

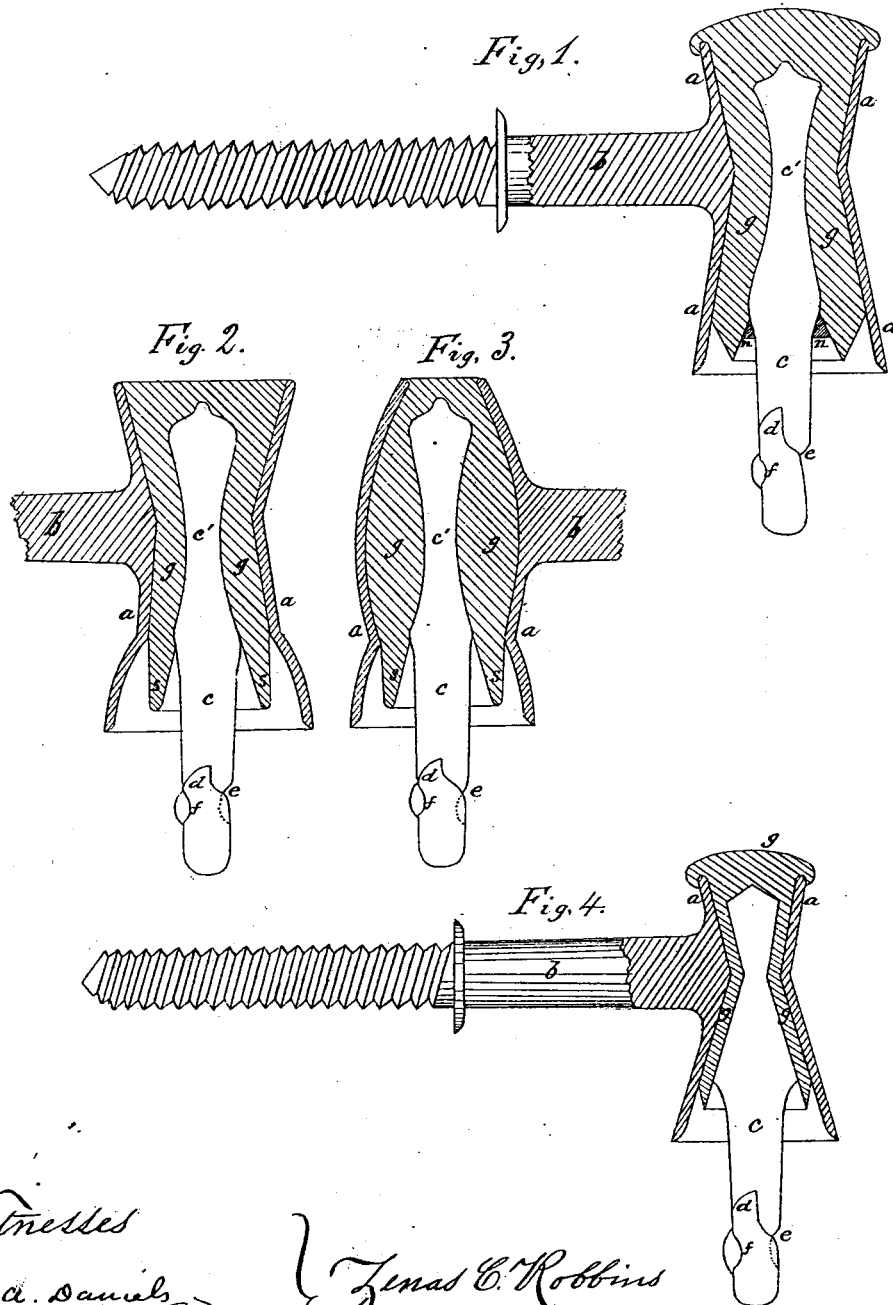
Z. C. ROBBINS.

Insulator.

2 Sheets—Sheet 1.

No. 112,281.

Patented Feb. 28, 1871.



