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2,239,653

ELECTRICAL CONVENIENCE OUTLET

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Fig. 1.

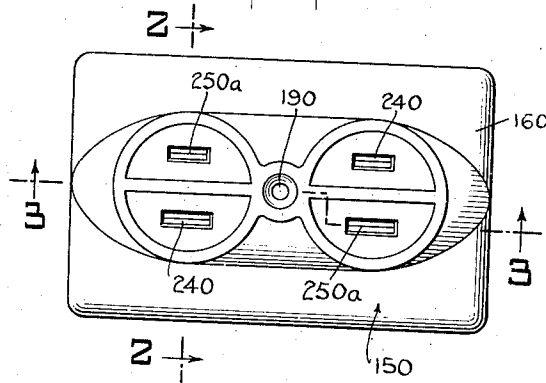


Fig. 2.

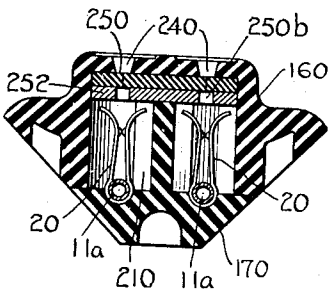


Fig. 3.

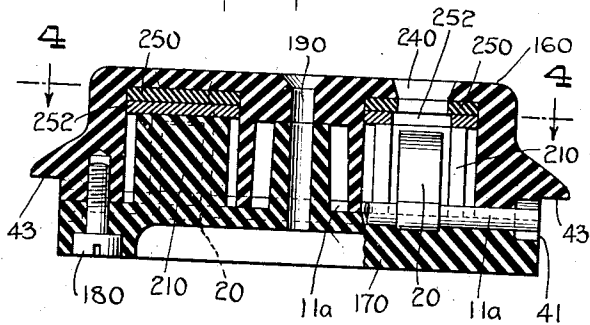
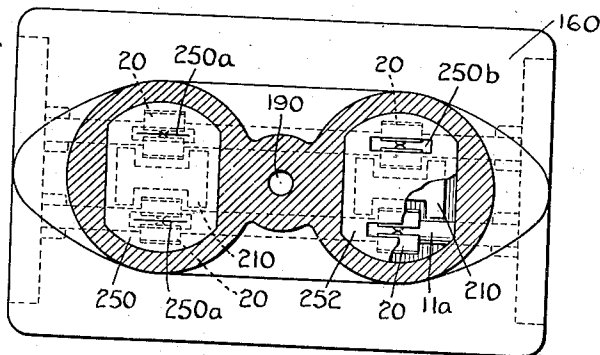


Fig. 4.



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ELECTRICAL CONVENIENCE OUTLET

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2 Claims. (Cl. 173-330)

The present invention relates to improvements in electrical convenience outlets, and particularly to convenience outlets of the type arranged to receive and make electrical contact with the blades of electrical attachment plugs.

Present forms of convenience outlets embody open blade-receiving slots disposed in suitable relationship to the electrical contact elements within the body of the outlet. Such slots afford an at-all-times open access to said contact elements and permit the entry of dirt into the body of the outlet, expose the contact elements to the corrosive effect of dampness, and of themselves provide no means for frictionally securing the blades of the attachment plug in operative engagement with the electrical contacts.

A feature of the present invention resides in the provision of a convenience outlet with access slots which are normally closed, said normally closed slots opening upon insertion of the blades of an attachment plug, and reclosing upon the removal of such attachment plug. Such normally closed access means, in contradistinction to the at all times open slots of conventional forms of convenience outlets, prevents the ingress of dirt and moisture, and resist the inflow of carelessly used or splashed fluids, such as fluid cleaning materials or the like. My improved convenience outlet, therefore, is particularly adaptable to electrical molding and wiring systems of the general type described and claimed in United States Patent No. 2,175,145, issued October 3, 1939, to Robert L. Davidson, wherein electrical conductors are embedded within an insulating body configured to simulate molding or like building trim, and thus adaptable for use at the baseboard of a floor, a counter-top, or like position in which exposure to cleaning fluids, dirt, or the like, is a normal incident.

Most preferred embodiments of my invention comprise a body of suitable material, within which the desired electrical contact elements are insulatedly mounted, and closures of resilient material, or resiliently mounted with respect to the body material, normally closing the access slots of the outlet.

Such resilient or resiliently mounted closures exert a wiping effect upon the blades of the attachment plug during the insertion thereof, thereby conditioning the surface of such blades for satisfactory electrical engagement with the contact elements within the outlet. The resilient closures, upon separation during the insertion of the attachment plug blades, exert a

"snubbing" effect upon said blades, and thus restrain the accidental disengagement of the plug from the convenience outlet, to a degree approaching substantial prevention of such accidental disengagement.

An object of my invention, therefore, is an improved electrical convenience outlet.

A further object of my invention is an improved electrical convenience outlet embodying normally closed, self-closing means of access to the internal electrical contacts of the convenience outlet.

Yet another object of my invention is to provide an electrical convenience outlet with normally closed, self-closing access means adapted to restrain the removal of an inserted electrical attachment plug.

Other features and advantages will herein-after appear.

