No. 868,122. PATENTED OCT. 15, 1907.

F. J. POINAN.

ELECTRIC INSULATOR.

APPLICATION FILED JULY 30, 1906.

Fig. 1.

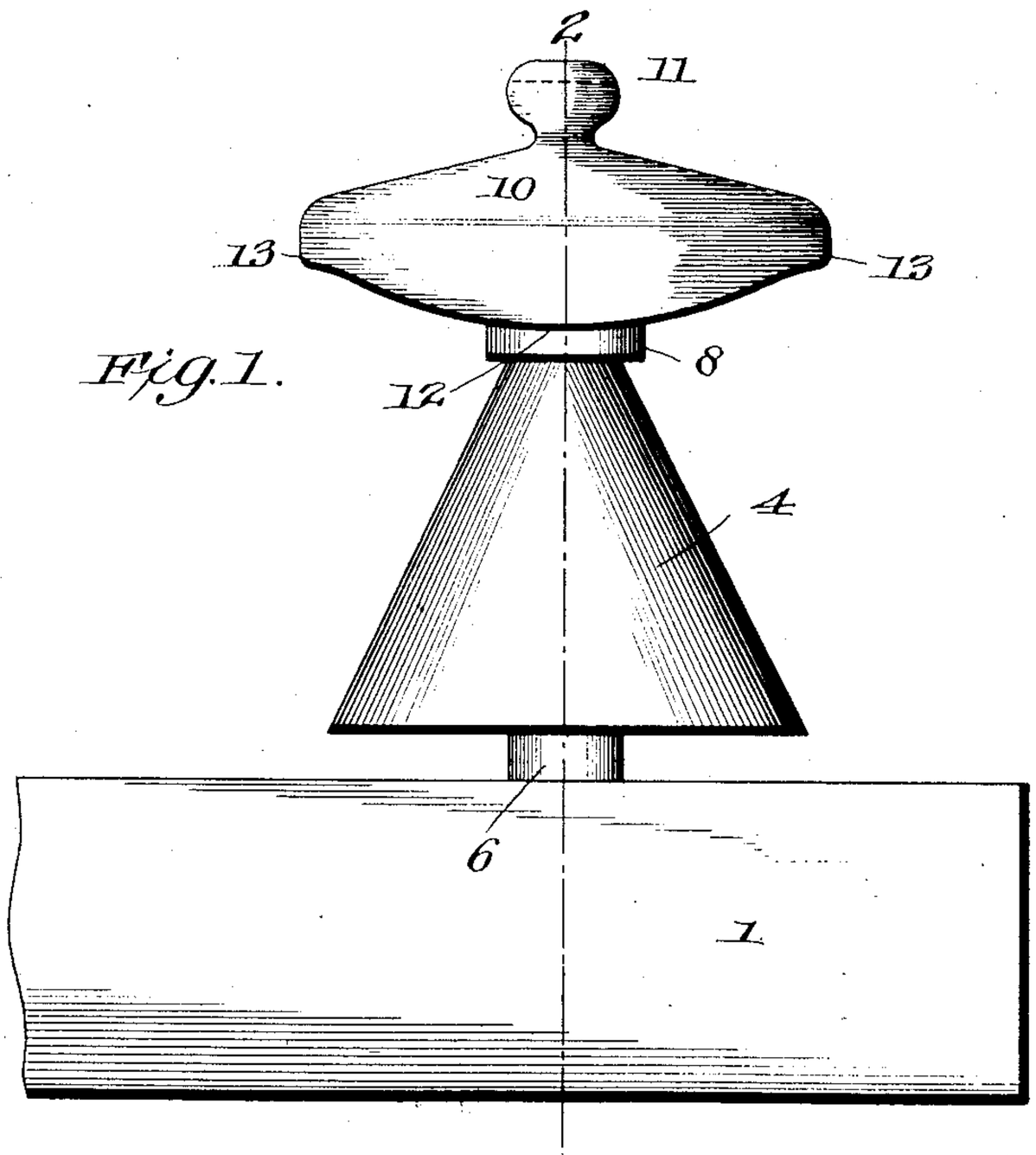
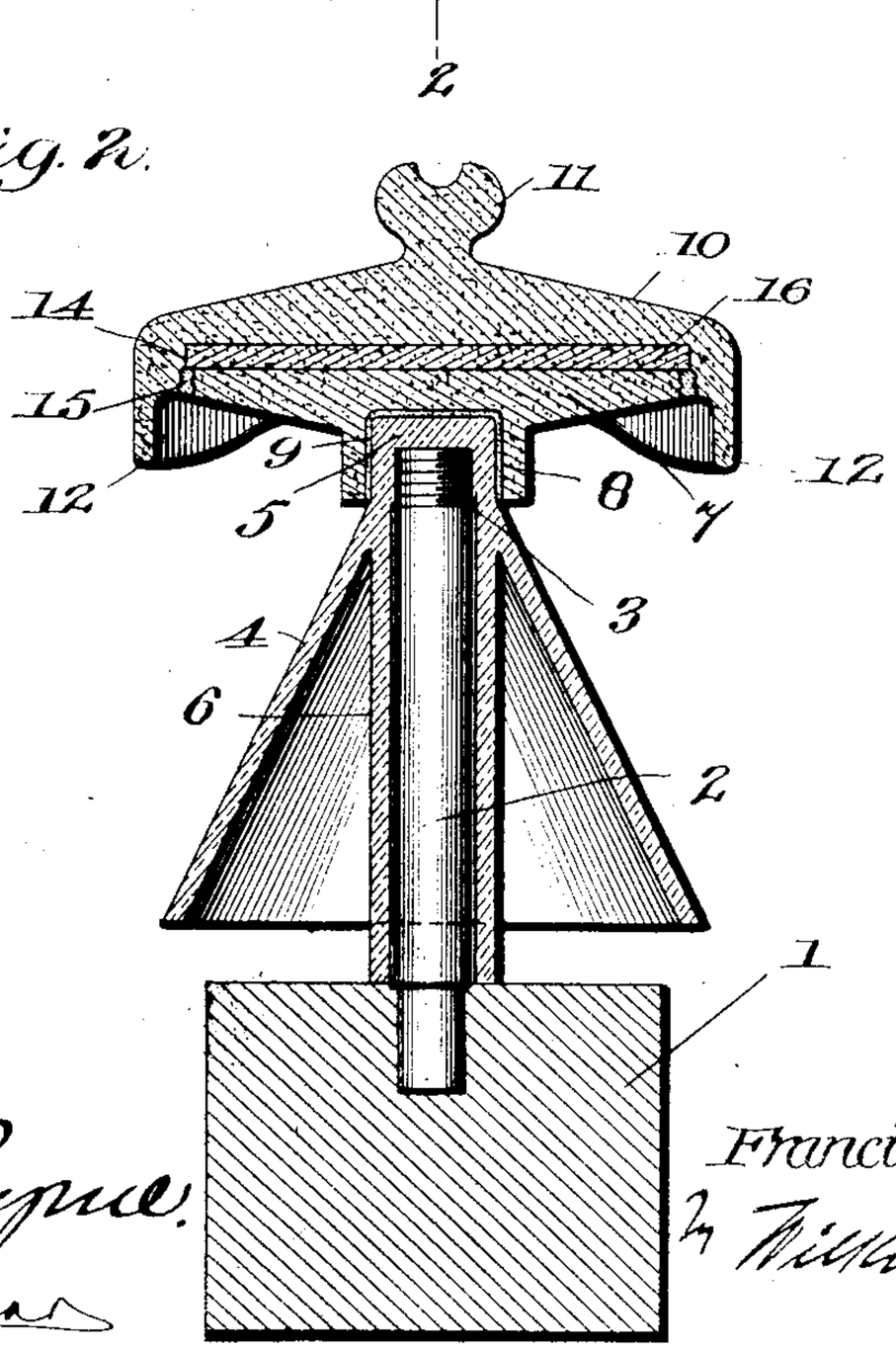


