

May 26, 1953

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2,640,126

FUSE ADAPTER PLUG

Filed Jan. 30, 1952

Fig. 3.

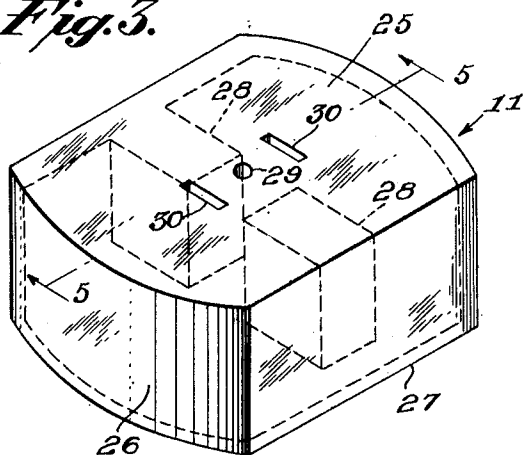


Fig. 2.

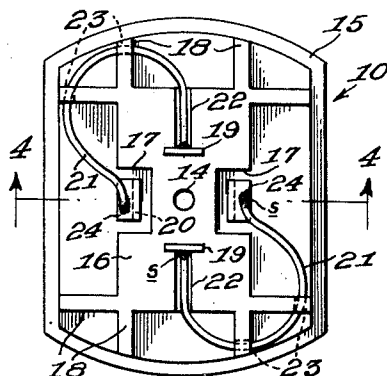


Fig. 1.

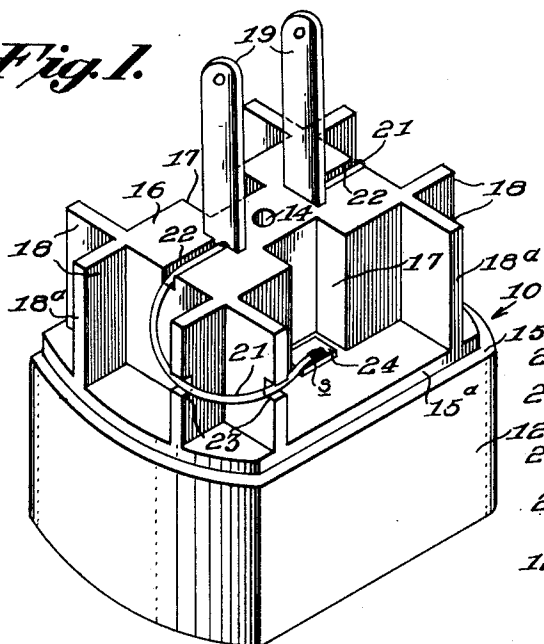


Fig. 4.

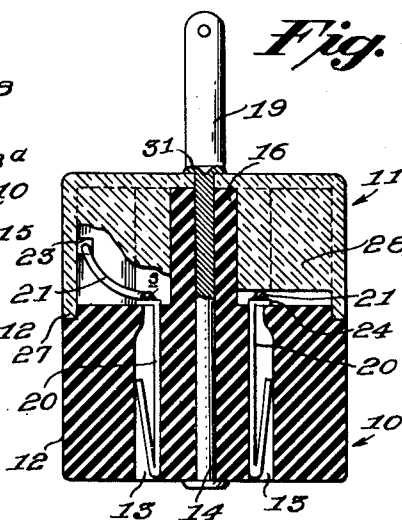
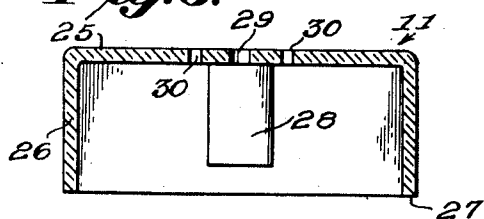


Fig. 5.



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UNITED STATES PATENT OFFICE

2,640,126

FUSE ADAPTER PLUG

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Application January 30, 1952, Serial No. 269,048

7 Claims. (Cl. 200—115.5)

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This invention relates to improvements in fuse adapter plugs.

The invention is more particularly concerned with an expendable fuse carrying adapter device to be plugged into the usual baseboard receptacles and/or other house wall outlets, and into which a standard attachment plug is adapted to be plugged.

The invention is particularly concerned with such a device which is provided with a fuse for each of the wires or lines to provide individual protection thereof for lamps and other electrical equipment, independently of and in addition to the usual house circuit protecting fuses.

An object of the invention is to provide a fuse adapter plug of this character having in one face thereof a pair of socket engageable prongs and in the opposite face a pair of spring contact plates, the latter being disposed in the plug body at substantially right angles to the prongs of the opposite face and engageable by the prongs of a standard plug, and wherein the prongs and contact plates are spaced by the dielectric material of the plug body but are connected in electrical circuit through fuse elements which are permanently connected to the prongs and contact plates through passages in the plug body.

A further object of the invention is to provide a fuse adapter plug which is of such construction that it is capable of manufacture at relatively low cost whereby it may be economically discarded upon blowing of a fuse therein.

