

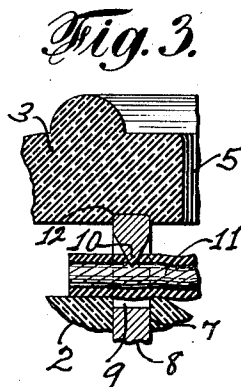
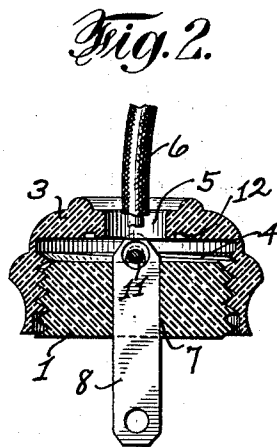
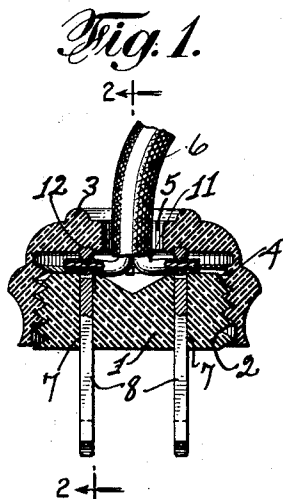
Feb. 12, 1935.

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1,991,045

ELECTRIC PLUG

Filed Jan. 4, 1930



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1,991,045

ELECTRIC PLUG

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Application January 4, 1930, Serial No. 418,476

9 Claims. (Cl. 173-361)

This invention relates to an electric plug to which electric wires or an electric cord can be easily connected. The device consists of few parts that are cheap to make, easy to assemble and are not likely to get out of order.

The plug made in accordance with this invention is of the push-plug type having blades that enter into openings in plug sockets of the well-known type. The electric wire can be securely connected to the blade contacts without the necessity of stripping the insulation off of the wires and repairs can be easily made or broken parts can be readily replaced.

The invention will be understood from the description in connection with the accompanying drawing, in which Fig. 1 is a longitudinal section through an illustrative embodiment of the invention; Fig. 2 is a section along the line 2-2 of Fig. 1, and Fig. 3 is a section on an enlarged scale, partly broken away, showing some of the details.

In the drawing, reference character 1 indicates a thick disc of insulating material, such as hard rubber or bakelite, for example. The disc 1 is exteriorly threaded, as indicated at 2, so that a screw cap 3 can be screwed upon the disc. The screw cap 3 is also of insulating material and is provided with an internally threaded recess, as indicated at 4, so that the cap can be screwed upon the disc to the desired position.

The cap is provided with a central opening 5 through which an electric cord or a pair of electric wires can be passed. A duplex wire 6 is shown passing through the opening 5 with the ends spread apart in the space between the disc 1 and the bottom of the cap 3.

The disc 1 is provided with transverse openings 7 therethrough. The openings 7 are disposed on opposite sides of the axis of the disc 1 and are parallel to this axis. The openings 7 are spaced apart a distance equal to the distance between openings that are provided in electric sockets to receive the blade contacts of an electric plug, and the blade contacts 8 are located in the openings 7 and fit closely therein so that they can slide in these openings but preferably have a sufficiently close fit to prevent the same from dropping out of these openings. While parallel blades 8 are shown in the drawing, tandem blades or combination blades of the well-known type may be used.

The inner ends of the blade contacts 8 are made so that when the cap 3 is screwed upon the disc 1, the blades 8 are moved longitudinally and make electrical contact with the wires pass-

ing through the hole 5 and the wires aid in keeping the blade contacts 8 in place. In the illustrative embodiment of the invention, the inner ends of the blade contacts 8 are provided with holes 9 through which holes the ends of the wires extend. The upper edges of the walls of the holes 9 are sharpened, as indicated at 10 in Fig. 3, so that when the contacts 8 are forced downwardly by screwing the cap 3 upon the disc 1, the walls 10 cut through the insulation near the ends of the wires 11 to make electrical contact between the contacts 8 and the wires. At the same time, this movement of the contacts securely holds the wires in place so that they do not become disconnected even when the wires are used for pulling the plug out of a socket.

The inner surface of the top of the cap 3 may be provided with a circular series of corrugations or indentations 12 opposite the upper ends of the contacts 8, so that the ends of the contacts 8 will snap into such indentations to prevent the cap 3 from being inadvertently loosened or unscrewed after it has been screwed into place to cause the contacts 8 to cut through the insulation on the ends 11 of the electric wires.

It is to be understood that other schemes than sharpened edges of holes in the contacts 8 can be used to cut through the insulation and hold the wires in place in a device of this sort. In view of the fact that the wires turn substantially at a right-angle after they pass through the hole 5, a direct pull upon the cord 6 will not cause the wires 11 to be disconnected, especially when the cap 3 is screwed down with sufficient force to cause the sharp edges 10 to make nicks in the metal wire or to cause the wires to be bent slightly into the upper ends of the holes 7. It will also be understood that the resiliency of the wires 11 will facilitate the snapping of the upper ends of the contacts 8 into the indentations 12. The considerable length of openings 7 in the thick disc 1 provide long bearing surfaces for the contacts 8 so that they are kept securely in proper position apart. No bare wires are exposed within the device and the danger of short-circuits is thereby greatly decreased. No tools whatever are required for connecting the electric wires as no binding screws have to be tightened and no insulation is required to be removed from the wires.

I claim:

1. In an electric plug, a member of insulating material, longitudinally movable contacts extending through said member, said member being threaded, a cap screwed on said member,

and means on said cap contacting with said contacts to keep said cap from unscrewing.

2. In an electric plug, a threaded disc of insulating material, a cap screwed on said disc and a removable prong contact, said contact being movable by said cap to press an insulated electric wire against said disc and penetrate the insulation.

3. In an electric plug, a threaded disc of insulating material, a cap screwed on said disc and a removable prong contact, said contact being movable by said cap to press an insulated electric wire against said disc and penetrate the insulation, said contact comprising a member extending through said disc.

4. In an electric plug, a threaded disc of insulating material having an opening there-through extending in an axial direction, a cap screwed on said disc, an insulated electric wire passing through said cap, and a slidable contact extending through said opening and piercing said insulated wire by means of pressure exerted by said cap.

5. In an electric plug, a threaded disc of insulating material, a cap screwed on said disc, an insulated electric wire passing through said cap, a slidable contact extending in an axial direction through said insulated disc, said wire being pierced between said disc and a portion of said contact and said cap pressing against said contact.

6. In an electric plug, an externally threaded

disc of insulating material, a cap screwed on said disc, an insulated electric wire passing through said cap, a slidable contact extending in an axial direction through said disc, said wire passing through an opening in said contact and said opening having a wall adapted to penetrate the insulation on said wire.

7. In an electric plug, an externally threaded disc of insulating material, a threaded cap engaging said disc, and an insulated electric wire passing through said cap, a slidable contact associated with said disc and moved by said cap in an axial position relative to said disc, said insulated wire being pierced by said contact.

8. In an electric plug, a member of insulating material having sliding prong contacts, said contacts having an opening at one end thereof for carrying an insulated electric wire, said wire having its insulation penetrated by the wall of said opening and means for applying pressure to said contact to retain said wire in place between the wall of said opening and said member of insulating material.

9. In an electric plug, a member of insulating material having parallel openings adapted for holding slidable contacts, slidable contacts in said openings each having a hole near one end to pierce an insulated electric wire, and a second member for moving said contacts against said wires so as to pierce the insulation and produce an electric contact.

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