

G. W. WILLIS.
INSULATOR.
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1,022,993.

Patented Apr. 9, 1912.

FIG. 1

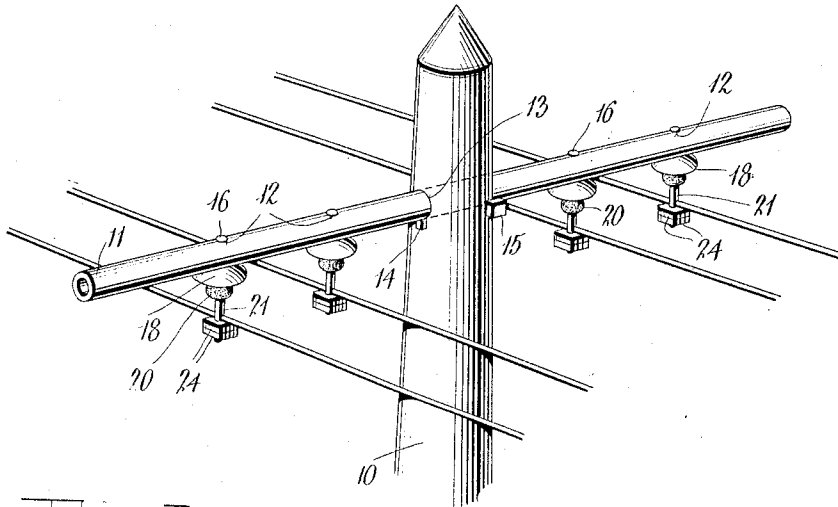


FIG. 2

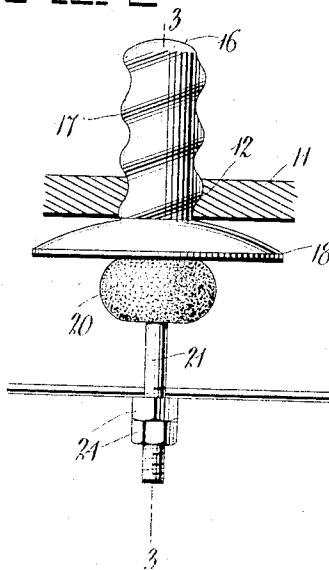
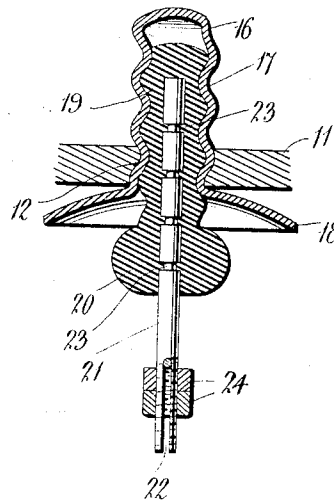


FIG. 3



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364

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UNITED STATES PATENT OFFICE.

GEORGE W. WILLIS, OF BECKLEY, WEST VIRGINIA.

INSULATOR.

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To all whom it may concern:

Be it known that I, GEORGE W. WILLIS, a citizen of the United States, residing at Beckley, in the county of Raleigh, State of West Virginia, have invented certain new and useful Improvements in 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 insulators and has special reference to a novel form of insulator adapted for carrying line and other wires.

The principal object of the invention is to improve the general construction of insulators of this character so that they may be readily applied to a suitably arranged pole and so that they will hold the wires carried by them in proper spaced and insulated relation to said pole.

A second object of the invention is to provide an improved general structure of cross-arm and insulator.

A third object of the invention is to provide an improved protecting shell for the insulating material.

With the above and other objects in view the invention consists in general of certain novel details of construction and combinations of parts hereinafter fully described, illustrated in the accompanying drawings, and specifically pointed out in the claims.

In the accompanying drawings, like characters of reference indicate like parts in the several views, and; Figure 1 is a perspective view showing the application of the insulator and also showing the improved cross-arm construction on the pole. Fig. 2 is an elevation of the insulator. Fig. 3 is a section on the line 3—3 of Fig. 2.

This insulator may be used in connection with any pole either of wood or metal and there has been here shown for the purposes of illustration an ordinary wooden pole 10. The cross-arm preferably used with this insulator comprises a length of metallic tubing 11 having suitable threaded openings 12 spaced in oppositely disposed pairs along the cross-arm and these openings are threaded for purposes hereinafter to be described. This cross-arm extends through a suitable opening 13 formed in the post 10 and is adjusted level in this opening by one or more wedges 14. These wedges also serve for the

purpose of holding the cross-arm from moving through the opening 13. For the purpose of holding the cross-arm from rotation a suitable bolt 15 is preferably provided which is screwed through the post 10 and has its inner end either bearing against the cross-arm or extending into an opening formed therein.

The insulator comprises a metallic shell which is preferably formed from a disk of sheet metal suitably stamped or spun and of uniform thickness throughout. In the stamping or spinning operations the insulator shell is formed with a hollow body having corrugated side walls 17, the corrugations being arranged spirally to form a screw thread, both the interior and exterior of the body being correspondingly threaded. This shell is open at its lower end and surrounding the mouth of the shell is a downwardly and outwardly extending flange 18 forming what is commonly known in this art as a petticoat. Within this shell is screwed a body of insulating material having an enlarged lower end 20 but this end is of less diameter than the diameter of the petticoat 18. The body of the insulator is threaded to correspond with the interior threads of the shell and within this body is held a centrally disposed stem 21 having a slotted lower end 22. The upper end of this stem is provided with notches 23 so that the insulating material, when molded around the stem, may have a secure grip on the stem and the latter be prevented from pulling loose from the body. The lower end of the stem is threaded and on the threaded portion are screwed nuts 24 the lower of which serves as a lock nut. The shell of the insulator is screwed into one of the openings 12 thus assembling the insulator and cross-arm.

In the application of this device the nuts 24 are removed and the wire to be held is placed within the slot 22. The nuts are again placed in position on the stem and screwed up to hold the wire in the upper end of the slot 22. When the upper nut has been screwed sufficiently far upon the stem the lower nut is then screwed up tight against said upper nut thus preventing any movement. It will be seen from the foregoing that when it is so desired the wire may be clamped tightly and prevented from slipping through the slot 22 or, if preferred, the wire may be allowed to slip through the slot thus preventing breakages of the wire.

and lateral stress upon the pole and the cross-arms. It will be noted that this latter arrangement is of great utility in sections of the country where poles are frequently
5 pulled down by heavy sleet or snow storms in as much as in the event of the wire breaking between two poles it would simply slide through the stem and would bring no lateral stress upon the pole which would tend to
10 pull it down. It will also be noted that the arrangement permits of very rapid repairs being made as it eliminates the connection of the line wire to the insulators by short lengths of wire twisted around the line wire
15 and the insulator. It will be further noted that the wire itself prevents any rotation of the insulator in the cross-arm hole or open-

ing so that there is no possibility of the insulator becoming detached.

What is claimed is:

In combination with a tubular shell of 20 disk metal corrugated to form exterior and interior screw threads, of a support having a threaded opening for receiving the shell, a threaded insulating bushing disposed 25 within and engaged with the interior thread of the shell, and wire supporting means secured to said bushing.

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

GEORGE W. WILLIS.

Witnesses:

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