(No Model.) 2 Sheets—Sheet 1.

W. S. ANDREWS.

INSULATOR.

No. 466,391. Patented Jan. 5, 1892.

Fig. 1.

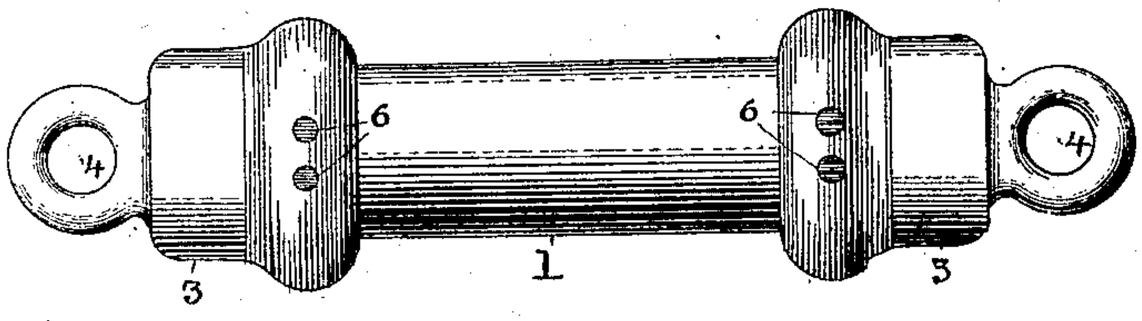


Fig. 2.

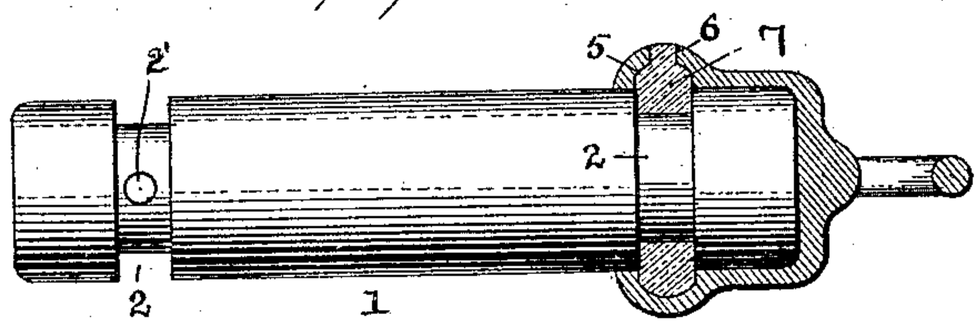
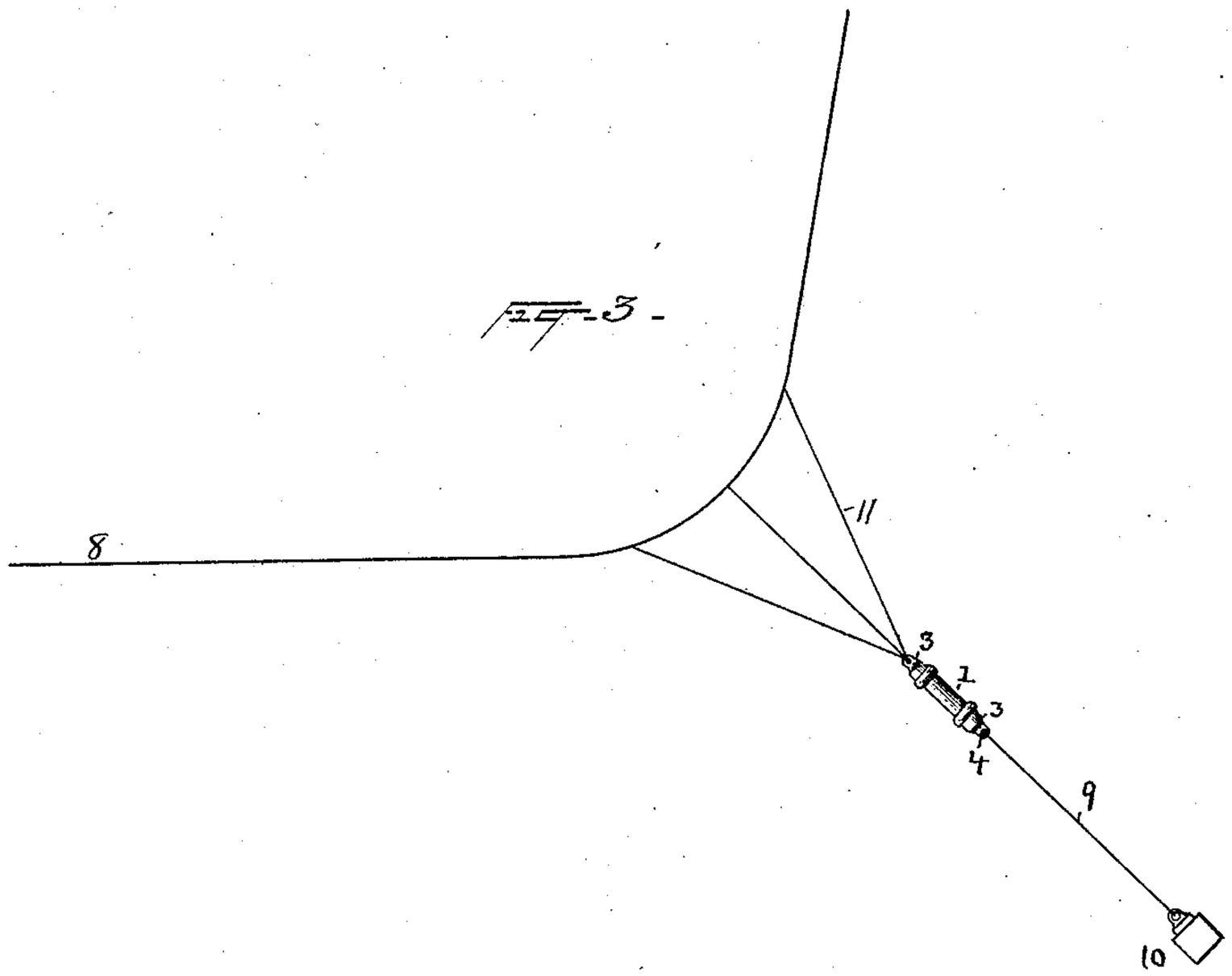


