Dec. 9, 1930. L. PROPP 1,784,388

ELECTRIC SOCKET FITTING

Filed June 3, 1927

Fig. 1,

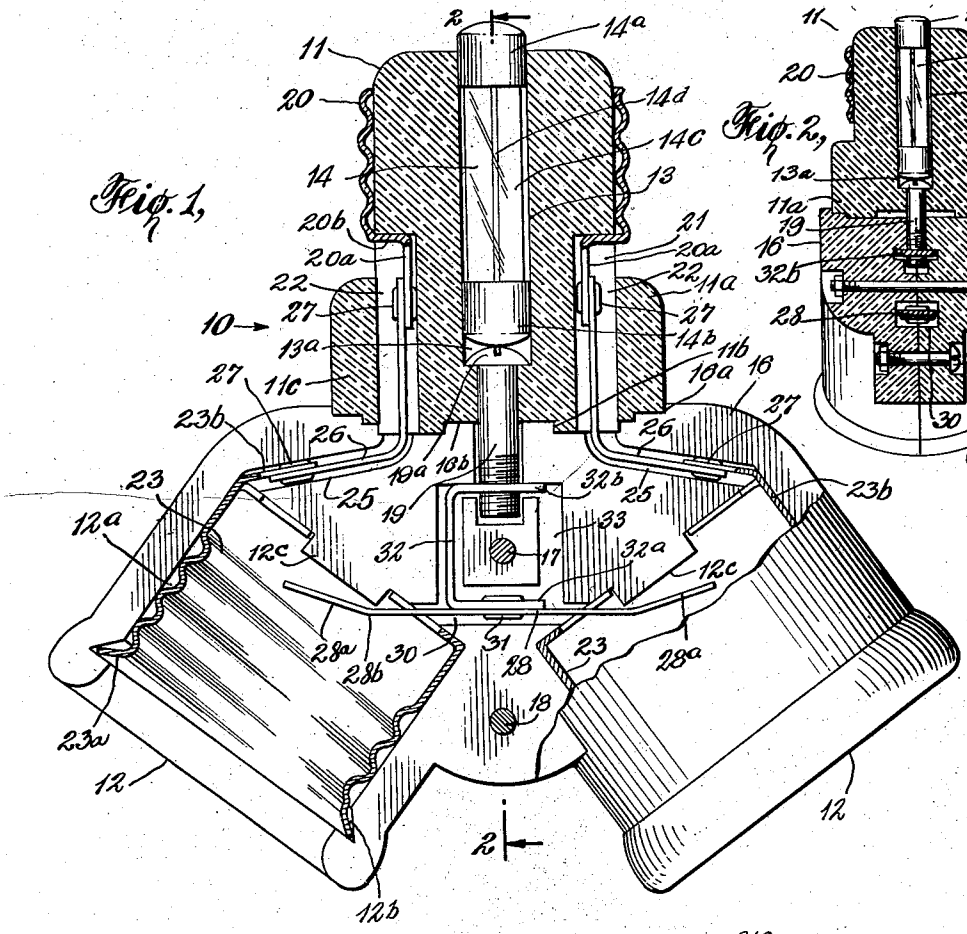


Fig. 2,

Fig. 3,

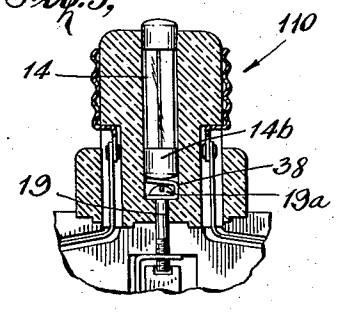
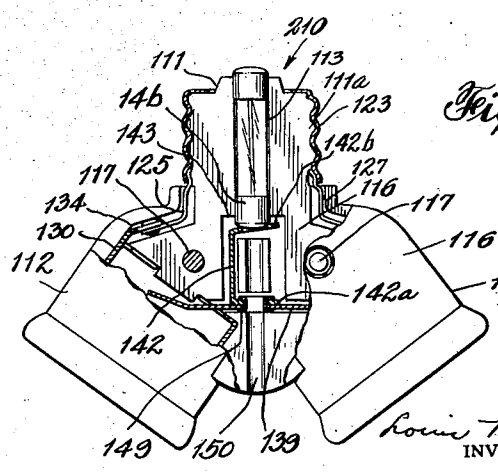


Fig. 4,



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UNITED STATES PATENT OFFICE

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ELECTRIC SOCKET FITTING

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This invention relates to detachable electric lamp socket fittings.

