May 9, 1950 H. A. CLINE 2,507,092

ELECTRIC PLUG

Filed Dec. 7, 1944

FIG. 1

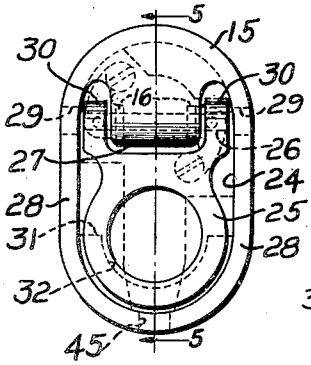


FIG. 2

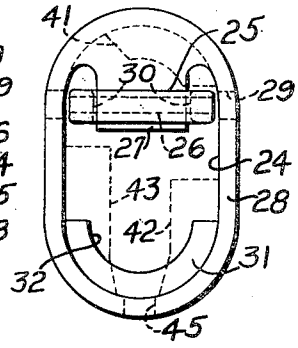


FIG. 3

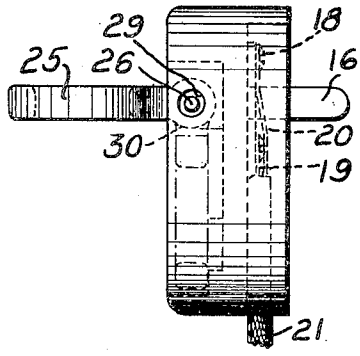


FIG. 4

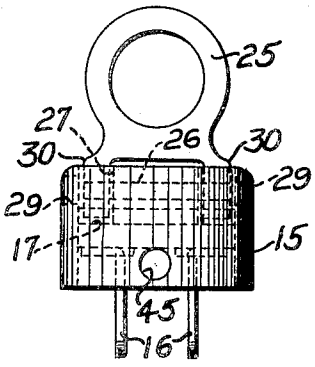


FIG. 5

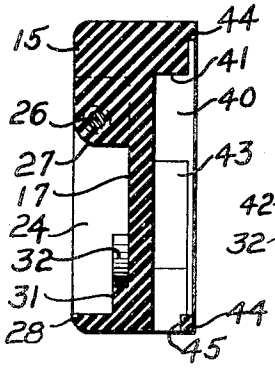
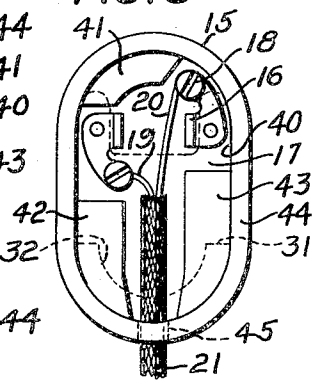


FIG. 6



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ELECTRIC PLUG

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2 Claims. (Cl. 173—361)

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My invention relates to plug caps for electrical outlets, and the like and more particularly to plug caps having novel means to remove them from the electrical outlets, and being otherwise particularly constructed so as to prevent the plug cap from being removed from the outlet by pulling on the cord connection, which latter is inserted into the plug cap for connection thereto, through the side thereof, thus preventing the cord wires from being loosened from the plug terminals, and at the same time preventing broken cords and broken wires, all of which makes my invention very practical from the standpoint of safety.

Many of the plug caps now on the market are difficult to remove from the outlets because there is no means thereon by which they may be grasped, and therefore the person usually takes hold of the cord connection and pulls, or jerks the plug cap from the outlet, with the result that the cord often breaks, or the wires therein break or pull loose from the terminals.

When the latter occurs there is danger of short circuits and even fire. Then again, by this method of removing the plug caps from the outlets, the person does not always pull straight, that is, in the line of the cord, and many times the cord wires will break inside the cord and cause serious trouble by short circuits and inconvenience before they can be repaired.

The main reason for pulling or jerking on the plug cap cord is because, in practically all of the plug caps now on the market, the cord comes out of the top of the plug cap, and therefore it is a perfectly natural thing for the person to grasp the cord to remove the plug cap from the outlet, rather than taking hold of the plug cap proper, and particularly so because there is no means on the cap to assist the person in removing the cap.

Another reason is that the plug caps are quite smooth and consequently slippery, because they are of a half round construction, and so the person's fingers slip off the plug cap, after which the person usually grabs hold of the cord and jerks the plug from the outlet, with the bad results, stated above, namely, wires pulled loose from the plug terminals, or broken wires, or broken cords.

