

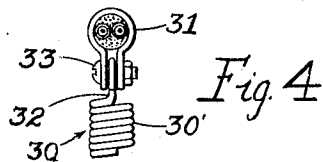
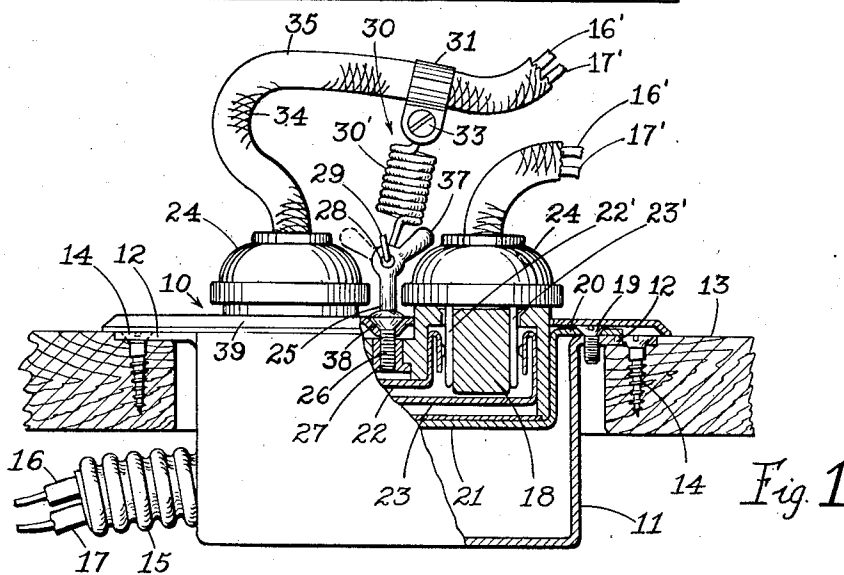
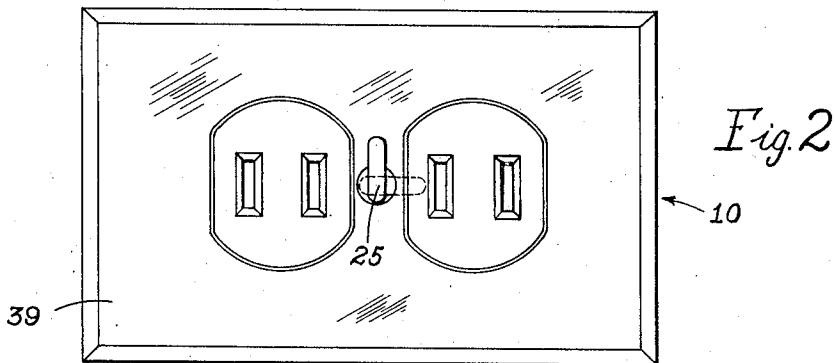
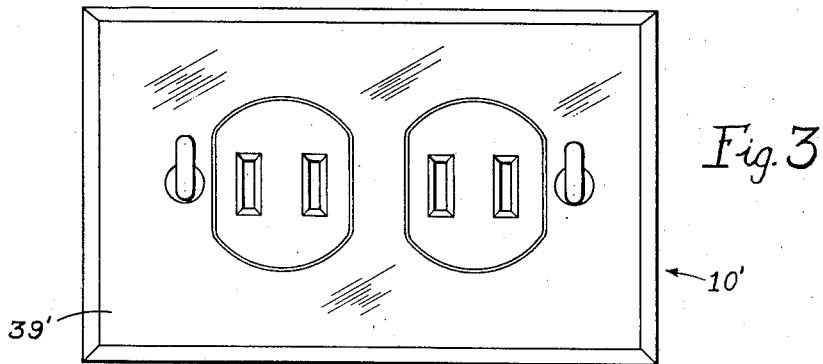
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SAFETY DEVICE

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SAFETY DEVICE

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8 Claims. (Cl. 173—322)

This invention relates to safety devices for use with electrical receptacles.

In the use of electrical devices, particularly with outlet units, including a flush receptacle and outlet or push plugs, of the types now used in exceptionally large quantities in industry and many other places but particularly in homes, there is an ever present possibility of inadvertently pulling the push plug from the flush receptacle when the slack in the extension cord is taken up, or when there is even a slight pull upon the cord while operating vacuum cleaners, electric irons, and the like, or while moving lamps and the like from place to place.

When the push plug is inadvertently pulled from the receptacle much inconvenience results because it is necessary for the operator to discontinue the particular task which the device accomplishes and move across the room to connect the plug into the receptacle again, or to search for the push plug and receptacle in the dark in order to complete connection again. Many other similar inconveniences are occasioned when the two become separated inadvertently.

So far as applicants are aware, no commercially satisfactory device has heretofore been provided to overcome the inconveniences just set forth.

