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RESILIENT ELECTRICAL OUTLET WITH
PUNCTURABLE SEALING CLOSURE
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2,617,848

Fig. 1.

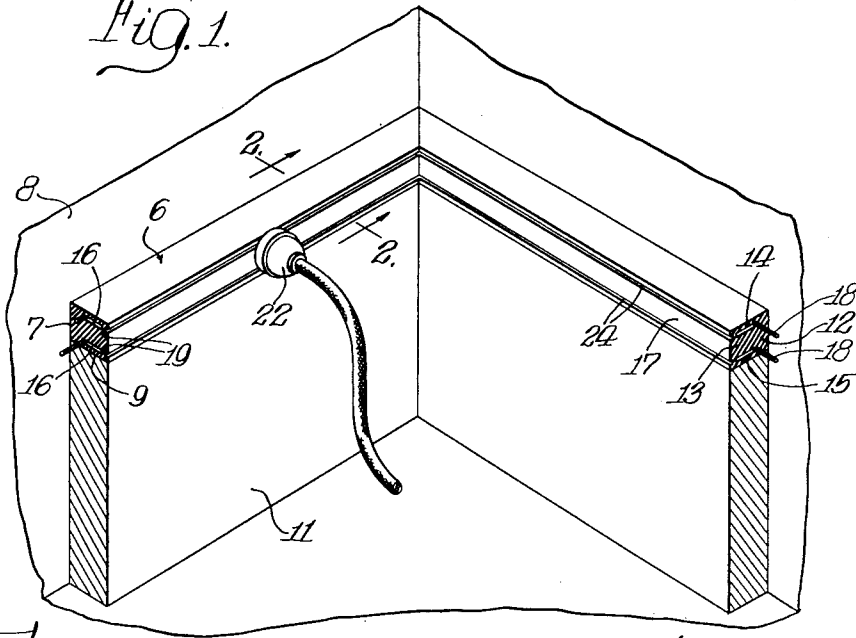


Fig. 2.

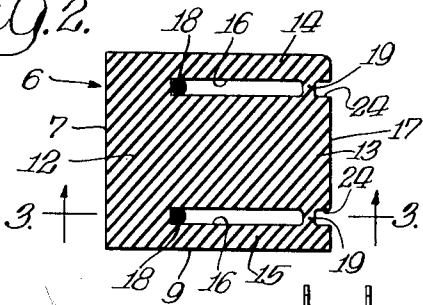


Fig. 3.

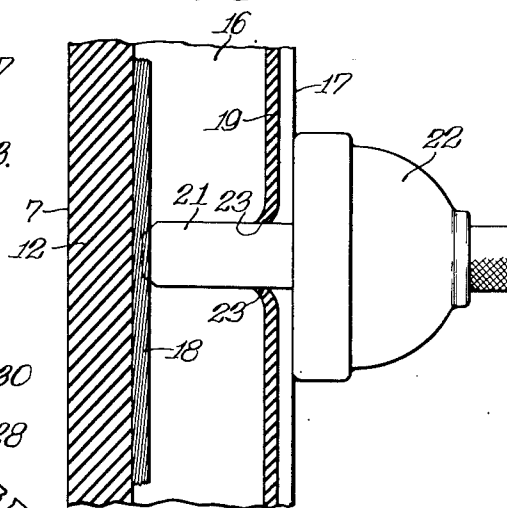
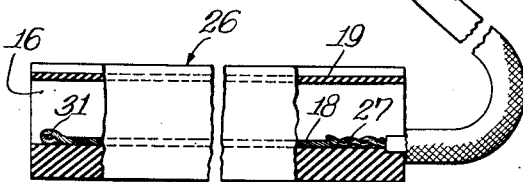


Fig. 4.



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RESILIENT ELECTRICAL OUTLET WITH
PUNCTURABLE SEALING CLOSURE

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1 Claim. (Cl. 173—334.1)

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This invention relates to continuous electrical outlets or sockets of the elongated type adapted to receive a connector plug at any desired point along its length.

Elongated electrical outlets of the aforementioned type are well known and comprise in general a rubber strip or body portion of any desired length which has imbedded therein a pair of electrical conductors such as wires, bus bars, or the like. Various means, including slots and grooves, may be provided for permitting insertion of a conventional pronged connector plug to make electrical contact with the conductors. In some cases it has been proposed to provide overhanging flaps, flanges, lips or other similar means for guarding the slots or grooves, the flaps and like portions generally being deflected or displaced by the prongs of the connector plug upon insertion thereof.

