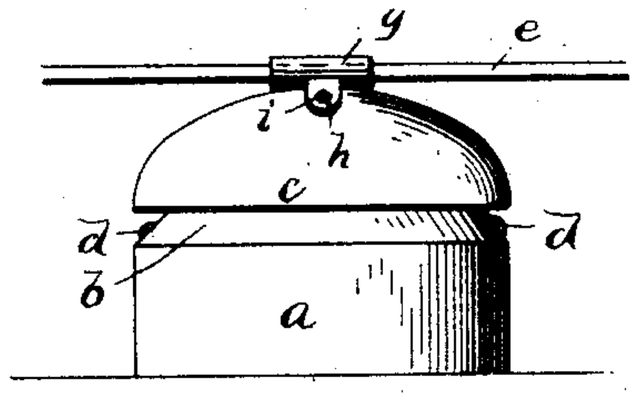
(No Model.)

J. R. BRANCH.

ELECTRIC INSULATOR.

No. 445,969. Patented Feb. 10, 1891.

Fig. 1.



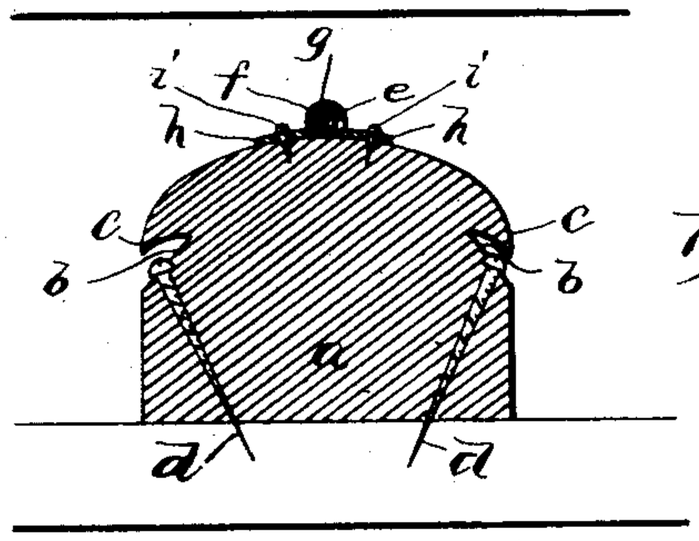


Fig. 2.

Fig. 3.

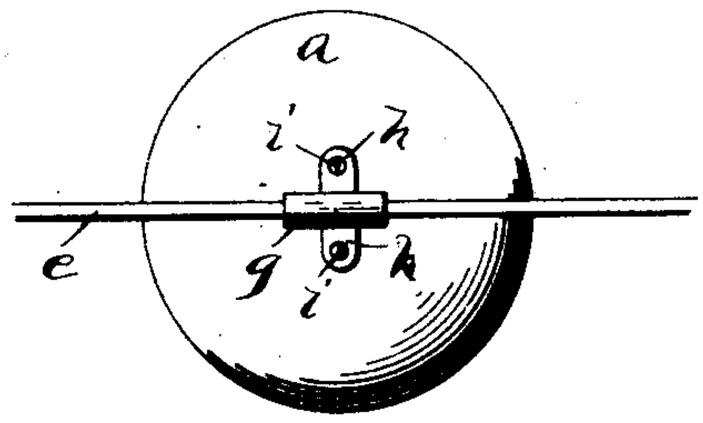


Fig. 4.

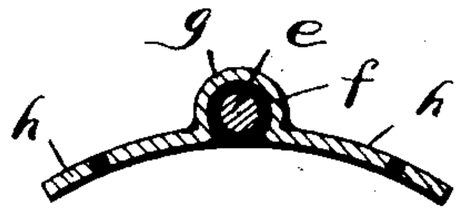
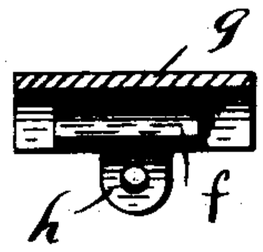


Fig. 5.



