

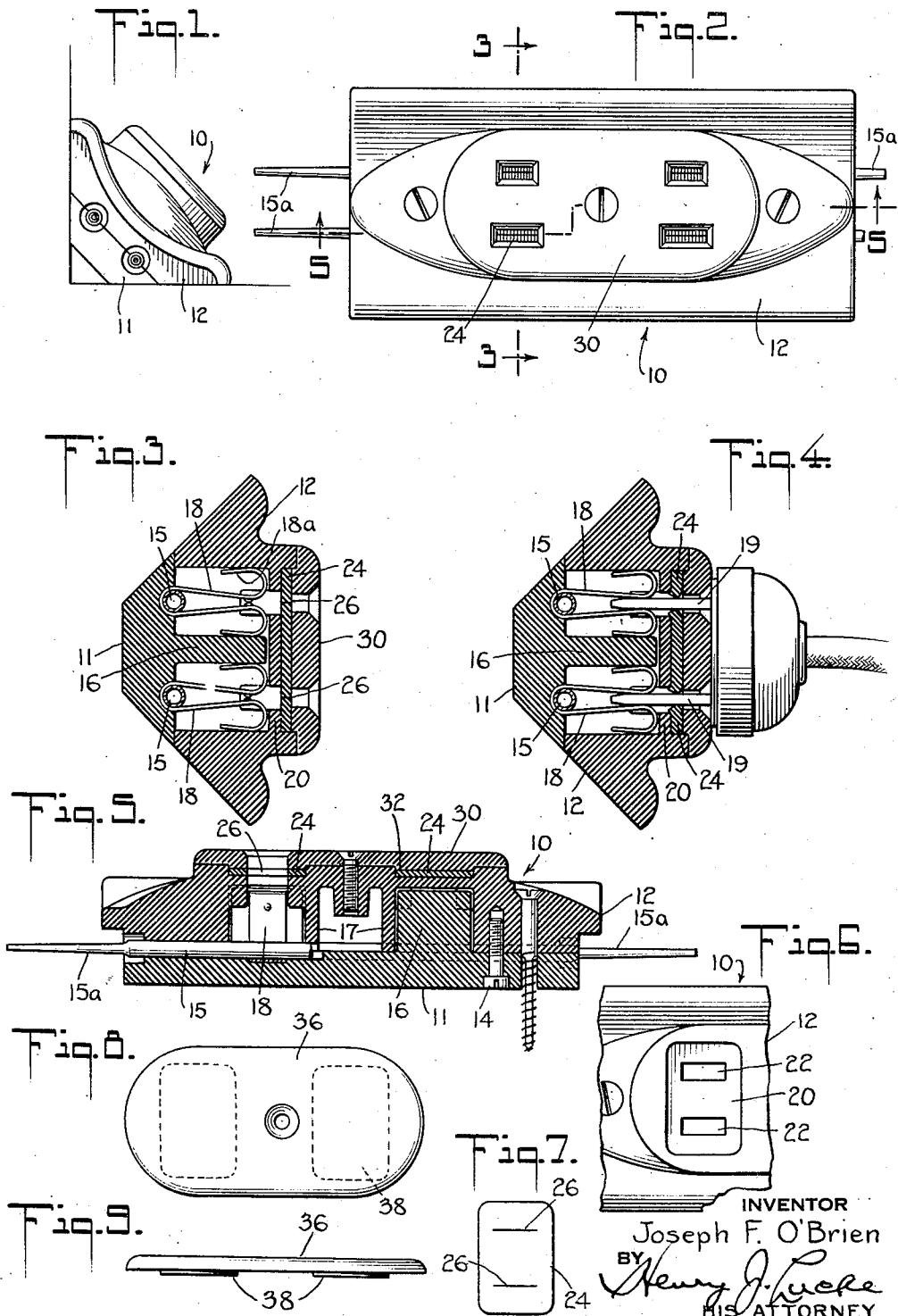
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J. F. O'BRIEN

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ELECTRICAL CONVENIENCE OUTLET

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INVENTOR
Joseph F. O'Brien
BY *Henry J. Lucke*
HIS ATTORNEY

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ELECTRICAL CONVENIENCE OUTLET

Joseph F. O'Brien, Jersey City, N. J., assignor to
John B. Pierce Foundation, New York, N. Y., a
corporation of New York

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The present invention relates to improvements in electrical convenience outlets.

It is an object of the invention to provide an electrical convenience outlet having removable cap means; whereby the cap normally affording 5 access to the contacts within the convenience outlet may be replaced by a blank cap, devoid of apertures and thereby preventing access to the contacts within the outlet.

It is a further object of the present invention 10 to provide improved means for shielding the contacts of the convenience outlet from the ingress of water, dirt, or the like.