Witnesses

H. A. Daniels
Jesse C. Smith.

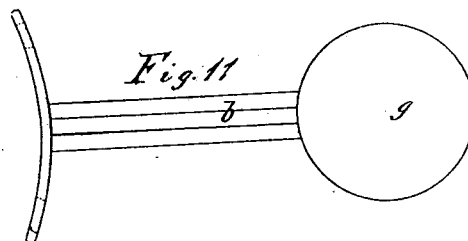
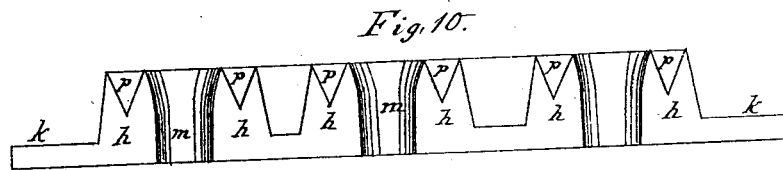
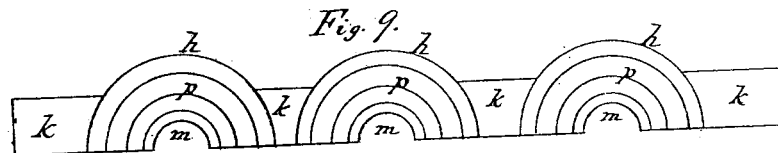
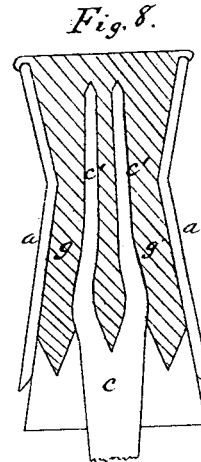
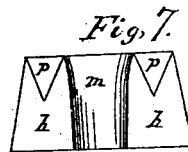
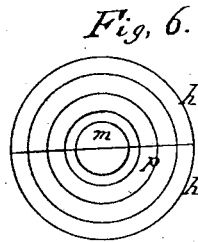
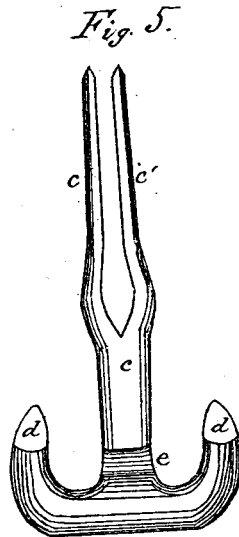
Zenas C. Robbins
Washington D.C.
Inventor

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ZENAS C. ROBBINS, OF WASHINGTON, DISTRICT OF COLUMBIA.

Letters Patent No. 112,281, dated February 28, 1871.

IMPROVEMENT IN INSULATORS FOR TELEGRAPH-WIRES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, ZENAS C. ROBBINS, of Washington, in the District of Columbia, have invented a new and improved Insulator for Telegraphic Wires ; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing which forms a portion of this specification, in which—

Figures 1, 2, 3, and 4 are views of different sizes and styles of said invention, partly sectional.

Figure 5, a side view of a detached portion of the same, termed the wire-holder; and

The other sheet of drawing mostly illustrates the method of constructing my said telegraph-wire insulator, and as such will be hereinafter referred to.

My said improved insulator for telegraph-wires is composed of the metallic supporter *a b*, the wire-holder *c d e f*, and the material *g*, which serves the purpose of combining the former with the latter, at the same time that it completely insulates the said metallic parts from each other.

The body portion *a* of the metallic supporter *a b* must be open throughout, and its sides must be of such a shape that they will securely retain any substance that may be placed therein while in a plastic or fluid state, and then allowed to harden therein.

Glass, gutta-percha, or any other suitable combining and non-conducting material may be employed, as represented by *g* in the accompanying drawing, for combining the wire-holder with and insulating the same from the head *a* of the body of the metallic supporter *a b*.

Figs. 1, 2, and 3 represent the proper size and proportions of the body *a* of the metallic supporter *a b*, when glass or any suitable cement is to be employed as the material for combining the wire-holder with and insulating the same from the said body; and

Fig. 4 represents the proper size and proportions of the body of the said metallic supporter *a b* when gutta-percha is to be employed as the material for combining therewith the shank of the wire-holder.

The combining and insulating-material *g* may rise a little above the sides of the body *a* of the metallic supporter, as represented in figs. 1, 4, and 8; or it may be left flush with the upper end of the body of said supporter, as represented in figs. 2 and 3.

Figs. 1, 2, 3, and 4 represent a proper shape to be given to the bottom surface of the said combining and insulating-material *g*, to produce, under all circumstances, a perfectly insulating separation between the surface of the wire-holder and the uncovered inner surface of that portion of the body *a* of the supporter that descends below the body of the said combining and insulating-material.

To give the said proper shape to the bottom surface of the combining and insulating-material *g*, and, at the same time, simplify and reduce the cost of manufacturing my said improved insulator for telegraph-wires, I have invented the following process of manufacturing the same, to wit:

I employ a molding-clamp composed of two sections, *h h*, of the shape represented by figs. 6 and 7 of the drawing—

Figure 6 being a top view of the said clamp, and

Figure 7, an inside view of one of the sections thereof detached from its mate.

