

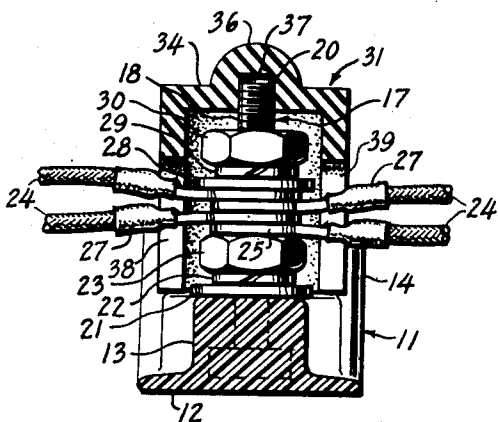
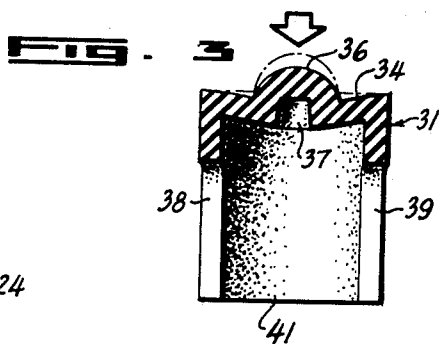
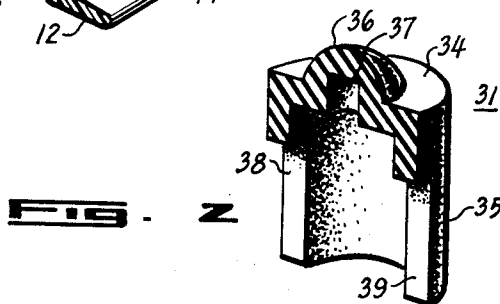
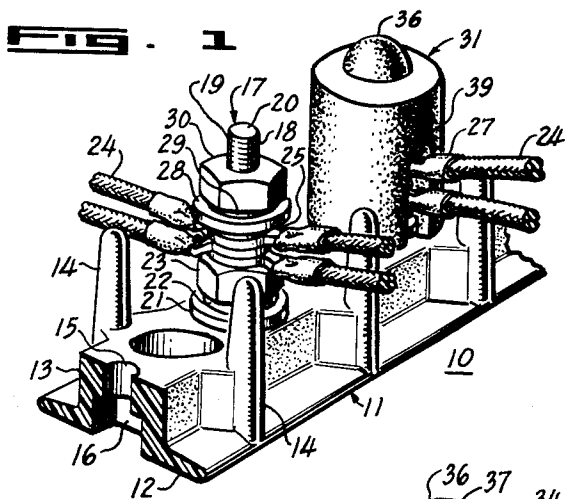
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INSULATING SHEATH FOR TERMINAL POST

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## INSULATING SHEATH FOR TERMINAL POST

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This invention relates generally to insulators and more particularly to an insulating cover or sheath for a terminal screw.

An object of the present invention is to provide an insulating member of a yieldable substance such as live rubber having an improved form adapting it for ready and self-locking attachment to a terminal screw.

Another object of this invention is the provision of an improved insulating sheath for a terminal stud which is easily installed and serves to isolate the terminal screw from dust and dirt and to protect it from moisture.

Another object of this invention resides in providing an insulating cover for a terminal screw consisting of a unitary molded body of yieldable material having such construction that it can be embracingly associated with the terminal screw and which utilizes the resiliency of the material of which it is formed to hold it upon the screw.

A further object of the invention is to produce an efficient and effective insulating sheath for a terminal screw, which has a simple and economical construction and is particularly characterized by its ease of attachment and ability to remain in operative position.

Other objects and features of the invention will be readily apparent to those skilled in the art from the following specification and appended drawing illustrating a preferred embodiment of the invention in which:

Figure 1 is a perspective view of a section of a cable terminal or panel connector having associated therewith an insulating sheath or cover made in accordance with this invention.

Figure 2 is a sectional view in perspective of an insulating cover.

Figure 3 is a view in vertical section of the insulating cover of Figure 2 and illustrating the general appearance of the cover when deformed under applied external pressure; and

Figure 4 is a vertical sectional view of the insulating cover in mounted position on a terminal post.