I am aware that different expedients have been suggested by the prior art for preventing undesired access to the conductors, e. g. complementary rib-and-groove cover portions which are normally in close abutment to give a sealed appearance but are flexible to permit insertion of a connector plug. It has also been proposed to imbed the conductors in narrow and so-called "self-sealing" slits in the body of the outlet instead of in relatively wider slots or grooves. However, none of these electrical outlets, as heretofore known, has been provided with a continuous, imperforate, and positive sealed closure which affords complete protection against accidental or undesired access to the electrical conductors. It will be evident that such a positive sealed closure will provide the maximum degree of safety and will also afford excellent protection of the outlet by excluding dust, liquids, and other foreign substances from contact with the conductors.

Accordingly, one object of my invention is to provide a continuous electrical outlet of the character described in which the electrical conductors are completely sealed in by means of continuous resilient closure members capable of excluding dust, liquids, and other foreign substances but permitting the insertion of the prongs of a connector plug.

Another object of the invention is to provide a continuous electrical outlet of the character described which is provided with resilient closures for the conductor-carrying channels, said closures being adapted to permit the insertion of the prongs of a connector plug and also being

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adapted to reseal or close up when the connector plug is withdrawn.

Still another object of the invention is to provide a continuous electrical outlet of the character described in which the electrical conductors are protected by resilient closures, said closures being adapted to permit the insertion of a connector plug and also adapted to retain the plug against tilting movement.

An additional object of the invention is to provide a continuous electrical outlet of the character described which is readily adaptable for use in relatively short lengths as a multiple desk outlet or the like.

Other objects and advantages of the invention will become evident from the subsequent detailed description of the invention and the accompanying drawings in which:

Fig. 1 is a fragmentary perspective view of a corner of a room illustrating one method of installing an electrical outlet embodying the features of my invention;

Fig. 2 is a transverse cross sectional view of the outlet taken along the line 2—2 of Fig. 1;

Fig. 3 is a longitudinal cross sectional view of the outlet taken along the line 3—3 of Fig. 2 and showing a connector plug in place in the outlet; and

Fig. 4 is a fragmentary longitudinal sectional view showing how a relatively short strip of the outlet may be employed as a multiple outlet for use on a table, desk, or the like.

Referring first to Fig. 1, the form of continuous outlet which has been selected to illustrate the invention is generally rectangular in cross section and of suitable dimensions so that it may be conveniently mounted on the upper edge of a base board. The outlet comprises an elongated body 6 having its rear flat face 7 lying flush against a wall 8 and its bottom face 9 supported by the top edge of a base board 11. It will be understood, of course, that the outlet may be formed in various other cross sectional shapes in order to permit its installation according to any desired method. For example, the outlet may be shaped and dimensioned to take the place of the quarter-round strip that is conventionally used at the intersection of a wall and floor.

The elongated body of the outlet, indicated generally at 6, may be provided in the form of an extruded or molded strip of flexible insulating material such as rubber or a suitable plastic composition. The body 6 has a base portion 12 with an integral central dividing portion 13 extending outwardly therefrom and integral side

portions 14 and 15 also extending outwardly from the base portion 12 in spaced parallel relationship with respect to the center portion 13. As a result of the spacing between the center portion 13 and the sides 14 and 15, a pair of longitudinal parallel continuous grooves or slots 16 are provided in the body 6 extending inwardly from the front face 17 thereof.

Suitable flexible electrical conductors, here illustrated as braided electric wires 18, are disposed in the slots 16 adjacent the innermost ends thereof, it being understood that the wires 18 will be connected, by means not shown, to a suitable source of electric current. The width of the slots 16 is preferably such that the wires 18 are retained firmly in place by the resilient pressure between the center portion 13 and the side portions 14 and 15 of the body 6. Furthermore, the spacing between the slots 16 and the dimensions of said slots are designed to permit the insertion therein of the prongs or fingers of a conventional connector plug or attachment plug as hereinafter described.

Positive sealed closure of the channels or slots 16 containing the wires 18 is obtained by means of relatively thin longitudinal webs 19 formed integrally with the rubber body 6 and extending between the center dividing portion 13 and the side portions 14 and 15 adjacent the open or outer edges of the slots 16. Preferably, although not necessarily, the web members 19 are disposed a slight distance inwardly from the front face 17 of the body 6, as best seen in Fig. 2. The webs 19, being solid and continuous, provide a positive sealing of the channels containing the electrical conductors thereby avoiding any possibility of accidental or unintentional contact with the conductors and also serving to exclude almost entirely all dust, dirt, and other foreign matter which should be kept away from the conductors.

