J. A. SANDFORD, JR.

ELECTRIC CABLE PROTECTOR.

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1,010,181 Patented Nov. 28, 1911.

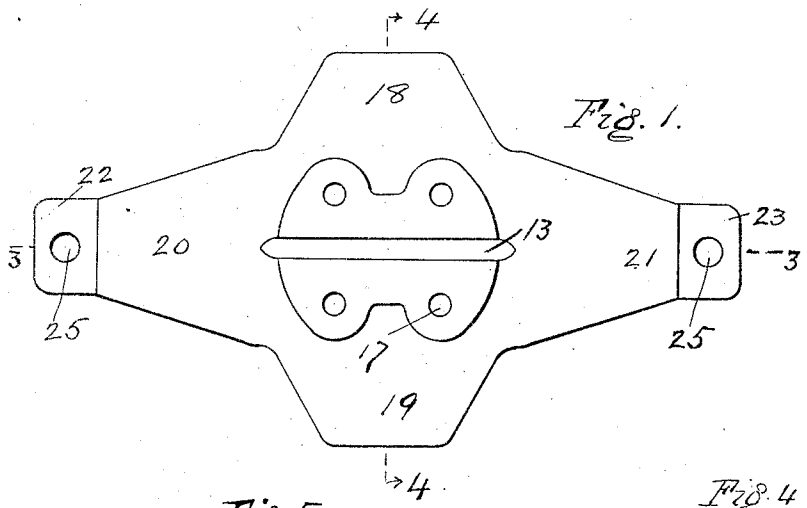


Fig. 1.

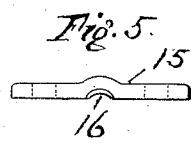


Fig. 5.

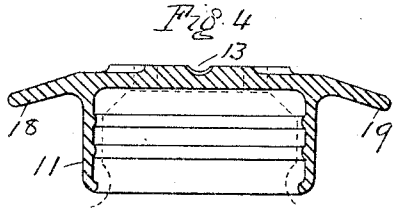


Fig. 4.

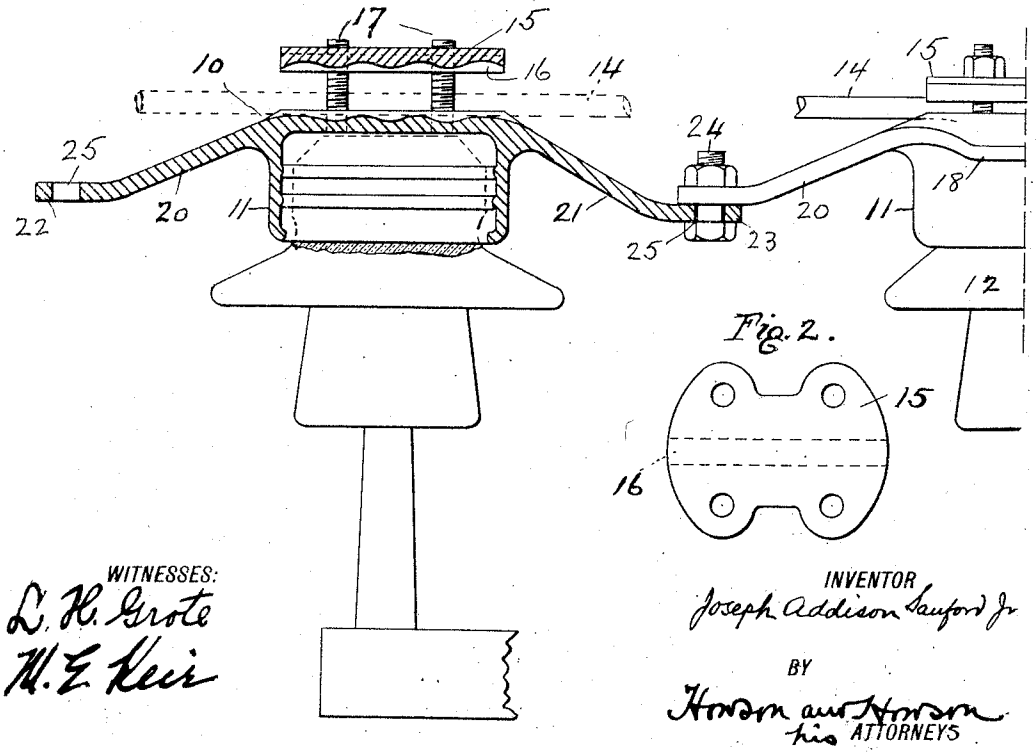


Fig. 3.

Fig. 2.

WITNESSES:

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UNITED STATES PATENT OFFICE.

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ELECTRIC-CABLE PROTECTOR.

1,010,181. Specification of Letters Patent. **Patented Nov. 28, 1911.**

Application filed July 7, 1911. Serial No. 637,320.

