

E. O. SESSIONS.
INSULATOR SUPPORT.
APPLICATION FILED JAN. 3, 1910.

1,012,724.

Patented Dec. 26, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

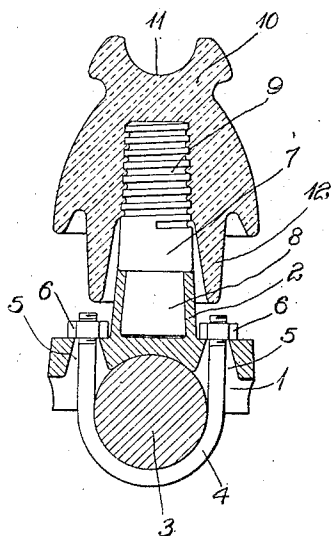


Fig. 2.

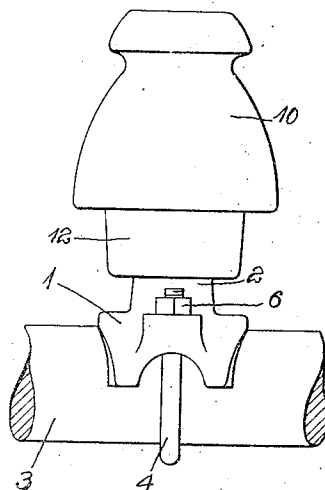


Fig. 3.

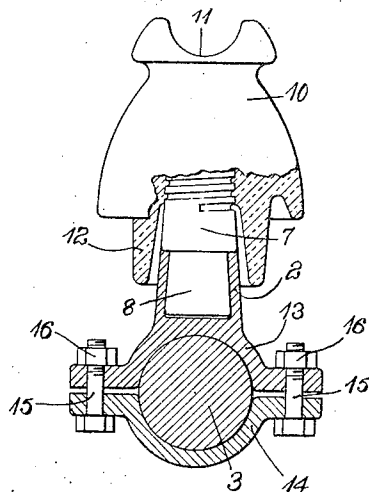


Fig. 5.

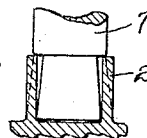
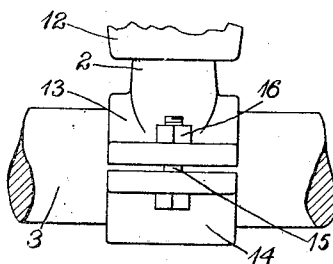


Fig. 4.



Witnesses

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2 SHEETS-SHEET 2.

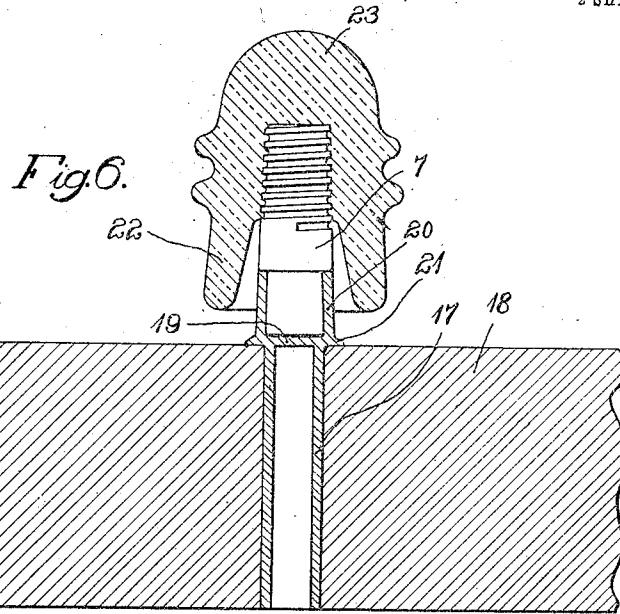
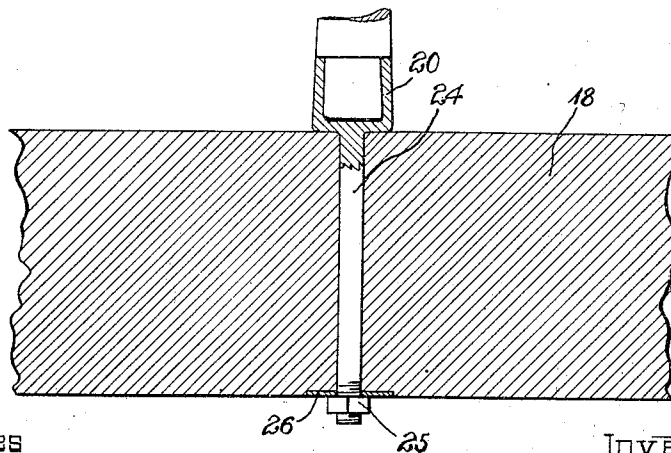


Fig. 7.



