objects projecting from or dragging beneath the cars. It will be seen, therefore, that by this construction a shield having a substantially continuous and unbroken upper surface is provided. The shield is preferably supported by a series of supports 16, independent of the conductor-rails 1 and 2 and the supports therefor, as by this construction the shield will in no wise interfere with the vertical movement between the conductor and the roadway. The flexibility of the shield will permit of the yielding of the roadway structure as the trains pass over it without liability of breaking the shield away from its supports. As so far described the conductor-rails 1 and 2 are electrically connected with each other and are used as a single conductor. If desired, however, the conductor-rails 1 and 2 may be insulated from each other and used to conduct the current both to and from the motors on the cars, thus forming a closed circuit system. This may conveniently be done by insulating one of the conductors from its supporting-brackets 7, as indicated in Fig. 6, in which 1 indicates the conductor-rail, 7 one of the brackets in which the rail is carried, and 17 a suitable block of insulating material embracing the flanges of the rail 1 and embraced by the seats 8 of the brackets 7.

While in many of its features my invention is limited to conductors of the double-contact type, it is in some of its features applicable to other forms of conductors, and I do not desire to limit myself to the particular construction herein shown and described or to the particular construction by which my invention is carried into effect, as many changes may be made therein without departing from the principles of my invention.

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

1. In an electric railway the combination with a continuous conductor having oppo-

sitely-disposed contact-surfaces, of a continuous shield extending over said conductor and supported independently thereof. 70

2. In an electric railway the combination with a continuous conductor having oppositely-disposed contact-surfaces, of a series of supports for said conductor, a continuous shield extending over said conductor and an independent series of supports for said shield. 75

3. In an electric railway the combination with a continuous conductor comprising a pair of contact-rails arranged side by side with their contact-surfaces facing outwardly, of a continuous shield extending over said conductor and supported independently thereof. 80

4. In an electric railway the combination with a continuous conductor comprising a pair of contact-rails arranged side by side and spaced apart with their contact-surfaces facing outwardly, of a series of supports for said conductor, a continuous shield extending over said conductor, and an independent series of supports for said shield arranged in the space between said contact-rails. 85

5. In an electric railway the combination with a continuous conductor having oppositely-disposed contact-surfaces, of a series of supports upon which said conductor is freely supported and a continuous shield extending over said conductor and supported independently thereof. 90

6. In an electric railway the combination with a continuous conductor comprising a pair of contact-rails arranged side by side with their contact-surfaces facing outwardly, of a series of supports upon which said rails are freely supported, a continuous shield extending over said conductor, and an independent series of supports for said shield. 100

7. In an electric railway the combination with a continuous conductor comprising a pair of contact-rails arranged side by side, and a series of independent supports for said contact-rails so constructed that said rails are freely supported independently of each other. 105

8. In an electric railway the combination with a continuous conductor comprising a pair of contact-rails arranged side by side, a series of independent supports for said contact-rails so constructed that said rails are freely supported independently of each other, and a continuous shield extending over said conductor and supported independently thereof. 110

9. In an electric railway the combination with a continuous conductor having oppositely-disposed contact-surfaces, of a continuous shield having a substantially continuous and unbroken upper surface, said shield extending over said conductor and supported independently thereof. 115

10. In an electric railway the combination with a continuous conductor comprising a pair of contact-rails arranged side by side with their contact-surfaces facing outwardly, a series of supports for said conductor, a con- 120

tinuous shield having a substantially continuous and unbroken upper surface, said shield extending over said conductor, and an independent series of supports for said shield.

5 11. The combination with an electric conductor, comprising a pair of contact-rails arranged side by side, of a support therefor consisting of a standard, and independent connections between said standard and said
10 rails.

12. The combination with an electric railway comprising a pair of contact-rails arranged side by side, of a support therefor consisting of a standard, and independent
15 connections between said standard and said rails, said connections being loosely retained on said standard.

13. The combination with an electric conductor comprising a pair of contact-rails ar-

ranged side by side, of a support therefor 20 consisting of an insulating-base, a standard, and independent connections between said standard and said rails.

14. The combination with an electric conductor comprising a pair of contact-rails ar- 25 ranged side by side, of a support therefor consisting of an insulating-base, a standard, and independent connections between said standard and said rails, said connections being loosely retained on said standard. 30

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE L. FOWLER.

Witnesses:

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J. H. FREEMAN.