April 16, 1929. W. D. KYLE 1,709,477

INSULATOR

Filed Jan. 9, 1922

FIG. 1

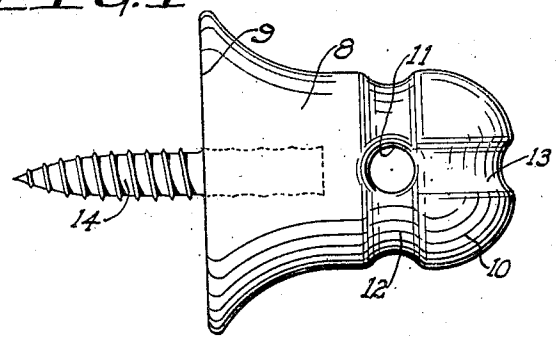


FIG. 2

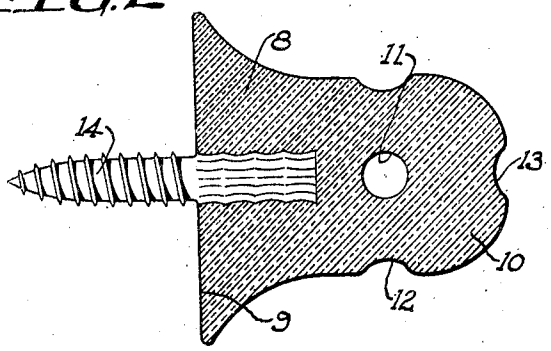
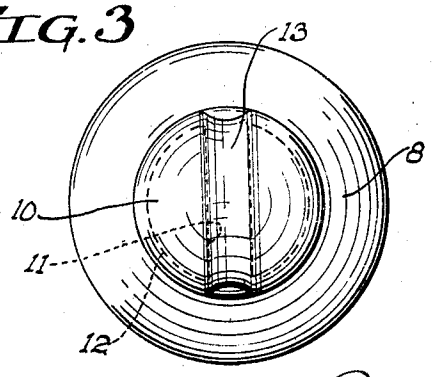


FIG. 3



WITNESSES

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UNITED STATES PATENT OFFICE.

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INSULATOR.

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The invention relates to insulators, and more particularly to the type used for attaching wires to buildings or other supports, and its object is to provide an inexpensive device having the requisite strength and insulating properties and easily attached to the support and the wire or wires.

The invention further consists in the several features hereinafter set forth and more particularly defined by claims at the conclusion hereof.

In the drawings: Fig. 1 is an elevation view of an insulator embodying the invention; Fig. 2 is a section taken on the line 2—2 of Fig. 3; Fig. 3 is a plan view of the insulator shown in Fig. 1.

In these drawings the body 8 of suitable insulating material, such as porcelain, or hardened plastic insulating material is flared outwardly to provide a broad flat base 9, and the head 10 of this body has a transverse opening 11 extending therethrough, with an exterior groove 12 extending around said head substantially parallel to the base and in the plane of said opening and an exterior groove 13 extending round the spherically curved end of said head from one end of the opening 11 to the other in a plane at substantially right angles to the base 9.

A lag screw 14 for wood provided with a self-piercing point in order to permit it to be screwed into a wood support without previously drilling a hole therein has its shank embedded in the body of the insulator and terminates at a distance from the groove 12. In the case of the hardened plastic insulating material, the lag screw is embedded in the insulator during the process of molding the body, as is well understood by those skilled in this art. In the case of the use of porcelain, the lag screw or machine screw is embedded in a hole formed in the body as by the use of suitable porcelain cement or lead. The broad flat base has a bearing against the wall or part to which the insulator is screwed to give rigidity to the device and avoid bending the screw shank. The insulator, with the lag screw, is adapted to be screwed into a wooden support, such as the side of a building, a pole or beam. The shank of the lag screw is threaded up to the base of the insulator so that the base of the insulator may be drawn up flat against the surface of the support to hide the screw and prevent it being exposed to the weather. By thus drawing the base of the insulator flat against the supporting surface, the lag screw is put into tension. Any cantilever stress which comes upon the insulator as by the tension of the wire which is dead-ended upon the insulator, does not bend the lag screw, but appears upon the lag screw as a stress in tension, due to the tendency to pivot about the edge or rim of the base. The lateral stress component is taken up by the friction of the flat base upon the support caused by the tension of the lag screw. The lag screw, therefore, need be in tension only after the insulator is properly seated on its support. In these constructions the turning of the insulator is readily accomplished by inserting a rod through the transverse opening 11 and using this rod as a handle to turn the insulator. Thus the opening 11 serves the double purpose of a wire-receiving opening and a turning tool mounting.

The insulator of the present invention has a flat porcelain base to bear flatly against the house or other support to completely enclose the only metal part, the attaching screw, thus being free from the objectionable staining that is incident to the use of insulators having metal bases.

