June 12, 1962 P. D. STOLLMAN 3,039,075

POLARIZED ATTACHMENT PLUG

Filed May 21, 1958

Fig. 1.

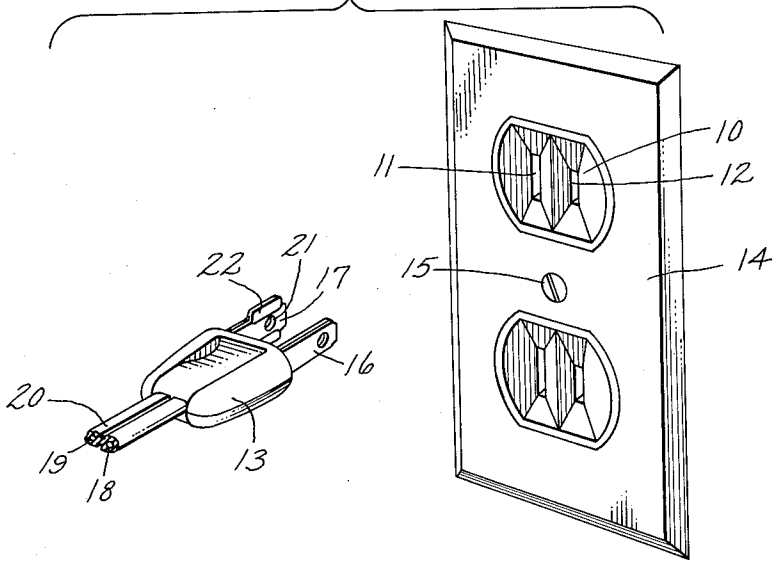


Fig. 2.

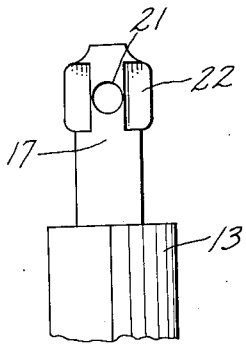


Fig. 3.

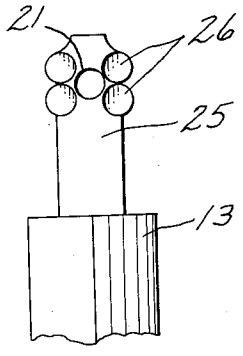


Fig. 4.

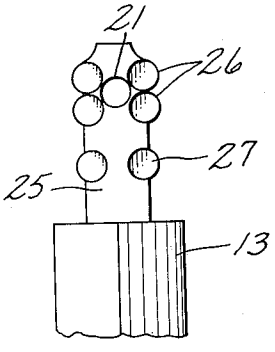
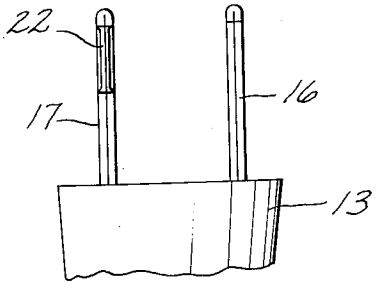


Fig. 5.



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3,039,075

POLARIZED ATTACHMENT PLUG

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2 Claims. (Cl. 339—184)

The present invention relates to polarized attachment plugs which have one standard contact blade and one oversized blade so that the plug can be inserted in only one way into a polarized outlet.

In ordinary residential wiring, the service entrance cable includes either three wires delivering 115/230 volts or two wires corresponding to the middle wire and one of the two outside wires and delivering 115 volts only. The middle wire of the three wire system is usually grounded and is known as the neutral wire. The purpose of grounding is to promote safety both from electrical shocks and from fire hazards. In a typical two wire general purpose branch circuit, one wire is black (hot) and the other wire is white (neutral). The black wire is the wire which should be connected to the brass-colored terminal on all switches, outlets, sockets, fuse boxes and to the black wires on pull chain fixtures. The white (neutral or ground) wire, also called the continuous wire, is grounded at the service entrance switch and it connects to the silver or light-colored terminal on all outlets, sockets, fuse boxes, etc. Hence, the white wire is a grounded conductor and a polarized outlet is one having a specific contact connected to the white grounded conductor. Accordingly, the polarized plug is one having a specific blade attachable to the specific contact of the polarized outlet. For example, the polarized plug has one standard-width blade and one wide blade and, similarly, the polarized outlet has one standard-slot and one wide slot. The present invention has been adopted principally for portable TV receivers. To be effective, the polarized plug must be part of a power supply cord attached to the receiver, and the chassis in turn is grounded to the polarized conductor of the cordset.

The principal object of the present invention is to provide a polarized attachment plug with an extra wide blade that is obtained by coining the edges of the blade after the plug body is molded.

A further object of the present invention is to provide an improved polarized attachment plug which is made by first finishing the plug as a standard parallel-bladed plug and then subjecting one blade to a coining operation to increase its width for use as a polarized plug.

