May 9, 1944. G. H. VON GEHR 2,348,665

ELECTRICAL OUTLET

Original Filed Oct. 16, 1940

Fig. 1.

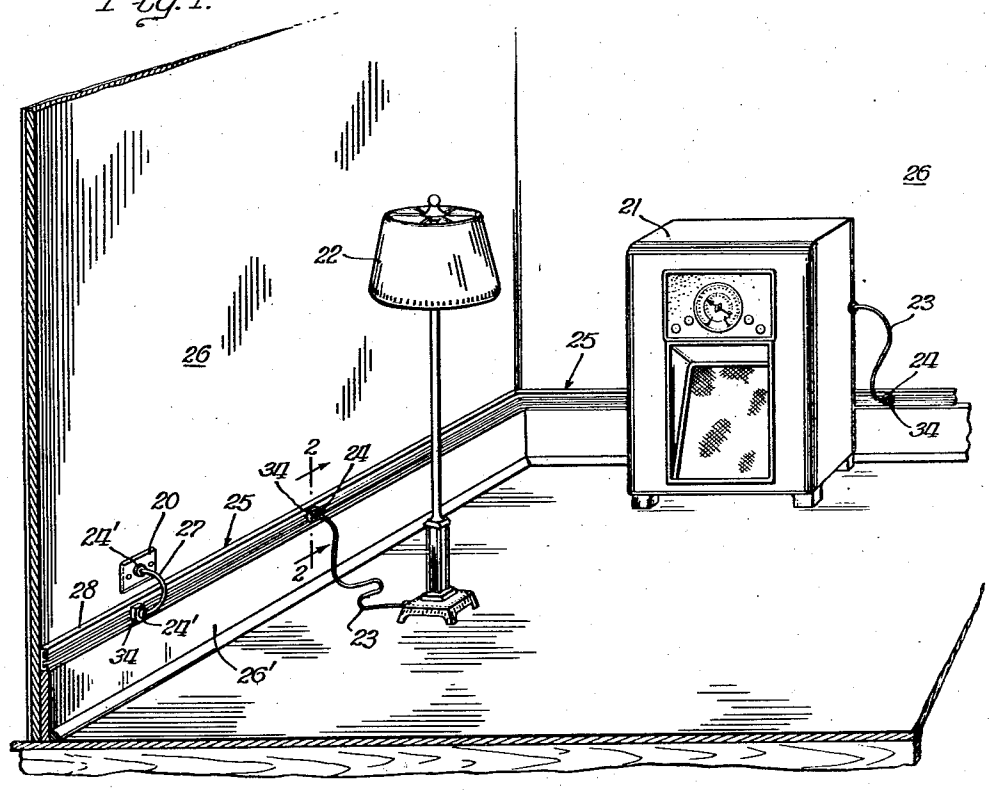


Fig. 2.

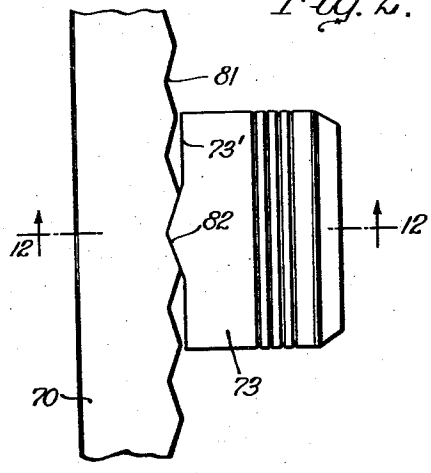
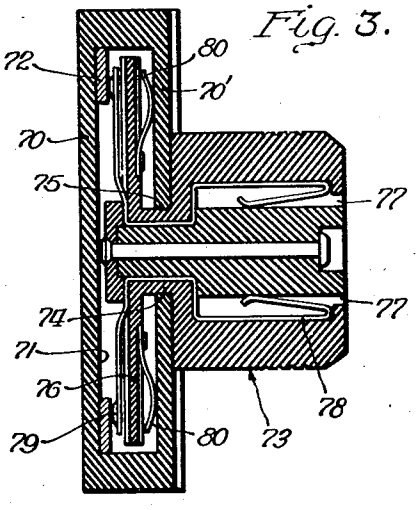


Fig. 3.



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ELECTRICAL OUTLET

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Original application October 16, 1940, Serial No. 361,338, now Patent No. 2,332,766, dated October 26, 1943. Divided and this application April 19, 1943, Serial No. 483,684

8 Claims. (Cl. 191—23)

This invention relates to electrical outlets, and particularly to continuous electrical outlets.

The continuous electrical outlet of the present invention is adapted to be provided in strips of any desired length, having associated therewith and adjustable along such length, one or more outlet plugs which are adapted to cooperate with the usual attachment plugs connecting electrical apparatus to a source of electrical energy.

Such a novel continuous electrical outlet may be advantageously employed in domestic or household, automotive, laboratory or other electrical distribution systems for providing convenient terminals for electrical apparatus to obviate long, unsightly and awkward drop or extension cords and the danger attending amateur wiring.