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INSULATOR-SUPPORT.

1,012,724.

Specification of Letters Patent.

Patented Dec. 26, 1911.

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To all whom it may concern:

Be it known that I, EDSON O. SESSIONS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful improvement in Insulator-Supports, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to insulator supports, and has special reference to a form of support in which a pin of non-conducting material is attached to a retaining member in order to cause the current to pass through the longest possible path through the insulator in cases of electrical discharge, arcing, or puncturing of the insulator.

When a high tension current is passed through a conductor connected to an insulator, the maximum efficiency of the insulator is obtained only when the current is required to pass through the petticoat of the insulator before a discharge can be made. In the prior art it has been customary to employ an insulator support which is integral with the retaining member or clamp by means of which the insulator is attached to a pipe, rod or other main support. The member ordinarily used has a projecting portion which is wound with cord, and the suitably threaded insulator is attached to the retaining member by means of engaging the threaded portion of the insulator with this cord. It will be evident that, inasmuch as the retaining member and the projecting portion integral therewith are made of metal, the current from the conductor will pass through the body of the insulator to this projecting portion contained within the insulator and located comparatively near to the conductor.

In my invention I employ a pin of wood or other non-conducting material which is attached to the metallic retaining member and is provided with threads so that the insulator may be directly screwed onto this pin. It will now be clear that when a discharge is made from the high tension conductor the current must travel a much farther distance through the insulator before it is possible to make a discharge to the

metallic retaining member. The insulator support of my invention consists ordinarily of a wooden pin with a metallic retaining member, to which this pin is attached by means of exerting pressure on a cup-shaped portion of the member in order to cause the pin to be gripped in position at its lower end. These and other advantages of my invention will be more apparent by reference to the accompanying drawings, in which—

Figure 1 is a vertical section through the insulator and the insulator support, showing the method of attachment to the main support. Fig. 2 is a side elevation of the parts shown in Fig. 1. Fig. 3 is an elevation and partly sectional view showing the insulator and a modification of the clamping member. Fig. 4 is a fragmentary side elevation of the parts shown in Fig. 3. Fig. 5 is a fragmentary sectional view showing the method of attachment of the pin to the retaining member. Fig. 6 is a vertical sectional view showing a modification of my support especially adapted for telephone and telegraph wire insulators. Fig. 7 is a vertical sectional view showing a further modification of a support for telephone and telegraph wire insulators.

As shown in Figs. 1 and 2, a clamping member 1 is provided with a cup-shaped portion 2. This clamp is preferably made of malleable iron, steel or other ductile metal.

The clamp 1 is attached to a main support 3, which may be a pipe, rod or other similar part, by means of the U-shaped strap 4 which passes through the openings 5, 5 in the clamp 1, and is held in position by means of the nuts 6, 6.

A wooden pin 7 having a portion 8 which is outwardly tapered toward its end, fits in the cup-shaped portion 2 of the clamp 1. The method of securing the pin 7 in position is shown in Fig. 5. The wall of the cup-shaped member 2 is originally straight, as indicated in the full lines in Fig. 5, and a die at the end of a plunger is then brought down over the pin and forces the wall of the portion 2 of the clamp 1 into the position shown in dotted lines in Fig. 5 and in full lines in Figs. 1 and 3. Inasmuch as the por-

tion 8 of the pin 7 is outwardly tapered toward its end, it will be evident that the pin 7 is now securely held in position.

The pin 7 is provided with the threaded portion 9 with which the insulator 10 is engaged. This insulator may be of any of the well known forms. As shown in Figs. 1, 2 and 3, the insulator 10 may have a groove 11 in which the conductor may be attached.

