

(No Model.)

A. W. HALE.  
INSULATOR FOR ELECTRIC WIRES.

No. 301,446.

Patented July 1, 1884.

FIG. 1.

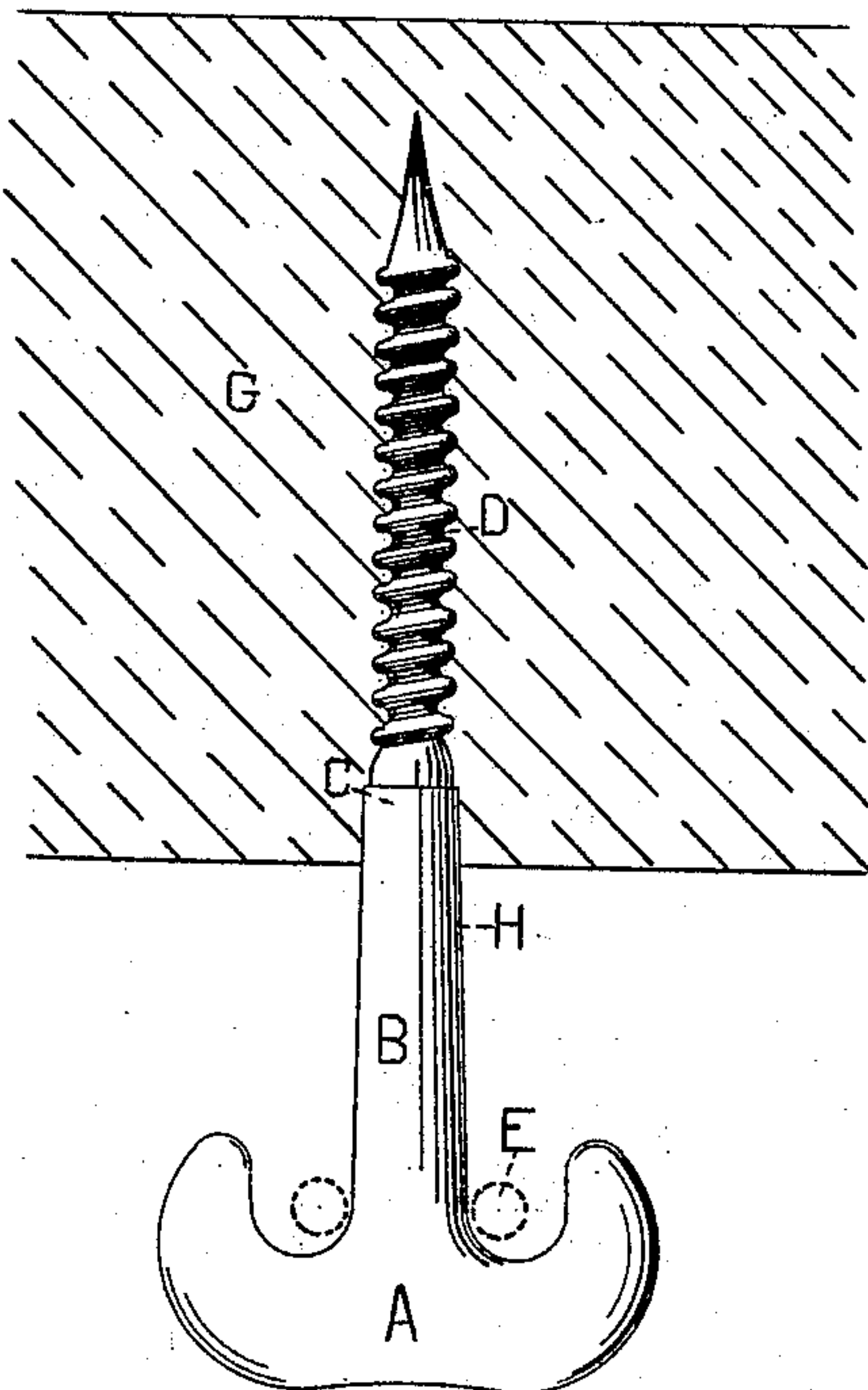
