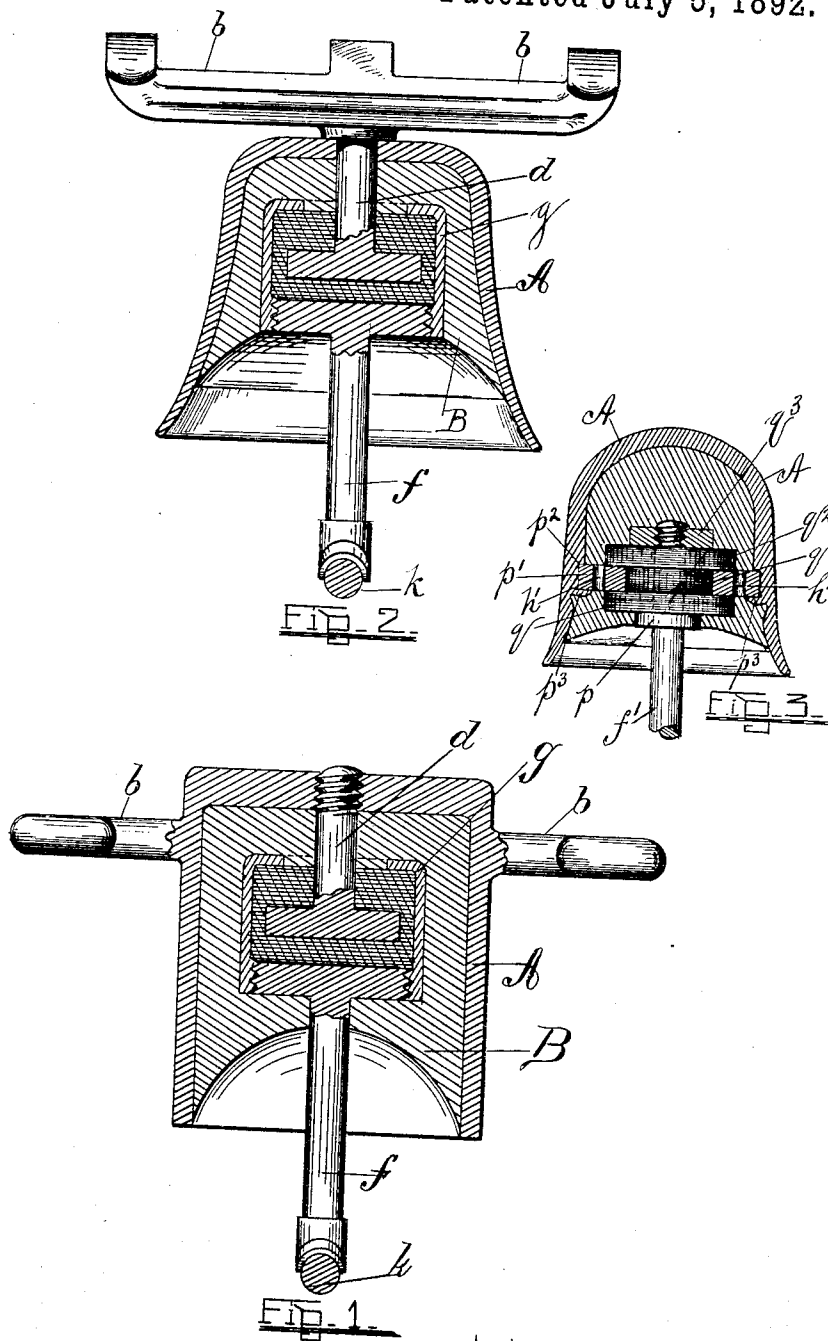


(No Model.)

L. McCARTHY.
INSULATOR.

No. 478,518.

Patented July 5, 1892.



WITNESSES—
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Robert Wallace.

INVENTOR—
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UNITED STATES PATENT OFFICE

LOUIS MCCARTHY, OF BOSTON, MASSACHUSETTS.

INSULATOR.

SPECIFICATION forming part of Letters Patent No. 478,518, dated July 5, 1892.

Application filed April 19, 1892. Serial No. 429,734. (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 drawings.

My invention has for its object to provide a durable insulator of high efficiency particularly adapted to outside use where it is required to withstand changes in temperature and the effects of moisture; and it consists in an insulator having the metallic portions insulated by the interposition of sheets of mica laid and pressed together, said metallic portions and interposed mica being suitably secured together and the whole being embedded in an insulating composition contained within a metallic protecting-case, all as hereinafter more particularly set forth, and the novel features of which are pointed out in the claim, which is appended hereto and made a part hereof.