The present invention is of particular advantage to the manufacturer of the cordset because no change need be made in the molding equipment for molding the plug body onto the end of the cord. By this is meant that the present molding equipment is set up to handle standard attachment blades which are crimped to the bare ends of a pair of conductors of an electrical cord. Complete new molds would be necessary if one of these standard blades were replaced by a polarized blade. This difficulty is circumvented by finishing the attachment plug as a standard parallel-bladed plug and then subjecting one blade of the plug to a coining operation by coining its edges to increase the width of the blade and thus form a polarized plug.

My invention will be better understood from the following description taken in connection with the accompanying drawing and its scope will be pointed out in the appended claims.

FIGURE 1 is an isometric view showing a typical polarized duplex convenience outlet with a faceplate attached thereto, and a polarized attachment plug embodying the present invention.

FIGURE 2 is a side view of the polarized blade of the attachment plug in FIGURE 1 showing the side edges of the blade coined to increase its width.

FIGURE 3 is a second embodiment of the polarized blade of FIGURE 2.

FIGURE 4 is another embodiment of the polarized plug of the present invention.

FIGURE 5 is a front view of the parallel blades of the polarized plug of FIGURE 1.

Referring in detail to the drawing and in particular to FIGURE 1, **10** represents a polarized duplex outlet having a wide slot **11** and a standard-width slot **12** for receiving the polarized attachment plug **13**. For several years now, the Underwriters' Laboratories have required all wall-mounted convenience outlets to be polarized outlets. A standard faceplace **14** is fastened over the outlet **10** by means of a single screw fastener **15**.

Turning now to a consideration of the polarized attachment plug **13**, it includes a pair of contact blades **16** and **17** that are crimped to the bare ends of the two conductors **18** and **19** of the electric cord **20** in a well-known manner. The contact blade **16** is a standard-width blade that has a maximum width of 0.250 inch. The polarized blade **17** has a free end of extra width which by U.L. standards is 0.312 inch minimum. Accordingly, the polarized plug **13** can only be inserted into a polarized outlet in one way, and the polarized blade **17** cannot fit into a standard-width slot such as **12**.

Attention is now directed to FIGURES 2 and 5 of the drawing for a better understanding of the polarized blade **17**. As shown in FIGURE 5, both blades **16** and **17** are formed of thin strip material which is doubted back onto itself to provide a double ply construction. A locating opening **21** is formed near the free end of both blades, as is standard practice in the industry. Originally, both blades **16** and **17** are made identical, and their terminal ends are crimped to the bare ends of the conductors **18** and **19** of the cord **20**. Then the blades are fitted into the cavity of the mold and the plug body is molded onto the cord to form a finished non-polarized molded plug. A die is then used to coin the edges as at **22** on opposite sides of the opening **21** so as to increase the width of blade **17** to conform to the U.L. requirements for the width of a polarized blade. This coined section **22** is of such length that it is not possible to angle the blade **17** into the standard-width slot **12** of the polarized outlet **10**.

FIGURE 3 shows a modification of the polarized blade, identified here as element **25**, which has been found most useful on solid blade constructions. This polarized blade **25** has a pair of pinch-out tabs **26** on each side of the blade in the area of the opening **21**.

FIGURE 4 shows a modification of the polarized blade **25** of FIGURE 3, namely, the addition of pinch-out tabs **27** in the shank of the blade on opposite edges thereof to prevent angling of the blade in the slot of the outlet if such were found to be a problem.

Having described above my invention of a novel method of manufacturing a polarized attachment plug with coined edges for the polarized blade, it will be readily apparent to those skilled in this art that this method creates quite a saving in tooling cost in avoiding the replacement of the dies of the molding equipment.

Further modifications of this invention will occur to those skilled in this art and it is to be understood, therefore, that this invention is not limited to the particular embodiments disclosed but that it is intended to cover all modifications within the true spirit and scope of this invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A polarized attachment plug comprising a plug

body and a pair of dissimilar contact blades, a first one of said blades having uninterrupted side edges extending outwardly from said plug body, a second one of said blades generally similar to said first blade but having coined projections formed on the side edges thereof adjacent the outer end, said projections having a thickness less than the thickness of the side edges on which they are formed and providing an increased width between their outer extremities thereby to provide a plug which may only be inserted into a polarized outlet in a predetermined manner, and additional coined projections formed on the side edges of the shank of said second blade to reduce the angling of the plug in the polarized outlet.

2. A polarized attachment plug comprising a plug body and a pair of dissimilar contact blades, one of said blades having coined projections extending from the sides of said one blade adjacent the free end thereof, said

projections being formed as pinch-out tabs to increase the width of said one blade so that said one blade may only be inserted into a polarized outlet in a predetermined manner, and additional pinch-out tabs formed on the sides of the shank of said one blade to reduce the angling of said plug in a receiving outlet.

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