

(No Model.)

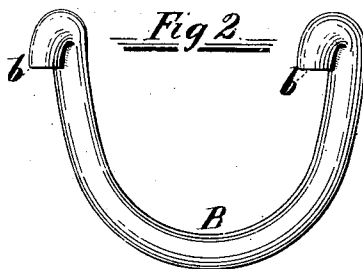
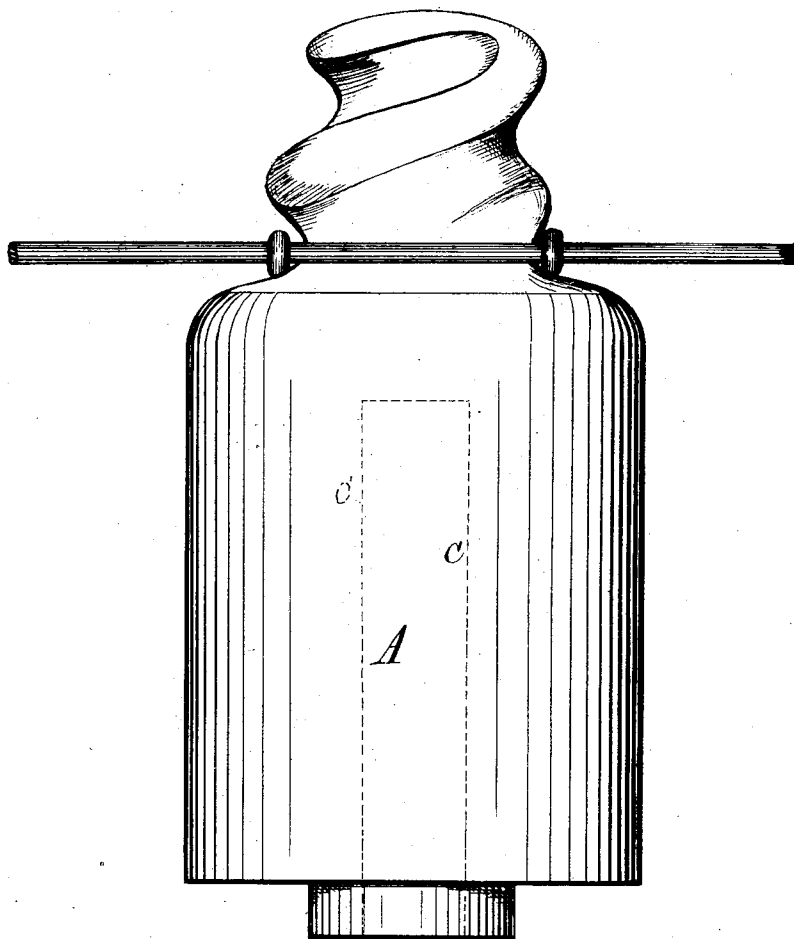
J. S. LEWIS.

INSULATOR FOR TELEGRAPH WIRES.

No. 276,839.

Patented May 1, 1883.

Fig 1.



Witnesses

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# UNITED STATES PATENT OFFICE.

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## INSULATOR FOR TELEGRAPH-WIRES.

SPECIFICATION forming part of Letters Patent No. 276,839, dated May 1, 1883.

Application filed May 2, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH SLATER LEWIS, a subject of the Queen of Great Britain, and a resident of Birkenhead, in the county of Chester, in the Kingdom of England, have invented certain new and useful Improvements in Supporting Insulators for Electric Conductors, of which the following is a specification.

Insulating - supports for telegraphic lines and other electric conductors have heretofore been made of various shapes; but the manner of securing the line-wire or other conductor to them has in nearly every case been substantially the same—namely, by means of a binding or tie wire of suitable length, which is applied after the insulator has been secured in its position upon the pole, bracket, standard, or other support, the ends of such binding or tie wire being wrapped a number of times around the main conductor. In some cases the line-wire or conductor has been laid in a slot formed in the body of the insulator, and secured in that position by means of a cap fitted over the top.

The object of my invention is to provide a supporting-insulator to which the line-wire or other conductor may be expeditiously and effectually secured without the use of special tools; and to this end the invention consists in forming a conical and expanding screw-thread upon the exterior of the upper portion of the insulator, which screw-thread is similar to that upon the point of a gimlet, except that its radius increases in a more rapid ratio. The line-wire or conductor is attached to the insulator by means of a rigid metallic shackle or clip formed in the shape of a horseshoe, the curved portion of which is adapted to encircle the body of the insulator, while each of its ends is provided with an open hook adapted to grasp the line-wire.