10 The petticoat 12 of the insulator may project downwardly and occupy a position inclosing a portion of the cup-shaped member 2 of the clamp 1.

In the modification shown in Figs. 3 and 15 4, the clamp consists of a member 13 which engages the main support 3 on one side, and a second member 14 which engages it on the other side. The members 13 and 14 are connected by the bolts 15, which are provided with nuts 16.

It will be clear that according to the construction which I employ, any arcing which takes place will occur between the petticoat member 12 of the insulator and the cup portion 2 of the clamp. In this way the current will be obliged to pass through a large part of the insulator 10 before a discharge to the clamping member can take place.

I have previously described a form of insulator support in which a clamping member is used. In Figs. 6 and 7 further modifications of my support are shown, these modifications being particularly adapted for use in connection with telephone and telegraph wire.

In Fig. 6 the retaining member consists of a lower tubular portion 17 which is inserted in a suitable hole bored in the cross-arm 18 of a telephone or telegraph pole. The upper part of the tubular portion 17 of the retaining member consists of a horizontal wall 19, which also forms the bottom of the cup-shaped portion 20. In order to prevent the retaining member from slipping downwardly through the hole in the cross-arm 18, a flange 21 is provided which acts as an abutment member against the upper surface of the cross-arm 18. The pin 7 is secured in the cup-shaped portion 20 in exactly the same way as described above.

It will be noted that the petticoat 22 of the insulator 23 projects downwardly over the cup-shaped portion 20 of the retaining member. This is a preferred form of insulator to be used in connection with my insulator support, inasmuch as water is thereby prevented from reaching the pin 7 and causing the same to swell. In order to further preserve the pin 7 against action of the weather I prefer to treat it with some one of the preservatives which are well known in the art.

In Fig. 7 another modification is shown, which is also particularly adapted for tele-

phone and telegraph work. In this case a downwardly projecting rod member 24 is formed integral with the cup-shaped portion 20 of the retaining member. The rod 24 is threaded on its lower end, and after being inserted in a suitable hole in the cross-arm 18 it is secured in position by means of the nut 25, in connection with which the washer 26 is provided. In this way it will be evident that the retaining member is securely fastened in position.

Many changes could be made in the detailed construction of the device which I have described without departing from the spirit of my invention.

What I claim as new and desire to cover 80 by United States Letters Patent is:

1. An insulator support which consists of a retaining member in the form of a cup with a closed bottom with an inwardly tapering wall, and an insulating member having an outwardly tapering end engaging in said cup, said insulating member adapted to support an insulator.

2. An insulator support comprising a retaining member in the form of a cup with a closed bottom with an inwardly tapering wall, and a wooden pin having an outwardly tapering end engaging in said cup, said pin adapted to support an insulator.

3. An insulator support comprising a supporting member having a cup-shaped portion with an inwardly tapering wall, and a wooden pin having an outwardly tapering end engaged by said cup-shaped portion and having a shoulder resting on the rim of said cup-shaped portion, the other end of said pin being adapted to receive and support an insulator.

4. An insulator support comprising a supporting member having a cup with a closed bottom and an inwardly tapering wall, and a wooden pin having an outwardly tapering end engaging in said cup and having a shoulder resting on the rim of said cup.

5. In combination, a petticoat insulator, a wooden insulator pin upon which the insulator is mounted, and a metal supporting sleeve surrounding the lower end of the insulator pin and extending upwardly inside the petticoat, so that the metal part will be considerably nearer the lower edge of the petticoat insulator in order that any electrical discharges and sparks will be kept away from the wood.

6. In combination, a supporting member having a cup-shaped metallic retainer, an insulator pin of tough material having moderately good insulating qualities secured in said cup-shaped retainer, and a petticoat insulator carried upon said insulator pin and extending downwardly over said retainer for a considerable distance so that some part

of this retainer will be considerably nearer
the lower edge of said petticoat insulator
than any part of such insulator pin in order
that any electrical discharges from said
5 lower edge will proceed to the side of the
retainer at a distance from the top thereof
thus keeping the sparks away from the in-
sulator pin.

In testimony whereof, I hereunto sub-
scribe my name this 29th day of December, 10
A. D. 1909.

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Witnesses:

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