With the above undesirable features in mind, and with the purpose of eliminating such undesirable features, I have invented and produced a novel plug cap for electrical outlets, which can be very easily removed from any outlet without any danger of having the wires become disconnected or pulled loose from the plug cap terminals, and also without any danger of the cord or wires therein being broken.

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It is therefore an object of my invention to produce a novel plug cap which can be easily removed from any electrical outlet with perfect safety relative to short circuits and broken wires or cords.

Another object of my invention is to produce a novel plug cap having means thereon to facilitate removal of the cap from an electrical outlet.

Another object is the production of a plug cap having an opening in the side thereof for the insertion of the connection cord, thus preventing any tendency or desire of a person to pull on the cord to remove the plug cap from an outlet.

A more specific object is the production of a plug cap having a pull ring to facilitate easy removal of the cap from an outlet.

A further object of my invention is to produce a novel plug cap which has a hinged pull ring, and also an opening in the side of the cap for the insertion of the electric cord.

A still further object is the production of a novel plug cap having a hinged pull means or ring, which, when not in use is folded in flush with the top of the cap.

Another object is the production of a novel plug cap having a hinged pull ring adapted to lay flush with the top of the cap, said cap being recessed for such purpose, and having a stop shoulder or rest for the pull ring when the latter is in the closed or flush position.

Another object is to produce a novel plug cap with a hinged pull ring arranged so as to lay flush with the top of the cap when not in use, and having its hinge point directly above the plug cap terminals so that the pull on the ring is in the most effective place relative to the terminals, thus making for easy removal of the plug cap from an outlet.

A further object is to provide a novel plug cap with a recess in the top thereof to provide for finger space so that the pull ring can be easily removed from its closed or flush position into its open or pulling position.

A further object is to provide a novel plug cap having a novel pivoted pull means thereon to facilitate removal of the cap from any outlet, and to provide an opening in the side of the cap for the insertion of the electric cord thus causing the cord to be at right angles to the direction of pull on the cap when removing it from an outlet.

And finally, it is an object of my invention to

provide a novel plug cap so arranged that it will have a certain psychological effect on the person about to remove it from an electrical outlet, since the cord projects from the side of the plug cap, and not the top thereof, the person will have no desire or inclination to remove the cap by pulling on the cord because it will be evident at first sight that the direction of pull is not right to remove the cap, and that by pulling on the cord will absolutely not remove the cap, and consequently the person will grasp the pull ring and thus properly remove the plug cap from the outlet without any danger of being electrically shocked, or loosening the wires of the cord from the cap terminals, or breaking the wires or the cord, thus making my novel plug of great benefit to the public from the standpoint of safety.

With these and other incidental objects in view my invention includes certain novel features of construction and combinations of parts, the essential elements of which are set forth in appended claims, and a preferred and modified forms of embodiment which are hereinafter described with reference to the drawing, which accompanies and forms part of this specification.

Of said drawing:

Fig. 1 is a top plan view of my novel plug cap showing the pull ring in the closed or flush position, the connection cord being omitted.

Fig. 2 is a top plan view showing the pull ring in the open or pulling position, the plug terminals and the connection cord being both omitted.

Fig. 3 is a side view with the pull ring in the open position. In this view the pull ring is also shown in the closed or flush position by dot-and-dash lines.

Fig. 4 is a front view with the pull ring in the open or pulling position.

Fig. 5 is a section on line 5—5 of Fig. 1, looking in the direction of the arrows.

Fig. 6 is a bottom view of my novel plug cap, showing how the cord is inserted in the side of the cap, and at right angles to the line of pull on the cap when it is being removed from an outlet.

Detailed Description

Referring now particularly to Figs. 1 to 6, inclusive, my novel plug cap with the hinged pull ring which is adapted to be moved into a closed or flush position, will be described first.

The plug cap 15 is elongated as here shown and has the usual pair of terminals 16 secured to the bottom side of a center rib 17 which is shown in Figs. 3 and 5. The cap 15 is preferably made of a plastic electrical insulating material such as rubber. However any other good insulating material that is moldable can be used without in any way departing from the spirit of my invention.

The usual screws 18 are used to secure wires 19 and 20 of an electrical connection cord 21 to the terminals 16, as shown in Figs. 3 and 6.

