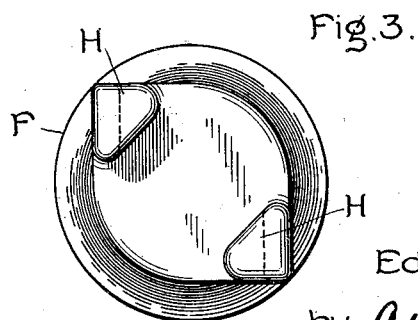
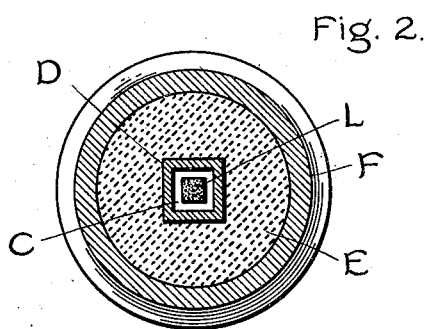
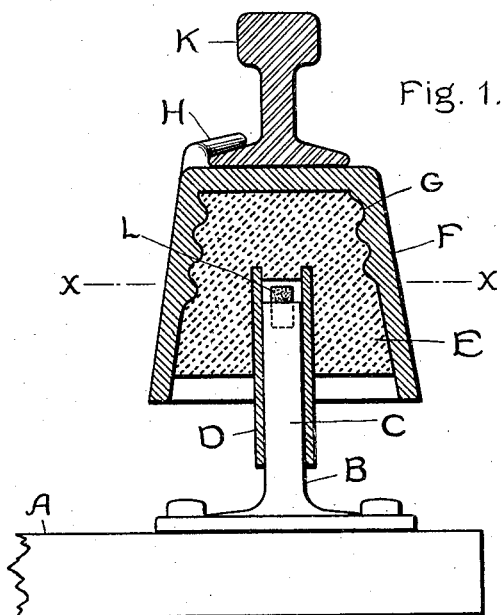


**No. 648,057.**

Patented Apr. 24, 1900.

**E. W. RICE, JR.**  
**THIRD RAIL INSULATOR.**  
(Application filed Feb. 20, 1900.)

(No Model.)



Witnesses:

Lawrence Bell.  
Alex Macdonald.

Inventor:  
Edwin W. Rice Jr.

by Albert G. Davis  
Atty.

# UNITED STATES PATENT OFFICE.

EDWIN W. RICE, JR., OF SCHENECTADY, NEW YORK, ASSIGNOR TO THE  
GENERAL ELECTRIC COMPANY, OF NEW YORK.

## THIRD-RAIL INSULATOR.

SPECIFICATION forming part of Letters Patent No. 648,057, dated April 24, 1900.

Application filed February 20, 1900. Serial No. 5,913. (No model.)

*To all whom it may concern:*

Be it known that I, EDWIN W. RICE, Jr., a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Third-Rail Insulators, (Case No. 1,179,) of which the following is a specification.

My invention relates to insulators, and particularly to that class of insulators which are used in railway systems for supporting the conductor-rail, ordinarily spoken of as a "third" rail.

It has been found in practice that it is sometimes advisable to allow vertical play between the third rail and the track-rails; and it is the object of my invention to provide a third-rail insulator which shall securely maintain the third rail in proper position, but which shall nevertheless allow it to rise and fall between proper limits in response to any strains upon the track or upon the rail.

In the drawings attached to this specification, Figure 1 is a view in section, showing my improved insulator with a rail attached in place. Fig. 2 is a cross-section on the line *x x* of Fig. 1, and Fig. 3 is a plan view.

Referring more particularly to Fig. 1, A is a tie or other support for the track, and B is a foot fastened to the tie by bolts or otherwise. This foot carries a square rod C, extending vertically upward. A square tube D slides freely on the rod C, and this tube is molded into the insulating material E, which forms the body of the insulator. A cap F is fastened to the insulating-body E, as by the screw-threads G.

Lugs H H are attached to the cap F or formed integral therewith, and these lugs, as shown in Fig. 3, are arranged to point in opposite directions and in such a way that the third rail K may be slipped in place and subsequently locked to the cap by a partial rotation of the lugs, as fully set forth in a certain patent to Hanson and Chapman, Reissue No. 11,613, dated June 22, 1897. A cushion L, of soft rubber or other yielding material, may be inserted in the upper portion of the rod B to protect the insulating material E from shock.

In mounting the third rail in accordance with my invention the rail is lifted about a foot above its ultimate position, the feet B

are bolted to the ties, and above each foot is placed an insulator-body with the lugs H H embracing the rail. The insulator is then given a partial rotation in order that the lugs may securely lock the rail and is finally dropped, so that the tube D slides on the rod C. The shape of the parts prevents rotation without interfering with vertical movement.

It will be obvious that I am not restricted to the use of a square rod and a square tube, since any shape other than circular will produce the result desired, and I may even use a circular rod and a circular tube in case I adopt some other method of fastening the third rail to the insulator-cap. As numbers of suitable methods are well known in the art, I do not deem it necessary to illustrate any particular one, since my preferred form of insulator is as shown in the drawings.

Though I have in the drawings attached to this specification shown the tube D carried by the insulator and the rod B carried by the support, nevertheless it will be evident that I am not restricted thereto, and that a mere reversal of this arrangement will be within the spirit and scope of my invention.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a third-rail insulator, a support, an insulating-body, means for permitting vertical motion between the support and the body, and means for attaching the rail to the body.

2. In a third-rail insulator, a support, an insulating-body, means for permitting cushioned vertical motion between the support and the body, and means for attaching the rail to the body.

3. The combination in a third-rail insulator, of a support, an extension attached thereto, an insulator mounted to slide vertically on said extension, and means for attaching the third rail to the insulator.

4. In a third-rail insulator, the combination of a cap, means for attaching the third rail to the cap, a tube carried by the cap and insulated therefrom, and a support carrying a member adapted to engage with said tube.

5. In a third-rail insulator, a cap, lugs on said cap adapted to allow the entrance of a third rail and to lock said rail on partial rotation, and means for permitting the insulator to slide up and down without rotating.

6. In a third-rail insulator, a cap, lugs on  
said cap adapted to allow the entrance of a  
third rail and to lock said rail on partial ro-  
tation, means for permitting the insulator to  
5 slide up and down without rotating with a  
cushion to prevent fracture.

7. In a third-rail insulator, an insulating-  
body, a cap, means for attaching a rail to the  
cap, a foot or support, and a sliding connec-  
10 tion between the foot and the insulating-  
body.

8. In a third-rail insulator, an insulating-  
body, a cap, means for attaching a rail to the  
cap, a foot or support, a sliding connection  
between the foot and the insulating-body, 15  
and a cushion between the foot and the body.

In witness whereof I have hereunto set my  
hand this 19th day of February, 1900.

EDWIN W. RICE, JR.

Witnesses:

BENJAMIN B. HULL,  
MABEL E. JACOBSON.