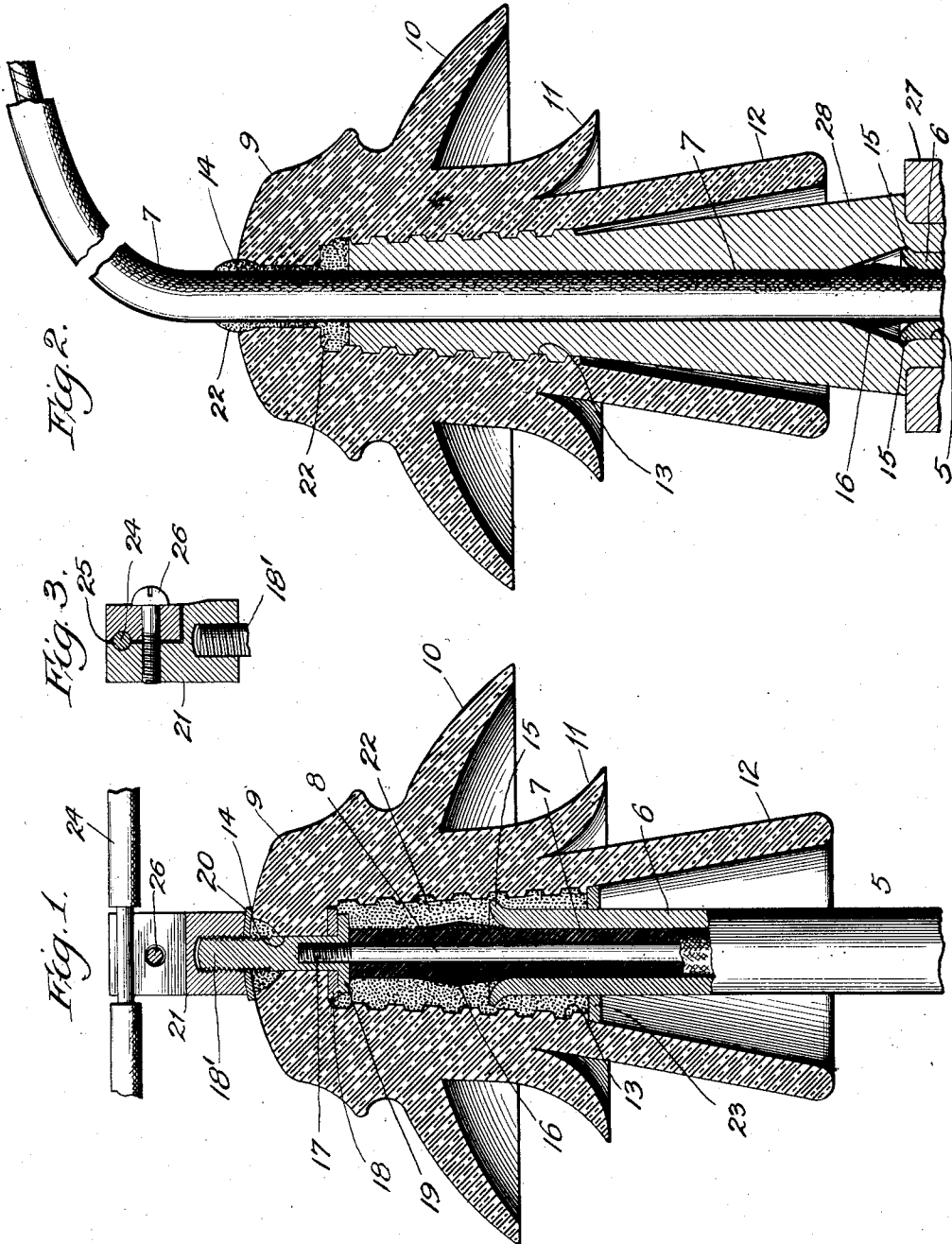


No. 893,285.

PATENTED JULY 14, 1908.

E. M. TOMPKINS.
ELECTRIC CABLE INSULATOR.

APPLICATION FILED AUG. 18, 1906.



Witnesses
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UNITED STATES PATENT OFFICE.

EDWARD M. TOMPKINS, OF CHICAGO, ILLINOIS.

ELECTRIC-CABLE INSULATOR.

No. 893,285.

Specification of Letters Patent.

Patented July 14, 1908.

Application filed August 18, 1906. Serial No. 331,146.

To all whom it may concern:

Be it known that I, EDWARD M. TOMPKINS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Electric - Cable Insulators, of which the following is a specification.

My invention relates to improvements in insulators for electric cables and especially to terminal insulators, whereby the insulation between the interior conductor is maintained at a very high standard under all conditions of use.

The object of my invention is the provision of a simple, cheap, convenient and highly efficient means for maintaining a high standard of insulation between the interior conductor of an electric cable, and the exterior sheath thereof, at or near the terminals of such cables.

In the drawing; Figure 1 is a vertical central section of my improved insulator and terminals as applied to an electric cable when the latter is directly connected to an aerial conductor. Fig. 2 is a similar view showing one modification of which my invention is susceptible, as it may be used without the immediate terminal shown in Fig. 3. Fig. 3 is a detail of a connector-terminal of the cable, and a means by which said cable may be directly connected to an aerial conductor.

In all of the views the same reference characters are used to indicate similar parts.

A lead-covered electric cable, 5, is composed of a lead sheath 6, an insulating medium 7, which may be of gutta percha, or rubber compound, paper, jute, or the like, and a copper conductor, 8.