I have shown my invention in the accompanying drawings as embodied in a trolley-wire hanger or insulator, such as is employed in the overhead construction of electric railways.

In the drawings, Figures 1 and 2 are vertical sections showing two forms of trolley-wire hanger, some portions thereof being shown in elevation. Fig. 3 is a similar view on a smaller scale, showing a modified form of construction.

My invention will be readily understood from the following description, in which reference is made to the said drawings.

A is a metallic bell or case, which forms an exterior protection for the device and which enables it to withstand a severe blow without injury. The bell or case A is provided with suitable arms *b*, which are either secured directly to the bell, as shown, Fig. 1, or to a projection from the bell, as shown, Fig. 2.

In Fig. 2 the projection is formed by the end of the bolt *d*, which projects through the top of the bell. The metallic portions which are insulated from each other are shown in the form of bolts *d f*, the proximate ends of which are flanged in the usual manner and which are separated by a series of sheets of

mica, which are interposed between the proximate faces of the flanged portions. A number of sheets of mica which are cut away centrally to accommodate the head of the flanged portion of the bolt *d* are placed around the said flanged portion, and another series of sheets which are cut away to accommodate the body of the bolt are placed or strung on the bolt and cover a portion of said bolt, as shown. A metallic shell or case *g* of a size adapted to receive the sheets of mica is provided and the bolt *d* and sheets of mica are placed therein. The case *g* is provided at one end with a large opening through which the bolt *d* may pass without coming in contact with said case. The other end of the case *g* is screw-threaded to receive a correspondingly-threaded head or flanged portion of the bolt *f*. The head of the bolt *f* is screwed into the case *g*, and the whole insulation thus formed is secured within the metallic case A by screwing the end of the bolt *d* into the top of the bell or case A or by riveting it therein. A mass of insulating composition B, which may be of any of the well-known compounds now in use, is then placed in a plastic state inside the case A and is pressed and molded entirely around the insulated bolts *d f* therein, leaving only the downwardly-extending portion of the bolt *f* exposed. The composition B is then allowed to set and harden. To the lower end of the bolt *f* the trolley-wire *k* is secured in any well-known manner. By thus embedding the insulated portions *d f* and their connecting and securing parts, as also the interposed mica insulation, in the insulating composition B the parts are thoroughly protected from moisture and the injurious influence of the weather, and a very durable and efficient insulator is obtained.

At Fig. 3 I have shown still another form of trolley-wire hanger, which embraces a bell A and a somewhat different form of interior construction. In constructing an insulator as shown, Fig. 3, the bolt *f'* is provided with an annular shoulder or collar *p*. A series of sheets of mica *q* are then strung on the bolt and adjacent them another series of sheets of mica *q'* of less diameter than the series of sheets *q*. Outside the series of sheets *q'* is placed a ring *p'* of metal, the central aperture thereof being of a size to receive the series of

sheets of mica q' . Adjacent the ring is then
 placed another series of sheets of mica q^2 ,
 which may be of the same size as the sheets
 q , and on top of the sheets q^2 a nut q^3 is
 5 screwed onto the bolt f' . The bolt f' is thus
 insulated from the ring p' . The whole is then
 placed within the bell A, which may be pro-
 vided with a shoulder at p^2 , against which the
 ring is placed. The securing-flange p^3 is then
 10 pressed up against the under side of the ring,
 thus holding the parts securely within the
 bell. The ring p' is provided with a series
 of apertures or holes h' to permit of the plas-
 tic composition flowing or being pressed into
 15 the space above the ring within the bell. The
 plastic composition is then applied, pressed
 into place, and allowed to harden, firmly em-
 bedding the whole of the contents of the bell
 in a mass of insulating composition.
 20 I do not desire to limit myself to any par-
 ticular form or construction of the parts or

any specific method of securing the metallic
 portions which are insulated by the inter-
 posed sheets of mica together, as any well-
 known construction may be employed.

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What I claim is—

An insulator comprising metallic portions
 separated by an interposed series of sheets of
 mica compressed together, securing devices
 by which said metallic portions and said mica
 30 are secured together, a mass of insulating ma-
 terial in which said metallic portions and said
 sheets of mica and their securing devices are
 embedded, and an outer metallic covering or
 case, substantially as shown and described.

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

LOUIS MCCARTHY.

Witnesses:

WM. A. MACLEOD,
 ROBERT WALLACE.