It is yet another object of the invention to provide an electrical convenience outlet adaptable 15 to serve as a connector unit in a run of seriatim interconnected conduit units of an electrical conduit system positioned for example, at the junction of the floor and baseboard of a room, the juncture of a counter-top and wall, etc.

In the present invention, the body of the outlet is provided with removable cap means, said cap means having the customary openings there-through to provide for the passage of the prongs 20 of a conventional electrical attachment plug.

Suitably positioned within the body of the convenience outlet are inserts of rubber or equivalent yieldable elastic material, said inserts being slitted in registry with the apertures within the body of the unit, to permit the forcible insertion 30 of the blades of an attachment plug through said slits. It will be understood that said slitted openings are normally closed, separating only upon the insertion of such attachment plug blades and bearing against such blades to "snub" the same against accidental removal.

The body of the convenience outlet is adapted to receive blank cap means devoid of plug-receiving apertures, said blank cap means cooperating with said resilient insert means to seal the electric conductors within the outlet against the ingress of dirt or fluids.

Advantageously, the electrical conductors of the convenience outlet include laterally extending bus bars, preferably of the nature of tubular conductors disposed within longitudinally extending passages adjacent the base of the outlet body, and suitably arranged for seriatim connection with conductor means in adjacent wiring units. Suitable plug blade contact means are provided, 50 said contact means being firmly secured to said tubular conductors in electrically conductive relation.

Pursuant to preferred forms of the present invention, the contact means are individually 55

housed within an insulating chamber, and are arranged to cooperate with the walls of such chamber to secure its therewith associated conductor against rotation or longitudinal displacement.

Other features and advantages will hereinafter appear.

In the accompanying drawing:

Fig. 1 is an end elevation of an electric convenience outlet;

Fig. 2 is a plan view of the same;

Fig. 3 is a vertical section taken through lines 3—3 of Fig. 2;

Fig. 4 is a section similar to Fig. 3, but showing an electrical attachment plug in operative position;

Fig. 5 is a sectional elevation taken on the lines 5—5 of Fig. 2;

Fig. 6 is a fragmentary plan view of the convenience outlet, with the cap thereof removed;

Fig. 7 is a plan view of the resilient insert means;

Fig. 8 is a plan view of a blank cap for use with the convenience outlet; and

Fig. 9 is an elevation of said blank cap.

Referring to the drawing, convenience outlet 10 desirably has a composite body, including base 11 and body element 12. Such body elements cooperate to provide angularly related walls, rendering the convenience outlet adaptable for installation as part of a combined molding and wiring system at the intersection of the floor of a room and baseboard thereof.

Desirably, body elements 11, 12 are wholly of electrical insulation material, such as a suitable moldable plastic. Screws 14 or equivalent may secure the respective body elements. To accommodate the longitudinally extending conductors 15, 15, the respective body portions may be formed 40 with complementary grooves within which said conductors snugly fit.

Said conductors 15 may be tubular, and swaged at each end to form a tapering pin, 15a, adaptable to fit frictionally within the tubular conductor of an adjacent conductor unit (not shown) to afford electrical and mechanical interconnection of such units. By swaging the ends of tubular conductors 15, the quantity of electrically conductive material in such conductors is equal throughout their length, as the tapering down of the ends 15a is accomplished without sacrifice of wall thickness.

A vertical wall 16 of base 11 cooperates with body side walls and downwardly extending ribs 17 thereof to define compartments within which

electric contact means 18 are individually and insulatedly housed.

Such contact means 18 are formed with downwardly curving wings 18a, which normally bear against the side walls of their respective compartments, see Figs. 3 and 4, to assist in maintaining said contact means in upright position. Preferably, contact means 18 are of suitable width to place the edges thereof in engagement with side walls of the respective housings (see Fig. 5) to preclude lateral movement of the conductor means and their thereto secured conductors 15. Such operative association of the contact means 18 and the wings 18a thereof, with the walls of the respective compartments adequately anchors conductors 15 against the axial strains imposed thereon during the stage of insertion of the end portions 15a into the tubular conductors of an adjacent unit.

As shown in Figure 6, the upper face of body 12 is planar, and in such face are formed suitable recesses 20 (one such recess being shown in Figure 6). The base of each such recess 20 is provided with apertures 22, 22, in registry with the contact elements 18.

For operative association with said recesses 20, the present invention provides inserts 24 of resilient insulating material such as "gum" rubber, such rubber insert being slitted, see 26, 26, Figure 7, in registry with contacts 18. By making said inserts 24 slightly oversize with respect to the recesses 20, the material of such inserts is compressed and the walls of slots 26 are crowded into relatively tight engagement. As will be seen in Figure 5, the thickness of the inserts 24 is less than the depth of recesses 20.