It is an object of the present invention to provide an efficient and practical means for preventing inadvertent disconnection of the push plug from the receptacle to obviate the disadvantages which result from such disconnections.

It is another object of the present invention to provide a satisfactory device adapted to retain push plugs in cooperating receptacles, which may be used in conjunction with push plugs and plug receptacles already installed in homes and other places.

It is a further object of the present invention to provide a safety device for preventing accidental removal of a push plug from a receptacle which will not transmit a shock or pulling strain to the wood screws or other like means connecting outlet units to walls.

Yet another object of the present invention is to provide a safety device which will not prevent regular and desired removal of a push plug from a plug receptacle, or which will not inconvenience the operator unduly in this regard.

One feature of the present invention is the provision of a member adapted to be easily and quickly moved into an operative or locking position over the push plug in order to hold it in

the receptacle, or moved clear of the push plug in order to permit its easy removal.

Another feature of the present invention is the provision of a safety device which is equally operative to hold either or both of two push plugs in a duplex receptacle.

A still further feature of the present invention is a single member adapted to serve the double purpose of holding a push plug in a receptacle and simultaneously hold a flush plate on the outlet receptacle.

Yet another feature is the provision of a safety device adapted to positively lock the push plug relative to the receptacle and to yieldingly take up the shock or initial pull of the extension cord upon the push plug and receptacle.

Other features and advantages will appear hereinafter.

In the drawing:

Figure 1 is a view, partly in section, showing the invention applied to an electric outlet unit.

Fig. 2 is a top view of the unit disclosed in Fig. 1 with the push plugs removed.

Fig. 3 is a view similar to Fig. 2 but showing a modified application of the invention.

Fig. 4 is a detail view of the spring link and clamp.

Referring now in detail to the drawing, the present invention is illustrated as applied to a conventional outlet unit 10 or 10'. The former is disclosed in Figs. 1 and 2 and comprises a usual outlet box 11 having ears 12 extending over a wall 13 to which it is secured by screws 14.

A flexible conduit 15 with feed wires 16 and 17 shown in Fig. 1 is merely representative of a line feed connection to the outlet box 11 with the conduit entering through the knock out hole and clamped by internal straps in the usual manner. It is within the purview of this invention, however, to use lead sheath, cable, loom, solid pipe conduit, etc., the disclosed flexible conduit being merely illustrative of one form.

A double flush receptacle 18 of conventional type is illustrated as secured to the outlet box 11 by flat head screws 19 passed through ends 20 of a strap 21 and threaded into outlet box ears 12 in the usual manner. The feed wires 16 and 17 are connected to the regular and usual terminals (not shown) of the receptacle 18 for feeding current to contact members 22 and 23. The latter are in the form of straps extending through longitudinal and vertical slots to be engaged by both the plugs in the usual manner.

This receptacle 18 is merely illustrative of one type receptacle with which the present invention

may be used. Single receptacles and various types of multiple receptacles may be used equally well.

Usual push plugs 24 with plug prongs 22' and 23' and outlet feed wires 16' and 17' may be connected and disconnected to the receptacle 18 and the contact members 22 and 23 at will any number of times; while the outlet wires of an interconnected outlet cord 35 are connected to a lamp, toaster, vacuum cleaners, electric iron, or any of great variety of electrical devices now used in homes and other places.

Since it is necessary to have the connection between the plug prongs and the contact members loose enough to facilitate easy connection, it follows that the two may be easily disconnected again. This has proven to be an inconvenience in the field, for with even a slight pull on the cord while using vacuum cleaners, electric irons, etc., or while moving lamps, the push plug and receptacle become inadvertently separated. A considerable inconvenience results whenever this occurs. For example: it is necessary for the operator of a vacuum cleaner to discontinue working, walk across a room, plug in the receptacle and then return to the cleaner; for the operator of an electric iron to do practically the same thing, but in addition, with the danger of leaving the still hot iron on the article and possibly scorch it; and to grope around in the dark when a lamp plug becomes disconnected.

Now it should be particularly noted that the present invention overcomes these disadvantages and inconveniences in a neat, simple, positive, and economical manner.

In its present preferred form this invention provides a safety device including a member 25 preferably secured to the receptacle 18 as by a thread end 26 thereof engaging an insert 27 or threading into the strap 21 in the usual manner, with the stud member 25 having a hook or eye 28 adapted to receive a loop 29 at one end of a link 30, which is preferably in the form of a spring as shown. This loop and hook are preferably made so that one may be readily disconnected from the other at will. The other end of the link is connected to a clamp 31 as by having a looped end 32 of the spring receive a clip tightening screw 33.

The link 30 may be in the form of a one piece member, for example the clamp 31 may be extended beyond the screw 33 any desired extent and merely hooked into the member 25. Bead and other type chains or wires may be used equally well as a link. However, in its present preferred form a yielding link such as the spring 30' is used.

