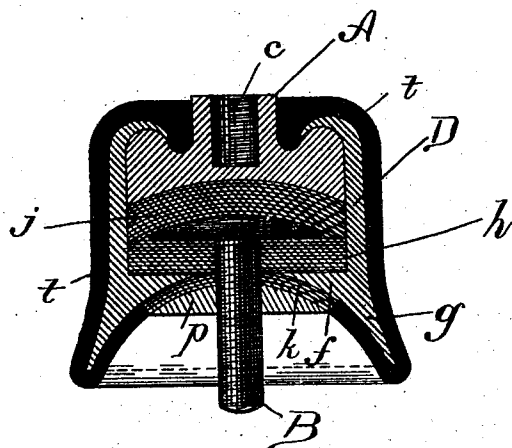


(No Model.)

L. McCARTHY.
INSULATOR.

No. 517,621.

Patented Apr. 3, 1894.



Witnesses:

Arthur F. Raudall,
Robert Wallace.

Inventor:

Louis McCarthy
by Mackrood Calross & Raudall
his Attorneys.

UNITED STATES PATENT OFFICE.

LOUIS MCCARTHY, OF BOSTON, MASSACHUSETTS.

INSULATOR.

SPECIFICATION forming part of Letters Patent No. 517,621, dated April 3, 1894.

Application filed July 15, 1893. Serial No. 480,618. (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 the insulator shown and described in Letters Patent No. 449,943, dated April 7, 1891, granted to me. In the manufacture of these insulators it is desirable to reduce the cost of construction to a minimum, and at the same time to secure the highest possible efficiency of the device. As hitherto made, so far as known to me, sheets of mica of several different sizes have been employed, as the insulating material in the insulator aforesaid, each size of sheet requiring to be cut by a cutter or die of proper size. When a number of different dies are required the cost is considerably increased. It is also desirable that the layers of mica should be so arranged in the insulator as to solidify to the best advantage in the manufacture of the insulator. To obviate the objections above named, and to obtain the stated desiderata is the object of my present invention, which will be readily understood from the accompanying drawing, and the following description in which reference is made to said drawing.

The drawing shows a vertical section of a trolley wire hanger or insulator embodying my invention.

Referring to said drawing, A represents one of the metallic portions of the said hanger or insulator, and B the other of said metallic portions, the two portions being insulated from each other. The portion A is provided with means, such, for instance, as the screw-threaded socket *c*, for connecting it with the overhead support, while the portion B is provided with a screw-threaded shank by means of which it may have attached to it the ear or clip which supports the conductor or trolley wire.

D represents a shell or case, preferably of metal, having an inwardly projecting flange *f* which serves to retain within the case, the insulation, as also the metallic connection B. The skirt which is commonly employed in

trolley wire hangers or insulators is shown at *g*, but is not material to my present invention.

In constructing the insulator the metallic portion B is provided with a series of sheets of mica *h* which have each a hole cut therein, and which are strung on the shank of the part B. These sheets of mica are cut to a size which will fit the interior of the case D. The metallic part B with the sheets of mica strung on the shank thereof is then placed within the case. The head of the said part B is rounded or curved, as shown, so that when another series of sheets of mica, shown at *j*, are placed within the case on top of the curved head, the said sheets *j* will come in contact around the said head with the sheets of mica *h*. The under face of the metallic portion A is curved or concaved to correspond with the convex head of the part B, and the top of the part A is so shaped that when the top of the wall of the case D is bent over the top of the part A they will hold the parts securely in place. The precise form of the parts within the case is not material to my present invention, and any well known construction of these parts may be employed, as also any well known means for securing the parts together. The retaining flange *f* is brought to a feather edge as shown and the under side of the said flange is preferably formed on a curve. A series of sheets of mica *k* which are of the same shape and size as the sheets *h* are also strung on the shank of the part B outside the flange *f*, and a retaining nut or washer *p* which is rounded or curved to correspond with the curve of the under side of the flange *f*, and which is preferably flat on the opposite side as shown, is then slipped or forced on the shank of the part B, and the whole is firmly compressed, causing the sheets of mica *k* to assume the curved position shown, and to lie snugly against the under side of the flange *f*, and between it and the curved face of the retaining washer *p*. By making the hole in the washer *p* of the same or slightly smaller diameter than the diameter of the shank of the part B, and forcing the washer *p* onto the shank under heavy pressure, the parts will be firmly secured in place. The washer or nut *p* may be screw-threaded, so as to screw onto the shank, the shank being similarly threaded,

but I prefer to force the washer *p* onto the shank under pressure as previously described. By thus reducing the flange *f* to a feather edge the sheets of mica on the under side of the flange are allowed to come in contact with the sheets of mica above the flange, around the shank of the part B, and sheets of mica of the same size, and cut by the same dies may be used both above and below the flange, thus materially reducing the cost of construction and simplifying the same. If the edge of the flange were thick, a series of smaller sheets of mica would require to be strung on the shank B opposite the thick edge of the flange.

In the construction above described, only one size or at most two sizes, of mica will be required, while at the same time, the strength of the insulator is maintained and the mica is so arranged as to compress more solidly and thus maintain the efficiency of the insulation or slightly increase it. I have shown at *t* an exterior layer which is composed of an insulating composition applied in a plastic condition and molded over the exterior of the insulator. This is not, however, essential to my present invention.

What I claim is—

1. An insulator comprising a case, metallic portions placed within said case and separated from each other by an interposed layer

of insulating material, a flange on said case extending inwardly therefrom and having a thin or feather edge, a series of sheets of mica outside said flange on one of the insulated metallic portions and in contact around said metallic portion with the insulating material within the case, and a nut or washer on said insulated metallic portion, substantially as set forth.

2. An insulator comprising a case, metallic portions placed within said case and insulated from each other by interposed sheets of mica, a flange on said case extending inwardly therefrom and having a thin or feather edge, the upper side of said flange being flat and the under side thereof curved in cross section, a washer or nut on the shank of one of the insulated metallic portions, the face of said nut adjacent said flange being curved to correspond therewith, and a series of sheets of mica interposed between said nut and said flange and in contact around said shank with the insulating material within the case, substantially as set forth.

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

LOUIS MCCARTHY.

Witnesses:

WM. A. MACLEOD,
ROBERT WALLACE.