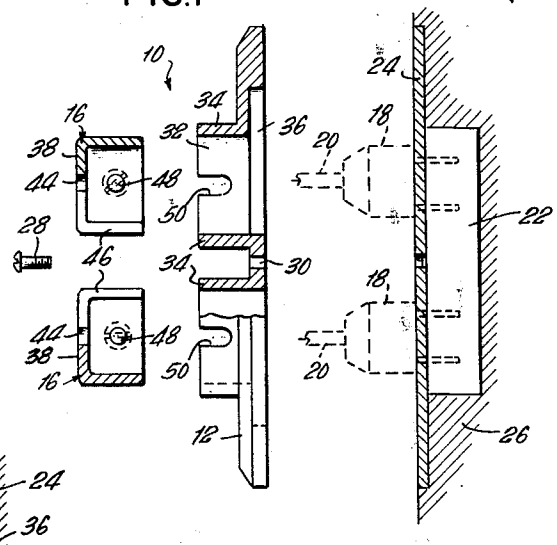
Dec. 4, 1962 N. L. THAW 3,067,402

SAFETY PLUG LOCK

Filed April 5, 1961

FIG. 1



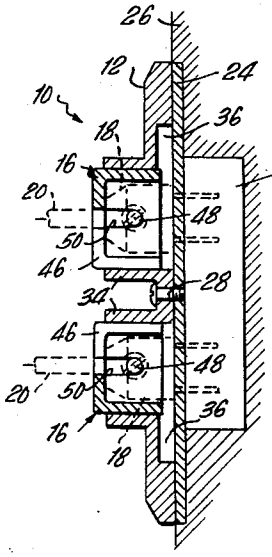
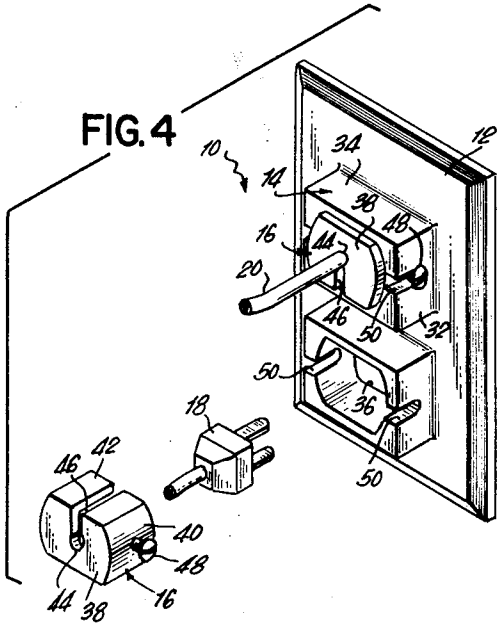


FIG. 2

FIG. 4



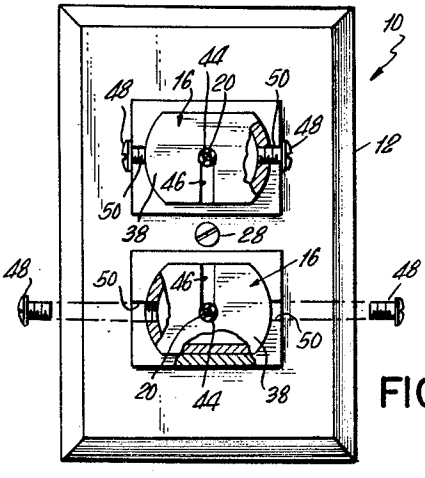


FIG. 3

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SAFETY PLUG LOCK

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The present invention relates generally to safety devices for electric plugs and outlets, and is directed specifically toward a device which is effective to lock a standard two-conductor male electrical plug into a wall outlet.

The use of a male electric plug having a body and a pair of adjacent parallel contacts in connection with a female outlet having a complementary pair of openings is the standard means by which electrical current is delivered from the main house line to the individual electric lights and appliances. Although the use of the electrical wall outlet and the mating male plug have achieved wide acceptance, a number of individual safety problems have arisen which detract from their overall acceptability. One of the problems results from the fact that the only force retaining a male plug in the female outlet is the friction between the contacts on the plug and the mating contacts in the outlet. Often, these friction forces are insufficient, and the plug works its way loose due to movement of the wire connected to the plug until the contacts of the male plug are exposed such that they may be shorted out by having a conductor placed thereacross or such that they may be contacted by a child or animal, with the catastrophic result of producing an electrical shock. In addition, in those instances where a female outlet is not provided with a mating male plug and the openings thereof are exposed, a child might insert a conducting element into the outlet and receive a shock.