Fig. 3.



Witnesses
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By his Attorneys
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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

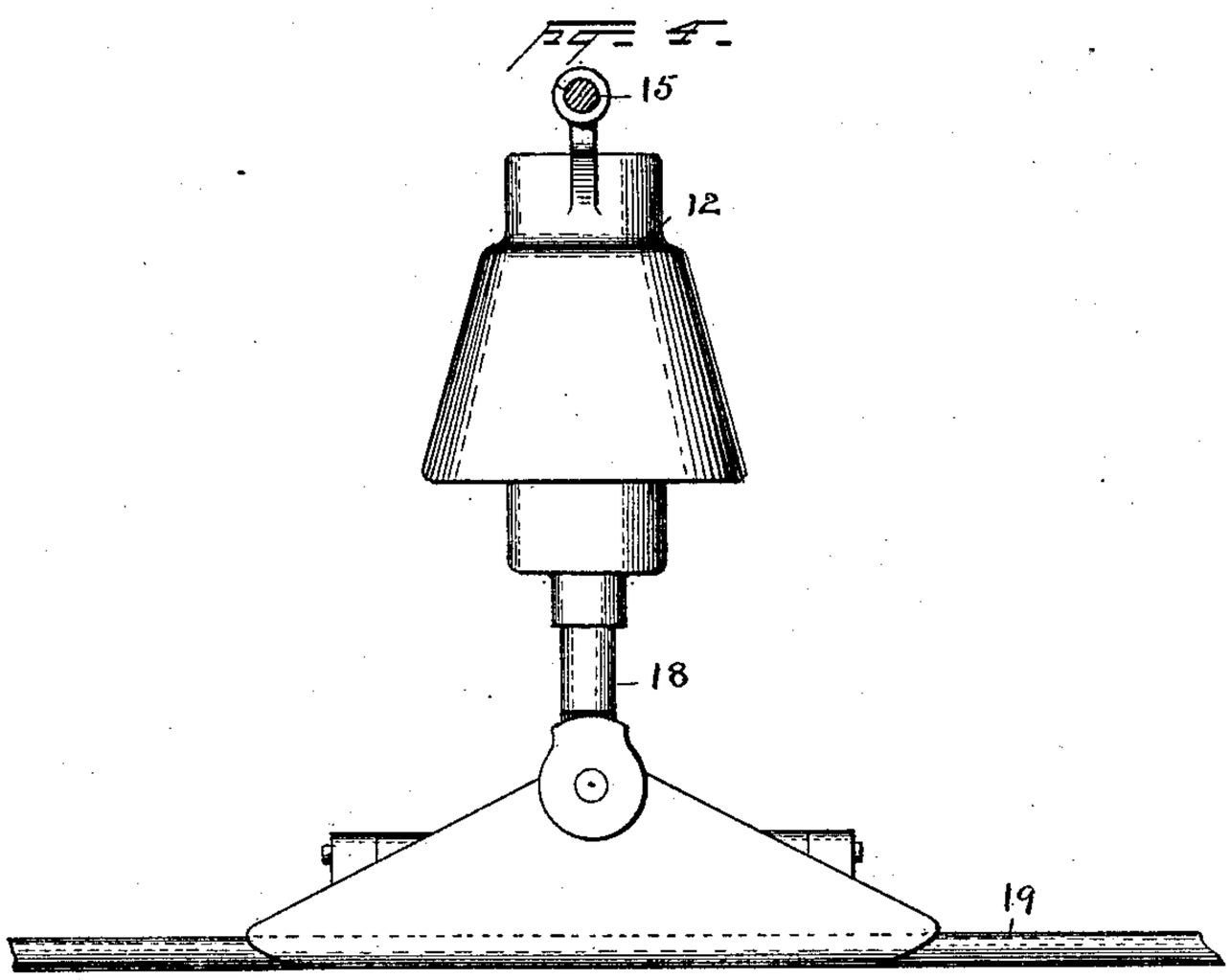
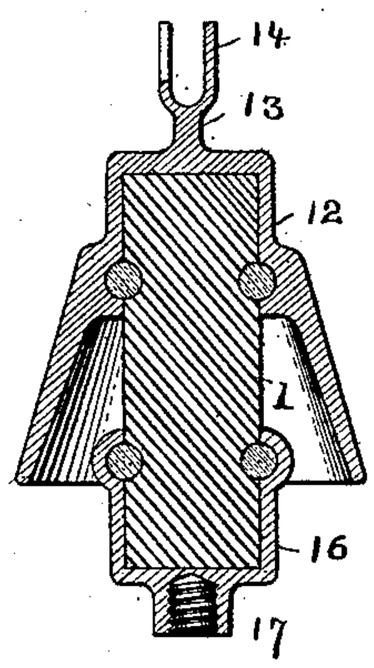


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM S. ANDREWS, OF NEW YORK, N. Y., ASSIGNOR TO THE EDISON GENERAL ELECTRIC COMPANY, OF SAME PLACE.

INSULATOR.

SPECIFICATION forming part of Letters Patent No. 466,391, dated January 5, 1892.

Application filed May 27, 1891. Serial No. 394,267. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. ANDREWS, a citizen of the United States, residing at New York, in the county and State of New York, have invented a certain new and useful Improvement in Insulators, of which the following is a specification.

The present invention relates to insulators, hangers, and similar devices which are especially adapted for use in connection with overhead conductors for electric railways, but which are applicable, also, to other uses.