Having specific reference now to the drawing there is illustrated a usual cable terminal or electric panel connector, indicated generally by the numeral 10, comprising a molded mounting body member 11 formed of any suitable insulating material, such as the plastic "Bakelite," or hard rubber. Body member 11 comprises a base 12 having a centrally disposed, longitudinally extending raised portion 13. A plurality of pillars or columns 14 rise from base 12 and are arranged in pairs on opposite sides of the raised portion

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13, with those pillars 14 located on the same side of raised portion 13 being spaced equally one from the other. The raised portion 13, at the various locations intermediate succeeding columns 14, is pierced to provide a plurality of circular bores 15, each of which terminates in a square-shaped recess 16. A plurality of terminal posts 17 are provided on the body member 11. The terminal posts 17 comprise screws 18, the threaded shanks 19 of which are passed through bores 15 to project their free ends 20 above raised portion 13, and have square-shaped heads which fit into square-shaped recesses 16 to prevent the screws 18 from turning. Each of the screws 18 mounts a washer 21, a lock washer 22, and a nut 23 to secure the screws 18 to the body member 11. Cables 24 are affixed to the panel connector 10 by fitting the cable tip or terminal 25 carried at the end of each cable 24 onto a terminal post 17. Each cable tip 25 has the metallic portion thereof which is clinched onto a cable suitably encased in an insulating covering 27, which covering may be made of any suitable plastic or other insulating material. After the desired number of electrical leads are fitted to a terminal post 17, they are secured to the post by means of a washer 28, a lock washer 29, and a nut 30.

With the cable connections made, an insulating cover or sheath 31 may now be fitted to the terminal posts 17. The insulating cover or sheath 31, in accordance with the invention, embodies a generally cup-shaped unitary body member having an annular end wall 34 and arcuate side walls 35; in other words, sheath 31 in effect is a hollow cylinder having one end closed. An integral tit or nob 36 is formed on and projects from the exterior surface of end wall 34, and is positioned centrally thereon. Interiorly of the cup-shaped sheath 31 there is provided centrally in end wall 34 a recess 37 which extends into tit 36 but not through it. The diameter of recess 37 is slightly less than the diameter of screw 18 so that the end of screw 18 does not have free access to recess 37. The tit 36 is shown in the drawing as being generally a spherical-segment in shape. However the particular shape of the tit 36 does not form a part of this invention. What the invention does require is a protuberance of some kind on the exterior of end wall 34 and an interiorly located or blind recess. The purpose of this protuberance or tit 36 and the recess 37 will hereinafter be explained.

Sheath 31 is provided with a pair of oppositely disposed slots 38 and 39. The slots 38 and 39 extend longitudinally from the open end 41 of cup-

shaped portion 33 and terminate short of end wall 34.

Insulating cover or sheath 31 may be made of any readily deformable material which when distorted under pressure tends to return to its original shape. Rubber is preferred as the resilient material to be used, including synthetic rubbers as well as natural rubber. Additionally, since the material from which insulating cover 31 is made is not a part of this invention, it is contemplated that any elastic deformable material having physical properties similar to rubber may be employed.

In use the insulating cover 31 is placed over a terminal screw 18 with slots 38 and 39 positioned to fit over the ends of the cables 24 connected to the screw 18. The blind recess 37 in end wall 34 will be located above the upper end of screw 18. Since, as has been described hereinbefore, the recess 37 is of lesser diameter than the diameter of screw 18 the end of screw 18 will not enter the recess 37 without external force being applied to the sheath 31. As shown in Figure 3 when force is applied to the tit 36 the upper end of sheath 31 will deform and the opening to the recess 37 will be enlarged. It is to be noted that the illustration of Figure 3 exaggerates the deformation that occurs, this is in order that the invention may be more readily understood. After enlargement of the opening to recess 37 continued application of the external force will readily fit the end of screw 18 into recess 37. The natural resiliency of the material comprising the sheath 31 will afford a circumferentially applied force which causes the sheath 31 to tightly grip the end of the screw 18 and lock the sheath 31 to the screw 18 so that it cannot readily be jarred loose therefrom. Tit 36 enables the external deforming force to be readily applied to sheath 31 and at a location where it will facilitate the insertion of the end of screw 18 into blind recess 37.

