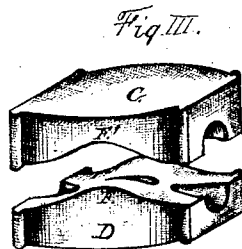
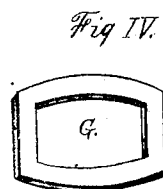
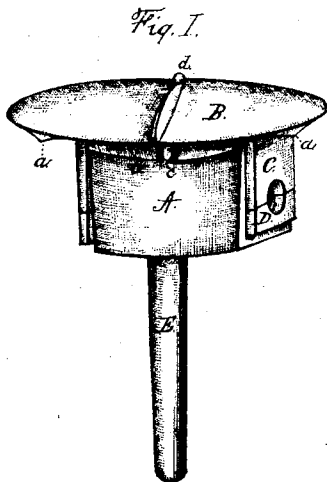
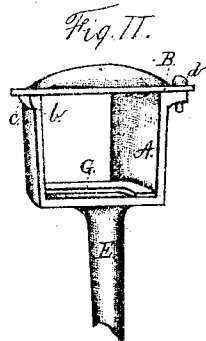
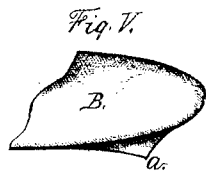


SMITH & PETTINGELL.

Insulator.

No. 109,461.

Patented Nov. 22, 1870.



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ASHBEL GRATTAN SMITH AND WILLIAM PETTINGELL, OF PAINESVILLE, OHIO, ASSIGNORS TO THEMSELVES AND WILLIAM H. FOWLER, OF SAME PLACE.

Letters Patent No. 109,461, dated November 22, 1870; antedated November 11, 1870.

IMPROVEMENT IN INSULATORS FOR TELEGRAPH-WIRES.

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

We, ASHBEL GRATTAN SMITH and WILLIAM PETTINGELL, of Painesville, in the county of Lake and State of Ohio, have invented certain Improvements in Insulators, of which the following is a specification.

The first part of our invention relates to the use of a covered box, having a pin or screw attached to its bottom, to secure it to the pole. In the box is secured a glass insulator, formed of two curved parts, divided horizontally, thus forming a dry and complete insulator.

The second part of our invention relates to the glass insulator, formed of two blocks of glass, divided horizontally. The upper surface of the lower block is curved upward in the center, to fit into a corresponding curve on the lower side of the upper block. The blocks, when together, fit closely. The channel to receive the wire is cut out of the blocks: in the lower block, lengthwise through the curve and slightly rounding, following the form of the curve; in the upper block it is cut away only at the ends, so that, when the wire is placed between the blocks, it is gripped securely, and prevented from drawing through; the ends of both upper and lower blocks are cut out in a cone-shaped recess, to allow for the sway of the wire; the outline of the blocks is oval, to suit the form of the recess in the box, thus holding the blocks securely in the box.

The third part of our invention relates to the top or cover; said top is secured to the box in any convenient manner; on the edge of the top are drips, to lead the water, which, if the drips were not used, would follow over the edge of the top, and pass into the box between the glass and case. In the winter, the water, freezing, would rupture the glass; the drips, as is easily seen, attract the water, and by their position on the under side, and near the ends of the top, and clear of the box, prevent the water from passing into the box. The cover can be made of any convenient form.

The fourth part of our invention relates to the gasket, made of India rubber, or any elastic material; said gasket is placed between the glass blocks and the bottom of the box, making an elastic bed for the blocks.

The following is a description of the accompanying drawing:

Figure I is a perspective view of the insulator complete in all its parts, and embodying our invention.

Figure II, longitudinal section of the same.

Figure III, perspective view of the curved glass insulating-blocks.

Figure IV, view of the elastic gasket.

Figure V, section of the top, showing the drip.

A is a box, its interior of an oval form, with the pin or screw B projecting from its bottom, making an attachment to the pole, or any other support.

The elastic gasket G is first placed in the bottom of the box, serving as an elastic bed for the glass insulating-blocks C and D to rest on, and confining, by its spring, both blocks firmly together.

The lower curved glass block D is cut out lengthwise, through the curve F, to receive the wire.

The lower curved glass block D is placed in position on the gasket G, the upper block C is then placed on the block D, the curve F in said block fitting over and receiving the curve on the block D.

The block C is slightly grooved near its ends to receive the wire.

When both blocks are in position, and pressed together, they securely gripe the wire between them, preventing it from drawing through.

The ends of both blocks have a cone-shaped opening, to allow the wire to sway back or forth without breaking the glass.

The oval form of the blocks fitting into the oval seat in the box keeps them in their place; the top or cover is secured to the box in any convenient manner.

Said cover has the drip-points *a* projecting from its under surface, two on a side, near the ends of the top and clear of the box, the use of which, as easily seen, is to lead the water during rain, and cause it to drop clear of the box and wire; if the drips *a* were not used, the water would run under the top, and down between the box and the glass blocks, freezing in the winter, and destroying its perfect insulation.

The advantage in this improvement is, it is not necessary for the workmen to carry tools up the post to secure the wire to the insulator.

Where the glass cone is used, the wire has to be wound round the cone, and then secured by a short piece of wire wound round the cone above the wire, and secured to the main wire by twisting the ends round the wire, necessitating the use of a tool.

We are well aware that wire has been secured to insulators without winding, as by passing through hooks or otherwise; most of them are expensive and wet insulators.

In our improvement, the workman, in putting up the wire, secures the insulator to the post before raising it; after the pole is raised he carries the wire up the pole, turns off the cover B of the insulator, takes out the upper half, C, of the glass block, places the wire in the groove of the lower block D, replaces the block C, and returns the cover B; the wire is thus formed into the curve of the blocks and held securely.

The novelty in our improvement consists in using the curved blocks C and D, confined in the box A,

the use of the elastic gasket, and the drips *a* on the edge of the cover B, the combination of all these parts making a cheap, durable, and dry insulator.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination of the oval box A and cover B, with the water-drips *a*, on the lower edge of the cover, substantially as and for the purpose as hereinbefore set forth.

2. The combination of the curved glass blocks C and D, substantially as and for the purpose as hereinbefore set forth.

3. The elastic gasket G, substantially as hereinbefore set forth.

4. The combination of the oval box A, cover B, with the water-drips *a* on the lower edge of the cover B, the curved glass blocks C and D, and the elastic gasket G, all combined and used in combination, as and for the purpose as hereinbefore set forth.

ASHBEL GRATTAN SMITH.

WILLIAM PETTINGELL.

Witnesses:

JOHN J. MITCHELL,

HORACE ALVORD.