The invention consists in the improved hanger or insulator hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side view of an insulator complete. Fig. 2 shows the body of the insulator, the cap being removed from one end and the cap at the other end being shown in section. Fig. 3 illustrates the application of the insulator. Fig. 4 illustrates a hanger and wire supported thereby, and Fig. 5 is a central section of the body of the hanger.

The body of the insulator consists of a rod or block of wood or other suitable insulating material 1, having at each end a groove or depression 2, which preferably, though not necessarily, extends entirely around the block. Fitting over the ends of the block are metal sleeves or caps 3, having suitable eyes or fastening devices 4, to which wires may be connected. Each sleeve or cap is provided with a groove or depression 5, corresponding in position to the groove 2—that is, the grooves are so placed on the block and on the cap, respectively, that when the parts are put together the grooves register with each other. The groove in the wooden rod or block may be rectangular or semicircular or any other shape in cross-section, as may also the corresponding groove in the metal cap, as different shapes of grooves may be found desirable, according to the different kinds of wood or other material used.

Each cap is provided with one or more holes 6, which extend through the body to the groove 5. There may also be a hole 2′ bored through the wood, which will be filled with the molten metal and will strengthen the connections and prevent turning of the caps.

In making the insulator the caps are slipped onto the body 1 and melted type-metal or other suitable metal is poured through the hole or holes 6 into the space formed by the grooves or depressions 2 5. When said metal cools, the caps and body 1 will be rigidly secured together by metal rings 7, partly embedded in the caps and partly in the body and extending into the holes 6. This connection is very quickly and easily made and is very strong. By actual test an insulator constructed by me as above described, in which the body was one inch and a half in diameter and in which the metal rings 7 were about three-eighths of an inch square, broke only at a strain of four thousand pounds.

In Fig. 3, 8 indicates a trolley-wire passing around a street-corner. 9 is a guy-wire connected at one end to post 10. The opposite end of the wire 9 is connected to one end of my insulator, and the second end of the insulator is connected by wires 11 to the trolley-wire. It is evident that the insulator may be used for other purposes than that above described.

In Figs. 4 and 5 the body 1 has at its upper end a bell-shaped cap 12, having an extension 13, with fingers or fastening devices 14, adapted to be bent around a supporting-wire 15, extending, *e. g.*, across a street. The body has at the opposite end a cap 16, with a screw-threaded extension 17, adapted to receive the holder 18, which supports the trolley-wire 19.

Having described my invention, what I claim is—

1. An insulator or similar device consisting of an insulating-body provided with a groove or depression, a metal cap having means for connecting a wire to it and having a corresponding groove or depression, and a body of metal extending from the depression in the body into the depression in the cap, substantially as described.

2. The combination of a body provided with a groove or depression at each end, a cap at each end, having means for connecting a wire to it and having corresponding grooves or depressions, and a body of metal in the space formed by the grooves or depressions, substantially as described.

3. The combination of an insulating-body having a circumferential groove at each end,

a metal cap on each end, having means for connecting a wire to it and having a corresponding groove, and a metal ring or filling in the annular space formed by the registering grooves, substantially as described.

4. The combination, in an insulator, of an insulating-body having a circumferential groove at each end, a metal cap on each end, having means for connecting a wire to it and having a corresponding groove, a hole passing through the cap to the groove, and a metal ring or filling in the annular space formed by the registering grooves and extending into said holes, substantially as described.

5. An insulator or similar device consisting of an insulating-body provided with a groove or depression, a metal cap having a corresponding groove or depression, a body of metal extending from the depression in the body into the depression in the cap, and a fastening device on the cap, substantially as described.

6. An insulator or similar device consisting of an insulating-body provided with a groove or depression, a metal cap having means for connecting a wire to it and having a corresponding groove or depression, a body of metal extending from the depression in the body into the depression in the cap, and means to prevent the cap from turning on the body, substantially as described.

This specification signed and witnessed this 11th day of May, 1891.

WILLIAM S. ANDREWS.

Witnesses:
HENRY PRICE BALL,
ALDRED K. WARREN.