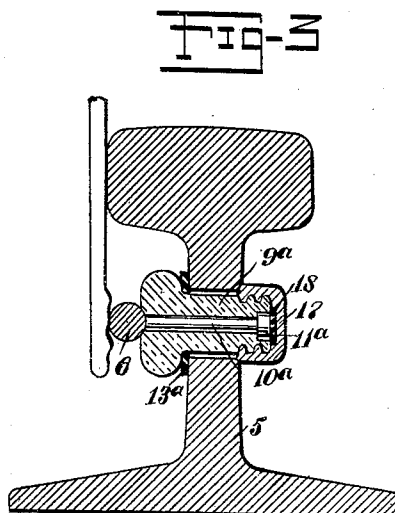
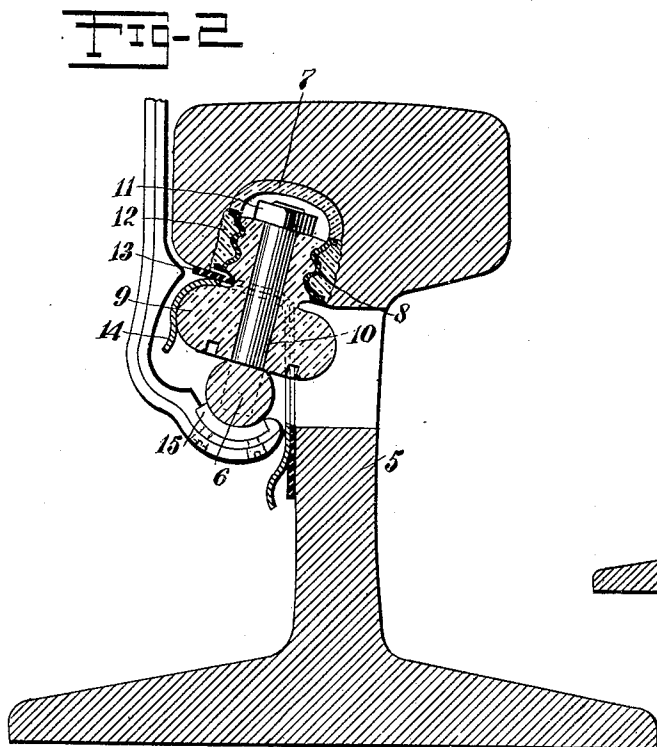
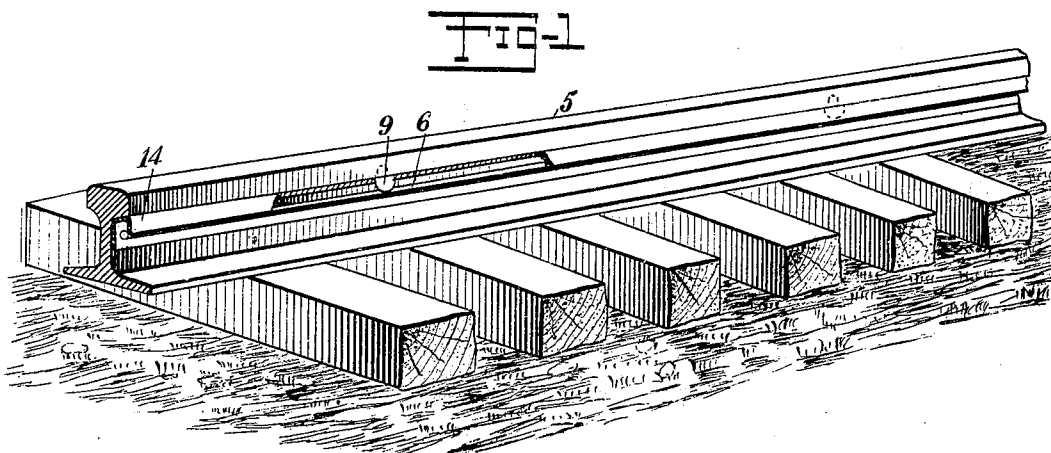


E. W. ENEQUIST.
ELECTRIC CONDUCTOR FOR RAILWAYS.
APPLICATION FILED OCT. 21, 1907.

945,502.

Patented Jan. 4, 1910.



WITNESSES

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ELECTRIC CONDUCTOR FOR RAILWAYS.

945,502.

Specification of Letters Patent.

Patented Jan. 4, 1910.

Application filed October 21, 1907. Serial No. 398,376.

To all whom it may concern:

Be it known that I, ERIK W. ENEQUIST, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Electric Conductor for Railways, of which the following is a full, clear, and exact description.