These and other objects and advantages of the invention will become apparent to those versed in the art in the following description of the invention as illustrated in the accompanying drawing, wherein:

Fig. 1 is an isometric view of the main body portion of the improved fuse adapter plug, in accordance with a preferred structural embodiment thereof;

Fig. 2 is a top plan view of the body portion of the plug and showing the chambered portions thereof;

Fig. 3 is an isometric view of the transparent cover for the plug body which is operatively associated with the body portions, shown in Figs. 1 and 2, to close the chambers therein;

Fig. 4 is a transverse sectional view, in the plane of line 4—4 on Fig. 2, and showing the assembled plug, and

Fig. 5 is a longitudinal sectional view of the cover in the plane of line 5—5 on Fig. 3.

Referring now to the drawings for a more detailed description of the invention, the improved

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plug will be seen to include a main body portion 10 and a cooperating cover member 11.

This body 10 is formed of a suitable plastic insulating material and includes a base portion 12 which is solid except for a pair of laterally disposed prong receivable openings 13. A cover securing rivet receiving bore 14 is disposed centrally of this body portion and intermediate the openings 13. One side of the base 12 is provided with an inset marginal seat 15 for a purpose later referred to. This side of the base portion 12 also includes an integral centrally disposed generally H-shaped block or wall 16 surmounting the base and inwardly of the marginal seat 15. The shape of this projecting wall block portion 16 provides two oppositely disposed recesses 17 which register with the prong receivable openings 13. At each of the four corners of the wall block 16 the sides thereof extend to the marginal seat 15 in the provision of right angularly disposed fins or partitions 18, forming eight chambers around the wall block 16. More specifically it will be seen by reference to Fig. 2, in particular, that the generally H-shaped wall block provides the recesses 17 at each side thereof and in transverse alignment with the bore 14. Also that each pair of fins or partitions 18 extend from each of the four corners of the wall block in right angular relation to each other to the free lateral edges 18^a of the fins which are flush with a shoulder defining one wall 15^a of the seat 15.

A pair of wall socket engageable prongs 19 are driven or moulded into the wall block portion 16 to any desired extent and same are disposed in the longitudinal center of the plug body 10.

A reversely bent spring contact plate 20 of usual form is disposed within each opening 13, as is more clearly seen in Fig. 4. In addition to the elements of the adapter plug just described, the plug is provided with a pair of fuse elements 21. Each of the fuse elements are in the form of a fusible strand and one thereof has an end rigidly secured to one prong 19 and the other end rigidly secured to one contact plate 20, while the other element has one end rigidly secured to the other prong and its other end rigidly secured to the other contact plate.

The rigid connection of the fuse elements is preferably effected by soldering, but other means may be adopted.

The top wall of portion 16 is provided with a pair of channels 22, each leading from a prong 19 to an end wall of the wall block portion 16 intermediate a pair of the fins 18, and the pair of fins at diagonally opposed corners of the wall

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block are provided with notches 23. Each fuse element thus extends from a prong 19 through the channel 22 and the pair of notches 23 thence to the inner ends of the contact plates 20. Here the inner ends of the contact plates are bent at right angles to provide retaining ledges 24 overhanging the inner ends of the passages 13 and to which corresponding ends of the fuse elements are secured. It is to be particularly noted that the ledges 24 are disposed within the recesses 17 and the contact plates 20 are restrained against movement outwardly of passages 13 solely by said ledges.

The cover 11 shown in Figs. 3 and 5 is also formed of plastic insulating material but is preferably of a transparent material for providing visual inspection of the fuse elements 21, and their connections with the spaced prong and plate members 19 and 20.

The cover 11 includes a top wall 25 of the same shape and size as the base portion 12 from which depends a marginal wall 26 whose free edge 27 is adapted to engage the seat 15 and the adjacent marginal wall 15^a on the base portion 12. The cover is provided with a pair of spaced blocks 28 which are integral with the walls 25 and 26. The blocks 28 extend inwardly from opposite inner faces of the marginal wall 26 and as shown in Figs. 4 and 5 stop short of the marginal free edge of the cover for a distance equal to the depth of the body shoulder 15^a, plus the thickness of the plate portion 24 and connected fuse wire 21.

The spaced opposed ends of these blocks are further shaped to snugly fit into the recesses 17 in the H-shaped wall block 15 and provide additional partitions for the surrounding chambers. A primary purpose of these blocks 28 is to rest upon and exert pressure on the ends of the fuse elements 21, which overlie and are secured to the ledges 24 of the contact plates 20. By this means the fuse ends and attached contact plates are restrained against movement inwardly of the prong receiving passages 13. The cover 11 is further provided with a central aperture 29 alignable with the bore 14 for receiving a rivet 31 to permanently secure the cover on the body portion.

The cover is further provided with a pair of slots 30 for closely receiving the prongs 29. Irrespective of the particular contour of the body portion 10, it will be apparent that same is capable of expeditious and economical manufacture by a moulding process and which also applies to the cover 11 which is of simple box-like form.

