Feb. 3, 1953 C. A. WOODWARD 2,627,359

HOUSING FOR ELECTRIC SWITCHES AND THE LIKE

Filed May 26, 1949

FIG. 1.

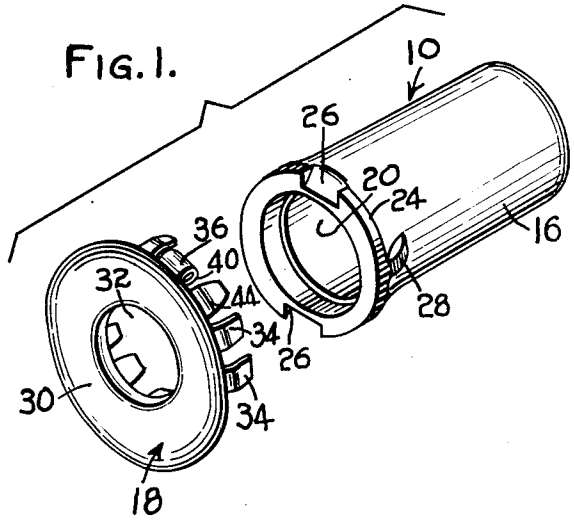


FIG. 2.

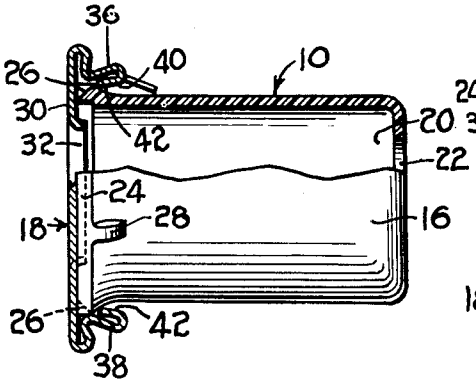


FIG. 3.

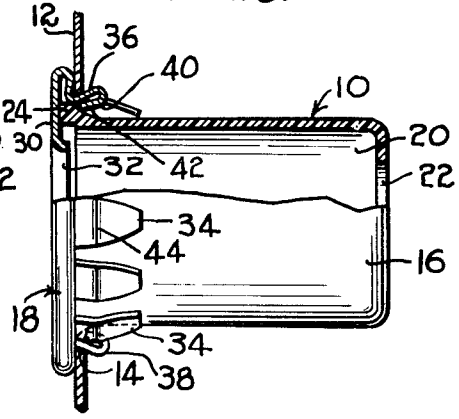
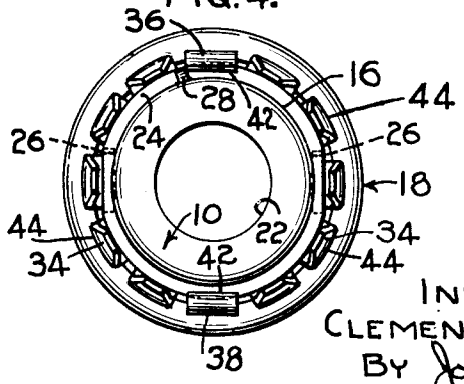


FIG. 4.



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Patented Feb. 3, 1953

2,627,359

UNITED STATES PATENT OFFICE

2,627,359

HOUSING FOR ELECTRIC SWITCHES AND THE LIKE

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Application May 26, 1949, Serial No. 95,450

5 Claims. (Cl. 220—3.5)

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This invention relates to housing assemblies for electric switches and the like which are adapted to snap into engagement with a supporting wall through an opening therein.

The object of the invention is to provide a switch housing assembly comprising a body member and a cap member in which the cap member has means thereon for snapping engagement with the body member, and also means for engagement with a supporting wall when the assembly is inserted into an opening therein.

A further object of the invention is to provide a switch housing assembly comprising a cap member and a body member in which the body member is provided with an outwardly extending flange having inclined camming surfaces thereon to cooperate with engaging legs disposed on the cap member to allow assembly of the members.

A still further object of the invention is to provide a cap member for assembly with a housing body having an outwardly extending flange disposed thereabout, in which the cap is provided with attaching legs, some of which are adapted to engage the outwardly extending portion of the body member, and others are adapted to engage a supporting wall when the housing assembly is inserted into an opening therein.

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

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description, taken in conjunction with the accompanying drawing, in which:

Fig. 1 is a perspective view of the component parts of the housing prior to assembly;

Fig. 2 is a view in elevation, partly in section, of the housing assembly in which the cap member is partially assembled onto the body member;

Fig. 3 is a view in elevation, partly in section, in which the cap has been completely assembled on the body member, and the assembly has been mounted in an opening in a supporting panel; and

Fig. 4 is an end view of the housing assembly of Fig. 3.

Referring to the drawing, there is illustrated a housing assembly 10, which is adapted to be snapped into engagement with a supporting wall 12 through an opening 14 therein. The assembly 10 comprises a body 16, which is preferably formed of insulating material such as synthetic organic plastic, and a sheet metal attaching cap 18 which is shaped and arranged to snap into engagement with one end of the body 16.

In the preferred embodiment, the body 16 is substantially cylindrical, and has an internal cavity 20 for receiving a switch or other device (not shown) to be contained within the housing.

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An opening 22 may be provided in one end of the body for receiving electrical lead wires to be connected to the switch. To provide means for enabling the cap to engage the body, an outwardly extending flange portion 24 is provided, which extends about the periphery of the body adjacent the end to which the cap is to be attached. The flange portion 24 is provided with a pair of inclined camming portions 26 on the side of the flange nearest the end of the body, which are preferably disposed directly opposite one another. A stop member 28 is provided behind the flange portion approximately midway between the inclined portions for a purpose which will be hereinafter described.