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

FRANCIS J. POINAN, OF ROCHESTER, NEW YORK.

ELECTRIC INSULATOR.

No. 868,122. Specification of Letters Patent. Patented Oct. 15, 1907.

Application filed July 30, 1906. Serial No. 328,439.

To all whom it may concern:

Be it known that I, FRANCIS J. POINAN, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Electric Insulators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in high potential insulators.

In currents of high tension, especially where the amperage is greatly increased, owing to the surcharge there is a tendency for the current to spread in all directions, and consequently this tendency of the current to escape is greatest at the poles or supports of the line wire, the poles forming the most immediate conduit to the earth, and hence the ordinary insulator is sometimes punctured by the current, or the latter escapes over it and the circuit completed to the earth through that pole supporting said insulator.

One of the objects of this invention is to avoid this feature, and in carrying out my invention, while I do not claim the idea broadly, one of the essential features is to provide members composed of different kinds of insulating material having different degrees of surface resistance, and one of said members being substantially proof against puncture by the electric current.

With this object in view, my invention resides in providing an insulator particularly constructed and adapted to accomplish this end, and also constructed in such manner as to efficiently shed water from the cross arm of the pole supporting the insulator.

While I do not restrict myself to the exact details shown, to more clearly understand the invention, reference is had to the accompanying drawings illustrating a practical embodiment of the same, in which like letters designate the same parts in the two views, and in which:—

Figure 1 is a view in side elevation of one of my insulators applied to the cross arm of the pole, and Fig. 2 is a longitudinal cross section on the line 2—2 of Fig. 1.

1 designates the cross arm or other suitable support, and 2 the supporting pin thereon, which is generally composed of wood screw-threaded at its upper end as at 3 to receive the petticoat of glass 4 which is in the form of a hollow cone provided at its upper end with an integral neck portion 5 forming a head adapted to be seated and cemented within a socket portion formed in another section of the insulator, as hereinafter described. This head or neck 5 is recessed and screw-threaded to receive the threaded pin 2, and extending downwardly from said neck or head and centrally of said petticoat is a glass sleeve 6 integrally formed with said petticoat and extend a slight distance below the bottom thereof. The parts just described form the lower section of the insulator proper.

The upper section of the insulator is preferably provided with a plurality of members formed of a suitable insulating material or composition having different degrees of puncturability and resistance, and coöperating with said lower section to form an effective insulator for currents of high voltage. The lower member of this upper section 7 is provided with a central projection 8 recessed to form a socket to receive the head 5 of the glass petticoat which is adapted to be cemented therein, as indicated at 9.

The top member 10 is in the form of a hollow cap piece having the grooved knob or wire support 11 and the flanged portion of which on opposite sides extends a considerable distance, as at 12, below the end portions 13, so that when the insulator is in position any water will be discharged from the upper surface at the lowest portions 12, and these portions being disposed on either side of the cross arm, shed the water from said cross arm.

In the solid portion of the cap 10, above the flanged portion, there is formed a recess 14, the lower portion 15 of which may be grooved to more firmly receive a suitable cement for securing together the lower member 7 and the upper member 10 of said upper section, it being observed that when the parts are so assembled, a space would normally be left between said upper and lower members. In this space there is secured an intermediate insulating member.

It will be understood that the members forming the upper insulating section may be formed of any suitable insulating material or composition, and while the intermediate member 16 is shown as being formed of the same composition as the members 7 and 10, it will be understood that the member 16 may be in essence a filler of any suitable fabric or cloth treated in any suitable way or specifically with oil or varnish, which fabric may be in the form of layers firmly compressed between said members 7 and 10 and forming with said cap and base an insulator practically impervious to a current of high tension. Also the members 16 and 17 may both be of composition stone or formed of the same material as the cap 10, or formed of laminated mica or laminated varnished asbestos, or of other suitable insulating material, if desired. When the insulating material is of composition stone, the following ingredients may be employed in its manufacture:—white clay, red clay, feldspar stone, slip clay, ocher, lime water, varnish, mica, glass, sulfur and boiled oil. Combinations of various parts are to be fired in kilns at a temperature of 200 degrees Fahrenheit, for 48 hours. It will also be

observed that it may be desirable to treat the wooden pin 2 with boiled oil or varnish, or similar insulating material.

Having thus described my invention, what I claim is:—

1. In an insulator, the combination of a support, a pin thereon, and an insulating portion having a lower section comprising a flaring glass petticoat having an internal longitudinal sleeve formed integral therewith within which sleeve said pin fits, said glass portion entirely surrounding said pin except where it fits into said support, and an upper composite insulating section of different material from said lower section, substantially as described.

2. In an insulator, the combination with a support and a pin carried thereby made of non-conducting material, and an insulating material mounted thereon having a lower section made of glass comprising a petticoat, and a sleeve longitudinally disposed within said petticoat and terminating in a solid head, said sleeve and head fitting over said pin, and an upper section comprising a composite cap having a recessed base adapted to receive the head of said lower section, said upper section being made of a different kind of insulating material, substantially as described.

3. In an insulator, the combination with a support, a pin thereon and a composite member the lower section of which is made of glass and comprises a petticoat and glass sleeve terminating in a solid head, said sleeve being adapted to fit over said pin, and a two-part upper section the lower part having a recessed base to fit over said head and forming a cap, and a lower member and an intermediate member of a different kind of insulating material, the whole upper section being cemented together, substantially as described.

4. In an insulator, the combination of a pin with a base member comprising a conical glass petticoat and an internal sleeve adapted to fit over said pin, said sleeve terminating in a solid head, and an upper section comprising a lower recessed member adapted to receive said head and cemented thereto, a cap member having a curved flange forming projecting side lips and recessed to form a space between said cap member and said lower member, and an intermediate member disposed within said recess, all of said members being cemented together, substantially as described.

In testimony whereof, I affix my signature, in presence of two witnesses.

FRANCIS J. POINAN.

Witnesses:
EUGENE RAINES,
CHARLES F. MIELKE.