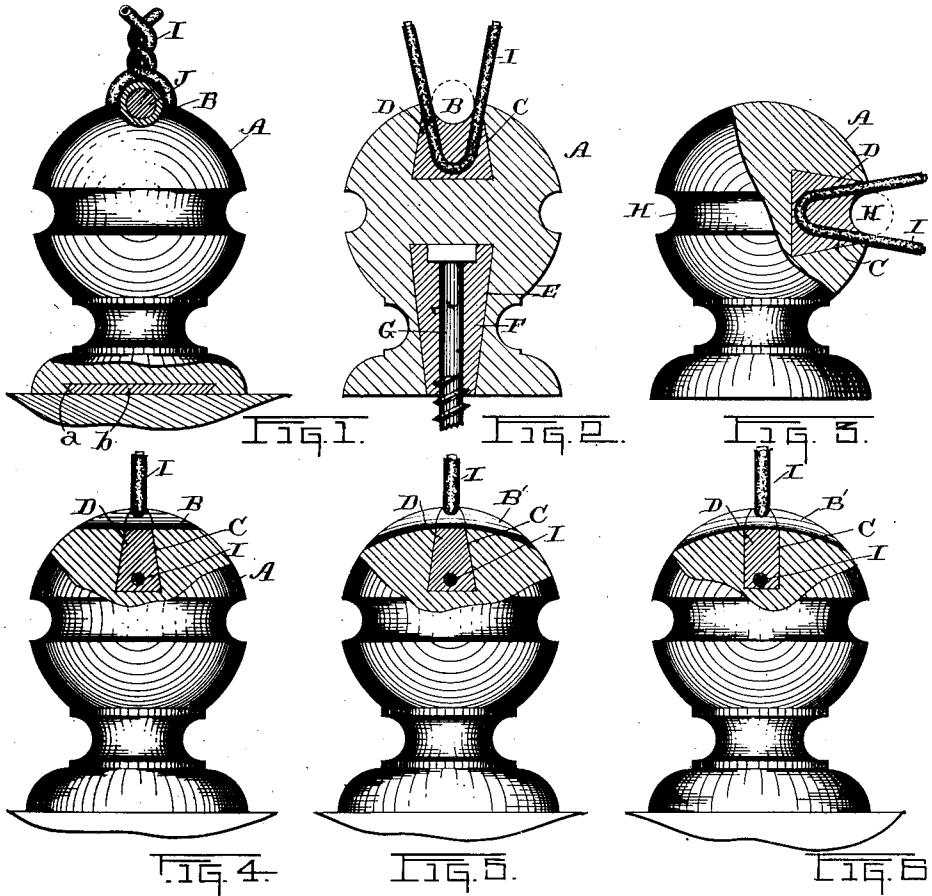


(No Model.)

D. M. ROTHENBERGER.
ELECTRIC WIRE INSULATOR.

No. 537,718.

Patented Apr. 16, 1895.



Witnesses:

James W. Beranet
Geo. C. Fitch

Inventor.

D. M. Rothenberger
per *Pattison & Nesbit*

Attorneys.

UNITED STATES PATENT OFFICE.

DANIEL M. ROTHENBERGER, OF LANCASTER, PENNSYLVANIA, ASSIGNOR OF TWO-THIRDS TO CHARLES A. INGLIS AND EDWARD D. REILLY, OF SAME PLACE.

ELECTRIC-WIRE INSULATOR.

SPECIFICATION forming part of Letters Patent No. 537,718, dated April 16, 1895.

Application filed January 8, 1895. Serial No. 534,248. (No model.)

To all whom it may concern:

Be it known that I, DANIEL M. ROTHENBERGER, of Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Electric-Wire Insulators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in electric wire insulators; and it has reference to that class of insulators which are secured to an object and form a support and holder therefor.

The object of my invention is to provide a simple, cheap, but strong insulator in construction and convenient of manipulation, by providing the insulator itself with an external groove or recess to receive the main wire, and an inwardly extending opening having its outer end opening into and communicating with the said external groove, the said opening being formed to receive a tie wire to be held or secured in the said opening by means of solder or plastic material; and to preferably provide the opposite end of the insulator with a means of attachment to a wall or other object.

In the accompanying drawings, Figure 1 is a side elevation of an insulator embodying my invention, the inner end of the insulator being shown in section. Fig. 2 is a longitudinal sectional view, taken transverse the direction of the supported wire. Fig. 3 is a view partly in section showing my invention applied to one side of the insulator. Fig. 4 is a view of the insulator its outer end being partly shown in section at right angles to the section shown in Fig. 2. Fig. 5 is a view similar to Fig. 4, with the exception that the groove or recess for the wire is made curved. Fig. 6 is a view similar to Figs. 4 and 5, with a slight modification in respect to the specific form of the tie wire opening.