An object of the invention is to provide a continuous electrical outlet with a slidable adaptor plug operatively associated with the continuous outlet, and means for yieldingly locking the adaptor plug in any one of a predetermined number of positions of adjustment along the length of the continuous outlet.

Another object of the invention is to provide a continuous electrical outlet consisting of a relatively flat strip of flexible insulating material supporting flexible electrical conductors in its slot or slots, and one or more relatively flat adaptor plugs slidable along the length of the strip and adapted to receive a conventional attachment plug and to connect the same electrically with the flexible conductors.

The foregoing objects and various other objects, advantages and characteristics of the invention will be apparent from the following description and from the accompanying drawing forming part of the specification.

The accompanying drawing illustrates by way of example and more or less diagrammatically an embodiment of the present invention.

Fig. 1 is a fragmentary perspective view of a room equipped with a continuous electrical outlet embodying some of the features of the present invention.

Fig. 2 is a top plan view of an embodiment of the continuous outlet with an associated adaptor plug.

Fig. 3 is a vertical section on the line 12—12 of Fig. 2.

In many rooms only one conventional outlet 20 (Fig. 1) is employed for supplying electrical energy to electrical apparatus and appliances. At best only a few random outlets are employed and usually inconveniently located so that the arrangement of the furniture and electrical appliances in such rooms is more or less fixed without much regard for the interior decoration or arrangement subsequently decided upon. This dearth and random location of outlets has resulted in attempts by unskilled persons to adapt inconvenient and unsuited electrical supply conditions to frequently changing ideas of decoration and arrangement. These attempts are evidenced by dangerous, exposed wiring, unsightly and entangling extension or drop cords, and/or various other crude makeshifts for connecting an increasingly large number of electrical appliances with the source of electrical energy.

According to the present invention, various electrical appliances, such as a radio receiver 21 and a lamp 22, may be arranged at any desired location in a room irrespective of the location of the outlet 20, and may be supplied with electrical energy through cables or cords 23 having conventional attachment plugs 24 by "plugging in" a continuous outlet 25 secured to attaching surfaces or walls 26. The continuous outlet 25 may be energized from the house wiring system, for example, by a cord 27 having a conventional attachment plug 24' at each end thereof for connection with the conventional outlet 20 and with the continuous outlet 25 respectively.

Alternatively the continuous electrical outlet may be connected with the source of electrical energy through a connector block as hereinafter described.

In some cases it is desirable to provide for electrical contact or for an operative position of the adaptor plug only at predetermined points along the length of the strip. Thus it may be desirable to prevent accidental sliding movement of the adaptor plug so that once it has been moved to the most suitable position with respect to the location of the electrical appliances to be supplied with current, the plug cannot be moved without the exertion of appreciable force. Also in some instances it may be desirable to limit the total number of positions for a given length of strip at which an attachment plug can be located in an operative position, so as to avoid overloading of the circuit.

An embodiment accomplishing these objects is illustrated in Figs. 2 and 3. In this embodiment a strip 10 of insulating material, for example, rubber, is provided with a slot 11 and carries two continuous electrical conductors 12 here represented as flat strips of metal which may be attached to the rear wall of the strip in any suitable manner. Associated with this strip is an adaptor plug 13 having a reduced neck portion

74 passing through the narrow inlet portion 75 of the slot 71, and an enlarged inner end portion 76 located in the major part of the slot 71. The adaptor plug 73 is provided with openings 77 for receiving the prongs of a standard attachment plug such as the plug 24 previously referred to, and carries two contact members 78, the outer ends of which are adapted to make contact with the prongs of the attachment plug, while the inner ends are adapted to make resilient contact, as at 79, with the conductors 72. As shown in Fig. 3, the reduced neck portion 75 is of greater horizontal length than the thickness of the adjacent wall 70' of the strip 70 so that the plug 73 is capable of limited movement transversely to the strip 70, or in a direction from the left to the right, as viewed in Figs. 2 and 3. A pair of spring members 80 are mounted on the forward face of the enlarged portion 76 of the plug member and bear against the inner surface of the strip wall 70' so that they tend to draw the plug 73 inwardly into the slot of the strip and thus enhance the contact at the points 79 between the contact members 78 and the conductors 72.

As shown in Fig. 2, the front face of the wall 70' is provided with notches 81, and the cooperating face 73' of the plug 73 is formed with a correspondingly shaped projection 82 for engagement with a selected one of the notches 81. Thus it will be apparent that in order to displace the plug 73 from any position to a new position of adjustment, the plug is first manually drawn outwardly, or to the right as viewed in Figs. 2 and 3, against the action of the spring members 80. This results in breaking of the contact at the points 79, and temporary disconnection of the contact members 78 from the source of current supply. The plug must be held in its outer position against the action of the springs 80 while it is being moved along the length of the strip to its new position whereupon release of the plug will permit the springs 80 to draw the plug inwardly and to bring the projection 82 into proper engagement with the selected notch 81, thus re-establishing the electrical contact at 79 and the supply of current to the contact members 78.

