

H. R. MARKEL.
INSULATOR.
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1,061,620.

Patented May 13, 1913.

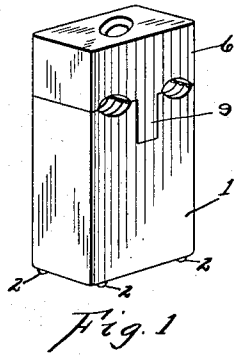


Fig. 1

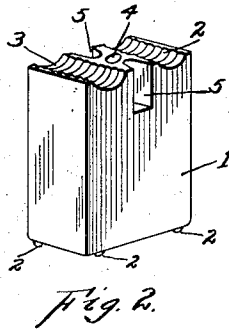


Fig. 2.

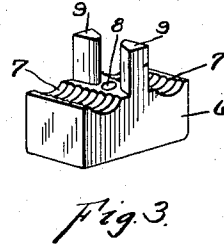


Fig. 3.

Witnesses

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INSULATOR.

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To all whom it may concern:

Be it known that I, HARLEY R. MARKEL, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Insulators, of which the following is a specification.

My invention relates to an insulator and is particularly designed as an improvement upon the types of porcelain insulators now in use generally for the purpose of clamping wires to studding within a building.

In the production of my insulator, I mainly aim to eliminate the undesirable features resulting from the use of coactive clamping elements having interfitting extensions and sockets of what might be termed a pyramidal nature. In other words, it is aimed to eliminate sharp edges as much as possible and to particularly avoid the use of such edges for bearing points. In the use of pyramidal interfitting connections and sockets, the chief drawback resides in the fact that the clamping parts when in actual use, vary as to their relative contiguity and, inasmuch as such a form of connection is only capable of perfect fit at one point, the parts are necessarily subjected in most instances to a stress greater than they are constructed to bear. This will be more readily understood when it is remembered that very frequently insulators of this type are only utilized for one wire and, as a matter of fact, the general purpose in forming the insulator with two grooves or passages for the wires, is to render the parts interchangeable in position. Considering that one wire is clamped between the parts of an insulator, it will be readily seen that a pyramidal interfitting connection will be thrown out of alinement in such a manner that the main stress will inevitably be upon the point of the pyramidal extension and in a great many cases, will result in breaking off of the same. In view of this stress to which these devices are normally and constantly subjected, I aim to provide a structure of insulator wherein the bearing walls of the interfitting extensions and sockets are of such a form that they contact throughout regardless of the space between the clamping elements. Thus if the clamping elements are separated by a quarter of an inch, they are just as firmly fitted together as though they were separated by an eighth of an inch. Furthermore, in the production of my im-

proved type of insulator, I aim to provide a structure wherein the interfitting bearing points are disposed between the grooves which hold the wires and are in a position to prevent the wires from creeping into contact with the clamping screw or nail. Not only this, but the bearing points are disposed in as widely separated relation as possible for the maximum resistance to a twisting action. It will be remembered in this connection that the operator initially places the wire in the groove and drives the nail in only a part of the way and sufficient to clamp the wire temporarily in position. Thereupon, pliers are used for drawing the wire taut and in such action they have a leverage upon the insulator. This will inevitably result in a very severe twisting stress upon the upper portion of the insulator and the insulator must therefore be constructed to meet such a stress. At the same time, there will be a stress of no mean proportion upon the base of the insulator and I have likewise devised a medium of resisting this stress.

The preferred embodiment of my invention is shown in the accompanying drawings, in which similar characters of reference designate corresponding parts, and in which:

Figure 1 is a perspective view of my improved insulator in assembled position, Fig. 2 is a perspective view of the base of the insulator, and, Fig. 3 is a perspective view of the top of the insulator.

It will be noted that the base is substantially of rectangular form as shown at 1 in the drawing and is provided upon its lower surface with lugs 2 preferably spaced, which are adapted to prevent rotation resulting accidentally from twisting of the insulator necessarily incurred in normal application thereof. The upper end of the insulator is provided with transverse grooves 3 preferably corrugated and spaced apart. Centrally disposed and extending longitudinally through this base 1 is an aperture 4 and upon either side of such aperture 4 formed in the edges of the base and between the corrugated grooves 3 are sockets 5 desirably tapered inwardly toward the aperture 4, but having their walls rounded throughout.

The top is shown at 6 as being of substantially rectangular form and provided on its under surface with complementary transverse grooves 7 likewise preferably corru-

gated and with an aperture 8 extending longitudinally therethrough. Upon either side of the aperture 8 and depending from the under surface of the top 6 and desirably 5 located between the grooves 8, are pins 9 of a substantially triangular cross section, but having their surfaces rounded to eliminate sharp corners.

It will be noted that the sockets 5 and the 10 pins 9 are disposed at opposite sides of the insulator and furthermore that their walls are vertical throughout, producing a continuous contact regardless of the relative degree of closure of the clamping members. 15 The importance of this results in the fact that the upper section of the insulator, when in operation, necessarily precludes contact of the upper surface of the base with the under surface of the top. Were the pins 20 and sockets provided with walls other than vertical, they would only contact throughout at one point, whereas in the present case, the contact is even independently of the space between the base and top members. 25 Furthermore, these insulators are generally, as hitherto stated, for clamping one wire only and there is necessarily a tilting strain. If the interfitting members are tapered downwardly to a point, such 30 connections could not hold the members from relative twisting as they would not be in contacting relation. At any rate, there would be a looseness which would greatly endanger breakage of the lug or lugs used. 35 Aside from the above stated functions, I have provided a structure wherein sharp edges are practically obviated by the provision of the spaced inwardly tapering sockets. These spaced sockets further effect

a bearing of maximum strength for the resistance of rotative tendencies of the top upon the base. 40

What I claim, is—

An insulator comprising a base portion having a passage-way formed longitudinally therein for the reception of a retaining screw, there being a wire retaining groove extending transversely across a plane 45 face of said base upon opposite sides of said passage-way, said base portion being provided with diametrically opposed recesses located at its edges, extending longitudinally thereof and tapering inwardly, said recesses terminating short of said passage-way and having rounded inner walls, a 50 crown portion having a passage-way for said retaining screw which aligns with the passage-way of the base portion, transverse wire retaining grooves formed upon opposite sides of said passage-way in a plane 60 face of said crown portion and alining with the grooves of the base portion, and projecting diametrically opposed lugs located at the edge of said crown portion and between said grooves, said lugs tapering inwardly and having rounded inner faces, the longitudinal walls of said lugs lying in parallelism with the longitudinal walls of the 65 recesses of the base portion, the said lugs being spaced outwardly from said screw receiving passage-way. 70

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

HARLEY R. MARKEL

Witnesses:

LOUISE E. SMITH,
BLANCHE JACOBS.