With the body portion 10 and cover 11 provided, the fuse plug adapter is readily completed by the simple operations of driving the pair of prongs 19 into central portions of the wall block 15, dropping the contact plates 20 into the openings 13, disposing the fuse elements within the channels 22 and notches 23 and soldering the ends thereof to the prongs 19 and ledges 24 of the contact plates. The cover 11 is then placed on the body in the position of Fig. 4 and a rivet 31 is passed through the aligned openings 14 and 29 and upset at opposite ends thereof as is also indicated in Figs. 4 and 5.

The completed plug is in effect a unitary element in the same sense as are the usual well known house fuses but possessing in addition thereto the advantage of being quickly and easily connected into circuit with the usual flexible cord connections of lamps and the like at the usual wall sockets. The fuse elements 21 may

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of course be of different capacities and fused plugs may accordingly be constructed for various current amperages as are the well known house fuses.

It is to be particularly noted that the inner face of the side wall 26 of the cover 11 engages the edges 18^a of the fin-like partition walls 18, and the inner face of the top wall 25 of the cover engages the upper face of wall block 16 as well as the top edges of the fins 18. This combination and arrangement of parts provides a series of closed compartments surrounding the wall block 16 and effectively eliminates arcing and explosion, since the connections of each fuse element 21 with a prong 19 and a contact plate 20 are separated by a pair of spaced fins 18. The transparency of the cover 11 offers visual inspection of the fuses 21 whose opposite soldered ends are clearly visible through the recesses 17 and channels 22.

From the above detailed description of the invention, it will be appreciated that an adapter fuse plug is provided as a unitary device, capable of economical manufacture and which may be dispensed with, as an ordinary fuse upon the occurrence of an overload or short, causing a fusible element to be blown.

While I have disclosed my invention in accordance with a single specific structural embodiment thereof, various changes may be made in the details of construction without departure from the spirit and scope of the invention as defined in the appended claims.

What I claim, and desire to secure by U. S. Letters Patent is:

1. A fuse adapter plug comprising a body member having a pair of wall socket engageable prongs extending thereto and from one face thereof, a pair of openings for receiving the prongs of a connector plug extending into said body member from another face thereof, a contact plate disposed in each of said openings and having a ledge overhanging the inner end thereof, fuse elements interconnecting the ledges of said contact plates and said prongs, and a cover supported on said body member over said fuse elements and including pressure block portions reacting upon said ledges for retaining the contact plates against relative movement in said openings.

2. The structure according to claim 1, wherein said fuse elements extend through spaced body portions and are permanently secured at their ends to said prongs and said contact plates, and wherein said cover encloses said spaced body portions and is permanently secured to said body member.

3. A fuse adapter plug comprising a body member including a base portion and a block portion surmounting same, a rivet receiving bore extending through both said portions centrally thereof, a pair of openings extending through said base portion on opposite sides of said bore for receiving the prongs of a connector plug, a contact plate disposed in each of said openings and having a ledge member on its inner end overhanging the wall of the opening and resting in part on the upper face of said base portion, a pair of wall socket engageable prongs extending into said block portion and projecting from a face thereof, strand-like fuse elements having corresponding ends thereof secured to said prongs, the other ends of said fuse elements resting upon and secured to said ledge members, and a cover supported on said base portion and said block por-

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tion and including pressure means engaged with said other ends of the fuse elements for retaining the contact plates in said openings.

4. The structure according to claim 3, wherein said fuse elements are soldered to said prongs and said ledges, and wherein said cover is provided with an aperture aligned with said bore, and a rivet extending through said bore and aperture and being upset at its opposite ends for permanently retaining said cover and said base portion together.

5. The structure according to claim 3 wherein said block portion is generally rectangular in plan and wherein same is provided with a pair of fin-like partition walls extending laterally outwardly from each corner thereof in right angular relation, the outer edges of said fins engaging the inner face of said cover, and the pairs of fins at diagonally opposite corners of said block portion being provided with notches for receiving said fuse elements.

6. The structure according to claim 3, wherein said block portion is provided with laterally opposed recesses in which said ledges are disposed, and wherein said pressure means comprises blocks integral with said cover and disposed within said recesses.

7. A fuse adapter plug comprising a body member including a generally rectangular base and

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a generally rectangular block projecting from one wall of the base, the block having a pair of prongs extending thereto and projecting from a wall thereof opposed to said first wall, a pair of laterally aligned recesses in opposed walls of said block and extending from one of said first walls to the other, a pair of openings in said base for receiving the prongs of a connector plug opening through said one wall and an opposed wall of the base, a contact plate disposed in each of said openings and having a ledge overhanging the inner end thereof and resting on said one wall and within a respective one of said recesses, fuse elements interconnecting the ledges and said prongs, and a cover supported on said base and enclosing said block, said cover having a pair of pressure members engaged within said recesses and bearing on said ledges for retaining said contact plates in said openings.

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