An object of the invention is to provide an improved electric fitting of the character described having a replaceable fuse element incorporated in circuit with a current carrying member of the fitting in a novel manner so as to form a practical and efficient protector for the circuit in which it is employed.

Another object of the invention is to provide an improved electric fitting of the character described in which a replaceable fuse element is incorporated in the fitting structure, the latter being made of the usual standard parts and of substantially the same size, compactness and neatness in appearance characteristic of standard electric lamp socket fittings.

A further object of the invention is to provide an improved device of the character described comprising few and simple parts which are readily assembled and form a device which is cheap to manufacture.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of application will be indicated in the following claims.

In the accompanying drawing, in which is shown one of the various possible illustrative embodiments of this invention,

Fig. 1 is a cross-sectional view showing a fused lamp socket fitting embodying the invention;

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1;

Fig. 3 is a fragmentary cross-sectional view of a modification; and

Fig. 4 is an elevational view with parts in section of another modified form of the invention.

Referring in detail to the drawing, 10 denotes a detachable electric lamp socket fitting comprising a plug portion 11 and socket portions 12 formed of parts that are arranged in an improved manner to form a rugged structure. Disposed centrally in an axial chamber 13 of said plug portion 11 is a replaceable fuse element 14, arranged to be in circuit with a current carrying member of the fitting, thus providing a protection for the electrical circuit of the fitting 10, as will hereinafter be described.

The body of the fitting consists of a novel arrangement of separately formed moulded insulating portions, that are made of "bakelite", porcelain and the like material. Thus the plug portion 11 comprises a single member of cylindrical form while the rest of the fitting including socket portions 12 comprises preferably a pair of identical mating portions 16, as shown in Fig. 2. The portions 16 are secured together in any suitable manner, as for instance by means of screws 17 and 18 transversely extending through said portion 16. The plug portion 11 is fastened to said portions 16 by a screw 19 axially extending from the lower or closed end 13*a* of the chamber 13 to engage with a suitable anchorage as will be described hereinafter.

Preferably the mating portions 16 are formed with a circular recess 16*a* to receive the lower end 11*a* of the plug portion 11. To prevent relative turning of the plug portion 11 with respect to the mating portions 16, the latter may be provided with a ledge 16*b* of non-circular cross-section extending through said recess 16*a* which is received in a closely fitting groove 11*b* in the plug end portion 11*a*. In this way, reliable and effective engagement of the several portions forming the fitting is ensured.

The plug portion 11 includes a conventional screw contact shell 20 fitted thereon. Said shell has a pair of oppositely disposed integral lugs 20*a* that are offset inwardly at 20*b* into openings 21 and pass through longitudinally extending passages 22 in the plug end portion 11*a*. Preferably the plug end 11*a* is enlarged to form the wall or shoulder for said passages 22 which extend in substantial alignment with the outer surface of the plug portion 11 on which the screw shell 20 is fitted so that the assembly of the parts is facilitated.

Screw contact shells 23 are housed in cylin-

drical cavities 12*a* provided in the socket portions 12, said shells being retained therein by means of outwardly directed rim flanges 23*a*. Each rim flange is received in an annular recess 12*b* provided in the respective cavities 12*a* when the mating portions 16 of the fittings are brought together. Said screw shells 23 are formed with integral lugs 23*b* that extend into passages 25. (See Fig. 1.) The shells 23 are connected to the contact shell 20 through the jumpers 26 that extend through passages 22 and 25 and are connected to lugs 20*a* and 23*b* by suitable means such as eyelet rivets 27.

Each lamp socket portion 12 of the fitting includes a center contact 28*a* adapted to connect with the ends of a lamp base or the like (not shown) said contacts terminating a current carrying member 28 comprising a single strip of spring metal disposed in a passage 30 between said mating portions 16. Said current carrying member may be secured by means of an eyelet rivet 31 to an arm 32*a* of a U-shaped anchor member 32. The latter is fitted into a groove 33 provided in mating portions 16, said groove being shaped to receive said portion 16. The arms 32*a* and 32*b* of said member are thus retained against movement for holding the center contacts 28*a* in proper operative position in the lamp socket portions 12. The current carrying member 28 projects into each of said socket portions at an angle to the closed end of the socket portion to provide for a spring action of said member with the center contact of a lamp base the opposite ends 28*a* of said member 28 being preferably bent slightly to diminish the inclination of the contacts 28*a* with relation to the axis of the socket portions. An abutment projection 12*c* is provided in the closed end of the socket portions to serve as a bearing against which the contacts 28*a* are pressed on inserting a lamp base into a socket portion.

