

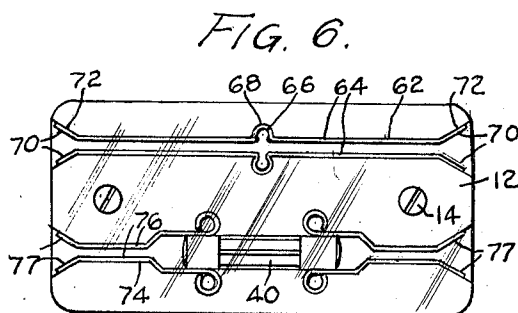
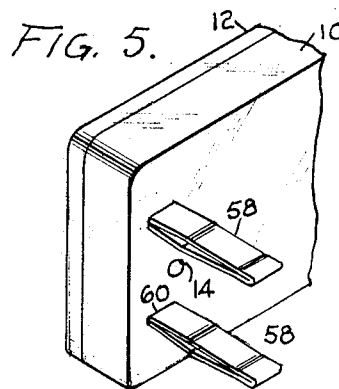
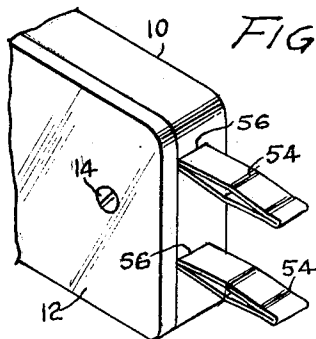
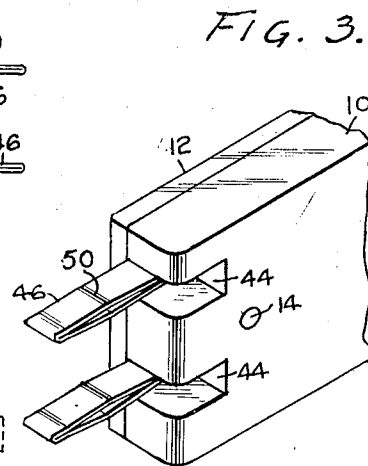
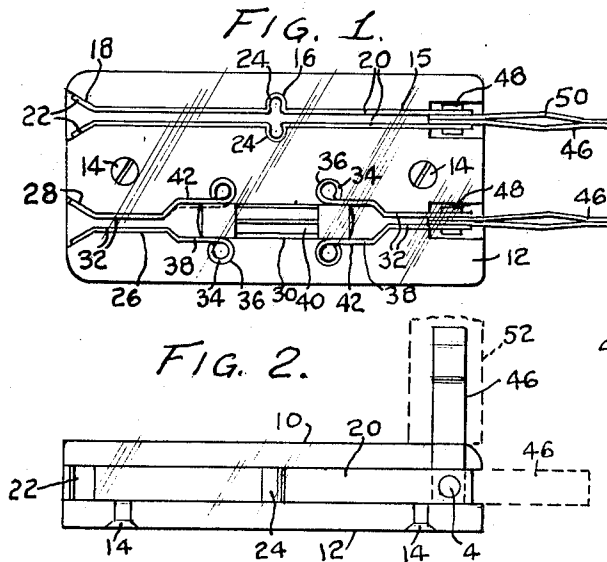
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MULTIDIRECTION SAFETY SNAP-IN FUSED ADAPTER PLUG

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**MULTIDIRECTION SAFETY SNAP-IN
FUSED ADAPTER PLUG**

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6 Claims

ABSTRACT OF THE DISCLOSURE

A plastic body, preferably of transparent plastic, houses conductors extending longitudinally therethrough, such conductors forming at one end sockets for the reception of a plug from an appliance. The opposite ends of the conductors are connected pivotally to projecting prongs which may be plugged into an electrical outlet with the body of the device projecting either directly outwardly or at any angle from 0 to 90 in either direction, swinging about the pivotal connection of the prongs with the conductors. The body includes therein a fuse lighter than that in the fuse box so that if the appliance is shorted, the fuse in the body of the device will "blow" without disturbing the fuse in the fuse box. The body includes a preferably clear plastic cover through which the fuse is visible.