This invention has for an object primarily to provide in connection with one or both of the traffic rails of an electric railway, *i. e.*, one of the rails on which the rolling stock travels as contradistinguished from other rails, an electric conductor or conductors for feeding the car motor, thus dispensing with the usual third rail or overhead wire conductor and avoiding many of the dangers and inconveniences resulting therefrom.

The invention further resides in certain special features of construction and arrangement of parts as will be hereinafter pointed out and then particularly claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a perspective view of a railway rail with the preferred embodiment of my improvement applied thereto; Fig. 2 is a cross-section of the same; and Fig. 3 is a cross-section of a modification.

I apply my improvement directly to a railway rail 5 which, for the sake of convenience, I will term a traffic rail, by which I mean one of the rails on which the rolling stock of the road directly travels. Underneath the head of this rail at one side of its web I provide an electric conductor 6, preferably a metal wire, longitudinally extending and supported at intervals of its length by insulators of suitable construction; each insulator, as shown in Figs. 1 and 2, being retained within a cavity formed in the head of the rail on its under face. The walls of this cavity are roughened for the reception of the insulator, which consists of a porcelain or other like insulating cup 7, a corrugated sheet metal spool 8, or a spool made of an insulating material, and a porcelain or other like insulating plug 9, threaded into the spool and provided with a central aperture which receives a metal stem or stud 10, riveted, soldered or otherwise secured to the conductor 6, and provided with a nut 11,

threaded on its inner end and bearing on the plug. The cup and spool are held in the cavity of the rail preferably by a suitable cement 12, such that the flanges of the spool do not touch the walls of the cavity, thus making the spool itself an insulated part from the rail, the cement entering the corrugations at the outside of the spool and also the burred or roughened portion of the cavity, which operates to securely bind these parts together.

Between the head of the plug and rail, and in contact with the latter, is placed an insulating washer 13, the same being extended downwardly some distance against the rail web. There is also placed immediately between the head of the plug and the insulating washer, a guard or shield 14. This guard, it will be observed, extends downward at both sides below the plug head, the inside of the guard passing to a point below the conductor 6, thus leaving in substance only a narrow slot through which the conductor is accessible for feeding the current to the car motor as by the shoe 15. The guard 14 not only prevents accidental contact of workmen and others with the conductor 6, but also shields the conductor from the weather, whereby ice will not form on the same. As the guard is never in contact with the rail but insulated therefrom, it is preferably made of steel, heavily japanned or coated, and is of such shape that it will act when the shoe is pushed to place it to guide the latter to correct position. In order that sufficient space may be provided for the application of the several insulators, the web of the rail is cut out at a point directly below the cavities in the rail head, as clearly shown in Fig. 2.

In the modified form of my invention shown in Fig. 3, instead of securing the insulators for the conductor 6 in cavities formed in the head of the rail, the same are secured in openings formed in the rail web; the insulators in this instance being composed of porcelain plugs 9^a held in place by internally-threaded metal caps 17, the said plug receiving in its central bore the stem 10^a connected with the conductor at one end, and provided with a nut 11^a at its opposite and inner end, which is insulated from the cap 17 by a porcelain disk 18. In this construction an insulating washer 13^a, corresponding to the washer 13, is arranged in a corresponding position. It will thus be seen

that the whole construction is easily accessible for attachments, removals or repairs.

The cheapness and practicability of mounting the conductors make it feasible to
5 have one conductor on each rail, which may be desirable for different systems of electrical propulsion, or the extra conductor may be used in case of a breakdown or emergency.

10 The invention is obviously susceptible of other modifications than that shown, and I consider I am entitled to such changes as fall within the scope of the claims annexed.

Having thus described my invention, I
15 claim as new and desire to secure by Letters Patent:

20 1. An insulator for conductors comprising a porcelain cup and a spirally corrugated spool adapted to be secured in a cavity, a porcelain plug threaded into the spool having a central bore, and a stud passing through the bore of the plug adapted to be connected with the conductor.

2. In combination with a railway traffic rail, a conductor arranged longitudinally 25 under the head thereof, insulators supporting the conductor at intervals from the rail, and a sheet metal guard interposed between the rail and conductor, with the weight of the guard carried by the insulators. 30

3. In combination with a railway traffic rail, plugs of insulating material secured at intervals in the rail under the head thereof, each plug having a central opening passing therethrough, a stem removably secured in 35 the central opening of each plug, and a conductor supported from the stems of the plugs.

In testimony whereof I have signed my name to this specification in the presence of 40 two subscribing witnesses.

ERIK W. ENEQUIST.

Witnesses:

F. D. AMMEN,
JOHN P. DAVIS.