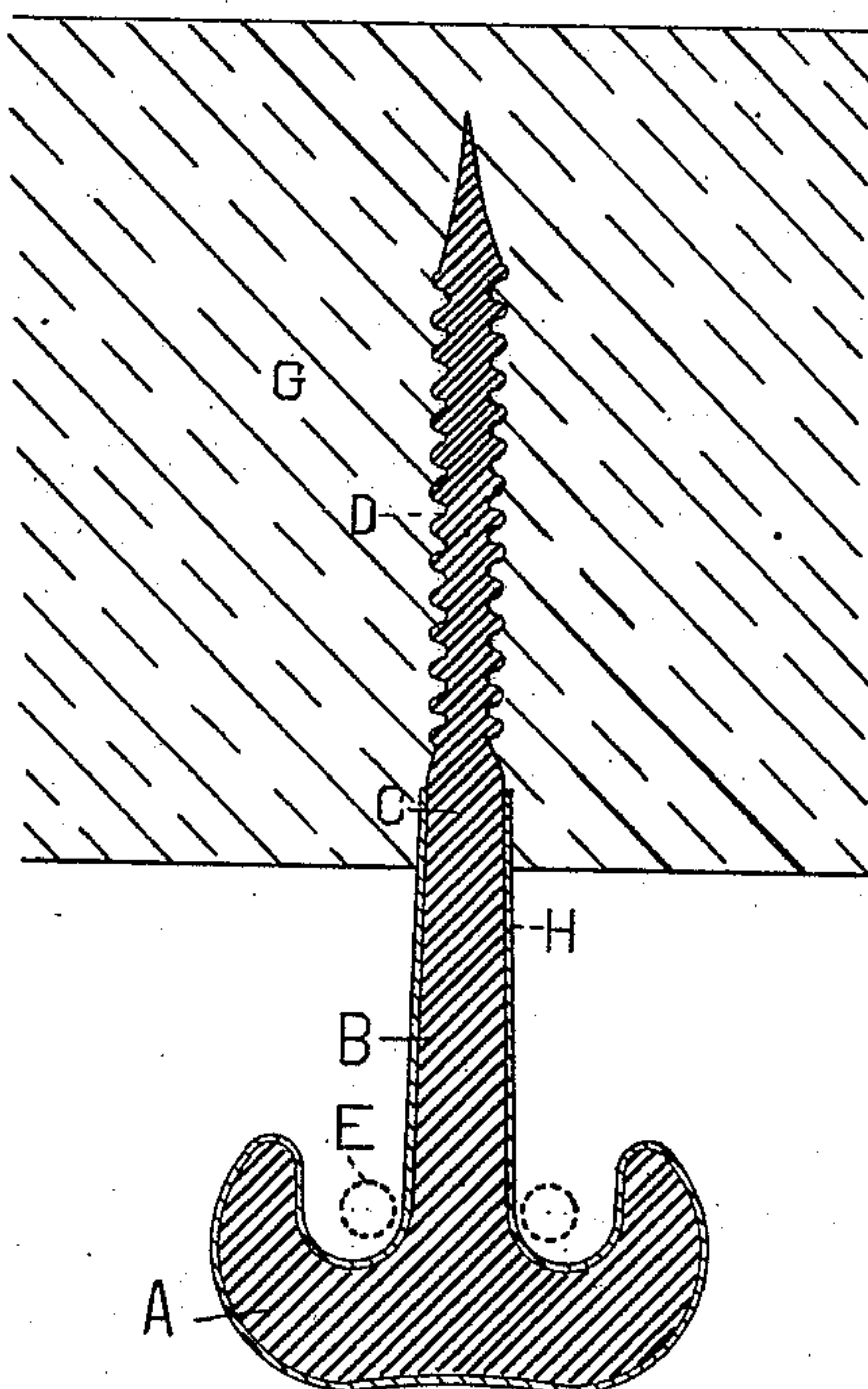


FIG. 2.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

ALBERT W. HALE, OF PLAINFIELD, NEW JERSEY.