For use with said convenience outlet, I provide removable cap means 30, having projecting portions or bosses 32 matching the contour of recesses 20 for snug fit therein. Bosses 32 maintain the cap means in proper position; the illustrated machine screw 34 may be employed to removably secure said cap means 30. Desirably, the bosses 32 of the said cap are of such depth with respect to the stated recess space above the inserts to exert a compressive force upon the inserts 24 further to compact the material thereof.

It is to be noted from Figures 2 and 3 that the normally self-closing characteristic of the slots 26 of insert 24, combined with the stated compression of the material thereof, makes such insert effective as a closure means to prevent the ingress of dirt or the like into the compartment housing the contacts 18. As is indicated in Figure 4, the passage of the blades 19 of an attachment plug through the respective apertures into engagement with the contacts 18 is effected only upon distorting the insert 24. The apertures 22 at the base of recess 20 are suitably oversize, to accommodate the downward displacement of the body of insert 24 adjacent the slitted apertures thereof. During the passage of the blades of the attachment plug through the slits of insert 24, the walls of such slits bear resiliently against the sides of the blades of the attachment plug, wiping the same free of dirt or the like, and additionally, snubbing said blades against accidental withdrawal.

For installations where it may be desirable to seal off the contacts 18, the present invention provides for the substitution for the cap 30 of a blank cap 36, devoid of attachment plug openings. Said blank cap, see Figs. 8 and 9, is provided with bosses 38 at the underside, for co-

operation with the recesses 20 of said convenience outlet body.

As has been stated with respect to the bosses 32 of cap means 30, the bosses 38 of blank cap 36 are of such depth as to forcibly compress the resilient inserts 24 into a compact mass when said blank cap is in position on the body 12. The stated inserts 24 being under a normal transverse compression by reason of the size relationship between the insert and the recess 20 into which such insert fits, the additional pressure afforded by the bosses 38 of the blank cap 36 effectively seals the slitted apertures 26 of the inserts and additionally urges the inserts 24 into a substantially water-tight and dirt-tight engagement with the side walls of the recess 20.

The protection afforded by the blank cap 36 is of particular value during the stage of installation of the system in a new building, where wet plaster, paint, and the dirt attending the constructing of a new building might otherwise enter the body of the convenience outlet. The blank cap completely seals such outlet body, as aforesaid, and upon removal of the cap, the surface of the outlet body is free from dirt or the like, and in condition for receiving the conventional cap 30.

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 having a body, contact means disposed within said body and apertures affording access to such contact means, the combination with insulator means of resilient material fixed within a recess formed in an upper surface of the body and having normally closed openings disposed in operative relationship to said access apertures, of cap means removably associated with said body and provided with a raised surface on its under side arranged to bear against said resilient insulator means to compact the same within the recess.

2. In an electrical convenience outlet having a recessed body, contact means disposed within said body and apertures affording access to such contact means disposed in a base wall of said body recess, the combination with fixed resilient insert means disposed within said body recess, said insert means having normally closed openings in registry with the openings of said body, of a cap for said body, said cap having openings in registry with the openings of said insert means and means arranged to fit within said body recess and to bear against the resilient insert means therein over substantially the entire surface of said insert means.

3. An electric convenience outlet comprising, in combination, a body formed with recesses at an outer surface, contact means disposed within said body, apertures formed in said body within the compass of said recesses to afford access to said contact means, an insert of resilient insulation material disposed within each of said body recesses, said inserts having normally closed openings in registry with said access apertures and having a surface area, when relaxed, greater than the surface area of said recesses, and cap means for said body, having plug-blade receiving apertures in registry with the openings of said inserts and projecting portions for insertion within said recesses and engaging the side walls thereof, said projecting portions bearing against

the surface of said resilient inserts to hold the same in operative position.

4. An electric convenience outlet comprising, in combination, a body, contact means disposed therein, a recess formed in an outer surface of said body above said contact means, said body 5 having apertures through the wall thereof and within the compass of said recess to afford access to said contact means, an insert of resilient insulation material disposed within said recess, the 10 thickness of said insert being less than the depth of said body recess, and formed with slits in registry with the said access apertures, and cap means for said body, said cap means having 15 openings in registry with said slits and a boss formed on its under side for projection into said recess and engagement with the side walls thereof, the under surface of said boss bearing against the surface of said resilient insert to hold the same in operative position within said recess. 20

5. An electric convenience outlet comprising,

in combination, a body, contact means disposed therein, a non-circular recess formed in an outer surface of said body above said contact means, said body having apertures through the wall thereof and within the compass of said recess to afford access to said contact means, an insert of resilient insulation material disposed within said recess, the thickness of said insert being less than the depth of said body recess, and 5 formed with slits in registry with the said access apertures, and cap means for said body, said cap means having a boss having openings in registry with said slits and a contour matching the 10 contour of said recess formed on its under side for projection into said recess and engagement with the side walls thereof, the under surface of said boss bearing against the surface of said resilient insert to hold the same in operative 15 position within said recess.

JOSEPH F. O'BRIEN.