J. R. HARRIS.

SPLIT INSULATOR.

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1,042,372.

Patented Oct. 22, 1912.

Fig. 1.

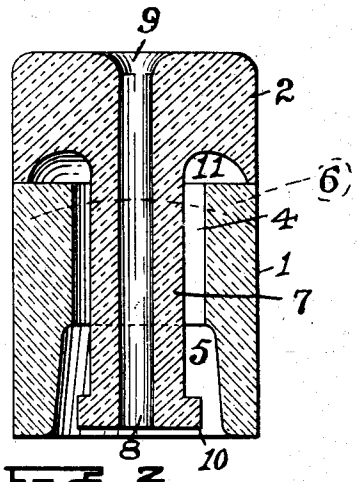


Fig. 2.

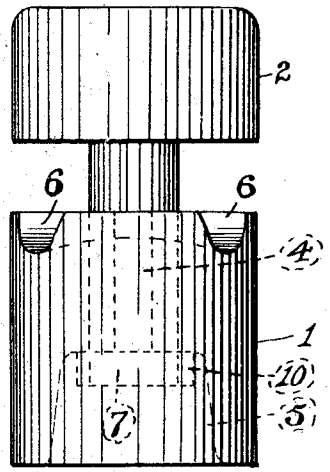


Fig. 3.

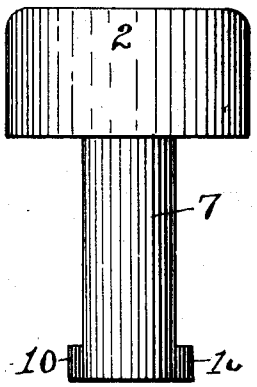
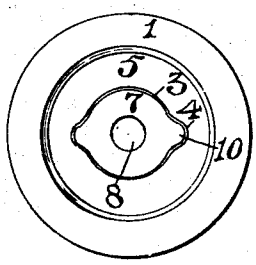


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

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SPLIT INSULATOR.

1,042,372. Specification of Letters Patent. Patented Oct. 22, 1912.

Application filed April 8, 1912. Serial No. 689,111.

To all whom it may concern:

Be it known that I, JOHN R. HARRIS, a citizen of the United States, and residing in the township of Chartiers, in the county of Allegheny and State of Pennsylvania, have invented or discovered new and useful Improvements in Split Insulators, of which the following is a specification.

My invention consists of a new and improved split insulator or two-part electrical-wiring knob.

Split insulators are preferred for electrical-wiring, but their use is attended by numerous inconveniences. The bases and caps are shipped together in bulk and must be sorted out and matched before use. The workman must first select a base and then a cap when installing the insulator. He then places the base in position, stretches the wire or wires in place, then puts the cap upon the wire and the base, and then nails the whole to the wall or other support. This is a slow and tedious operation. In the transportation and handling of the unassembled parts of the insulators there is a large percentage of breakage and spalling of the edges and corners of the same.

The base and cap of my insulator are separately formed then assembled together before shipment, and need not thereafter be disassembled, sufficient looseness being provided before nailing fast to allow of the introduction of the wire between the parts, the nailing fast of the insulator to the wall or support tightening the cap down upon the base and wire or wires. The assemblage of the parts together prevents breakage or spalling in shipment or handling, and facilitates installation as the workman does not need to sort out the different parts and assemble the same. If desired however, the cap may be readily detached from the base.

In the accompanying drawings, Figure 1 is a longitudinal section of the base and cap in the position assumed when being assembled; Fig. 2 is a side elevation of the insulator, the cap being turned to prevent disassemblage and also pulled out to its limit of movement under such circumstances to admit of the insertion of the wire; Fig. 3 is a side elevation of the cap, and Fig. 4 is a bottom plan view of the insulator, the cap being turned into position for disassemblage.

The following is a detailed description of the drawings, an insulator of round cross-section and single wire-groove being shown for the sake of illustration but it being understood that the cross-sectional shape and the number of wire-grooves provided is immaterial.

1 is the base and 2 is the cap, the material used for the same being porcelain, glass or any other suitable non-conducting material. The base 1 is provided with a central longitudinal bore 3 having at one or more of its sides a longitudinal slot or groove 4. The bottom end of bore 3 is countersunk as at 5.