The mode of applying my invention consists in first hooking the rigid shackle onto the line-wire at the proper place, thus forming a stirrup or irregular ring, into which the conical portion of the insulator is inserted from beneath and screwed as far as possible, so as fit tightly and bind therein, after which the insulator is mounted upon its pin, bolt, or bracket in the usual way.

In the accompanying drawings, Figure 1 is an elevation of my improved insulator, in which

the method of attaching the line-wire thereto is shown; and Fig. 2 is a detached view, showing the shackle or clip whereby the line-wire is attached to the insulator.

In the drawings, A represents the insulator, which is preferably made, in the usual form, of an inverted cup or bell of porcelain or other suitable non-conducting material. The upper portion of the insulator A is of smaller diameter than its main body, and is provided with a conical or expanding screw, *a a*, the diameter of which increases from the top toward the bottom of the insulator.

B is a rigid horseshoe-shaped metallic clip or shackle, the curved inner surface of which is adapted to fit the screw-thread upon the insulator, as hereinafter explained, and it has both its ends turned over, so as form open hooks *b b*, adapted to grasp the line-wire.

In carrying out my invention I first attach the shackle to the line-wire at the proper place by means of the open hooks *b b*, which grasp the line-wire and form in connection therewith an irregular ring or stirrup. The top of the insulator A, upon which is that portion of the screw *a* of least diameter, is inserted into the ring or stirrup formed by the line-wire and the shackle, and is then turned about its cylindrical axis, and thus screwed into the stirrup. By reason of the constantly increasing or expanding diameter of the screw the insulator soon comes to a firm bearing, after which it may be placed in its permanent position by mounting it upon a bolt, pin, or bracket, which enters into a suitable socket, C, formed in the lower end of the insulator.

The shackles or clips B may be forged, stamped, or shaped from suitable metal, and galvanized or otherwise protected from oxidation before they are applied to use.

Among the advantages attained by the use of my improved insulator and mode of attachment of the line-wire thereto are the following: No special tools are necessary either to attach or detach the line-wire from the insulator, and in consequence of the simplicity and convenience of this mode of attachment an important saving in time is effected, not only in the erection of new telegraph-lines, but in the replacement, removal, or renewal of poles or wires upon existing lines. Any gage of wire from the largest in use to the smallest is securely

held, whether the line is tightly or loosely stretched. The insulator can be applied in any position, and it is impossible for the line-wire to be detached therefrom by accident, and  
 5 even in case of the fracture or destruction of the insulator the line-wire will be caught by the top of the bolt, pin, or bracket and retained in its position.

The insulation of the conductors is essentially improved by the use of my invention. Every part of the surface of the insulator is exposed to the cleansing action of rain, and as the clip is galvanized after being formed and before use, the surface of the insulator is kept  
 15 free from rust. Insulators may be easily detached from the line for cleansing and replaced again, as the clip may be used any number of times without injury.

It will be observed that the insulator touches  
 20 the line-wire and clip at three points only of its circumference, instead of being closely encircled thereby, as when the ordinary tie-wire is used, and hence a much smaller surface is exposed to leakage of electricity, and the working capacity of the line is correspondingly improved.

I am aware that the patent of Garity, No. 110,645, shows an insulator having a concentric groove in its head for the purpose of securing and holding the line-wire or conductor,  
 30 and a tapering screw-threaded shank to be screwed into the telegraph-pole or other support, and I therefore make no claim to such construction.

I claim as my invention—

1. A supporting-insulator for telegraphic  
 line-wires or other electrical conductors, provided with means for attaching it to its support, and having upon the exterior of that part  
 40 of it which sustains the wire a conical or expanding screw-thread or spiral groove, substantially as and for the purpose set forth.

2. The herein-described rigid metallic shackle of horseshoe form, provided with open hooks  
 45 formed at right angles to the plane of the shackle, for the purpose set forth.

3. The combination, substantially as hereinbefore set forth, of a shackle of horseshoe form with hooked ends, as described, for grasping  
 50 a telegraphic line-wire or other conductor, thereby forming a stirrup or ring, and a supporting-insulator having a conical or expanding screw-thread or spiral groove formed upon  
 55 its exterior surface, whereby it may be securely fastened between the line-wire and the shackle.

4. The combination, substantially as hereinbefore set forth, of a telegraphic line-wire, a loop or shackle attached thereto, and a supporting-insulator having upon the exterior of  
 60 that part of it which sustains the wire a conical or expanding screw-thread or spiral groove, whereby it may be securely fastened between the line-wire and the loop or shackle.

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Witnesses:

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