It is desirable to maintain, under all conditions of use and weather, a high standard of insulation between the conductor 8 and the sheath 6, after the said sheath has been cut back, as shown. It is well known that the insulating medium 7, possesses very much higher insulating qualities in a direction radially from the copper to the sheath, through the body of said insulating medium than along the outside surface of said medium, and that when said outside surface is exposed to the inclemency of the weather for any protracted length of time that its insulating qualities rapidly deteriorate. To overcome these difficulties I provide an insulator 9, of the character illustrated, which entirely covers that part of the cable-insu-

lating medium 7 immediately near the sheath, 6, thereby protecting it from the effect of the weather, and presenting a large extended, exterior, highly insulating surface, 60 by means of which the exposed terminal conducting portion of the cable is maintained under all conditions in its high state of insulation.

The insulator 9 may be made of glass, 65 porcelain or other suitable vitreous or other material, preferably provided with one or more petticoats, such as 10, 11 and 12. For convenience the insulator may have an axial, screw-threaded perforation, such as 13, 70 having a smaller, preferably an axial opening 14, near the top, through which the electric conductor of the cable takes.

Referring more particularly to Fig. 1; when it is required to connect the terminal of 75 an electric cable conductor to an aerial circuit, and under conditions where such terminal connection may be exposed to the weather, the lead sheath is first removed for a distance approximating and relatively that 80 shown in the drawing, and preferably, the lead sheath flared outwardly as at 15. A reinforced laminae of insulating material 16, such as mica, is forcibly inserted under the lead sheath for mechanical strength and to 85 fortify the insulation at this point, the stress being greater here (at the end of the lead sheath) than elsewhere. This reinforcement 15, while it is advisable and is very efficient for the purpose is not essential. 90

The end of the cable conductor 8, is screw threaded as at 17, and a metal stem 18, of copper or brass, of larger diameter is screwed on the end of said conductor. A rubber washer 18 is placed over the stem and rests 95 upon the shoulder 19 of said stem. A similar washer 20 is then placed over the stem and the terminal connector 21 is screwed tightly down over the protruding screw-threaded end of the stem, 18. The insulator is now 100 inverted and an insulating compound 22, such as Chatterton's compound; or other similar or suitable substance is poured into the central, screw - threaded perforation around the sheath 6 and the insulation 7, until the space is well filled. The insulating 105 washer 23, of fiber or other suitable material, is forced into the position shown, and serves to prevent the compound from dripping out when the device has been placed in its final 110 position.

An aerial conductor 24 may be supported

in the usual manner, on either side of the cable insulator, preferably at points approximately near to said terminal insulator. The wire 24 is placed within the groove 25 provided in the clip 21, and the screw 26 tightly drawn to perfect electric contact between said clip and wire 24.

The device described answers every purpose for which it is intended, is convenient of application and is entirely satisfactory in connection with cables where the current is not large. Where stranded conductors are used in cables and by which large current is carried, the modification shown in Fig. 2 may be preferable. Under such conditions it is good practice to solder or braze the terminal cable conductor to the aerial line, and to tape that part of the cable insulation between said terminal and said insulator.

In Fig. 2, 27 is an ordinary cross arm, a threaded, wooden insulator-pin 28 passes through a perforation therein as usual. The pin is axially perforated for the entrance of the cable 5 at the lower end thereof, and for the passage therethrough of the insulating portion 7, as shown. The pin is preferably boiled in linseed oil, or otherwise treated, to raise its insulating qualities to the highest attainable degree. The mica reinforcement, 16, is preferably placed near the lead sheath and over the rubber or other insulating material 7.

After the cable has been threaded through the insulator, as described, an insulating compound, such as 22, is placed within the central perforation of the insulator, as shown, to make a water tight joint.

In either case the cable may be bodily supported, in any convenient or usual manner, to take most of the strain off of the terminal fixture.

While I have herein described an embodiment of my invention and a single modification for the purpose of illustration, I desire it to be understood that it is susceptible of many modifications which I have not shown, and that considerable variation from the structure herein illustrated may be made without departing from the spirit and scope of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent, of the United States, is:

1. In a device of the character described, a petticoat insulator having an axial, screw-

threaded cavity to receive and hold cable supporting means, and a chambered axial perforation, smaller in diameter communicating therewith, through which an electric conductor may pass.

2. In a device of the character described, a petticoat insulator having an axial perforation, a threaded stem adapted and arranged to screw on to the end of an electric cable conductor, and a terminal clip for connection with said stem.

3. In a device of the character described, a petticoat insulator having an axial perforation of two diameters, a shoulder near the upper end of said insulator where the two perforations meet, a stem having a supporting collar abutting said shoulder, and a terminal clip in electrical contact with said stem.

4. In a device of the character described, a petticoat insulator having an axial perforation, a shoulder in said perforation, a terminal piece engaging said shoulder, adapted and arranged to make electrical contact with the conductor of an electric cable, an electric cable conductor bared at its end for contact with said terminal piece, and a filling of insulating compound, between said cable and the surface of said perforation.

5. In a device of the character described, a petticoat insulator having an axial, screw-threaded cavity and an axial perforation for the passage of an insulating conductor, of an electric cable, an axially perforated, screw-threaded supporting pin, and an insulating compound, between the contents and the surface of said cavity and perforation.

6. In a device of the character described, a petticoat insulator having an axial perforation, and an axial, screw-threaded cavity for the reception of a pin communicating therewith, a supporting pin having an axial perforation for the reception of an electric cable, said pin having been treated in a suitable manner to increase its insulating qualities.

7. As an article of manufacture, a petticoat insulator having an axial cavity and an axial, screw-threaded perforation of smaller diameter communicating therewith, said perforation being chamfered at its outer end.

In testimony whereof I hereunto set my hand in the presence of two witnesses.

EDWARD M. TOMPKINS.

In the presence of—
FORÉE BAIN,
MARY F. ALLEN.