March 13, 1934. W. D. KYLE 1,950,616

INSULATOR

Filed July 27, 1928

Fig. 1.

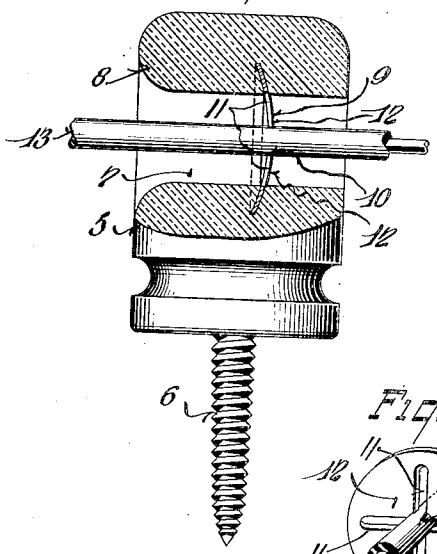



Fig. 2.

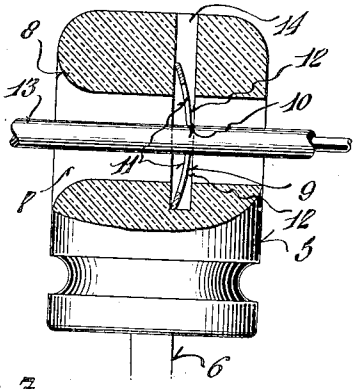



Fig. 3.

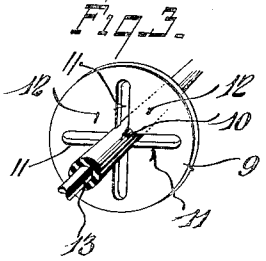



Fig. 6

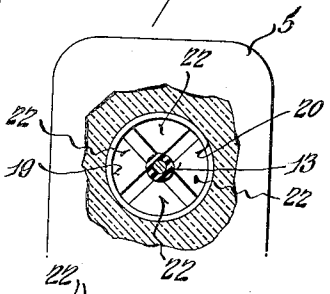



Fig. 4.

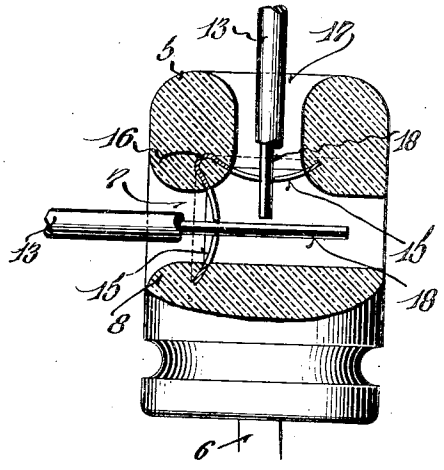
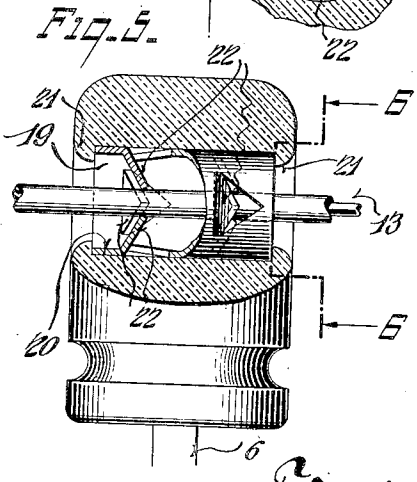



Fig. 5.




Inventor

William D. Kyle

By Dew Mitten Jones

Attorney

Patented Mar. 13, 1934 1,950,616

# UNITED STATES PATENT OFFICE

1,950,616

## INSULATOR

William D. Kyle, Milwaukee, Wis., assignor, by mesne assignments, to Line Material Company, South Milwaukee, Wis., a corporation of Delaware

Application July 27, 1928, Serial No. 295,686

2 Claims. (Cl. 173—313)

This invention relates particularly to means for mounting a conductor wire from an insulator.

It is an object of this invention to provide an insulator having a substantially dish-shaped washer member which permits a conductor to be inserted into its opening from one direction but restrains movement in the opposite direction.

Another object of this invention resides in the provision of an insulator having means incorporated therein whereby a conductor may be attached to the insulator by merely inserting it into an aperture in said means.

And a further object of this invention resides in the provision of an insulator of the character described having means whereby one or more conductors may be attached to the insulator by inserting them into apertures in said means and having means for electrically connecting the conductors attached to the insulator.

