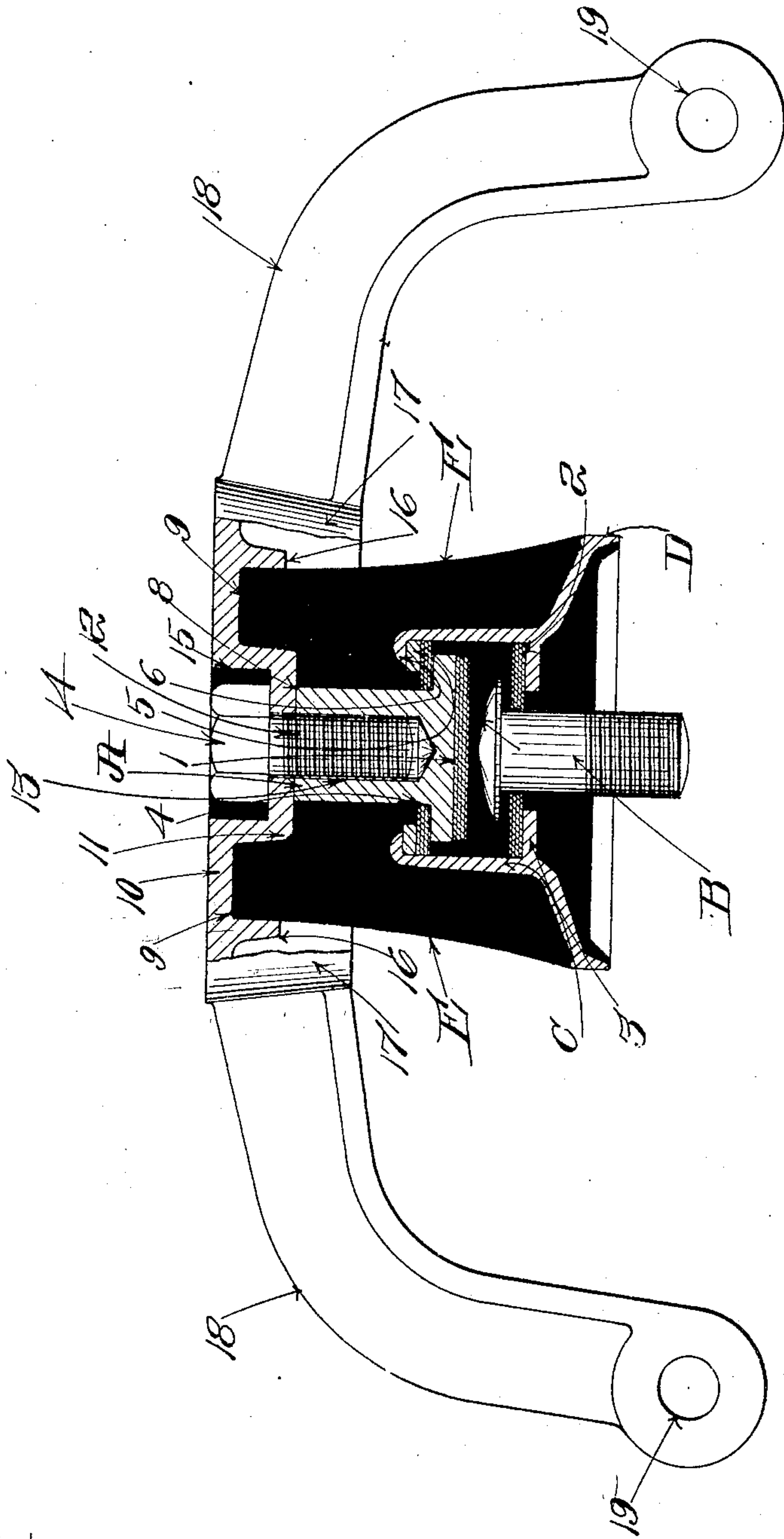


L. McCARTHY.
INSULATOR.
APPLICATION FILED OCT. 8, 1908.

930,608.

Patented Aug. 10, 1909.



Witnesses:
John H. Parker
Jessie E. Morrison.

Inventor:
Louis McCarthy
by Machod, Calver, Copeland & Day,
Attorneys.

UNITED STATES PATENT OFFICE.

LOUIS McCARTHY, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE MACALLEN COMPANY,
OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

INSULATOR.

No. 930,608.

Specification of Letters Patent.

Patented Aug. 10, 1909.

Application filed October 8, 1908. Serial No. 456,748.

To all whom it may concern:

Be it known that I, LOUIS McCARTHY, citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a certain new and useful Improvement in Insulators, of which the following is a specification, reference being had therein to the accompanying drawings.