BACKGROUND OF THE INVENTION

In accordance with the present practice, all building wiring has individual appliances or outlets selectively connected to fuses in a fuse box, and if any appliance is short-circuited, all of the appliances connected to one fuse in the box will be rendered inoperative if such fuse should "blow."

In many instances the lead-in for the appliance must be bent adjacent the plug to clear adjacent obstacles, for example, articles of furniture arranged adjacent an outlet. This bending or flexing of the wire is dangerous, since it may result in crystallization and breaking of the wires adjacent the plug, thus causing short-circuits.

SUMMARY OF THE INVENTION

The invention comprises an insulating body having therein at least one continuous conductor from one end to the other. Preferably, one conductor is in two separated parts connected by a relatively light fuse so that in the event an appliance is short-circuited the lighter fuse of the present device will "blow," and will not disturb the main fuse in the fuse box. The conductors provide at one end of the body a socket for the reception of an electrical plug leading to an appliance. The other end of the body is provided with projecting prongs to be inserted into an electrical outlet. These prongs are pivotally connected to the adjacent ends of the conductors to occupy a position in alignment therewith, or any intermediate position up to an angle of 90° with respect to the conductors. With such an arrangement, the prongs may be swung to 90° relative to the conductors and inserted into the electrical outlet, thus leaving the sockets at the other end of the device open for the reception of an appliance plug. The device may project either upwardly or downwardly from the outlet dependent on the way the device is plugged into the outlet.

The body of the device is preferably made wholly of clear plastic. However, the body includes a top plate which may be made of clear plastic while the remainder of the body is opaque, the clear plastic cover rendering the fuse within the body clearly visible so that it can be determined whether such fuse has burned out. The main body of the device is notched at one end to provide clearance for the projecting of the prongs in the manner described above.

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The main body of the device beneath the cover is grooved from end to end and such grooves are provided with offsets so that the conductors, provided with projections similar in shape to the offsets, may be pushed into position to be held against longitudinal displacement by such offsets, the conductors and the fuse being inserted prior to the securing of the cover in position.

BRIEF DESCRIPTION OF THE DRAWING

FIGURE 1 is a face view of one form of the device, the interior parts being visible through the transparent cover;

FIGURE 2 is a side elevation of the same, showing the prongs in solid lines turned at right angles to the conductors within the device;

FIGURE 3 is an enlarged fragmentary prospective view of the pivoted prongs occupying positions in alignment with the conductors;

FIGURE 4 is a similar view of a modified form of the invention showing stationary prongs projecting directly from one end of the body;

FIGURE 5 is a similar view employing stationary prongs projecting at right angles from the body; and

FIGURE 6 is a view similar to FIGURE 1 showing a form of the device having prong-receiving sockets at both ends.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIGURES 1, 2 and 3 the numeral 10 designates the main body of the device having a cover plate of corresponding shape and size indicated by the numeral 12 and secured in position on the body by screws 14 adjacent opposite ends of the device. Both the body and the cover plate can be made of clear plastic or the body 10 may be made of opaque insulating material. However, it is much preferred that the cover plate 12 be made of transparent material for a reason which will become apparent.

In the form of the invention shown in FIGURE 1, the body 10 is provided to one side of the longitudinal center thereof with a groove 15 having lateral offsets 16 preferably centrally of the length of the body. The groove 15 at one end of the body is flared outwardly as at 18. Two copper or other metallic strips 20 are inserted in the groove 15 and constitute one conductor for the device, the ends of the strips 20 at one end being flared as at 22 to lie against the flared portion 18 of the groove 15. The strips 20 intermediate their ends are bent to provide projections 24 lying in the offsets 16 to be thus anchored against longitudinal displacement in the body 10.