In addition to the safety problem presently associated with standard electrical plugs, there are found the problems of inconvenience which may result when a plug is inadvertently dislodged from its wall socket. For example, when a refrigerator or home freezer becomes disconnected from its wall outlet, the refrigeration mechanism ceases to operate, resulting in a loss through spoilage of the food contained therein. A myriad of other examples of the deleterious effect of accidental disconnection of the electrical plug may be readily brought to mind.

Accordingly, it is an object of the present invention to provide means to prevent the accidental dislodging of electrical plugs from wall sockets. Specifically, it is an object of the present invention to provide a device which functions to positively secure an electrical male plug within its mating wall socket such that it may not accidentally be dislodged therefrom, thereby exposing its electrical contacts or disconnecting the plug from the wall socket.

It is a still further object of the present invention to provide means to protect children from the harmful effects of electrical shock which may result from contact with electrical plugs loosely dangling from their associated wall outlets and from contact with exposed wall outlets into which children may place conducting material.

In accordance with a presently preferred illustrative embodiment demonstrating features and advantages of the present invention, there is provided a safety shield and electrical plug lock for securing a male plug to a female wall outlet. The shield and plug lock comprises a substantially flat body which is provided with means to secure the same to the wall outlet. A plug-receiving receptacle is formed on the body and has walls connected

to and substantially perpendicular thereto. The body is formed with an opening within the walls of the receptacle, thus providing a communication path from one side of the body to the other such that the electrical contacts on the plug may be inserted into the wall outlet. A plug cap is provided to fit over a male plug and to secure same to the plug lock body, and therefore to the wall outlet. The plug cap is formed with a central opening for the electrical line cord and a transverse entry slot from one edge of the plug cap to the central opening such that the electrical wire from the plug may be passed sidewardly into the end cap. Means are provided to adjustably mount the end cap within the plug-receiving receptacle and at various distances from the wall outlet such that male plugs of varying heights may be received therein and rigidly secured to the wall outlet. It will be appreciated that when the end cap is secured to the plug receptacle, the plug will be held into the wall outlet against any pull exerted on the plug wire. In those cases wherein a plug is not placed within the wall outlet, the body and the plug cap will cover the face of the wall outlet providing protection for the meddling fingers of children.

The above brief description, as well as further objects, features and advantages of the present invention will be best appreciated by reference to the following detailed description of a presently preferred embodiment when taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is an exploded, elevational and partly sectional view illustrating a wall outlet, plugs positioned in the wall outlet, a shield and plug lock according to the present invention, and a pair of plug caps according to the present invention;

FIG. 2 is a sectional view similar to FIG. 1 showing the individual parts of the assembly joined together in use;

FIG. 3 is a front elevational view of the device shown in FIGS. 1 and 2, illustrating the securement means which hold the plug cap into the plug-receiving receptacle; and,

FIG. 4 is a perspective view, partially exploded, illustrating the device according to the present invention.

Referring now specifically to the drawings, there is shown a safety shield and electrical plug lock assembly which is generally designated by the numeral **10**. The plug lock **10** generally comprises a body **12** of an overall configuration similar to the standard plate which is normally used as a frame around the conventional wall outlet, a pair of plug receptacles **14** and a mating pair of plug caps **16** which may be secured to the plug receptacles **14**. As may be seen in FIGS. 1 and 2, the electrical plug lock assembly **10** is adapted for use in conjunction with one or more male electrical plugs **18** and their associated wires **20** when in use with a female wall outlet **22** including the outlet plates **24** which effectively secure the outlet **22** onto a wall such as the wall **26**. A screw **28** is provided which passes through an opening **30** in the body **12** of the assembly **10** and is effective to secure the body **12** to the outlet plate **24** in place of the normally employed outlet plate.

As may be best seen in the sectional views of FIGS. **1** and 2, and the exploded view of FIG. 4, the body **12** and the plug receptacles **14** are advantageously formed as a one piece unit. The plug receptacles **14** each include a pair of end walls **32** and a longer pair of side walls **34** such that an enclosed plug-receiving area is provided within the side walls **32**, **34**. The body **12** has formed within the walls **32**, **34** a pair of openings **36** providing communication between the outside portion of the body plate **12** and the outlet **22** such that a plug **18** may be passed from the front side of the assembly **10** into the electrical outlet **22**.

The plug caps 16 are generally of U-shaped cross-sectional configuration and include a top wall 38, a pair of end walls 40 and a pair of longer side walls 42. A central opening 44 is formed in a top wall 38 to receive the plug wire 20 and a transverse slot 46 is formed in one of the side walls 42 and from the edge of the top wall 38 to the central opening 44 to provide an entry channel for the wire 20. It will thus be appreciated that the plug cap 16 may be placed about the male plug 18 by passing same sidewardly over the wire 20, utilizing the transverse slot 46, until the wire 20 is within the central opening 44, and then by sliding the plug cap 16 down the length of the wire 20 until the plug is contained within the top wall 38 and the side walls 40, 42 of the plug cap.