Witnesses:
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per

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UNITED STATES PATENT OFFICE.

JAMES R. BRANCH, OF RICHMOND, VIRGINIA.

ELECTRIC INSULATOR.

SPECIFICATION forming part of Letters Patent No. 445,969, dated February 10, 1891.

Application filed May 20, 1890. Serial No. 352,488. (No model.)

To all whom it may concern:

Be it known that I, JAMES R. BRANCH, of Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Insulators for Electric Wires; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates to certain improvements in insulators for electric wires.

The object of the invention is to provide an improved means for securing electric wires and insulating them from their supports and the ground and to secure such an insulation that no connection can be formed with the ground in wet weather by reason of the water running from the wire down over the insulator to the support or ground, thereby preventing leakage of the current from the wire. These objects are accomplished by and this invention consists in certain novel features of construction and in combinations of parts more fully described hereinafter, and particularly pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is an elevation. Fig. 2 is a cross-section through the insulator and wire. Fig. 3 is a top plan, and Figs. 4 and 5 are sections at different planes through the wire and securing-clip therefor.

In the drawings, *a* indicates the insulator-body or main support, formed of any material suitable for the purpose, and preferably (although, of course, not necessarily) cylindrical in shape, with a flat base to rest on a railroad-tie or other support and a dome-shaped top. Between its top and bottom this insulator is provided with a continuous annular peripheral groove *b*, extending inwardly and upwardly, so as to form the peripheral overhanging edge *c* such a distance from the lower side of groove *b* as to prevent a circuit being closed from the wire on the top of the insulator to the ground. This overhanging edge effectually prevents such an occurrence. The insulator is formed with inclined holes from the bottom of said groove through the base of the insulator for the securing nails or screws *d*, thereby preventing electrical connection with the ground through the securing-nails.

The electrical conductor *e* over the top center of the insulator is surrounded by a tube of rubber or other insulating material *f*, and the conductor is secured on the insulator by the metal strip or clip having the horizontal segmental portion *g* longer than and embracing the insulating material *f* on the conductor, and the two wings *h h* integral with said tube and resting on the top of the insulator and secured rigidly and strongly thereon to hold the conductor by screws *i*, as shown, or other fastening means. As the segmental portion *g* of the clip is of larger diameter than the conductor and is longer than the tube *f* of insulating material, insulating-spaces are formed between the projecting ends of the portion *g* and the conductor, (see Fig. 5,) thereby preventing electrical connection between the conductor and the securing-clip by means of water. By this construction the conductor is provided with a triple insulation: first, by insulating material *f;* second, by the projecting overhanging ends of the clip, and then by the insulator *a*, with its annular watershed or overhanging edge *c*. This insulator is particularly adapted to support and secure the conductors of electric railway-signals and overcomes serious difficulties heretofore encountered by reason of the current escaping and leaking to the ground in wet weather.

It is evident that various changes might be made in the form and arrangement of the parts described without departing from the spirit and scope of my invention. Hence I do not wish to limit myself to the precise construction herein set forth.

What I claim is—

1. The insulator having the flat base to be secured upon a support and the straight sides or periphery, the inwardly and upwardly extending groove around the periphery of the insulator, forming the downwardly-extending edge a distance above the base of the insulator, and a clip insulated from and securing the conductor onto the top surface of the insulator.

2. The combination of the insulator having the peripheral overhanging edge, the conductor having the section of insulating ma-

terial thereon, and the clip extending over said conductor and engaging said material and secured on the insulator, as set forth.

3. The combination, with the insulator, of the conductor having a section of insulating material thereon, and the securing-clip having wings secured on the top of said insulator and a portion embracing and longer than the insulating material on the wire, leaving space between its extended ends and the conductor, substantially as described.

4. The combination of the insulator having a peripheral groove forming the overhanging edge, the securing means extending through the insulator from the bottom of the groove, and the conductor secured to the top of the insulator, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JAS. R. BRANCH.

Witnesses:
O. E. DUFFY,
H. E. PECK.