Offset to the other side of its longitudinal center, the body 10 is provided with a groove 26, one end of which is flared outwardly as at 28. A substantial length of the central portion of the groove 26 is widened as at 30. Two sets of strips of copper or other conductive metal 32 are arranged in each end portion of the groove 26 and terminate at their inner ends with projecting portions 34 received in offsets 36 in the widened portion 30 of the groove 26. The projections 36, as well as the projections 24, preferably correspond in shape to the offsets in which they are arranged, and as in the case of the offsets 16, the offsets 36 fix the strips 32 against longitudinal movement.

Opposite ends of the pairs of strips 32 are relatively closely spaced and these spaces as well as the spaces between the ends of the strips 20 are adapted to receive the prongs of an electric plug. The portions of the strips 32 toward the center of the device are relatively widely spaced as at 38 to receive therebetween a fuse 40, which is lighter than the fuse in the fuse box controlling the circuit in which the present device is employed. The widely

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spaced portions 38 of the strips 32 seat against shoulders 42 forming parts of the grooves 26, and before the fuse 40 is inserted, the portions 38 of the strips are sprung inwardly slightly as shown in dotted lines in FIGURE 1. Preferably, when the fuse 36 is inserted, the strip portion 38 springs outwardly substantially solidly against the shoulders 42.

At the right-hand end of the device, as viewed in FIGURE 1, and also as shown in FIG. 3, the body 10 is cut away at 44 in the extremity of the body and toward the side thereof opposite the cover plate 12. Two plug prongs 46 project from said cutaway portion and are pivotally connected as at 48 to the adjacent ends of the conductors within the body. These prongs are preferably formed of resilient strips bent back upon themselves at their extremities and bulged apart as at 50 to be inserted into an outlet. In FIGURE 2 the prongs 46 are shown in solid lines projecting perpendicular to the body and in dotted lines as projecting in alignment with the body. Assuming that the prongs 46 are plugged into another similar device, as indicated by the dotted lines 52, such device and the body 10 will be in contact with each other so that the prongs will not be exposed. The same is true if the prongs in the dotted line position are plugged into an outlet or into such a device as the present one.

The device shown in FIGURE 4 is essentially the same as the device shown in FIGURE 1 except that the projecting prongs 54 are not hinged, but project directly from the body 10 through openings 56. In such case, if the device is plugged into an outlet, it will project directly outwardly therefrom. In the form of the device shown in FIGURES 1, 2 and 3, the same is true if the prongs 46 are used in the dotted line position shown in FIGURE 2. However, if the prongs 46 are swung to the solid line position in FIGURE 2, the body of the device will project directly along the surface in which the outlet is formed.

In FIGURE 5, the prongs are again rigid as in FIGURE 4. These prongs are indicated by the numeral 58 and project directly through openings 60 in the body 10, being fixed at their inner ends to the interior conductors of the device as suggested by dotted lines in FIGURE 5.

In FIGURE 6, there is shown a device having sockets at both ends. In such case, the body is provided to one side of the center thereof with a groove 62 similar to the groove 15 in FIGURE 1, and conducting strips 64 are arranged in such grooves and provided with projections 66 arranged in offsets 68 formed in the groove 62. Opposite ends of the strips 64 are flared as at 70 to fit against the ends 72 of the groove 62. This duplicates at opposite ends of the device the structure at the left-hand end of FIGURE 1.

At the opposite side of the longitudinal center of the body in FIGURE 6, grooves 74 are formed receiving conducting strips 76 which may be identical with the left-hand strips 32 in FIGURE 1, both ends of the bottom strips in FIGURE 6 being flared as at 77 so that plugs are receivable in opposite ends of the device.

From the foregoing it will be apparent that the most important form of the invention is shown in FIGURES 1, 2 and 3 wherein the pivoted prongs 46 may be positioned at either the dotted or solid line positions in FIGURE 2 or at any position therebetween. This renders the device highly convenient in use particularly where the plug to an appliance is to occupy a position at an angle to the outlet to which it is to be connected. For example, in a wall outlet, the prongs may be turned to the solid line position in FIGURE 2 so that the body 10 lies along the wall and the plug at the end of the cord to an appliance may be inserted directly into the end of the device opposite the prongs 46 without the necessity for having to bend or flex the wire. The use of the fuse in the combination is highly desirable. This fuse will be lighter than the fuse controlling the circuit in the fuse box and it will be visible through the transparent cover plate 12 together with all of the parts, to determine their condition.