Obviously the notches 81 may be spaced a greater distance apart than shown in Fig. 2 or may be replaced by notches or depression of different shapes, or the front face of the strip wall 70' may be corrugated. Any uneven formation of the front face of the strip, with a corresponding formation of the cooperating face of the plug 73, will serve to produce the result outlined above, of predetermining certain positions in which the plug 73 will be held in position and will make good contact with the conductors 72. A further effect of this construction is that the notches or corrugations 81 tend to prevent rotation of the plug 73 while in operative position, which would disconnect the contact members 78 from the conductors 72.

While the invention has been described for use in connection with house wiring systems, it will be understood that the continuous outlet may be employed in various other electrical systems where attaching surfaces are provided and where it is desirable to distribute electrical energy to a number of electrical appliances.

Various changes in the specific construction and arrangement of the parts will be apparent to one skilled in the art, and accordingly no limitation is to be understood from the specific disclosure of the invention, except as hereinafter set forth in the claims.

This application is a division of my application No. 361,338, filed October 16, 1940, now Patent No. 2,332,766, dated October 26, 1943.

Having thus described the invention, what is claimed and desired to secure by United States Letters Patent is:

1. An electrical outlet comprising an elongated slotted strip of insulating material supporting within its slotted portion a number of elongated electrical conductors, the forward face of said strip being provided with depressions spaced longitudinally of the strip, and a plug having elements for engagement with said electrical conductors, a portion of said plug being adapted to cooperate with said depressions so that when positioned in one of said depressions, said elements engage said electrical conductors, and when positioned other than in said depressions said elements are positioned out of electrical contact with said electrical conductors means being provided for maintaining said cooperating portion of said plug in said depression when said portion of said plug is positioned in one of said depressions.

2. An electrical outlet comprising an elongated slotted strip of insulating material supporting within its slotted portion a number of elongated electrical conductors, and a plug having contact members engageable with said electrical conductors, the configuration of the front face of the outlet being such and a portion of said plug being adapted to cooperate with said configuration so that in some positions of the adaptor plug the contact members are moved out of electrical connection with the electrical conductors, and in other positions urged into firm electrical engagement with said electrical conductors means being provided for maintaining said contact members in engagement with said conductors in the last mentioned positions of said adaptor plug.

3. An electrical outlet comprising an elongated slotted strip of insulating material supporting within its slotted portion a pair of elongated electrical conductors, an outlet plug slidably received within said slotted portion and adjustable longitudinally thereof substantially throughout the length of said strip, said plug being capable of limited movement transversely of said strip, contact means on said plug adapted to engage said conductors, resilient means operatively associated with said plug for urging said plug relative to said strip in a direction to enhance engagement of said contact means with said conductors, said strip having on its forward face depressions spaced longitudinally of the strip, and said plug having on its corresponding face a projection adapted selectively to engage said depressions, the arrangement being such that when the projection is not engaged with a depression the plug is inoperative and said contact means are out of electrical engagement with said electrical conductors.

4. A continuous electrical outlet comprising an elongated slotted strip of insulating material supporting within its slotted portion a pair of elongated electrical conductors, an outlet plug slidably received within said slotted portion and adjustable longitudinally thereof substantially throughout the length of said strip, said plug being capable of limited movement transversely

of said strip, contact means on said plug adapted to engage said conductors, resilient means operatively associated with said plug for urging said plug relative to said strip in a direction to enhance engagement of said contact means with said conductors, said plug and strip having cooperating faces, the face of said strip being provided with a series of depressions spaced longitudinally of the strip, and the cooperating face of said plug being provided with a projection complementary to said depressions, said resilient means urging said projection into a selected depression of said series when the plug is adjusted to register the projection with such depression whereby the electrical engagement between said contact means and said conductors is enhanced, the arrangement being such that when the projection is not engaged with a depression the plug is inoperative and said contact means are out of electrical engagement with said electrical conductors.

5. An electrical outlet comprising an elongated slotted strip of insulating material supporting within its slotted portion a number of elongated electrical conductors, and a plug having contact members engageable with a pair of said electrical conductors, the configuration of the front face of the outlet being such and a portion of said plug being adapted to cooperate with said configuration so that in some positions of the adaptor plug the contact members of the plug are moved out of electrical connection with said pair of electrical conductors means being provided for normally maintaining the contact members in engagement with the electrical conductors.

6. An electrical outlet according to claim 1, wherein said last mentioned means comprise resilient means for urging said portion of said plug into said depression when said portion of said plug is positioned in one of said depressions.

7. An electrical outlet according to claim 2, wherein said last mentioned means comprise resilient means for urging said contact members into firm electrical engagement with said electrical conductors in the last mentioned positions of said adaptor plug.

8. An electrical outlet according to claim 5, wherein said last mentioned means is adapted to urge the cooperating portion of said plug into releasable engagement with said configuration of the front face of the outlet.

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