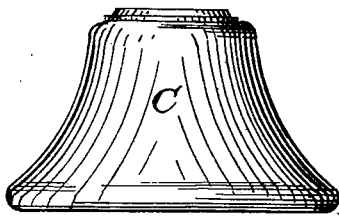


A. B. ELY.  
Telegraph-Wire Insulator.

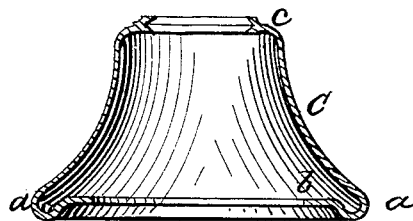
No. 51,934.

Patented Jan. 9, 1866.

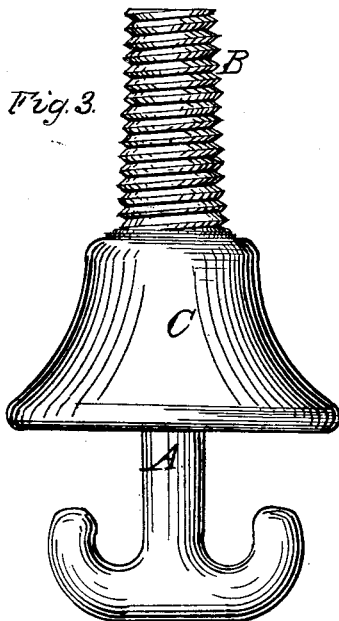
*Fig. 1.*



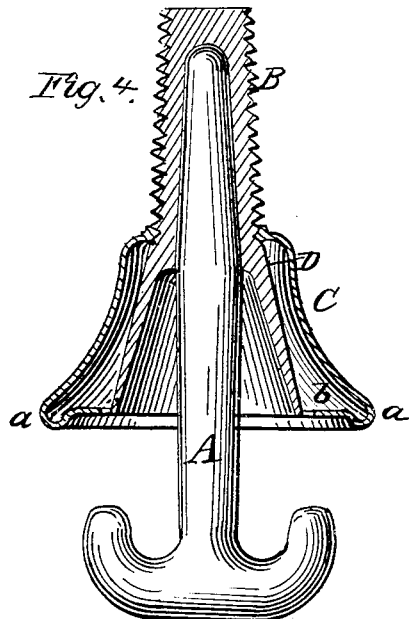
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



*Witnesses.*

*Theodore Lang*  
*J. J. Peyton*

*Inventor.*

*A. B. Ely*  
*by his atty*  
*Baldwinson*

# UNITED STATES PATENT OFFICE.

A. B. ELY, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN TELEGRAPH-INSULATORS.

Specification forming part of Letters Patent No. **51,934**, dated January 9, 1866.

### *To all whom it may concern:*

Be it known that I, A. B. ELY, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Insulators for Electric Wires; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a view, in elevation, of my improvement. Fig. 2 is a vertical central section through the same. Fig. 3 is a view of my hard-rubber cap applied to the hook; and Fig. 4 is a central section, showing the same in combination with a flared top of hard rubber.

To obtain the full benefit of the electricity generated for telegraphic communications in all weathers, it is found necessary to render the insulation of the conductors as nearly perfect as possible. Among various experiments to this end, hooks of iron having their shanks covered with hard rubber, on which screws are cut to hold the hooks in their proper supports, have been used with partial success; but in wet or damp weather films of moisture more or less dense will extend from the hook to its support, and thence to the ground. To remedy this defect it has been attempted to use a flared cap extending from the rubber coating upon the hook, and this, when made of hard rubber, was found beneficial; but in long-continued damp weather it is found inefficient, for the film of moisture will, in time, form on the flared cap and communicate with the ground.

Now it is the object of my invention to render the insulation of the telegraph-wire, when supported on the iron hook, more perfect than has hitherto been found practicable in wet weather; and to this end my invention consists in, first, making a projecting rim or flared cap of hard rubber or gutta-percha, of such a form as will effectually prevent the return of any moisture in contact with the rim to the support that sustains the hook; and, second, in the combination of one or more such rims or caps with other rims or caps in positions that will prevent the return of any moisture from the caps to the hook-supports.

To enable those skilled in the art to make

and use my invention, I will proceed to describe its construction and operation.

The ordinary hook A, for suspending telegraph-wire, is coated on its shank with a covering of hard rubber or gutta-percha, B, thick enough to receive a strong screw-thread, upon which to suspend the cap C, and by which the hook can be securely fastened into its proper support. The cap C is made of hard rubber or gutta-percha, and hollow or in a shell, and may be made of any desired form of outline, though possibly that shown in the drawings may prove the best. It has a female screw, *c*, cut in its top to fit the screw on the shank of the hook A with a water-tight joint, or is otherwise fitted or made tight to the shank. The lower edge of the cap is turned with a bead, *a*, or otherwise, and terminates in an inwardly-projecting flange, *b*, surrounding but not touching the shank, so that when moisture accumulates it will dry or drop without reaching the hook or returning to the shank. In this form my cap will prevent the return of any moisture that may have formed on its outer surface from passing within the cap or back to the shank of the hook, and no film of moisture can reach from the hook to the pole; and this result may also be properly attained by using it in combination with a flared cap or rim, D, which may project from the covering B on the shank of the hook, and be made of hard rubber or gutta-percha. Its form may be that of a shell-cone, and its lower edge may terminate near the inner edge of the flange *b* of the outer cap, C. A space being left between the inner edge of the flange and the outer surface or lower edge of the cone cap or rim, it will, obviously, be impossible, when the hook is placed in a vertical position, for any moisture to pass from the one to the other, or to return from the bottom of either to the shank of the hook, and thus the telegraph-wire will be effectually insulated, even in the longest duration of wet weather.

It is obvious that the caps C and D may be used in different relations without departing from my invention. For example, the cone-cap D may be inverted on the hook A, and so long as its outer edge is not in contact with the inner sides of the cap C the result must be that any moisture accumulated upon or touching

either must pass off without the possibility of returning or reaching from or to the shank of the hook. It is manifest, too, that under some circumstances it may be found expedient to use more than two caps in combination with the hook.

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

1. The hard-rubber or gutta-percha cap having its lower edge in the form of a bead, and terminating in a flange or disk bent inward

toward the hook, substantially as and for the purpose described.

2. The combination of two caps with the hook, substantially in the manner and for the purpose described.

In testimony whereof I have hereunto subscribed my name.

A. B. ELY.

Witnesses:

STURGES M. MOREHOUSE,  
FRANCIS R. BUTLER.