With the above and other objects in view which will appear as the description proceeds, my invention resides in the novel construction, combination and arrangement of parts substantially as hereinafter described and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the hereindisclosed invention may be made as come within the scope of the claims.

In the accompanying drawing, I have illustrated several complete examples of the physical embodiment of my invention constructed according to the best modes I have so far devised for the practical application of the principles thereof, and in which:

Figure 1 is an elevational view of an insulator embodying my invention with parts broken away and in section;

Figure 2 is a view similar to Figure 1 illustrating a slightly modified form of my invention;

Figure 3 is a perspective view of the dish-shaped washer removed from the insulator and with a conductor in position;

Figure 4 is a view similar to Figure 1 illustrating another modified form of my invention;

Figure 5 is a view showing still another modified form of my invention, and

Figure 6 is a view taken through Figure 5 on the plane of the line 6—6.

Referring now more particularly to the accompanying drawing, in which like numerals designate like parts throughout the several views, 5 represents the body of an insulator which is preferably formed of porcelain and from which an attaching screw extends to facilitate its attachment to any suitable support. A transverse bore or opening 7 having one end flared outwardly, as at 8, extends through the insulator and positioned in axial alignment with the bore and moulded or otherwise secured in the porcelain of the insulator is a dish-shaped washer member 9.

The washer member 9 has a central aperture 10 from which a plurality of radially extending slots 11 radiate to divide the washer member into a plurality of spring fingers 12 which, by reason of the substantially dish-shaped formation of the washer member, permit the insertion of a conductor wire 13 from the flared end of the bore 7, the points of the fingers biting into the conductor when retrograde movement is attempted. Thus it will be seen that to connect the conductor with the insulator it is only necessary to force the same into the central aperture 10 of the washer member moving its spring fingers 12 in the direction of the applied force to permit the conductor to pass therebetween, the resiliency of the fingers causing them to securely grip the conductor when pressure is released.

The modified construction illustrated in Figure 2 is generally the same as that described in connection with Figure 1 except that the washer member 9 is not moulded or otherwise secured in the porcelain of the insulator but is separable therefrom, being positioned in a longitudinal slot 14 extending transversely across the bore 7 and opening to the outer end of the insulator. This construction permits ready renewal of the dish-shaped washer members, as will be readily apparent.

In Figure 4, the transverse bore 7 is supplemented by a longitudinal bore 17 to accommodate a pair of conductor wires 13 and each bore or opening has a dish-shaped washer member 15 moulded or otherwise secured in its walls, the washer members being stamped from a single piece of metal and having their adjacent peripheries connected by a bridging strip 16 which is bent to position the washer members at substantially right angles with respect to each other. The pair of conductor wires are electrically connected through the washer members by having their ends 18 stripped of insulation and received in the suitably reduced apertures of the washer members.

That form of my invention illustrated in Fig-

ure 5 dispenses with the dish-shaped washer members and provides a cylindrical member 19 positioned in a bore 20 extending transversely across the insulator and being secured therein by having the outer portions of the bore moulded over the ends thereof, as at 21. The cylindrical member 19 has a plurality of circumferentially spaced substantially V shaped prongs 22 directed inwardly at an angle, adjacent each end to function in a manner similar to the spring fingers 12 of the dish-shaped washer members to retain a conductor inserted between the points of the prongs against detachment.

From the foregoing description, taken in connection with the accompanying drawing, it will be readily apparent to those skilled in the art to which an invention of this character appertains that I provide novel means incorporated in an insulator for attaching a conductor wire thereto which obviates the usual necessity of tying the wire and in which two or more conductors may be electrically connected.

What I claim as my invention is:

1. In a device of the character described comprising an insulator having a bore and means imbedded in said insulator and having a part extending across the bore, said part having a central wire receiving opening and radial slots to divide said part into resilient fingers for gripping a wire inserted into the bore, said means permitting the insertion of the wire in one longitudinal direction but automatically restricting movement thereof in the other direction.

2. In combination with an insulator adapted to have an electric wire connected therewith, said insulator having a bore into which the wire is longitudinally insertable, a centrally apertured spring member embedded in the insulator in a position across the bore to substantially close the same, said spring member having slots extended radially from its central aperture to divide the same into a plurality of spring fingers and being substantially concave whereby the wire is freely insertable into the central aperture between the inner ends of the spring fingers upon longitudinal movement thereof in one direction and whereby movement thereof in the other directions is restricted by the fingers biting into the wire.

WILLIAM D. KYLE.