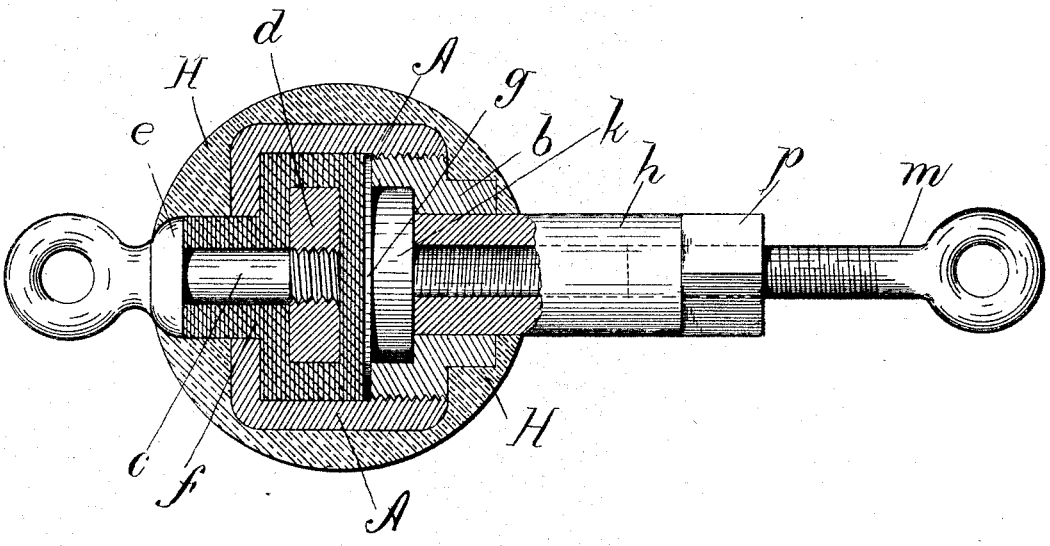
(No Model.)

L. McCARTHY.

STRAIN INSULATOR.

No. 489,658 Patented Jan. 10, 1893.



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LOUIS McCARTHY, OF BOSTON, MASSACHUSETTS.

STRAIN-INSULATOR.

SPECIFICATION forming part of Letters Patent No. 489,658, dated January 10, 1893.

Application filed June 29, 1892. Serial No. 438,411. (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.

Strain insulators, which are frequently used in the overhead wire supports for electric railways and for similar purposes, it is frequently desirable to provide with a turn buckle device so that the insulator may not only be employed to insulate one portion of the wire support from the other but may also be used to tighten the support.

My invention has for its object to provide a strain insulator which shall meet these requirements and it consists of an insulator having the metallic portions thereof separated by an interposed layer or layers of mica which have been laid and pressed together and which are contained in a suitable metallic frame or case, one of said metallic portions being so constructed and secured in place as to be capable of being turned to loosen and tighten the wire in which the insulator is inserted, and it further consists in the peculiar construction shown and hereinafter described whereby that portion of the device which is adapted to turn is incased in or surrounded by metallic parts so that the movement of the part which is adapted to be turned will not impair the insulation, all as hereinafter more particularly set forth.

The novel features of my device are pointed out in the claims which are appended hereto and made a part hereof.

In the drawing to which reference is made in the following description, I have shown my insulator partially in lengthwise section to show more clearly the construction.

Referring to said drawing A is a shell or case of metal preferably cylindrical in form and having an opening at one end, and at the other end formed with screw threads as shown to receive a cap *b*. The bolt *c* which forms one of the metallic portions of the insulator is provided at its outer end with an eye by means of which it may be attached to the supporting wire. The inner end of the bolt is provided with a nut *d*. A shoulder *e* on the bolt serves as a bearing against which the sheets of mica shown at *f* are compressed. The bolt *c* is provided with a number of sheets of mica which have previously been provided with a hole to receive the bolt, said sheets being strung on the bolt. These sheets of mica are of a diameter equal or substantially equal to the diameter of the opening in the end of the case A. An additional number of sheets of mica of larger diameter, that is, of a diameter equal to the diameter of the shell or case A, are then strung on the bolt after it has been inserted in the opening in the case A. The nut *d* is then screwed into position and a number of sheets of mica having a hole cut in them sufficient to accommodate the nut are then placed around the nut filling the space between the nut and the case A. An additional number of sheets or layers of mica are then placed over the nut *d* within the case A. The bolt *c* and its nut *d* are in this way completely insulated from the case A and from the other metallic portions of the device by a compact mass of mica which is very durable and which is of high insulative quality. After the mica which covers the nut *d* has been placed in the case A, the disk *g* which is preferably of metal and of a size to fit the case A is placed within the case on the mica. The screw cap *b* which has previously been placed upon the headed sleeve *h* is then screwed home. The cap *b* has a central aperture of sufficient size to accommodate the sleeve *h*, and this aperture is enlarged at the inner end so that it will accommodate the head *k* of said sleeve, said head serving to prevent the sleeve from being withdrawn from the cap *b*. The sleeve *h* has a central aperture lengthwise thereof which is provided to receive the threaded bolt *m*, the outer end of the sleeve *h* is then squared as shown at *p* to receive a wrench by means of which the sleeve may be conveniently turned. An eye on the outer end of the bolt *m* serves as a convenient means for securing the other portions of the supporting wire to the insulator. By turning the sleeve *h* the bolt *m* may be turned into the socket or aperture in the sleeve and the supporting wire tightened as will be obvious. It will be noted that the sleeve *h* turns entirely in the metallic portions of the insulator, that is, it is not in contact with the insu-

lating material and the insulating material is therefore not subjected to any rubbing or grinding action but is wholly protected and cannot be impaired by turning the sleeve *h* to tighten or loosen the supporting wire.

I have shown my device as covered with a globular mass of insulating material H, this covering may be formed of any of the well known insulating compositions which are capable of being applied in a plastic condition and will then set and harden. It forms a very durable finish for the insulator as it wholly protects the joints from moisture and the like and leaves the exterior smooth and not liable to retain moisture and dust. It will be noted however that the outer covering H is not essential to my device and may or may not be used as desired. The case A may also be very materially modified in form without departing from my invention.

What I claim is:—

1. An insulator comprising a case adapted to hold a series of sheets of mica, a metallic connecting piece placed therein, and a series of sheets of mica surrounding said piece and adapted to insulate the same from said case, a sleeve *h* secured within said case at one end and provided with a screw threaded bolt or connecting piece whereby as the sleeve is turned the connecting piece may be screwed into or out of the sleeve to tighten or loosen the supporting wire, substantially as set forth.

2. In an insulator the combination of the case A, a metallic connecting piece placed therein, and insulated therefrom by a series of sheets of mica, the disk *g*, sleeve *h* and bolt *m*, substantially as set forth.

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

LOUIS McCARTHY.

Witnesses:
WM. A. MACLEOD,
ROBT. WALLACE.