

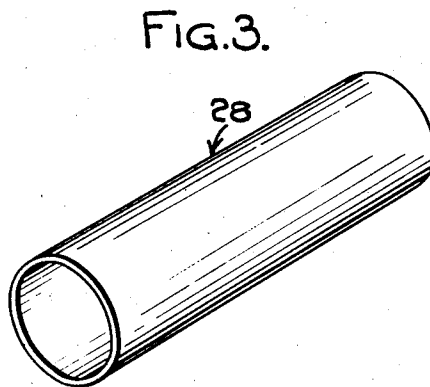
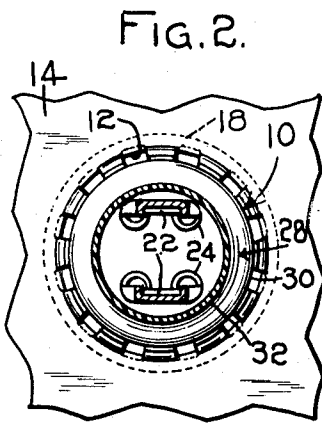
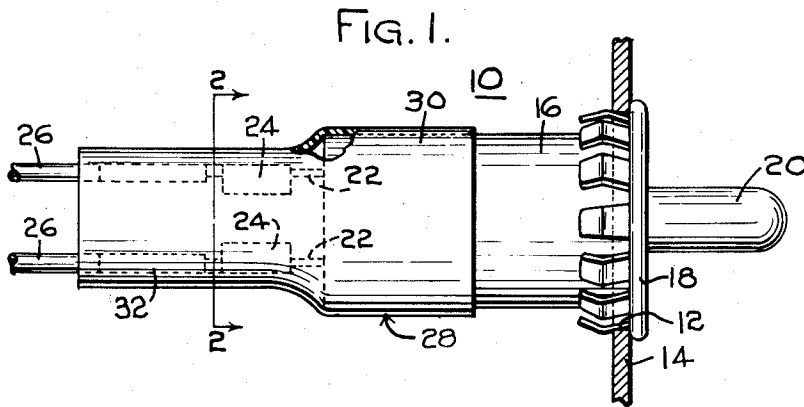
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FASTENING DEVICE

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1

2,831,948

FASTENING DEVICE

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2 Claims. (Cl. 200—168)

This invention relates generally to fastening devices and has particular reference to an electrical assembly.

In the construction of automobiles, appliances, and the like, it is customary to provide push-button switches to be operated by the opening and closing of a door. Such switches are usually mounted in a panel aperture and extend rearwardly therefrom with contacts projecting from the rear end to receive lead wires having suitable connectors therein. It is convenient to install such switches by drawing the leads through the aperture to the front side of the panel, attaching the leads to the switch, and then assembling the switch with the panel by inserting it rear end first through the aperture. In many cases, it is desirable to insulate the contacts so that when pushed through the aperture they cannot be accidentally shorted or grounded, and it is also desirable to protect them from physical damage. Several methods of providing such insulation have been used in the past, however, they have had the disadvantage of being too expensive, or too difficult to assemble, and in many cases, cause difficulty in the assembly of the lead wire connectors onto the contact, and in passing the switch through the aperture.

The object of this invention is to provide an electrical assembly having contact members extending therefrom which have an insulating sheath assembled therewith to insulate the contact members without interfering with the assembly of lead wire connectors thereon.

A further object of the invention is to provide a switch assembly in which an elongated housing having contacts extending from the rear end is provided with an insulating flexible transparent sheath assembled onto said end and extending rearwardly therefrom and closely surrounding said contacts.

Other objects of the invention will, in part, be obvious, and will, in part, appear hereinafter.

In the drawing:

Fig. 1 is a view in side elevation of an electrical assembly embodying the features of the invention;

Fig. 2 is a view in section taken on line 2—2 of Fig. 1; and

Fig. 3 is a perspective view of an insulating sheath used in the assembly of Fig. 1 prior to assembly therewith.

Referring to the drawing, there is illustrated an electrical switch assembly 10 which is adapted for snapping engagement into an aperture 12 in a support panel 14.

The assembly 10 comprises generally a housing 16 which may be formed of metal or plastic having an attaching member 18 assembled onto one end for snapping engagement into the panel aperture and an operating plunger 20 extending from said end.

To provide means for completing an electric circuit to the switch, a pair of contacts 22 extend axially from the rear end to receive connectors 24 of the snap-on type on lead wires 26.

To insulate the contacts 22 and connectors 24 from their surroundings to eliminate the possibility of shorting or grounding, an insulating sheath 28 is provided on the

2

rear end of the switch. The sheath 28 is preferably formed of a single piece of resilient transparent plastic which is originally in the form of an open-ended tube of uniform diameter which is less than that of the housing 16 and of sufficient length for a purpose to appear hereinafter. The sheath 28 is assembled onto the rear end of the housing 16 by enlarging an end portion 30 thereof until it is of sufficient size to pass over the end of the housing so that it is thereafter able to contract and firmly grip the housing. The method of enlarging the portion 30 will vary with the material of which the sheath is formed. In some cases simple stretching may suffice, in other cases, such as when a vinyl plastic is used, the application of heat or solvents may be desirable. The sheath 28, although resilient, is sufficiently rigid so that the portion 32 extends axially from the housing closely surrounding the contacts 22 and extending a considerable distance rearwardly therefrom so as to surround the lead wire connectors when they are assembled onto the contacts. The rigidity and resiliency of the sheath also protects the connectors and contacts from physical damage that might occur from handling the apparatus after the switch is assembled therewith.

The lead wire connectors preferably are of the type that can be assembled by pushing axially onto the contacts. In the preferred embodiment the sheath 28 is transparent to facilitate the assembly of the lead wire connectors onto the contacts.

Since certain obvious changes may be made in the device without departing from the scope of the invention, it is intended that all matter contained herein be interpreted in an illustrative and not in a limiting sense.

I claim:

1. An electrical apparatus or the like having an elongated housing and contact members extending therefrom which are adapted to receive connections of the quick-detachable type, and an insulating sheath assembled onto the housing portion from which said contacts extend, said sheath being formed of resilient transparent material and being a thin-walled tube with a diameter normally less than that of said housing portion, one end of said sheath being stretched about said portion of the body in gripping engagement therewith, the other end of the sheath projecting axially rearwardly from the body and surrounding said contact members in spaced relation thereto.

2. An electric switch or the like adapted for assembly into a panel opening from the front side thereof, said switch comprising an elongated housing having switch actuating means extending axially from the forward end, contact members extending axially from the rear end which are adapted to receive connectors of the quick detachable type, and a retaining ring disposed about the housing having radially spaced spring fingers for engagement into the panel opening, and an insulating sheath assembled onto the rear end of the housing, said sheath being formed of a thin-walled flexible tube of transparent resilient plastic which has a diameter normally less than that of the rear end of the housing, the forward end of the sheath being stretched about said end of the body in gripping engagement therewith, the rear end of said sheath extending axially from the rear end of the body and surrounding said contact members in spaced relation thereto.

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