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In the event of a short circuit in the appliance, the fuse 40 will "blow" without disturbing the main fuse, and other outlets controlled by the latter fuse will not be rendered inoperative.

Assuming that a fuse 40 "blows," it is easy to replace it merely by removing one of the screws 14, loosening the other screw and swinging the plate 12 in its own plane to expose the fuse. A screwdriver, nail or other implement then may be inverted beneath one end of the fuse and the latter pulled upwardly to be removed. Another fuse may be inserted, whereupon the plate 12 will be swung back to its normal position and the screws reapplied. This advantage is true of all forms of the invention.

The device is extremely simple and economical to manufacture and assemble. For example, in FIGURE 1 with the plate 12 removed, the strips 20 with the associated prong 46 pivoted with respect thereto, may be inserted in the groove 15 and the projections 24 will slide into the offsets 16, thus effectively anchoring the conducting strips in position. The conducting strips 32 may be similarly and just as easily inserted and will be anchored in position, whereupon the plate 12 may be applied together with the screws 14 to complete the assembling of the device. The conducting strips of the several forms of the invention are held in position in the body in the same manner.

Referring to FIGURE 3, it will be obvious that the strips 46 may be readily swung to the two positions shown in FIGURE 2 or to any intermediate position if desired, the cutouts 44 providing clearance from the swinging of the prongs.

From the foregoing it will now be seen that there is herein provided an improved multidirection safety snap-in fused adapter plug which accomplishes all of the objects of this invention and others, including many advantages of great practical utility and commercial importance.

As various embodiments may be made of this inventive concept, and as many modifications may be made in the embodiment hereinbefore shown and described, it is to be understood that all matter herein is to be interpreted merely as illustrative, and not in a limiting sense.

I claim:

1. An electrical adapter comprising an elongated body having an upper face grooved to receive at one side of the longitudinal center thereof a continuous conductor, said continuous conductor being in the form of a pair of spaced conducting strips extending substantially from end to end of said body, the top of said body having offset cutouts communicating with the groove containing said pair of strips, said pair of strips having lateral offsets corresponding in shape and size to said offset cutouts to be received therein to prevent longitudinal displacement of said pair of strips, said body being grooved at the opposite side of the longitudinal center thereof to receive additional conductors, each of said additional conductors comprising a pair of spaced conducting strips having confronting relatively widely spaced end portions, the confronting end portions of each additional pair being longitudinally spaced from each other, said end portions having offset resilient reverted ends, said body having a widened central portion with lateral openings at the ends thereof to receive said widely spaced end portions and said reverted ends, a fuse frictionally engaging between said spaced inner ends of said last-named pairs of conductors and seating in said widened central portion, a transparent top plate closing the top of said body to render said fuse visible, and prongs projecting from at least one end of said body and electrically connected at their inner ends to the adjacent conductors.

2. An adapter according to claim 1 wherein said prongs are pivotally connected at said inner ends thereof to the respective adjacent conductors, said end of said body having cutaways for said prongs to provide for the swinging thereof from positions substantially in alignment with said conductors to positions substantially at right angles to said conductors.

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3. An adapter according to claim 1 wherein said prongs are pivotally connected at their inner ends to the respective adjacent conductors, said body having cutaways in said end thereof extending from said top plate entirely through said body to provide for the pivoting of said prongs to various angular positions relative to said body.

4. An adapter according to claim 1 wherein the prongs project directly from one end of said body and are fixed at their inner ends to the adjacent ends of the respective conductors.

5. An adapter according to claim 1 wherein the prongs project from the rear face of said body and are secured at their inner ends to the respective adjacent ends of said conductors.

6. The structure of claim 1 wherein said body is comprised of transparent material.

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U.S. Cl. X.R.

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