June 5, 1951 J. E. DOSS 2,555,685

SAFETY PLUG FOR ELECTRIC APPLIANCES

Filed Nov. 23, 1948

Fig. 1.

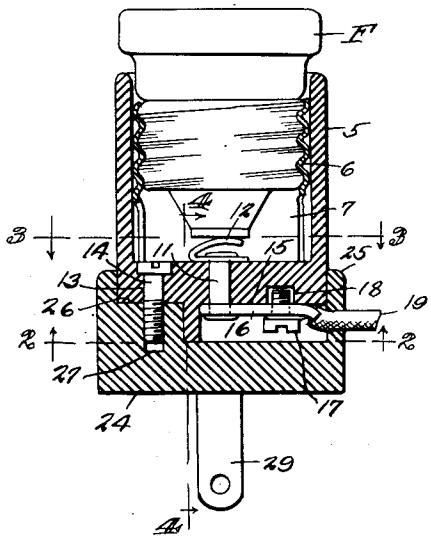


Fig. 4.

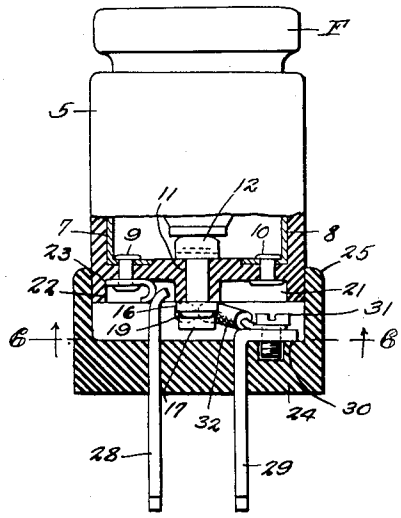


Fig. 2.

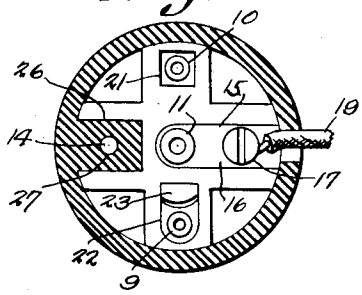


Fig. 5.

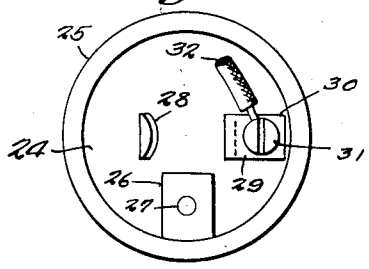


Fig. 3.

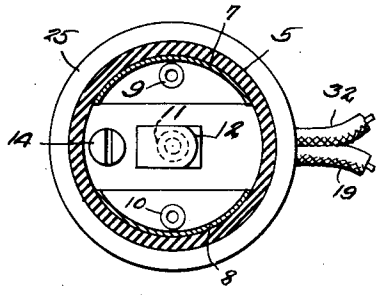
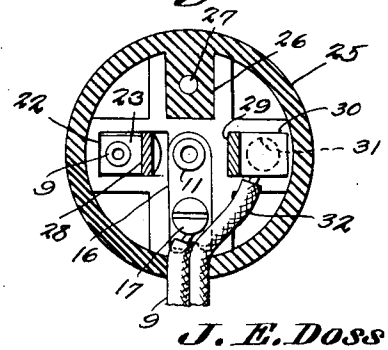


Fig. 6.



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SAFETY PLUG FOR ELECTRIC APPLIANCES

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Application November 23, 1948, Serial No. 61,617

1 Claim. (Cl. 173—344)

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This invention relates to a safety plug for electric appliances. More particularly, the invention has reference to a plug including a receptacle for a fuse, so that should there be a short circuit or the like in any electrical appliance connected electrically to the house circuit by means of the plug, said fuse will blow out.

It is an important object of the present invention to provide a device of the character described whereby a fuse of low amperage can be used, and thus in the event of a short circuit in said electrical appliance, said fuse will be blown, while no other fuse or electrical appliance on the same house circuit will be affected. Thus, the invention can be considered as a safety plug-in device.

Another important object is to provide a device of the character described that can be constructed at relatively low cost, will be capable of efficient use over an indefinite period of time, and will be attractive in appearance.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts, hereinafter more fully described and pointed out in the claim, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

Referring to the drawing

Figure 1 is a vertical section through a safety plug-in device constructed in accordance with the invention.

Figure 2 is a section taken on line 2—2 of Fig. 1.

Figure 3 is a section on line 3—3 of Fig. 1.

Figure 4 is a vertical sectional view taken on line 4—4 of Fig. 1.

Figure 5 is a top plan view of the plug base, with the fuse receptacle removed.

Figure 6 is a section on line 6—6 of Fig. 4.

Referring to the drawings in detail, the reference character F designates a conventional fuse, removably threaded in the cup or fuse receptacle 5, that is formed of non-conductive material, such as plastic or the like.

Receptacle 5 has therein a conductive threaded lining 6 engaged by the fuse F. The lining member 6 is formed with opposed downwardly extended legs 7, 8, that are spaced apart and are respectively secured to the bottom wall of the receptacle 5 by means of rivets 9, 10 respectively.

