R. A. CUNNINGHAM & D. F. CROWELL.

TELEGRAPH INSULATOR.

No. 184,509. Patented Nov. 21, 1876.

Fig: 1.

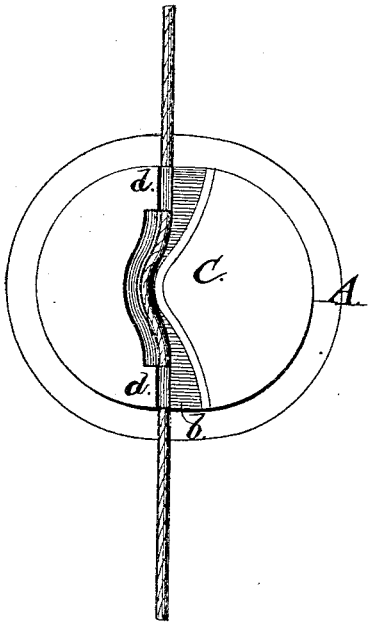
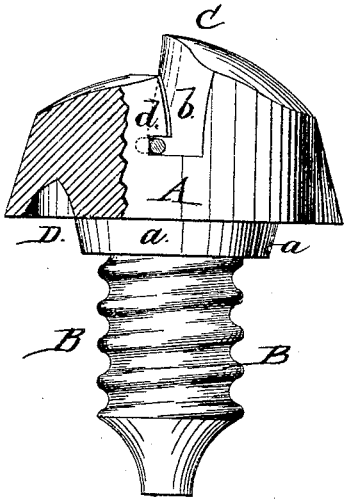


Fig: 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ROBERT A. CUNNINGHAM AND DAVID F. CROWELL, OF ZANESVILLE, OHIO.

IMPROVEMENT IN TELEGRAPH-INSULATORS.

Specification forming part of Letters Patent No. **184,509**, dated November 21, 1876; application filed March 6, 1876.

To all whom it may concern:

Be it known that we, ROBERT A. CUNNINGHAM and DAVID F. CROWELL, of Zanesville, in the county of Muskingum and State of Ohio, have invented a new and Improved Insulator for Telegraph-Wires, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a top view, and Fig. 2 a side view, partly in section, of our improved insulator for telegraph-wires.

Similar letters of reference indicate corresponding parts.

The invention will first be fully described in connection with the drawing, and then pointed out in the claim.

The invention consists in constructing the head of the insulator with a transverse groove which divides the head into two sections, the convex section of which is made higher than the other, so that the wire may be bent around the same, and kinked with a curve corresponding to the transverse groove.

In the drawing, A represents an insulator, which is made entirely of glass, the shank B being provided with a screw-thread to be directly screwed into the hole bored into the cross-beam or pole, to dispense thereby with the wooden pin, upon which most insulators are placed. A shoulder, *a*, of the shank B, defines the extent to which the same may be screwed into the wood, and prevents thereby the screwing in of the insulator to such an extent that the head of the same comes in contact with the wood, so as to form, especially in rainy weather, by the sheet of water collecting thereon, an electric connection with the pole, and thereby a loss of electricity. The head C of the insulator is divided by a curved central recess, *b*, that widens at both ends into two sections, of which the convexly-curved section is raised about the thickness of the wire above the opposite section, so that when the wire is to be attached to the insulator, it may, before insertion into the groove, be easily bent around the convex raised section of the head to form a kink corresponding exactly to the curve or convexity against which it is to bind, after which it is readily sprung downwardly into the groove or recess.

This construction of head very greatly facilitates the putting up of wires, especially those of small diameters, as it renders unnecessary the clumsy and inconvenient use of tongs for kinking the wire.

The concavely-curved section of the head C is provided at both ends with projecting shoulders *d*, that serve to retain the kinked wire securely in place when the same has been carried into position in the recess.

The shoulders and kink of the wire produce the rigid holding of the wire, so as not to slip in the insulator in case the wire should break. This insulator dispenses also with the short piece of wire that is at present used to tie on the line-wire, which forms a great advantage over the present insulators, as not only wire is economized, but also the annoying and time-consuming tying of the wire avoided.

The insulator may be used in any position, and will be very convenient where the wires have to be turned in different directions and at right angles, as in turning the corners of streets, &c.

Upon the under side of the head of the insulator is formed a water-shed, D, which consists simply of a deep annular groove. This water-shed is designed to form a dry insulating boundary for the head in rainy weather, and when its outer edge is held aloof from, and out of contact with, the cross-beam by the shoulder *a*, serves to thoroughly insulate the wire at all times.

In defining the scope of our invention, we would state that we are aware that the several features of the water-shed, shoulder, screw-threaded stem, and the general arrangement of the sectional head are each old in themselves, and to the same we make no broad claim.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

A telegraphic insulator having its head divided by a groove into a concave section having projecting shoulders *d*, and a convex section of greater height than the said concave section, substantially as and for the purpose described.

ROBERT ANDERSON CUNNINGHAM.
DAVID FRANKLIN CROWELL.

Witnesses:

ALLEN MILLER,
CHARLES G. BONED.