The plug cap 16 is further provided with securement means for attaching same to the plug-receptacles 14. The securement means in the present illustrative embodiment comprise two opposed screws 48 threaded into appropriate tapped holes formed within the end walls 40 of the plug cap. Mating, elongated, U-shaped cutouts 50 are formed within the end walls 32 of the plug receptacles 14 which U-shaped cutouts mate with the screws 48. Thus, the plug cap 16, with the plug 18 contained therein, is placed within the walls of the plug receptacle 14 with the heads of the screws 48 positioned on the outsides of the end walls 32 of the plug receptacle 14. When the prongs of the plug 18 have been fully received in the mating openings in the outlet 22, and the plug cap 16 has been pushed flush against the top of the plug 18, the screws 40 may be tightened up such that the plug cap 16 is rigidly secured to the plug receptacle 14 as shown in FIG. 2 and the top portion of FIG. 4. It will be appreciated that the provision of the elongated cutout 50 provides an adjustable securement means whereby plugs of a variety of different heights may be easily accommodated.

With the plug 20 and the plug cap 16 received within the plug receptacle 14 as described above, it will be appreciated that a pulling force exerted on the wire 20 which would normally tend to dislodge the plug 18 from the outlet 22 will be ineffective to remove the plug from the outlet. This is so because the plug cap 16, through the plug receptacle 14, the body 12 and the main securement screw 28, will effectively oppose any force tending to remove the plug from the outlet 22. When it is desired to remove the plug 18 from the outlet 22, the two securement screws 40 are loosened, the end cap 16 is removed from the plug receptacle 44 and the plug may then be disengaged from the outlet 22.

In situations where a given receptacle is not being utilized, the plug cap 16 may be placed within the plug receptacle 14 without the insertion of a plug and may be secured thereto by the screws 48. The top wall 38 of the plug cap 16 will provide an effective shield to cover over the exposed openings of the female outlet 22 such that small children will be unable to tamper with the outlet, thus protecting them from accidental electrical shock.

It will be appreciated that there is provided in accordance with the present invention a safety shield and electrical plug lock which effectively provides means to lock a male electrical plug to a female wall outlet. Means are provided whereby the plug lock may be adjusted to receive plugs of varying sizes to secure same against accidental dislodgement. In addition, the device according to the present invention provides effective means to shield an unutilized female wall outlet such that a shock cannot accidentally be received from the same.

A latitude of modification, substitution and change is intended in the foregoing disclosure and in some instances some features of the invention will be used without the other corresponding features. Accordingly, the claims herein should be construed broadly and in a manner consistent with the spirit and scope of the invention.

What I claim is:

1. A shield and plug lock for an electrical outlet comprising a body plate, means to secure said body plate to the front of an electrical outlet, an upstanding plug-receiving receptacle having side walls rigidly connected and substantially perpendicular to said body plate, an opening formed in said body plate within the confines of the side walls of said receptacle to provide communication between the front and the rear of said body plate, a plug cap sized to be received within said receptacle and to receive an electrical plug, and means for adjustably securing said plug cap to the side walls of said receptacle at a variety of heights above said body plate, said plug cap having a top wall formed with an opening to provide passage means for the electrical wire attached to said plug and a transverse wire slot providing entry means to insert said wire sidewardly into said opening, said cap providing means to secure said plug to said receptacle and thereby to said body plate and to said electrical outlet.

2. A shield and plug lock for an electrical outlet comprising a body plate, means to secure said body plate to the front of an electrical outlet, an upstanding plug-receiving receptacle having side walls rigidly connected and substantially perpendicular to said body plate, an opening formed in said body plate within the side walls of said receptacle providing communication between the front and the rear of said body plate, a plug cap sized to be received within said receptacle and to receive an electrical plug, and means for securing said plug cap to the side walls of said receptacle, said plug cap having a top wall formed with an opening to provide passage means for the electrical wire attached to said plug and a wire slot providing entry means to insert said wire sidewardly into said opening, said shield and plug lock being effective to secure said plug to said receptacle and said body plate and thereby to said outlet.

3. A shield and plug lock for an electrical outlet comprising a body plate, means to secure said body plate to the front of an electrical outlet, an upstanding plug-receiving receptacle having side walls rigidly connected and substantially perpendicular to said body plate, an opening formed in said body plate within the side walls of said receptacle to provide communication between the front and the rear of said body plate, a plug cap sized to be received within said receptacle and to receive an electrical plug, and means for adjustably securing said plug cap to the side walls of said receptacle, said plug cap having a top wall formed with an opening to provide passage means from one side of said cap to the other for the electrical wire attached to said plug, said cap, securement means, receptacle and body plate providing means to lock said plug into said outlet.

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