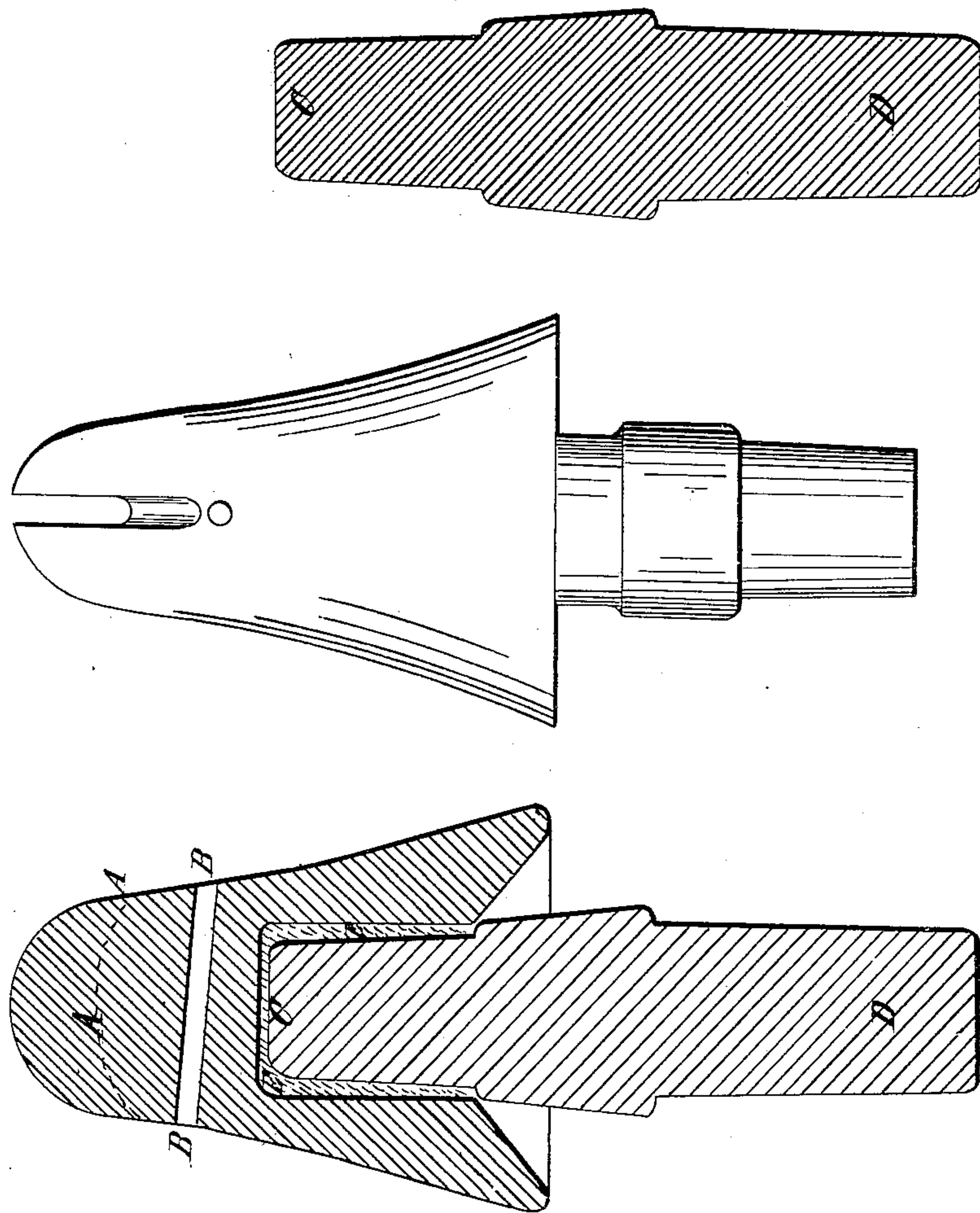


J. F. BOYNTON.
INSULATOR FOR TELEGRAPHS.

No. 66,453.

Patented July 9, 1867.



Witnesses:
J. L. Coombs
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United States Patent Office.