To all whom it may concern:

Be it known that I, JOSEPH ADDISON SANDFORD, Jr., a citizen of the United States of America, and residing in the city of East Liverpool, in the county of Columbiana and State of Ohio, have invented a certain new and Improved Electric-Cable Protector, of which the following is a specification.

My invention relates to electric cable protectors and particularly to a device for preventing the injurious heating of power cables or the like by arcs accidentally formed at the insulator supports, by reason of line trouble of any sort such as breaking down of insulators, short-circuiting, lightening flashovers, and such causes.

The present device is of particular utility at line crossings, for instance where a high power transmission wire crosses telephone or telegraph lines. Under present conditions, if an arc is formed between the wires and cable, it plays directly upon the cable and frequently so heats the latter that it melts, the line parts and the ends fall to the ground or upon adjacent wires thereby charging the latter, and in any case presenting a highly dangerous condition of affairs.

The present device aims to provide a cable shield upon which the arc may play, thus saving the cable until the usual safety devices, such as fuses or other cut outs, arranged in the power line, have had opportunity to come into action, and withdraw the current from the line, thus suppressing the arc which has formed upon the insulator.

In the accompanying drawings, Figure 1 is a plan of my shield in one form, with its cap removed; Fig. 2 is a plan of the cap alone; Fig. 3 is a vertical section through the shield with cap in position to be adjusted and with a second insulator in series; Fig. 4 is a cross section of the shield on line 4—4, Fig. 1; and Fig. 5 is an end elevation of the cap alone.

In the particular form shown, which may of course be variously modified without departing from my invention, the metallic shield 10 is provided with a depending bell 11 in which the head of the insulator 12 may be cemented or otherwise secured in well known manner. In the upper surface of the shield a groove 13 is formed to receive the cable 14. A cap 15 with corresponding groove 16, is fastened to the shield by means of screw studs 17, the bottoms of the two grooves being undulated to effect a clamping action upon the cable when the cap is screwed down.

To prevent an arc from reaching and playing upon the cable, I now propose to form wings 18, 19, 20 and 21 projecting outwardly from the body of the shield both in the direction of the cable and at right angles thereto. These wings are so designed, especially with regard to their length, that an arc attempting to reach the cable will play instead upon one of these wings, and its heat will consequently be taken up in great part by the shield, while the cable is thus protected until the current which it of course transmits to the shield is withdrawn from the line and the arc suppressed. Obviously under varying conditions or for different line voltages the size and shape of the wings and cap would vary somewhat—as does the insulator 12 itself. But in any case they would be so shaped as to effect the same object, viz. to protect the transmission cable from the heat of the arc by causing the latter to play upon the shield instead of upon the cable.

It frequently happens that the span is too great or the cable is too heavy to be supported upon a single insulator and pin, and in such cases, two or more are arranged in series on the supporting arm and the cable passed thereover. To meet such conditions, the inclination of one of the arms, viz. 21 extending in the direction of the cable, is made slightly greater than that of the opposite arm 20, so that the horizontal offset end 23 thereof lies in a plane lower than that of the end 22 of the arm 20. This permits the shields of juxtaposed insulators to be overlapped and secured together by means of a bolt 24 passing through the registering perforations 25 in the overlapped ends 22—23 without straining the vertical pins on which the insulators are supported.

Various modifications of the device in which my invention is embodied will readily suggest themselves.

I claim as my invention:—

1. The combination with an insulator, of a cable carrying and cable protecting shield of conducting material mounted on the head of said insulator and shaped to intercept,

and thus to protect the cable from the play of, an accidental arc tending to form upon said cable.

2. The combination with an insulator, of a cable carrying and cable protecting shield of conducting material mounted on the head of said insulator and shaped to intercept, and thus to protect the cable from the play of, an accidental arc tending to form upon said cable, and means to clamp a cable on said shield.

3. The combination with an insulator, of a cable carrying and cable protecting shield of conducting material mounted on the head of said insulator and provided with wings shaped to intercept, and thus protect the cable from the play of, an accidental arc tending to form upon said cable.

4. The combination with an insulator, of a cable carrying and cable protecting shield of conducting material mounted on the head of said insulator and provided with wings shaped to intercept, and thus to protect the cable from the play of, an accidentally formed arc, the wings extending in the direction of the cable having offset ends lying in different planes for the purpose specified.

5. The combination with an insulator, of a cable carrying and cable protecting shield of conducting material having a depending bell adapted to embrace and be secured to the head of the insulator, and guard wings on said shield designed to intercept the play of an accidentally formed arc, together with means for securing the cable on said shield.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses.

JOSEPH ADDISON SANDFORD, JR.

Witnesses:
RALPH R. ORR,
B. D. KENNEY.