The cap 18 comprises a base 30, which may have an opening 32 for receiving a switch operating plunger, and a series of attaching legs 34 which are arranged about the base to receive the end of the body 16 and the flange portion 24 centrally thereof. A pair of opposite legs 36 and 38 are each provided with a camming surface 40 and an inwardly extending shoulder portion 42. It has been found most convenient to accomplish this by curling the end of the leg under and back on itself, so that the end of the leg serves as the inwardly extending shoulder portion 42, and the resulting rounded portion serves as the camming surface 40. The other legs are each provided with outwardly extending shoulder portions 44, which are spaced on the legs a predetermined distance away from the base 30 to receive a section of the supporting wall therebetween for engagement by the shoulders 44.

To assemble the cap and the body, the cap is aligned with the body so that the curled legs 36 and 38 are opposite the inclined portions 26 on the body, with the end of the body centrally disposed within the series of legs 34. The relative dimensions of the parts are such that the legs 34 are able to pass over the end of the body and the flange 24. However the curled legs 36 and 38 engage the inclined portions on the flange, and when the parts are forced together, the camming surface 40 of the legs rides over the inclined portion 26 on the flange and snap into engagement therebehind. After such engagement, the cap may be easily removed as long as the curled legs are aligned with the inclined portions 26 on the flange. As illustrated in Fig. 3, the cap is then locked into engagement with the base by rotating the cap on the base until a curled leg comes against the stop 28, which is shaped and arranged to pass under the legs 34 during such rotation, but is sufficiently high to engage the curled leg 36 and thereby limit the rotation to a predetermined amount.

After such assembly, the housing may be inserted into the opening 14 in the supporting wall, whereby the outwardly extending shoulders 44

engage the edge of the wall to retain the housing in assembly therein.

Although in the illustrated embodiment the cap is shown to have two curled legs, it will be understood that more may be provided if desired, in which case a corresponding number of inclined portions will be provided on the body. The outwardly extending flange portion in some cases may be disposed on the body at a point intermediate the ends, and the cap provided with an opening sufficiently large to allow it to pass completely over the end of the body for engagement with the flange.

Since certain other 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. A housing assembly for switches and the like which is adapted to snap into engagement with a supporting wall through an opening therein, said assembly comprising a body member and a cap member, said body member being substantially cylindrical and having an outwardly extending flange portion at one end thereof, said flange portion having at least one recessed passage extending therethrough, said cap member comprising a base and a plurality of support-engaging resilient legs spaced about the periphery of said base and extending from one side of said base substantially normal thereto to provide a substantially cylindrical outline and to receive the body member and the outwardly extending flange portion centrally thereof, at least one of said legs having a radially inwardly extending shoulder portion which extends within said substantially cylindrical outline and which is adapted to ride over the flange portion through said recessed passage and to lock into engagement with said outwardly extending flange portion when the cap member is on the body member, said body member having means thereon to limit rotation of the cap member thereon by engaging said inwardly extending shoulder portion.

2. A housing assembly for switches and the like which is adapted to snap into engagement with a supporting panel through an opening therein, said assembly comprising a body member and a cap member, said body member being substantially cylindrical and having an outwardly extending flange portion at one end thereof, said flange portion having a pair of recessed passages extending therethrough at opposite points on the periphery of said flange portion, said cap member comprising a base and a plurality of support-engaging resilient attaching legs spaced about the periphery of said base and extending from one side of said base substantially normal thereto to provide a substantially cylindrical outline and to receive the body member and the outwardly extending flange portion centrally thereof, a pair of oppositely disposed legs being curled radially inwardly and downwardly to provide rounded ends thereon and radially inwardly extending shoulder portions thereon which extend within said substantially cylindrical outline, said pair of legs being shaped and arranged to ride over the flange portion through said recessed passages when the cap member is assembled onto the body member and to lock into engagement behind the outwardly extending flange portion when the cap member is on the body member, the other legs having radially outwardly extending shoulder portions for snap fastener engagement with the supporting panel when the housing is assembled in an opening therein.

3. A cap for assembly on a substantially cylindrical housing having an outwardly extending flange portion at one end and for securing said housing in an opening in a supporting panel, said cap comprising a base portion and a plurality of support-engaging resilient legs spaced about the periphery of said base portion and extending from one side of said base portion substantially normal thereto to provide a substantially cylindrical outline and to receive centrally thereof a substantially cylindrical housing having an outwardly extending flange portion at one end, at least one of said legs having a radially inwardly extending shoulder portion which extends within said substantially cylindrical outline and which is adapted to ride over the flange portion of such a housing through a recessed passage in such flange portion and to lock into engagement with such outwardly extending flange portion.

4. A cap for assembly on a substantially cylindrical housing having an outwardly extending flange portion at one end and for securing said housing in an opening in a supporting panel, said cap comprising a base portion and plurality of support-engaging resilient attaching legs spaced about the periphery of said base portion and extending from one side thereof substantially normal thereto to provide a substantially cylindrical outline and to receive centrally thereof a cylindrical housing having an outwardly extending flange portion at one end, an oppositely disposed pair of said legs being curled radially inwardly and downwardly to provide rounded ends thereon which extend within said substantially cylindrical outline, said pair of legs being shaped and arranged to ride over such a flange portion through recessed passages therein when the cap is assembled onto such a housing and to lock into engagement behind such an outwardly extending flange portion, others of said legs having radially outwardly extending shoulder portions for snap fastener engagement with the supporting panel when the housing is assembled in an opening therein.

5. A cap in accordance with claim 4 wherein the oppositely disposed pair of legs include portions extending within the substantially cylindrical outline adapted to engage projections extending from adjacent the outwardly extending flange portion at one end of a substantially cylindrical housing to which the cap may be applied to provide means for stopping relative rotation of said cap with such a housing.

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