JOHN F. BOYNTON, OF SYRACUSE, NEW YORK.

Letters Patent No. 66,453, dated July 9, 1867.

IMPROVEMENT IN INSULATORS FOR TELEGRAPHS.

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, JOHN F. BOYNTON, of the city of Syracuse, county of Onondaga, in the State of New York, have invented a new and useful way of constructing Telegraph Insulators; and I do hereby declare that the following is a full and exact description thereof, reference being had to the letters of reference marked thereon.

The nature of my invention and improvement consists in the insulator being made of two or more pieces, each piece being a complete insulator of itself, and the parts cemented together by an insulating material, forming a compound insulator. Heretofore, insulators have consisted of a corrugated dome-shape glass cap, sitting upon a wooden pin inserted into the cross-arm of a telegraph pole. These glass caps are pressed in a mould, and if great care is not taken in annealing them, they are brittle, liable to get out of order, and are comparatively expensive. Again, being supported by a wooden pin inserted into them, they are not thoroughly insulated from the pole, as wood is a partial conductor of electricity under ordinary circumstances, and much more so in damp weather, when the wooden pin has absorbed moisture and the telegraph pole is wet. So when the moisture of the atmosphere is condensed upon the surface of the glass, the electricity will escape from the wire on this thin film of moisture, and reaching the damp pin, passes over it and is conducted by the pole to the earth. From this cause telegraph constructors have found it very difficult to produce perfect insulations. One advantage my insulator has over those made of glass is in the color, being black, which more readily absorbs heat, and maintaining a higher temperature, causes a more rapid evaporation of moisture from its surface, keeping the points of contact dry, and so being less liable to convey electricity from the conductor.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

Figure 1 is a vertical section of an insulating cap, made in any convenient form, with a hole in the centre to receive the insulating pin, having a slot, A, in the top, in which the conductor may rest, and a hole, B, through which a wire passes to fasten the conductor in its place.

Figure 2 is a pin, made of non-conducting material, on which the insulating cap is placed, and cemented when desired.

C, end of non-conducting pin, to be inserted and cemented in the insulating cap; D, end of non-conducting pin, to be inserted into a bracket, telegraph pole, or cross-bar; E, cement, made of insulating material, seen in the joint between insulating pin and cap and which may also be used in securing the pin to the cross-bar, bracket, or telegraph pole.

When these several parts, made of non-conducting substances, are cemented together with insulating cement, they form a compound non-conductor of electricity, and so arranged that water cannot pass the joints or reach their points of contact, thereby preventing any escape of electricity in the dampest weather. The non-conducting substances which I use in making non-conducting pins, caps, and cement, for the purposes set forth, consist of a combination of hydrocarbons, sulphur, silicates, and silicic acid, as described in another application for Letters Patent, filed by me simultaneously with this, and consists of a composition of silicate of alumina, silicic acid, in the form of clay, pressed or moulded into the desired shape, and baked or burned as earthenware is burned, being left open and porous without enamel. When their temperature is about 400° Fahrenheit I immerse them in liquid hydrocarbons. I prefer the heavy hydrocarbons of the asphaltic or coal-tar series, with which a small proportion of sulphur may be mingled. The insulator should remain in the hydrocarbon bath until fully saturated.

In this application I do not claim an insulating cap, nor the material of which it is made; but what I do claim as my invention, and desire to secure by Letters Patent, is—

1. Supporting an insulating cap, the whole material of which is a non-conductor, by a non-conducting pin, when such pin is constructed separately from the cap, substantially as shown and described.

2. I also claim securing a non-conducting pin to an insulating cap, both of which are composed entirely of non-conducting materials, by an insulating cement, as herein set forth.

3. I also claim securing a non-conducting pin, composed entirely of non-conducting material, to the cross-arm, bracket, or telegraph pole, by an insulating cement, as set forth.

4. I also claim the combination of a non-conducting pin, composed entirely of a non-conducting material, cemented to an insulating cap, composed entirely of a non-conducting material, with the slot A, and binding-wire hole B, substantially as herein set forth.

Witnesses:

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JOHN F. BOYNTON.