The transverse holes through the insulator serve the two-fold purpose of receiving a tool for screwing it up and for receiving the wire.

Because of the wire passing through the transverse opening and the absence of metal parts surrounding it, there is less danger in the event of the porcelain breaking, for the line wire or conductor would then be entirely released and would fall to the ground, thus eliminating any possibility of carrying current directly into the house.

While the embedding of the screw in the body of the insulator serves to hold it against relative rotation, it is obvious that other means may be employed to key it fast in the insulator and compel it to turn when the insulator is turned by the tool passed through the opening.

The insulator constitutes a two-piece house or wall bracket, there being merely the porcelain body and the metal screw and the latter, being entirely enclosed when the insulator is installed, leaves only porcelain exposed, which is immune to the weather and to the dangers of conductivity and is protected against the latter in case it should break.

The device is highly useful in the industry because of its applicability to various situa-

tions and uses. It is particularly useful for dead-ending a drop wire (insulated copper wire) from the pole line to the house of the customer. In such use the drop wire is cut off with about two feet of line extending beyond the insulator. Then the end is passed through the eye or perforation 11 and the span drawn tight and then the end bent back and twisted about the main part of the span wire tight against the head of the insulator. The tension of the span tends thereafter to keep the conductor in place. Where it is desired to run the drop wire along the side of the house the same is laid in the top groove 13 so that the entire porcelain body lies between the live conductor and the support. A short piece of the wire (insulated) is extended through the perforation 11 and is twisted about the supported conductor. Thus the single structure fulfills the two requirements adequately and cheaply.

What I claim as my invention is:

1. As an article of manufacture a self-mounting insulator comprising a solid body of porcelain having a flat base of enlarged diameter with a self-piercing wood screw rigidly fixed therein and the threaded shank thereof extending out of the center thereof for drawing said base flat against a support, there being a solid eye integral with the base, said eye being adapted to have a conductor looped therethrough for dead ending a span, said eye having a groove extending across the head for locating a continuous line wire, the eye in that case being adapted to receive a tie wire for holding the line wire in the groove.

2. As an article of manufacture, a two-part self-mounting bracket insulator suitable for dead ending a span or supporting a run of conductor comprising an insulating body having a head and a base with a flat seating face, a metallic pointed wood screw having its upper end extending into and fixed in the base of the insulator and its shank extending at substantially right angles to the seating face, said head being formed into a loop by a transverse perforation above the screw, the flat seating face seating against the surface of the support and giving the body a direct bearing upon the support and completely hiding the metallic screw, the base portion of the body having a relatively extending circular rim which is adapted to resist bending of the screw by a cantilever stress on the insulator.

3. As an article of manufacture, a unitary two-piece self-mounting insulator suitable for dead ending a conductor or for supporting a run of conductor comprising a one-piece body of insulation consisting of a head and a base, the base having a flat seating face, the head having a transverse perforation with rounded edges merging into a groove across the top of the body for locating a wire, there being a metallic stud rigidly fixed in the base and extending at substantially right angles to said seating face, said stud being threaded up to substantially said base to permit the insulator to be drawn up by said thread until the flat seating face seats against and the body is supported by the surface of a support to which the stud is threaded, thereby leaving no exposed metallic part of the article, the transverse perforation forming a solid loop of insulation above the stud.

4. As an article of manufacture, a two part self-mounting insulator bracket suitable for dead ending an insulated drop wire comprising a body of porcelain consisting of a head portion and a body portion integral therewith, the head portion comprising a solid loop of porcelain providing an eye formed by a transverse perforation with well rounded edges suitable for looping an insulated drop wire therethrough in any angular position, said eye having a groove extending across the head, the base having a flat seating face of relatively large area and a pointed wood screw embedded in the body of the porcelain below the eye and projecting from the center of the base for sustaining an endwise pull on the insulator by the drop wire and adapted to draw the seating face flat against the surface of a support to permit the insulator to sustain the cantilever load which is imposed by extending the drop wire at an angle to the axis of the insulator.

5. As an article of manufacture, a two-part self mounting insulator bracket suitable for dead-ending an insulated drop wire comprising a body of frangible insulation consisting of a head portion and a body portion integral therewith, the head portion comprising a solid loop of frangible insulation providing an eye formed by a transverse perforation with well rounded edges suitable for looping an insulated drop wire therethrough in any angular position, the base having a flat seating face of relatively large area and a pointed wood screw embedded in the body of the frangible insulator below the eye and projecting from the center of the base for sustaining an endwise pull on the insulator by the drop wire and adapted to draw the seating face against the surface of a support to permit the insulator to sustain the cantilever load which is imposed by extending the drop wire at an angle to the axis of the insulator.

In testimony whereof I affix my signature.

WILLIAM D. KYLE.