10 My invention has for its object an improved electrical insulator.

The invention will be fully understood from the description which follows, taken in connection with the accompanying drawing and the novel features thereof are pointed out and clearly defined in the claim at the close of the specification.

In the accompanying drawing my invention is shown as embodied in an overhead insulator for electric railway work, the body of the insulator and the contiguous portions of the overhead support from which the supporting arms project are shown in cross section for greater clearness.

20 Having reference to the drawings A is the upper metallic connection by means of which the insulator is firmly secured in place and B is the lower metallic connection from which the electrical conductor is supported. These connections are secured in place by means of a preferably cylindrical or cup-shaped case C which is provided with a projecting flange or skirt D and they are separated within the said case and insulated therefrom by means of suitable insulation. In the form of insulator shown the insulation comprises a layer of sheet mica 1 located directly beneath the head of the connection A and a layer of sheet mica 2 which is provided with a central hole through which the connection B passes and which rests on the inwardly projecting flange 3 forming the bottom of the cup or casing, and a washer of sheet mica 4 placed above the head of the connection B and surrounding the shank of the stem thereof. Above this washer shaped mass 4 of sheet mica is a ring of metal 5 resting on the sheet mica washer 4 and receiving on its upper surface the inturnd edge 6 of the cup or casing C. The portion 7 in which the head of the connection B is embedded consists of a mass of molded insulating composition. The inturnd edge 6 of the casing is forced inwardly under great pressure after the parts are assembled and serves to compress the

parts solidly together and clamp them in their compressed position. The exterior of the skirt D, the casing C, and the connection A are embedded in a mass of molded composition E applied in the presence of heat and pressure. This entirely covers and seals the joints around the inturnd upper edge of the case or cup and extends downwardly over the lower edge of the skirt D. It is thick enough as shown to form a solid protecting mass the exterior of which is preferably gradually tapered as shown so that all moisture is excluded from the parts which are covered by the said composition E, any moisture which accumulates being shed at the lower edge of the skirt and thus entirely kept from contact with the lower connection B.

The mass of insulating composition E is carried upwardly so as to be flush with the upper end 8 of the connection A and surrounding the end 8 it is carried up in an upwardly projecting annular portion 9. A cap 10 is formed with an annular depressed portion 11 which fits within the recess inside the upwardly projecting parts 9 of molded composition, and rests upon or in contact with the upper ends of the connection A. A central hole is provided in this compressed or hub-shaped portion 11 through which a screw threaded bolt 12 passes into a threaded socket 13 in the connection A. The head 14 of this bolt rests in a cup or recess 15 in the said cap 10. It will be clear that when the cap 10 is in place the bolt 12 serves to clamp the cap securely to the connection A and to hold it securely thereto. The space around the head 14 of the bolt is preferably filled with cement or insulating composition to prevent the ingress of moisture. The cap 10 is provided outside of the upper end of the block or mass of insulating composition E with an annular downwardly projecting flange 16 which bears against the outer edge of the covering E of composition. Outside of the flange 16 the cap is provided with a downwardly projecting body portion or casing 17 from the opposite sides of which the arms 18 project. These arms are of the well known shape, being curved downwardly and provided at their lower ends with eyes 19 to which the cross wires are secured. It will be noted that the cap and contiguous portions of the insulator, and especially the exterior mass of molded composition E are so shaped

and fitted together as to form a very secure connection. The bolt 12 is of sufficient strength to resist all strain which would tend to separate the insulator from the cap or support, that is a strain which would tend in the view shown to pull the insulator down away from the cap while the upwardly projecting annular portion 9 fitted between the hub 11 and the annular flange 16 of the cap gives the construction great capacity to withstand a lateral or rocking strain which would tend to tip the cap while at the same time the flange 16 and sides of the cap 17 afford a very full protection from the entrance of moisture around the joints, at the top of the mass of composition E. For insulators which are used in unprotected positions out of doors this is important. I am enabled therefore by my construction not only to provide an insulator having high insulative quality and great durability but also to provide one which is mechanically of great strength and with great power to resist mechanical strain applied in any direction.

While I have shown my invention as applied to the overhead insulation for electric

railways I do not desire to limit myself to such form of insulation since it may be embodied in insulators which are used for a great variety of purposes wherever durability and power to resist the entrance of moisture is desired and particularly where the insulator is subjected to mechanical strains which would tend to separate it from the contiguous parts which support it or which in some cases may be supported by it.

What I claim is:

An insulator comprising metallic connections secured together and insulated from each other by interposed insulation and having a covering of molded composition provided with a projecting portion and a cap secured to one of the said metallic connections and having a hub and flange between which the projecting portion of the insulating covering is fitted.

In testimony whereof I affix my signature, in presence of two witnesses.

LOUIS McCARTHY.

Witnesses:

GEORGE P. DIKE,
ALICE H. MORRISON.