Sept. 23, 1924. 1,509,645

M. J. FOSS

INSULATOR

Filed Feb. 2, 1922

Fig. 1.

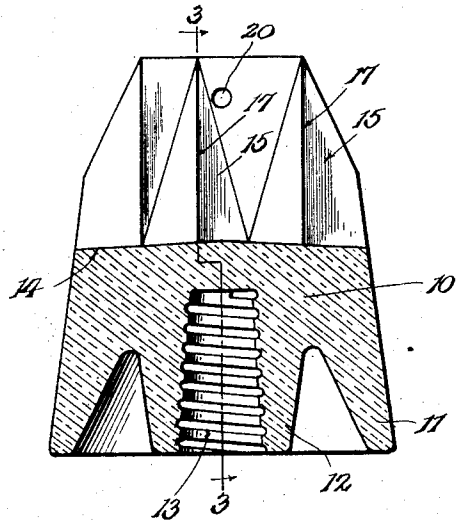


Fig. 4.

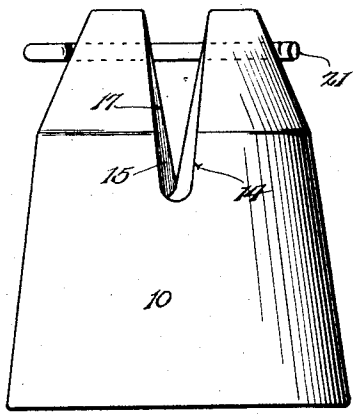


Fig. 2.

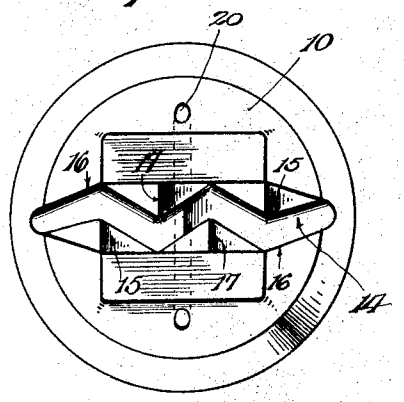
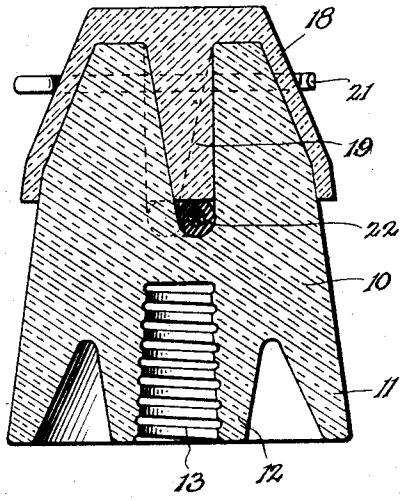


Fig. 3.



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UNITED STATES PATENT OFFICE.

MARVIN J. FOSS, OF FARIBAULT, MINNESOTA.

INSULATOR.

Application filed February 2, 1922. Serial No. 533,619.

To all whom it may concern:

Be it known that I, MARVIN J. FOSS, citizen of the United States, residing at Faribault, in the county of Rice and State of Minnesota, have invented certain new and useful Improvements in Insulators, of which the following is a specification.

This invention relates to an improved insulator and seeks, as one of its principal objects, to provide a device of this character adapted to support an electrical conductor without the use of a tie wire.

A further object of the invention is to provide an insulator adapted to grip the conductor and wherein the conductor will be limited against accidental disengagement from the insulator.

And the invention has as a still further object to provide an insulator employing a cap for protecting the conductor at the insulator.

Other and incidental objects will appear hereinafter.

In the drawing:

Figure 1 is a vertical sectional view through my improved insulator, the cap being removed,

Figure 2 is a plan view of the device,

Figure 3 is a vertical sectional view on the line 3—3 of Figure 1, looking in the direction of the arrows and showing the cap in place, and

Figure 4 is a side elevation showing the use of the insulator without the cap.