In the accompanying drawing:

Figure 1 is a plan view of a form of convenience outlet embodying my invention;

Figure 2 is a sectional elevation taken on 2-2 of Figure 1;

Figure 3 is a side elevation, in section, of the outlet of Figure 1; and

Figure 4 is a partial plan section taken on the lines 4-4 of Figure 3, the left-hand outlet unit showing the resilient self-closing aperture means, and the right-hand outlet showing backing means for said resilient member, said backing means being supported by a suitable structure formed with the base portion of the outlet.

Referring to Figures 1 to 4 inclusive, wherein a form of convenience outlet embodying the present invention is illustrated, the said convenience outlet, herein designated 150, comprises a cap member 160 and a base portion 170, each of which is desirably wholly of electrical insulation material, and preferably of any suitable moldable plastic. A multiple-outlet form has been chosen for illustration.

The convenience outlet is provided with electricity conductors 11a extending longitudinally thereof and resting upon suitable arcuate grooves provided in the base portion 170. Said electricity conductors are preferably tubes of copper or equivalent. The convenience outlet, further, preferably embodies the annular recesses or sockets 41, and the eave-like extensions 43, to overlap the surfaces of contiguous units arranged in seriatim electrical and mechanical connection with the convenience outlet, to minimize the danger of short circuit of the conductors therein.

When moldable plastic or like substantially

non-resilient material is employed for the cap member 160, the access slots 240 correspond to the conventional at-all-times open blade-receiving slots. In the present invention, there is employed, in operative association with said slots, a resilient closure means disposed intermediate the openings 240 of the head and the contact elements 20. Said resilient closure means may advantageously comprise an insert 250 of soft rubber or like electrical insulation material, said insert having a configuration adapted to fit snugly within a recess formed in the underside of the cap 160, as shown in Fig. 4, and provided with a plurality of slits 250a disposed for operative association with the openings 240. Said slits may be formed by piercing the soft rubber simultaneously with blanking it out to final shape. As illustrated in Fig. 2 the slits 250a are normally closed. The resilient insert 250 may be slightly larger than the receptive socket within the cap 160, to crowd the side walls of the slitted openings more snugly into mutual engagement.

To support the inserts 250 within the cap member 160, I prefer to employ suitable substantially rigid backing members 252, preferably of vulcanized fiber or the like, having openings 250b so disposed as to afford access to the contacts 20. The backing members 252 may be permanently affixed to the resilient means 250, or may be a separate insert supported in any desired manner within the cap 160; as shown in Figs. 3 and 4, the base member 170 may be formed to afford an upstanding column 210 of general H-configuration, the elements of such column 210 affording a broad base upon which the associated member 252 may rest. The column 210 cooperates with the side walls of the cap 160 to enclose the contacts 20 within individual mutually electrically insulated chambers, as in the case of the wall 21 of the previously described embodiment.

The respective base and cap members of the convenience outlet may be secured in any desired manner, as by the screw threaded element 180 illustrated in Fig. 3; by making the base and head separable, the resilient inserts may be replaced if worn or damaged. As shown in Figs. 1 and 3, it is advantageous to provide a central aperture 190 through which aperture a wood screw or like means may be passed for the purpose of screwing the outlet against a baseboard or other structural surface.

Upon the insertion of the blades of an electrical attachment plug 31 through the slots 240 into electrical engagement with the contact members 20, the slotted openings 250a of the resilient means 250 are spread apart and distorted downwardly. The resilient member 250 preferably

having a substantial thickness—of the order of three thirty-seconds ($\frac{3}{32}$) of an inch—the downward distortion of said resilient member at the point of blade entry exerts a snubbing action against the blades, as referred to more fully above.

Whereas I have described my invention by reference to specific forms thereof, it will be understood that many changes and modifications may be made without departing from the spirit of the invention.

I claim:

1. In an electrical convenience outlet, the combination with a base portion formed of electrical insulation material having vertical wall means and electrical contact means disposed on said base portion adjacent said wall means, of a cap member of electrical insulation material for association with said base portion, said cap member having depending wall means for cooperation with said base portion wall means to provide chambers having walls of electrical insulation material, for housing said contact means, said cap member having apertures in registry with said contact means, recesses provided on the under-side of said cap member, and a plate of resilient electrical insulation material disposed within each recess of said cap member and having normally closed self-closing openings in registry with the apertures in said cap member, said plate of resilient electrical insulation material being supported by said wall means and held thereby within the said recesses of said cap member.

2. In an electrical convenience outlet, the combination with a base portion formed of electrical insulation material having vertical wall means and electrical contact means disposed on said base portion adjacent said wall means, of a cap member of electrical insulation material for association with said base portion, said cap member having depending wall means for cooperation with said base portion wall means to provide chambers having walls of electrical insulation material, for housing said contact means, said cap member having apertures in registry with said contact means, recesses provided on the under-side of said cap member, a relatively thick plate of resilient electrical insulation material disposed within each recess of said cap member and having normally closed self-closing openings in registry with the apertures in said cap member, and rigid backing means disposed beneath said plate of resilient electrical insulation material and supported upon said base portion wall means to maintain said plate of resilient electrical insulation material in operative position.

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