When the link clamp 31 is secured to the extension cord 35 a small amount of slack 34 is provided to the extension cord after the push plug 24 has been connected to the receptacle as shown in Fig. 1 so that there is no possibility of pulling the outlet or push plug 24 from the receptacle 18, for as an operator uses up the slack in the extension cord 35 up to the clip 31 there is a pull on the link 30 which prevents the plug from being pulled out of receptacle. Since the link 30 is in the form of a spring, there is no direct or heavy pull. The pulling force is transmitted to various parts of the complete unit 10 rather than to the easily removed plug. There is no shock from the pull to either the receptacle, the outlet box, or to the connection between the complete unit and the base. The structure just described thus forms an effective and

efficient primary means to prevent the push plug from being inadvertently disconnected.

A supplemental or secondary lock is also provided in the same safety device including an extension 37 adapted to overlie the plug 24 with the link 30 connections, as shown by dotted lines in Fig. 1, or to overlie the adjacent plug 24 as shown by full lines in the same figure. Thus, the one general safety device of the present invention provides either a double lock for the one plug in a flush receptacle or locks the two plugs in a duplex receptacle. Further, the link 30 may be unhooked from the member 25 and the latter used alone as a safety device.

In addition to serving as a safety device in the manner just described, the member 25 is also provided with a bevel 38 adapted to fit into regular countersunk cover holes to hold the cover 39 on the receptacle 18 and on the outlet box 11, and thus serves an added important function.

The member 25 may replace the small holding screws 19 in the unit 10' illustrated in Fig. 3 wherein the type of receptacle requires a cover plate 39' with two holding screws on the ends rather than one in the center as shown in Figs. 1 and 2. In this latter form the member 25 screw section passes through the strap 21 and is threaded into the outlet box ears 12, thus holding both the cover 39' and receptacle 18 to the outlet box 11.

Thus, it should be particularly noted that the member 25 may be connected to the flush receptacle unit 10 and 10' without changing the conventional structure in any way, and that it may in fact be added to practically all of hundreds of thousands of such units already installed.

Other modifications may be made within the scope of this invention, and portions of the improvements may be used without others.

We claim:

1. A safety device for preventing inadvertent removal of a push plug and associated extension cord from an outlet receptacle comprising a member adapted to concurrently secure the cover to the receptacle and the outlet box, and to overlie and lock the push plug relative to the receptacle.

2. A safety device for preventing inadvertent removal of a push plug and associated extension cord from an outlet receptacle and cover comprising a member for securing the cover to the receptacle; yieldable means extending from said member to the extension cord and secured at its ends to the extension cord and cover securing member, adapted to prevent a pull on the cord from being transmitted to the push plug, and prevent removal thereof from the receptacle; and an extension on said member adapted to overlie the push plug and form a supplemental means adapted to prevent removal of the plug from the receptacle.

3. A safety device for preventing inadvertent removal of a push plug and associated extension cord from an outlet receptacle and cover comprising a member for securing the cover to the receptacle; a yielding link extending from said member to the extension cord and secured at its ends to the extension cord and cover securing member, adapted to prevent a pull on the cord from being transmitted to the push plug and prevent removal thereof from the receptacle; and an extension on said member adapted to overlie the push plug and form a supplemental means adapted to prevent removal of the plug from the receptacle.

4. A safety device for preventing inadvertent

removal of a combined push plug and extension cord from an outlet receptacle and cover comprising a threaded member adapted to secure the cover to the outlet receptacle; an eye in said member; a yieldable link secured at one of its ends to the eye and at its other end to the extension cord forming a primary safety device; and an extension on said member adapted to overlie the push plug and form a secondary safety device.

5. A safety device for preventing inadvertent removal of a push plug from an outlet receptacle with a cover, comprising a member on the receptacle adapted to hold both the cover and the push plug to the receptacle and movable into a position to continue holding the plate to the receptacle but permitting advertent removal of the push plug.

6. A safety device for preventing inadvertent removal of a push plug from an outlet receptacle comprising a threaded and hooked member on the outlet receptacle adapted to secure a cover

to the outlet receptacle and movable into both an operative locking position over the push plug and into an inoperative (non-locking) position relative thereto.

7. A device of the class described comprising in combination an outlet box receptacle; a cover for said receptacle; a member for securing the cover to the outlet box; and means upon said member and forming an integral part thereof for preventing inadvertent removal of a push plug from said receptacle.

8. A device of the class described comprising in combination an outlet box receptacle; a cover for said receptacle; a member on the outlet receptacle for securing said cover to said receptacle; and said member on the outlet receptacle projecting a considerable distance beyond the outer surface of said cover and having means thereon for overlying and preventing inadvertent removal of the push plug from the receptacle.

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