The members 28 with the center contacts 28*a* are connected in circuit through member 32 and the screw 19, the screw head 19*a* being adapted to contact with the fuse element 14, and the leading end of the screw being threaded into the arm 32*b* of the member 32, as shown in Fig. 1.

The fuse element 14 may be of any standard construction and is preferably of midget size having metallic ferrule ends 14*a* and 14*b*, and a tubular casing 14*c* formed of a suitable insulating material such as glass or fibre, which encloses a fuse strip 14*d* connected between the ferrules 14*a* and 14*b*. When the fuse element is inserted into the chamber 13, the ferrule 14*b* contacts the head of screw 19, while the end of ferrule 14*a* extends outside of the plug portion 11 to form a center contact for the fitting 10.

To assemble the fitting 10, jumpers 26, after being secured to the lugs 20*a* of the contact shell 20 are inserted through openings 21 into passages 22, said contact shell being fitted over the plug portion 11. The offsets 20*b* which are formed in the lugs 25 rigidly retain the shell 20 in position, and the extending ends of the jumpers are connected as by riveting to lugs 23*b* of contact shells 23. The anchor member 32 is secured to current carrying member 28 and has the screw 19 threaded into arm 32*b* of said member 32 after the latter has been passed through plug portion 11, the ends 28*a* of member 28 being positioned into the socket shells 23 of one of the mating portions 16. The side portions 16 are fitted together to enclose the current carrying parts of the socket and are secured by screws 17 and 18. The fuse element may then be inserted into said chamber to complete the fitting.

In Fig. 3 a modified form of the invention is shown. Here the fitting 110 provides for a resilient engagement between fuse element 14 and a current carrying part of the fitting. To this end, a spring 38 is secured beneath the head 19*a* of the screw and extending thereover to contact ferrule 14*b* of the fuse element and compensate for any strains exerted on the element when the plug portion 11 is screwed up into an outlet of a power supply. The upper part of spring 38 may be formed with an opening to permit insertion of a tool, such as a screw driver, in order to tighten the screw 19 when the two lower parts 16 are secured to the plug 11.

In Fig. 4 another modification of the invention is shown. Here the body of the fitting 210 is composed of but two identical mating portions 116 which, when assembled, form both the threaded plug and socket portions 111 and 112 of the fitting. Said side portions 116 are secured together by any suitable means as, for instance, by screws 117. The plug end 111*a* of said portion 111 has mounted thereon a screw shell 123. Said shell engages with jumpers 125 that extend through passages 127 in said mating portion wherein they connect with lugs 134 of socket shells 130 by means of eyelet rivets. A current carrying member 139 is secured by an eyelet rivet 149 to an arm 142*a* of a U-shaped keeper 142 that is disposed in recess 143. The other arm 142*b* of said keeper extends into proximity to the inner opening of an open-ended chamber 113 that receives fuse element 14, with the ferrule 14*b* thereof projecting from said chamber into recess 143 to abut against said end 142*b*, which is bent to provide a spring contact. In this way the fuse element 14 is relieved by any stress to which it might be subjected on screwing plug portion 111 into a power outlet.

To facilitate ejectment of said fuse element, a passageway 150 is provided through the lower portion of the body of the fitting, through the eyelet rivet and contact arm 142*b* and extends in alignment with the chamber

113. Thus suitable means can be inserted against ferrule 14*b* to eject the fuse element 14 for purposes of examination or replacement.

From the foregoing description, the assembling of the device will be apparent. The several current carrying parts are first positioned on one of the mating portions 116, and then the other side fitted thereto. The screw shell 123 and screws 117 are then applied to secure together the body parts of the fitting in the well understood manner.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawing is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. A fitting of the character described comprising a body formed of a plurality of separate parts, one of said parts forming a plug portion, and other parts constituting mating side portions forming the body of a lamp socket portion, said plug portion having a chamber, and a replaceable fuse element in said chamber having an extending end portion forming a center contact for said plug portion.

2. A fitting of the character described comprising a plug portion, and a plurality of lamp socket portions, said socket portions having contact screw shells, a current carrying member having the ends thereof extending into said shells to form center contacts, a U-shaped member mounted in a recess in the fitting, said current carrying member connecting with one arm of the U-shaped member, a shell contact on the exterior of said plug portion connecting with said contact screw shells, the latter having an axial chamber, and a fuse element in said chamber, one end of said element forming a center contact for said plug portion and the other end thereof being in circuit with the other arm of the U-shaped member.

3. A fitting of the character described having a plug portion and a lamp socket portion, said plug portion having an axial chamber, and a replaceable fuse element in said chamber having a projecting end forming a terminal center contact for the plug portion, the fitting having a current carrying member of said lamp socket portion in circuit with the other end of said fuse element.