6 is a wire-groove in the top face of the base 1, preferably bowed upwardly as shown in dotted lines in Fig. 2. Two or more of such wire-grooves may be provided according to the number of wires to be supported.

The cap 2 is provided with a stem 7 which is pierced through by a nail or screw hole 8 extending through the cap and preferably countersunk, as at 9, at its outer or cap end. The stem 7 fits the bore 3 of the base, both of which are cylindrical. The end of stem 7 is provided with one or more lateral fins 10—10, one for each slot 4 and adapted to slide along the said slots. It is evident that the cap and base may be assembled by registering the fins 10—10 with the slots 4—4 and pushing the stem 7 through the bore 3 until it protrudes into the countersinking 5. By giving the cap a partial turn, the fins 10—10 are turned out of registration with the slots 4—4 and the cap cannot be removed from the base until such registration is restored. As the fins and slots are relatively of small size, accidental registration of the same is practically impossible, so that the cap and base are permanently assembled together unless intentionally taken apart. The stem 7 of the cap is of sufficient length to allow considerable play between the fins 10—10 and the inner end of the countersinking 5 so that the cap may be raised, as shown in Fig. 2, to permit the introduction of the wire between the cap and base to be clamped in the groove 6.

The inner or under face of the body of cap 2 is provided with an annular groove 11 surrounding the stem 7 and coacting with the wire-groove 6 to clamp the wire tightly in place when the cap and base are forced together. The advantage of making the groove 11 annular is that the position of the cap need not be nicely adjusted to enable the grooves 6 and 11 to coact in engaging the wire.

At the factory the base and cap are formed separately and then assembled by registering the fins 10—10 with the slots 4—4 and passing the stem 7 down through the bore 3, and then giving the cap a partial turn to destroy the registration of the fins with the slots, thus locking cap and base together. In wiring, the nail or screw is inserted through the hole 8 and driven partially into the wall or support; the cap is then drawn away from the base to the limit of its movement and the wire is laid in groove 6. The nail or screw is then driven home until its head seats in countersinking 9, fixing the insulator firmly to its support and clamping the wire firmly between the cap and base.

It is thus evident that I have produced an inexpensive, yet durable and convenient split insulator which greatly reduces the loss from breakage and spalling and facilitates handling and installation.

My insulator is a two-pieced insulator in one. An advantage which might be mentioned is the fact that there is perfect insulation between the nail or screw and the wire or wires, so that in case the insulation of the wire becomes chafed or broken, there is no danger of the naked wire coming into contact with the nail or screw as the latter is enveloped for substantially its entire length in a cylinder of porcelain. Thus grounding or short-circuiting of the wire is impossible.

What I desire to claim is:—

1. A split insulator composed of a base having a central bore provided with a longitudinal slot and a countersunk end, a cap, an integral stem on said cap adapted to extend through said bore into said countersinking when said cap and said base are assembled, and a lateral fin on the end of the stem adapted to register with the slot to permit the assemblage of said cap and said base but when occupying said countersinking and turned out of registration with said slot to limit the movement of said cap in relation to said base and prevent its disassemblage therefrom.

2. A split insulator composed of a base and a cap adapted to be tightened together and bind the wire between them, said base being provided with an axial bore containing a longitudinal slot, the base of said bore being countersunk, a stem integral with said cap and adapted to be inserted in said bore, said cap and stem being provided with a longitudinal fastener hole, and a lateral fin on said stem adapted to traverse said slot when said stem is inserted in said bore and to prevent the withdrawal of said stem from said bore when said fin occupies said countersinking and is turned out of registration with said slot.

3. A split insulator composed of a base and a cap adapted to be tightened together and bind the wire between them, said base being provided with an axial bore containing a longitudinal slot, a stem integral with said cap and adapted to be inserted in said bore, said cap and stem being provided with a longitudinal fastener hole, and a lateral fin on free end of said stem adapted to traverse said slot when said stem is inserted in said bore and to prevent the withdrawal of said stem from said bore when said fin occupies said countersinking and is turned out of registration with said slot, sufficient looseness being provided for the insertion of the wire between the cap and the base by making the stem between the cap and the fin longer than said bore.

Signed at Pittsburgh Penna. this 6th day of April, 1912.

JOHN R. HARRIS.

Witnesses:
E. A. LAWRENCE,
J. H. HARRISON.