The rubber webs 19, being relatively thin and resilient, are designed to be perforated or punctured by the prongs 21 of a connector plug 22 (Fig. 3) when the latter is inserted in the outlet, and the resilient nature of the webs 19 results in a close-fitting adherent contact between the punctured edges indicated at 23 and the prongs 21. When the plug 22 is completely inserted in the outlet, the innermost ends of the prongs 21 may be diverted to one side or the other of the wires 18 (Fig. 3) and good electrical contact is thereby maintained by the resilient pressure between the center portion 13 and the side portions 14 and 15 tending to hold the wires 18 and the prongs 21 tightly together. As previously mentioned, it is preferred that the webs 19 be positioned in the slots 16 a slight distance inwardly from the front face 17 of the body 6. In this way, the outermost portions 24 of the slots 16 are always readily apparent and are available to serve as guides for properly locating the prongs of the connector plug before applying the necessary pressure to puncture the webs 19. It will be evident that if the webs 19 were flush with the front face 17 of the outlet body 6, difficulty might be encountered in quickly placing the prongs of a connector plug in proper position for puncturing the webs.

As a further result of their resilient nature, perforation of the webs 19 will result in slits which are just sufficient in size, when the material is stretched, to allow the passage of the prongs 21 therethrough, so that the web material hugs the prongs tightly. Thus, even when the connector plug 22 is in place in the outlet, dirt

and other extraneous matter will be kept out of the conductor channels or slots 16 by the close fitting nature of the perforated edges 23. The close fit of the perforated edges 23 with the prongs 21 also affords an additional advantage in that the webs 19 thereby tend to hold the plug 22 against tilting movement longitudinally of the outlet. In addition, the resilient and elastic nature of the relatively thin rubber webs 19 is such that when the plug 22 is withdrawn from the outlet, the punctures will tend to reseal or close over. Thus, although with continued use the outlet of my invention may be punctured in several places as a result of the insertion of the connector plugs, the positive closure effect is retained to a substantial degree even when the connector plugs are withdrawn.

Although the principal use of the outlet of my invention will ordinarily be found in installations along walls, base boards, or other surfaces of homes and buildings, the device is also capable of other advantageous uses. For example, my outlet can be used for light circuits, telephone circuits, or other related uses, the number of electrical conductors and slots containing the same being varied dependent upon the particular use involved. In addition, a relatively short length of my outlet may be employed as a multiple outlet for use on a desk top or table top. For such use, the wires 18 at one end of a length or outlet 25 are twisted or otherwise fastened, as shown at 27 in Fig. 4, to a conventional insulated extension cord 28 having a plug 30 which is inserted in a convenient wall or floor outlet. The connections between the extension cord 28 and the conductors 18 may then be forced or pushed inwardly into the open ends of the cavities or slots 16 in order to completely conceal the connections within the strip of outlet 25 and thereby bringing the insulated portion of the wire 28 in close abutment with the end of the outlet. The conductors 18 at the opposite end of the length of outlet 26 may be folded over and pushed inwardly in the slots 16 as shown at 31 in Fig. 4. Thus, a suitable short strip of my outlet may readily be employed as a multiple desk outlet with the severed ends or connected portions of the imbedded conductors 18 being easily concealed and protected within the outlet itself.

Although my invention has been described in connection with one particular structural embodiment, it will be understood that various modifications and alternatives may be resorted to without departing from the scope of the invention as defined by the appended claim.

I claim:

An electrical outlet comprising an elongated body portion of flexible insulating material and having a pair of parallel longitudinal slots extending inwardly from the outer face of the body portion, electrical conductors disposed in said slots adjacent the bottoms thereof, and continuous resilient web members integral with said body portion and extending across said slots adjacent the outer face of the body portion in spaced relation from said conductors for sealing the slots, the spacing of said web members from said conductors permitting stretching and puncturing of the web members by insertion of the prongs of a standard connector plug whereby the punctured edges of the web members are disposed in close contact with the prongs when the plug is inserted in the outlet for retaining the plug against tilting movement and whereby the punctured portions contract to substantially smaller size than said

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prongs and the punctured edges engage to close the openings made by the prongs when the plug is withdrawn from the outlet.

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