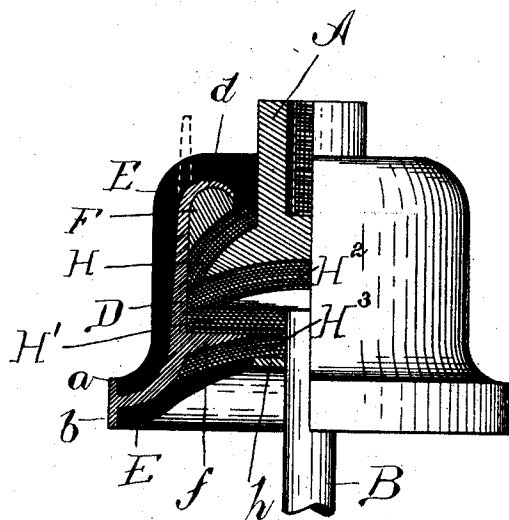


(No Model.)

L. McCARTHY.
INSULATOR.

No. 503,549.

Patented Aug. 15, 1893.



WITNESSES.

Arthur F. Randall.
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INVENTOR.

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UNITED STATES PATENT OFFICE.

LOUIS MCCARTHY, OF BOSTON, MASSACHUSETTS.

INSULATOR.

SPECIFICATION forming part of Letters Patent No. 503,549, dated August 15, 1893.

Application filed January 14, 1893. Serial No. 458,344. (No model.)

To all whom it may concern:

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

My present invention is an improvement on that shown and described in Letters Patent No. 449,943, dated April 7, 1891, granted to me.

In the manufacture of insulators such as are employed for supporting or insulating overhead conductors of electric railways, I have found it desirable to produce an insulator which would secure double insulation inside the bell, or containing case, of the hanger or insulator itself. This is desirable to provide against some forms of accident which may occur and which it is unnecessary for me to detail at length. To secure such an insulator is the object of my present invention.

The peculiarities of my device are herein after fully set forth, and the novel features thereof are pointed out in the claims which are appended hereto.

My invention will be readily understood from the accompanying drawing, and the following description in which reference is made thereto.

The drawing shows my invention as embodied in a hanger or insulator for overhead conductors and is partially in section in order to fully show the construction.

Having reference to the drawing A represents one of the metallic portions, said portion being provided with a threaded socket by means of which the insulator is secured to its support. B represents the other metallic portion which serves to support the conductor.

D is a bell-shaped case provided with a skirt having upwardly and downwardly projecting flanges *a b* against the inner surface of which the exterior layer E is molded. This exterior layer or covering is preferably of insulating composition molded onto the bell when in a plastic condition. This exterior covering forms no part of my present invention and may be omitted without changing the character of my device.

F is a ring of metal which is placed on top of the mica insulation and over the upper edge of which the top of the bell D is bent as shown at *d*. The top of the walls of the bell D before being bent over as shown are in substantially a vertical position as indicated by dotted lines in the figure.

H represents the insulation which I employ and which is preferably sheet mica. It will be noted that the bell D is provided with an inwardly projecting flange *f* which serves to hold the metallic portion B within the case.

In constructing the insulator I take the metallic portion B which is headed as shown and place on the stem thereof adjacent the head, sheets of mica H' which have previously been perforated to receive the stem of the part B and which are made of a shape and size which will fit the interior of the bell or case D. I then place the part B with these sheets of mica strung thereon inside the bell and place a series of sheets of mica H² on top of the rounded or curved head of the part B. The metallic portion A is then placed in the bell, the enlarged flaring end downward and resting upon the mica H². The end of the part A which bears upon the mica H² is concaved to correspond with the convex head of the part B. Washers or disks of mica H which have been perforated so that they may be placed on the metallic portion A are then put into the bell covering the enlarged or flaring end of the part A as shown. The ring F is then laid on top of the sheets of mica H and the whole is placed in a press of proper shape and by means of a very high degree of pressure the upper edge *d* of the bell D is bent and pressed over the top of the ring F, the ring and the mica insulation being forced downwardly while at the same time the top *d* of the bell is bent inwardly so that the mica within the case is practically solidified and by the bending in of the walls of the bell, is held in this highly compressed state. The cross sectional shape of the ring F may be varied so long as it is of such shape as to receive the bent over edges of the case. Before submitting the parts to pressure a series of sheets of mica H³ is strung on the shank of the part B and placed underneath and in contact with the flange *f* of the bell. These sheets of mica may be omitted but I prefer

to use them. When used they are also solidified under the high pressure and are retained in position by a ring or nut of metal *h* which is slipped on the shank of the part B. This
5 ring or washer *h* may be provided with a hole of the same or slightly smaller diameter than the diameter of the shank of the part B, so that it will require considerable pressure to slip it onto the said shank, and when it is
10 forced on or under pressure it will remain securely in place, or the ring *h* may be threaded and screwed onto the said shank, the latter also being threaded. After the parts are thus compressed and secured together the outer
15 covering E of molded material, if an outer covering be used, is placed around the whole and molded to shape. The exposed metallic flanged edge of the skirt of the bell serves to protect the insulator from being cracked or
20 broken if it receives a sudden blow from a trolley or the like.

My invention may, as will be obvious, be embodied in insulators for other purposes, in which case, the projecting flanged skirt may
25 not be desired and may be omitted. The space between the ring *f* and the adjacent part of the metallic portion A may be filled

in with washers of mica or with comminuted mica or it may be filled by the plastic composition which is used to form the molded covering E. In this way I secure an insulator
30 by means of which the metallic portions A and B are not only insulated from each other but are also wholly insulated from the case D. It is strong and durable and of high insulative power. 35

What I claim is—

1. An insulator comprising a case, metallic portions placed within said case, and insulated therefrom, and from each other by layers of insulating material, substantially as
40 set forth.

2. An insulator comprising a case, metallic portions placed within said case and separated from each other by an interposed layer
45 of insulating material and having a ring over which the edges of the case are bent to secure the parts together, substantially as set forth.

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

LOUIS MCCARTHY.

Witnesses:

WM. A. MACLEOD,
ROBERT WALLACE.