Referring now to the drawings A indicates an insulator composed of porcelain, glass or other similar insulating material, having

formed across its outer end a groove or recess B to receive the main wire J to be supported and held thereby. An opening C, is formed in the insulator with its outer end extending into and communicating with the said groove B, and placed within this opening C is the tie wire I which is preferably made in the form of a staple. This tie wire I is secured firmly within the opening C by means preferably of solder D which is poured into the opening after the wire is placed therein. However cement may be used in the place of the solder, and be forced into the opening in a plastic state, and permitted to remain and harden therein thus forming a hold for the tie wire.

Attention is directed to the exact position of the wire I, its ends extending upward at each side of the groove B in which the wire is placed and forming virtually a part of the side walls of said opening, so that when the main or line wire is placed in the recess, the tie wire when brought together at its extremities and twisted as shown in Fig. 1 will grasp tightly and firmly the line or main wire. It is due to the fact that the opening C has its upper end preferably larger in diameter than the greatest width of the groove B as indicated in Fig. 1. However I do not limit myself in this particular, for the size of the tie wire opening may be varied without departing from the spirit of my invention.

In Figs. 2, 3, 4, and 5, the tie wire opening C is made dove-tail in shape to make more certain the retention of the solder and thereby the tie wire therein. However this is not absolutely essential, for this opening may be formed with straight walls as shown in Fig. 6, and which I find to be very effective.

In Fig. 2 is shown the preferred form of insulator, in which a screw G is secured within a recess F formed longitudinally in the inner end of the insulator, the said screw being held in place by means of solder or cement E.

In Fig. 1, I show the inner end of this insulator provided with a recess *a* in which is placed cement *b*, preferably of such a character as will soften by heating, whereby a heating of the cement will hold the insulator in place when pressed against a flat faced object.

In Fig. 3 the tie wire recess is shown com-

municating with the external circumferential groove H. The object of this location is that when a wire is to change its direction, as for instance in turning a corner, such a location is especially adapted for that purpose.

In Figs. 1, 2 and 4 I show the recess B with a straight inner wall, while in Figs. 5 and 6 the recess is shown with a curved inner wall for the purpose of changing the direction of the wire in a convenient and firm manner.

By means of an insulator constructed as herein shown and described a great deal of time and labor are saved in the construction and running of the line or main wire. The lineman has only to turn the screw into the wall or other object, place the line wire in the groove B and twist the ends of the tie wire around it, thus doing away with the necessity for any tools whatever, the tie wire being of such a character that it can be twisted by hand. This is likewise true of the construction shown in Fig. 1, in that the lighting of a match would sufficiently soften the cement to make it adhere to the object against which the insulator might be placed.

I do not make any claim broadly for the attachment of the tie wire to an insulator, for I am aware that this has heretofore been done by means of casting the wire therein, but so far as I am aware a cavity or opening having its outer end open and communicating with the line wire groove, to receive the tie wire held in place by means of solder or plastic material, is novel, and—

What I claim, and desire to secure by Letters Patent, is—

1. An insulator having an external groove to receive the line or main wire, an opening extending inward from the said groove and having its outer end extending into and communicating therewith, a tie wire placed within the said opening, and a holding material placed within the said opening and surrounding the wire, substantially as described.

2. An insulator having an external groove to receive the line or main wire, an inwardly extending opening having its outer end extending into and communicating with the said

groove, and a staple shaped tie wire having its doubled portion within the said opening, and a holding material placed in the said opening between and around the said doubled portion of the tie wire, substantially as specified.

3. An insulator having an external groove for the line or main wire, an inwardly extending tie wire opening having its outer end extending into and communicating with the groove, and its outer end preferably larger in diameter than the greatest width of the said groove, a tie wire placed in the said opening and held therein, the projecting portions of the tie wire extending out at each side of the said groove and having its inner side forming substantially a portion of the side walls of the said groove, whereby the wire is tightly grasped by the twisting together of the ends of tie wire, substantially as set forth.

4. An insulator having an external groove adapted to receive a line or main wire, an inwardly extending opening having its outer end extending into and communicating with the said groove, and its inner end enlarged, a doubled wire placed within the enlarged end of the said opening, and a holding material placed around the doubled portion of the wire and within the enlarged portion of the opening, substantially as and for the purpose specified.

5. An insulator having its inner end provided with a recess, and a filling of cement, extending to or slightly beyond the outer surface of said inner end for the purpose specified.

6. An insulator having a tie wire, and its inner end provided with a recess, and a filling of cement within the said recess, extending to or slightly beyond the outer surface of said inner end substantially as described.

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

DANIEL M. ROTHENBERGER.

Witnesses:

A. S. PATTISON,
JAMES W. BERANS.