The longitudinal cavity *m* in each clamp-section *h* is the counter-shape of that of the semi-circumference of the body of the wire-holder, and, consequently, the two clamp-sections *h h* can be made to closely embrace the body of the wire-holder, as shown in Figure 8.

The exterior shape of the united clamp-sections is such that the clamp will fit accurately within the lower portion of the open body of the metallic supporter *a b*, as also shown in fig. 8, and, consequently, when the said clamp has been closed upon the body of a wire-holder, and has then been placed within the lower end of the body of the metallic supporter *a b*, the said clamp will firmly hold the wire-holder in its proper position during the process of depositing the combining and insulating-material within the body of said metallic supporter, and around the shank of said wire-holder, and simultaneously therewith the annular groove *p* formed in the head of the clamp *h h* gives the proper shape to the pendent portion *s* of the said combining and insulating-material *g*, as represented in fig. 8, and modified forms of which are represented by figs. 2, 3, and 4.

A large number of the clamp-sections *h* may be cast in one piece, with a connecting-bar, *k*, as shown in figs. 9 and 10, which will enable a large number of the wire-holders and the metallic supporters of my improved insulator for telegraph-wires to be preliminarily combined with each other, and then raised to the proper temperature for the reception within the body of said supporter of the permanently combining and insulating-material.

The open portion of the body *a* of the supporter, which descends below the combining and insulating-material *g*, serves the purpose of protecting said material from any vertically or obliquely descending moisture; and the pendent portion *s* of said insulating-material that descends between the wire-holder and the open inner sides of the body of the supporter prevents the moisture that may condense upon the surface of said wire-holder from being brought into conducting-connection with the moisture that may

condense upon the said open inner surface of the body of the supporter. And, as an additional protection, the said metallic surfaces may be coated with varnish, or with any non-conducting tenacious cement, or may be glazed. Or, should it be deemed still more expedient, some non-conducting and non-condensing cement may be run into the angle between the body of the wire-holder and the inner surface of the non-conducting pendent *s*, as shown by *n n* in fig. 1.

I do not intend to limit myself to any precise shape of the respective metallic portions of my improved insulator for telegraph-wires, while they shall be of such a shape as will enable the said parts to be first preliminarily combined with each other by a molding and clamping device preparatory to said parts being afterward permanently combined with each other by some insulating-material to be placed, while in a plastic or fluid condition, within the body of the metallic supporter, and around the shank of the wire-holder of said insulator, substantially as herein set forth.

The shank *b*, which projects from the body *a* of the supporter *a b*, may be of any desired length, and may be of any shape that will best adapt my improved insulator for telegraphic wires, to be made fast either to a vertical post, or to a horizontal beam or arm.

The said shank may have screw-threads cast thereupon, as shown in figs. 1 and 4, or the outer end of said shank may terminate in a perforated shield, *t*, as shown in Figure 11.

If it should be desired to give my improved insulator for telegraph-wires the capacity of being secured to the upper side of a horizontal arm, the shank *b* must be curved or angularly turned downward, and must be supplied with a perforated flange or other equivalent device to prevent the turning of the insulator upon the axis of the said supporting-shank.

Should it be desired to give my said improved insulator the capacity of being secured to the under side of a horizontal arm, the shank *b* of its supporter must be curved or angularly turned upward, and be supplied with some contrivance for securing the same to said arm.

The curve *c* in the wire-holder, acting in conjunction with the concavities *ff* in the prongs *d d* of said holder, will prevent the telegraph-wire from being lifted-out of the wire-holder while the line is passing over considerable inequalities of surface.

In the matters of lightness, strength, durability, and perfection of insulation under all circumstances, it is believed that this, my improved insulator for telegraph-wires, will excel all others; and it is also believed that its cost of production will be considerably less than that of any other perfect and durable insulator.

I claim as my invention—

1. A new manufacture in the shape of an improved insulator for telegraph-wires, said manufacture being composed of two metallic portions of substantially the within-described shape, combined with and insulated from each other, substantially as herein represented and described.

2. The longitudinally-open and, at the same time, the retaining shape of the body *a* of the metallic supporting-portion *a b* of my improved insulator for telegraph-wires, combined with and insulated from the wire-holding portion of said insulator, substantially as herein set forth.

ZENAS O. ROBBINS.

Witnesses:

W. MORRIS SMITH,
SYDNEY E. SMITH.