## INSULATOR FOR ELECTRIC WIRES.

SPECIFICATION forming part of Letters Patent No. 301,446, dated July 1, 1884.

Application filed July 13, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT W. HALE, a citizen of the United States, and a resident of the city of Plainfield, State of New Jersey, have invented a new and useful improvement in insulated supports for telephone, telegraph, electric light, or any kind of electric wires, and a new article of manufacture, of which the following is a full, clear, and exact specification and description.

My invention consists in insulating such metallic supports for electric wires as are fixed in the supporting-body by which they are upheld—for example, a telegraph-pole or cross-arm—by covering them with such a complete coating of insulating-glaze that they are wholly protected from the atmosphere as well as from contact with the wire, and thus making them insulators, by which I avoid the necessity of using glass, or porcelain, or expensive rubber insulators, and my supports are stronger and more durable, and do not require any auxiliary protection from injury by friction. The importance of thus completely coating a metallic insulator with glaze arises from the fact that when the edge of the glaze is left exposed the surface of the metal is attacked by the oxygen in the atmosphere or other corroding atmospheric agents, and the corrosion thus produced penetrates under the edge of the glaze and causes it to flake off, and thus destroy the insulation. There are two methods by which this destruction of the enamel can be avoided: first, by completely covering the metallic support with glaze, so that there is no exposed edge of enamel, and the metal is thus entirely protected; I have heretofore, on May 17, 1883, filed an application for a patent for this device; second, by making use of the supporting-body for the same purpose, in combination with the enamel in the case of insulators having a portion inserted into such a supporting-body.

A form of my new insulated support, to which, however, I do not confine myself, is shown in the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents such a glazed insulator. A is the head with prongs to fasten the wire. B C D is the shank, consisting of a spike and a screw to be inserted in a suitable support. (Represented by G.) E is the wire.

Fig. 2 shows a longitudinal section of Fig.

1; with parts corresponding. In this the section of the coating of glaze H is shown by a double line entering the supporting-body G, (which should fit around it snugly,) preferably for upward of one-half ( $\frac{1}{2}$ ) an inch, and covering a portion of the shank only, leaving all the rest—viz., the screw and the spike—uncovered.

The metal base for the glaze may be cast or wrought in the form desired, and the whole insulator may be made in a single piece. The glaze may be made of any composition in the nature of a glaze or frit that will insulate, the fusing-point of which is below the fusing-point of the metal to which it is to be applied. One composition may be as follows: two hundred and sixty parts of flint glass, forty-one parts of carbonate of soda, and twenty-four parts of boracic acid are ground and mixed and fused, and the resulting mass or frit reground, as is well known in the arts. It may be applied by laying it on the surface to be glazed by means of a brush or any other convenient method, after it is ground and mixed with water to form a paste, and after being dried may be fused on in a suitable muffle or furnace.

I therefore claim and desire to secure by Letters Patent—

1. As a new article of manufacture, metallic insulators for electric wires, having a shank to be inserted in the pole, cross-arm, or other supporting-body by which they are upheld, made insulating by a coating of glaze which wholly covers the part exposed to the atmosphere, and in part also that which penetrates such support, substantially as described.

2. As a new article of manufacture, metallic insulators for electric wires, having a shank to be inserted in the pole, cross-arm, or other supporting-body by which they are upheld, and which combine in a single piece a bearing for the wire, and a means of attachment to the support insulated and made insulating by a coating of glaze which completely covers the part exposed to the atmosphere, and in part also that which penetrates such support, arranged and operating substantially as and for the purposes set forth.

ALBERT W. HALE.

Witnesses:

RANDOLPH HURRY,  
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