A rivet 11 is disposed centrally of the receptacle 5, extending through the bottom wall there-

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of in the space between the legs 7, 8. Rivet 11 is a conductive member and secures the spring contact 12 within the receptacle 5, said spring contact adapted to be engaged by the conductive center element of the fuse F, as best seen from Figs. 1 and 4.

To one side of the spring contact 12, and also disposed in the space between the legs 7 and 8, is the countersunk opening 13, receiving the assembly screw 14.

Formed in the under side of the bottom wall of the receptacle 5 is the elongated recess 15, and positioned in this recess is the conductive tongue 16, secured to the under side of said bottom wall by the projecting lower end of the rivet 11. The free end of the tongue 16 has formed therein a threaded opening in which is threaded the screw 17, with the receptacle 5 being recessed at 18 to clear the screw. Screw 17 serves to connect lead 19 to the tongue 16, lead 19 extending through the side wall of said base and leading to one side of an electrical appliance such as an iron, lamp, or the like, not shown.

The under side of the bottom wall of receptacle 5 is also recessed as at 21 for the rivet 10, and is recessed as at 22 for a rivet 9 and for a depending spring contact 23 secured by said rivet 9, and connected electrically by said rivet 9 to the lining member 6.

The reference numeral 24 designates a base of non-conductive material, such as plastic or the like, and this base is formed with an upstanding annular flange 25, to provide a socket receiving the receptacle 5. Formed in the socket defined by the annular upstanding flange 25 is a lug 26 integral with the base 24, said lug 26 having the threaded bore 27 for receiving the assembly screw 14. Thus, by means of the assembly screw 14, the receptacle 5 and the plug base 24 are tightly connected, but can be disassembled whenever necessary.

Embedded in the plug base in spaced relation, and projecting from the lower end thereof, are the prongs 28 and 29. Prong 28 extends upwardly through the base and is adapted to make electrical contact with the spring contact 23. Prong 29 has its inner end extended laterally so as to lie against the plug base, and formed in said inner end 30 of the prong is a threaded opening for receiving the screw 31 adapted to permit connection to the prong 29 of the lead 32, extending through the side wall of the base to the other side of the electrical appliance. It may be noted that the leads 19 and 32 extend outwardly through the side wall of the base at

right angles to the prongs **28** and **29**, while the fuse receptacle **5** is in line with said contact prongs. As a result, the fuse receptacle **5** constitutes a handle for insertion or pulling of the entire device from the ordinary house receptacle, while the leads **19** and **32** at no time would be grasped for this purpose. The whole device, accordingly, constitutes a permanently attached plug at the end of the cord of an electrical appliance, complete with built in fuse, and so formed that the fuse-receiving portion thereof, constitutes a grasping means which will not place the usual strain on the leads imposed by someone pulling the plug from the receptacle in the wall.

The operation, it is believed, will be readily understood. The entire device is capable of being plugged into the ordinary receptacle, for connection of the electrical appliance into the house circuit. Current will then flow through the prong **28**, for example, and tracing this circuit, reference should particularly be had to Fig. 4. Current entering through the prong **28** will pass through the spring contact **23**, rivet **9**, and into one side of the fuse F through leg **7**. The current will pass through the fuse and out the other side through the spring contact **12**, thence through rivet **11**, tongue **16**, and lead **19** to one side of the electrical appliance. Returning through the other side of the electrical appliance, the current will flow through the lead **32** to the prong **29**, and thence back into the house circuit.

It will be seen that should there be a short circuit or similar dangerous accident in connection with the electrical appliance mentioned, the fuse F will blow, but no other fuse will be blown, so that only the particular electrical appliance is disconnected electrically. Thus, the device serves as a safety plug-in, that readily meets the stated purposes of the invention.

What is claimed is:

A safety plug-in device including a base of non-conductive material, said base having a socket at one end; a pair of spaced conductive prongs embedded in and projecting beyond the opposite end of the base, said prongs extending into the socket, one of the prongs extending upwardly within the socket a substantial distance and being bent over against the bottom wall of the socket, the side wall of the socket being formed with an opening adapted to receive a pair of leads extending from an electrical appliance; a terminal screw threaded through the bent prong to connect one of the leads to said bent prong; a fuse receptacle having one end extending into the socket, said receptacle being of cup-like formation; a threaded lining mounted in said receptacle, said lining being proportioned for engagement by the conductive outer shell of a fuse; a spring contact centrally mounted within said receptacle for engagement by the center contact of a fuse, said spring contact being insulated from the lining; a terminal screw threadable into the underside of said receptacle for engaging the other lead, said second-named terminal screw being electrically connected to said spring contact; a connecting screw extending through the bottom of said receptacle and threadable into the base for detachably securing the receptacle within said socket; and a second spring contact mounted upon the underside of the receptacle and electrically connected to said lining, said second spring contact engaging the upstanding prong on insertion of the receptacle into said socket.

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The following references are of record in the file of this patent:

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