A recess 24 in the top of the cap 15 provides space for a hinged pull ring 25, hinged or pivoted on a hinge pin 26 supported in an offset 27 flush with the top of the cap 15 and formed in the recess 24. This recess 24 creates side walls 28 each having a hole 29 in axial alinement with the hinge pin 26 for assembly purposes. The pull ring 25 is forked to form hinge bearing ears 30 by means of which the ring 25 is supported on the hinge pin 26 to be moved from its closed or flush position into its open or pulling position, as shown in Figs. 1 and 2 respectively.

A semi-circular ledge 31 is formed in the recess

24 against the end of the walls 28 to provide a rest or support for the pull ring 25 when the latter is in the closed or flush position. This ledge 31 holds the ring 25 away from the rib 17 thus providing finger space for a person, so that when the finger is inserted into the ring 25 there will be enough room so that the finger can easily raise or lift the ring 25 out of the recess 24 about the hinge pin 26. The inside arcuate surface 32 of the ledge 31 is of a larger radius than the inside radius of the ring 25 as shown in Figs. 1 and 3, which is also for the purpose of providing finger gripping space.

The bottom of the plug cap 15 has a recess 40 which forms the bottom side of the rib 17, to provide space for the terminals 16 and the connection cord 21. Reinforcing sections 41, 42 and 43 are provided in the recess 40 as shown in dotted lines in Figs. 1 and 2, and in full lines in Fig. 6. This recess 40 creates a flange 44 all around the bottom of the plug cap 15 and at the end thereof has a hole 45 for the insertion of the connection cord 21, thus providing a side outlet for the cord 21 instead of the usual top outlet in plug caps now on the market.

When a person wishes to remove the plug cap 15 from an electrical outlet he merely places his finger in the pull ring 25 (Fig. 1), raises the ring 25 into the position shown in Figs. 2, 3 and 4, and then pulled straight out thus removing the plug cap 15 from the electrical outlet without any danger of loosening the wires 19 and/or 20 from the terminals 16, without any danger of breaking the cord 21 or the wires 19 or 20 therein, and consequently without any danger of being shocked by electricity, or blowing out any of the fuses in the line. Therefore by invention is a novel improvement over any of the plug caps on the market, from the standpoint of, first, safety, second, ease of removal of the plug cap, and third, cost in that repairs are reduced to a minimum.

While the form of device herein shown and described is admirably adapted to fulfil the objects primarily stated, it is to be understood that my invention is not limited to the particular form herein shown, as other forms may be used, all coming within the scope of the claims which follow.

What I claim is:

1. A unitary plug cap for electrical outlets, the combination of a flange extending around the bottom of the cap to form a recess; an electric cord projecting through said flange at one end of the cap; a pair of terminals secured to said cap in said bottom recess; a plurality of re-enforcing sections integral with said flange, two of which sections form a channel for said cord; a flange on the top of the cap extending along two sides and around the end thereof to form a top recess; a lug integral with the cap and extending into said top recess opposite said one end of the flange; a forked member spanning said lug; a hinge pin extending through said member and said lug whereby said forked member may be positioned at right angles to the top of the cap and also may be positioned level with the top; and a shoulder integral with said top flange and extending from the round end thereof into the top recess to act as a stop for said forked member when in its level position to maintain the upper level side thereof flush with the top of the top flange.

2. In a unitary plug cap for electrical outlets, said cap having a recess in the top thereof to form a flange the top of which is flush with the

top of the cap, said flange having openings in axial alignment and extending from the recess entirely through the flange; a lug integral with the cap and extending into said recess, said lug being flush with the top of the cap and the top of the flange and having an opening therethrough in axial alignment with said flange openings; a forked member projecting into said recess on each end of said lug between the lug and the flange; a hinge pin projecting through the forked end of the forked member and through said lug opening to provide a hinge for said forked member, said member having an effective position to act as a medium of removal of the plug cap from an electrical outlet, and having an ineffective position in which said member is entirely within the recess and laying flush with the top of the flange; a shoulder integral with the flange and projecting into said recess opposite said lug and serving as a stop for the forked member when the latter is in its ineffective position; and an

electric cord projecting through the side of the cap and extending into a recess in the bottom of the cap and attached to a pair of terminals secured to the cap in said bottom recess.

HAROLD A. CLINE.

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