Sheath 31 constructed with a deformable wall surface, which lies transverse to the longitudinal axis of the hollow body portion, and having a blind recess in this wall surface arranged to lie in axial alignment with the terminal screw to be enclosed by the sheath provides a locking or holding force which is sufficient to resiliently retain the sheath on the free end of the terminal screw under ordinary conditions of use and hence no other securing means are necessary. Providing a protuberance or nub on the wall surface, on the side thereof opposite to that side having the recess, effects an efficient means for fitting the sheath 31 upon the terminal screw which it insulates.

From the foregoing it is seen that there has here been provided an improved insulating device for enclosing a terminal post, which is simple in form and very readily applied. An effective insulating seal or cover is afforded about the terminal screw and the cable ends connected thereto which lessens to a very considerable degree the danger of shorts inadvertently developing between terminal posts.

It is understood, of course, that the sheath 31 is removable from the terminal screw and is adapted to be reused. The resilient force which holds the sheath to the terminal screw will yield to an external withdrawing pull without tearing or otherwise injuring the sheath.

While a certain preferred embodiment of the invention has been specifically disclosed, it is understood that the invention is not limited

thereto as many variations will be readily apparent to those skilled in the art and the invention is to be given its broadest possible interpretation within the terms of the following claims.

What I claim is:

1. An insulating member for enclosing an electrical terminal screw to which cable ends are connected comprising a unitary hollow body of resilient deformable material within which the terminal screw and the cable ends connected thereto may be disposed, said hollow body having side walls provided with oppositely disposed slots adapted to be fitted about the cable ends connected to said terminal screw, and means for resiliently securing the insulating member to the free end of said terminal screw, said means comprising a wall surface of said unitary hollow body, transverse to the longitudinal axis of the hollow body, and a protuberance on the exterior of said wall surface, said wall surface having a recess provided therein on the side thereof opposite to that side having said protuberance, which recess extends within said protuberance, said interiorly located recess arranged to lie in axial alignment with said terminal screw, when the hollow body is positioned about the terminal screw, and being of lesser diameter than the diameter of the terminal screw for closely receiving the free end of the terminal screw to apply a resilient force circumferentially to said free end, said recess increasing in size on application of external force to said protuberance to permit insertion of said free end of the terminal screw.

2. An insulating cover element for enclosing an electrical terminal post to which cable ends are connected comprising a unitary body member of resilient deformable material, said body member having a hollow cylindrical portion comprising arcuate side walls, an end wall transverse to the longitudinal axis of said body member and being open at one end, said side walls provided with oppositely disposed, longitudinally extending, slots adapted to be fitted about the cable ends connected to said terminal post to encase said connected cable ends, and means for resiliently securing the insulating cover element to the free end of said terminal post, said means comprising said end wall and a protuberance on the exterior surface of said end wall positioned centrally thereon, said end wall having a recess provided in the interior surface thereof, which recess extends into said protuberance, said recess arranged to lie in axial alignment with said terminal post when the body member is positioned about the terminal post, and being of lesser diameter than the diameter of the terminal post for closely receiving the free end of the terminal post to apply a resilient force circumferentially to said free end, said recess increasing in size on application of an external force to said protuberance to permit insertion of said free end of the terminal screw.

3. In a resilient, molded rubber insulating cap for covering a threaded terminal post, an upper end portion of which is exposed and which has assembled thereon the terminal ends of a plurality of insulated conductors which extend in opposite directions from said post and which are secured on said post by a nut screwed downwardly on the latter against said terminal ends, the combination of: a flat, circular top wall having a hemispherical boss formed integrally therewith and rising upwardly from the upper surface thereof, there being a hole extending axially upwardly through said top wall and into

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said boss, said hole being of substantially less diameter than said post and being adapted to frictionally receive the latter when said cap is pressed downwardly on said post; and a cylindrical side wall formed integral with and extending downwardly from the periphery of said top wall, said side wall having a plurality of openings extending upwardly from the lower edge thereof for closely receiving said insulated conductors, the frictional engagement of said hole with the threads on said post being substantially relaxed by pinching the upper end of said boss, thereby facilitating the application of said cap to or the removal of said cap from said post.

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