4. A fitting of the character described comprising a body formed of a plurality of separate parts, one of said parts forming a plug portion, a contact shell and a fuse element carried by said plug portion, and a current carrying member of a lamp socket mounted in other parts of said body in circuit with said fuse element, an end of said fuse forming a central terminal contact for the plug portion.

5. A fitting of the character described comprising a plug portion having a chamber and a lamp socket portion, a replaceable fuse element in said chamber, said fitting having a current carrying member making resilient electrical contact with said element.

6. A fitting of the character described formed of a plurality of separate parts, one of said parts forming a plug portion, the other parts constituting mating portions forming socket portions for the fitting, said fitting having current carrying means and a replaceable fuse element in circuit extending through said portions.

7. In a fitting of the character described, a connecting portion having a cylindrical wall, a screw contact shell fitted over said wall, said contact shell having a lug, a current carrying member connected to said lug, said fitting having a passage to receive said lug, a replaceable fuse element mounted axially in said portion adapted to connect in circuit with the current carrying member, said fuse element having a projecting end forming a center terminal contact for said connecting portion.

8. A fitting of the character described comprising a plug portion and a pair of lamp socket portions, said plug portion having a cylindrical wall formed with a shoulder portion, a screw contact shell fitted over said wall and having a pair of opposite lugs extending into the body of the fitting and contacting said shoulder portion serving to retain the shell in position on said wall, each of said socket portions having contact shells, said shells having connection with said lugs, and a replaceable fuse element axially positioned in said plug portion, said fuse element having an end forming a terminal center contact for said plug portion.

9. In a fitting of the character described, a cylindrical plug portion having an outer screw contact shell and an axial chamber adapted to receive a replaceable fuse element, a projecting ring forming a shoulder around the base of said plug portion, and a current carrying member connected to said contact shell, said ring having an opening extending therethrough to provide a passage for said current carrying member.

10. A fitting of the character described comprising a plug portion and a plurality of spaced lamp socket portions, said plug portion having a contact shell, a replaceable fuse element extending into said plug portion having an end thereof forming a center contact for the plug portion, a ring projection

extending around said plug portion outwardly of said contact shell, shell receptacles in each of said socket portions, and spaced current carrying members connected to the contact shell of the plug portion at one of the ends, and a contact shell of a socket portion at its other end, said ring projection having passages to receive said current carrying members, said current carrying members having clamping engagement with said plug portion to secure the contact shell thereof in position.

11. A fitting of the character described comprising a plug portion and a socket portion formed of a plurality of separate parts, one of said parts forming a body for said one of said parts forming a body for said plug portion, said plug portion having a chamber, a replaceable fuse element in said chamber, an end of said element extending from the plug portion forming a center contact therefor, said fitting having a current carrying member spaced from the fuse element, and means extending through a wall of said chamber into engagement with said current carrying member, said fuse element electrically connecting through said means with said current carrying member, said means securing said plug portion to the other portions of the fitting.

12. A fitting of the character described comprising a one-piece plug portion and a lamp socket portion, said plug portion having a chamber, and a replaceable fuse element in the chamber, said fitting having a current carrying member spaced from the fuse element, means extending from said chamber threadedly engaging said current carrying member, said means connecting said plug portion body with the body of the socket portion, and a spring secured by said means in said chamber for making resilient electrical contact with said fuse element.

13. A fitting of the character described comprising a plug portion having a contact shell and an outlet socket portion, a current carrying member for said socket portion, said fitting having a recess, a U-shaped member in said recess, said current carrying member being connected to one arm of said U-shaped member, and a replaceable fuse element in said plug portion having one end resiliently contacting the other arm of said U-shaped member, the other end of said fuse element projecting from the plug portion to form a center contact therefor.

14. A fitting of the character described comprising spaced lamp socket outlets and a plug portion, each of said outlets having a screw contact shell, the fitting having a current carrying member consisting of a strip of metal, the ends of said member extending into said sockets to form center contacts therefor, said plug portion having an axially extending replaceable fuse element in circuit with said current carrying member and extending at right angles thereto, said fitting having an ejector opening between the lamp socket outlets in alignment with said fuse element to permit of ready removal of said fuse element.

15. A fitting of the character described comprising spaced lamp socket outlets and a plug portion, said plug portion having an axial chamber, and a replaceable fuse element in said chamber connecting in circuit with current carrying parts of said outlets, said fitting having an ejector opening communicating with said chamber and disposed between the lamp socket outlets to permit of ready removal of said fuse element.

In testimony whereof I affix my signature.

LOUIS PROPP.