In carrying the invention into effect, I employ an insulator body 10 of porcelain or other approved insulating material, flared toward its lower end to provide a depending annular skirt 11 and formed axially of the body within said skirt is a boss 12 terminating flush with the skirt. Extending through this boss is a threaded bore 13 to accommodate the pin of a cross arm. Formed through the upper end portion of the body is a transverse zig-zag slot 14 opening through the upper end of the body as well as the opposite sides thereof. As will be observed upon reference to Figure 4, the slot is tapered or gradually widened toward the mouth thereof and, as brought out in Figure 2, the side walls of the slot are formed to provide a plurality of staggered V-shaped gripping ribs 15 and companion V-shaped indentations 16, each of the indentations being opposite one of the ribs respectively. The ribs thus provide vertical biting edges 17 and, as shown in Figure 4, said ribs are tapered in thickness toward their upper ends to merge into the walls of the slot so that said biting edges are accordingly inclined away from each other toward the mouth of the slot. However, at their lower ends said biting edges touch a plane common thereto. This construction provides an arrangement whereby the zig-zag formation of the slot becomes increasingly pronounced toward the lower end of the slot.

In conjunction with the body 10, I employ a substantially frusto-conical cap 18 of porcelain or other approved insulating material, which is formed to snugly fit the upper end of the insulator body and is provided with a diametric zig-zag retaining web or rib 19 terminating flush with the lower end edge of the cap and shaped to snugly fit in the slot 14. Formed through the body 10 near its upper end, are alined medially disposed openings 20 and removably fitting through the wall of the cap and through said openings is a cotter pin or other fastening device 21, locking the cap upon the insulator body.

In use, an electrical conductor, as conventionally illustrated in Figure 3 at 22, is engaged in the slot 14 of the insulator body and pressed downwardly therein over the gripping ribs 15. Accordingly, as the conductor approaches the lower end of the slot, the biting edges 17 will flex said conductor until, when the conductor reaches the lower end of the slot, the portion of the conductor extending through the slot will be caused to assume the zig-zag formation of the slot, the edges 17 of said ribs biting into the conductor for securely holding the conductor against longitudinal pull. Furthermore, the weight of the conductor will tend to constantly wedge the conductor in engagement with the ribs. After the conductor is thus in place, the cap 18 is applied and the pin 21 fitted through the cap for locking the cap against displacement. When the cap is thus applied, the rib 19 will be advanced into the slot 14 to engage the conductor at its upper side so that said rib will wedge the conductor to the lower end of the slot firmly held by the gripping ribs and, of course, since the cap is locked against accidental displacement, the cap will, in turn, serve to lock the conductor engaged with the insulator. Should any difficulty be experienced in forcing the conductor to the

lower end of the slot, the cap may, after the conductor has been arranged in the upper end of the slot, be positioned over the insulator body to engage the rib 19 with the conductor. Then, by pounding upon the cap with a rubber mallet or the like, the conductor may be readily driven into place. As will be perceived, the cap will close the insulator body at its upper end while the rib 19 will substantially close the slot 14 of the body. Rain, snow, or other foreign matter will thus be excluded from the slot while the portion of the conductor lying within the slot will be effectually protected from the elements.

In some instances, it may be found expedient to use the insulator body without the cap 18 and, in Figure 4, I have shown the insulator body so employed. Under such circumstances, the pin 21 is, after the conductor has been engaged in the slot of the body, fitted through the openings 20 in the body for locking the conductor against accidental displacement.

Having thus described the invention, what is claimed as new is:

1. In an insulator, the combination of a body having a zig-zag wire receiving slot therein, and a cap for the body having a zig-zag rib fitting in said slot for limiting a wire against displacement from the slot.

2. In an insulator, the combination of a body having a zig-zag wire receiving slot therein, a cap for the body having a zig-zag rib fitting in said slot for limiting a wire against displacement from the slot, and a pin extending through the rib and cap across said slot securing the cap in position.

In testimony whereof I affix my signature.

MARVIN J. FOSS. [L. S.]