June 20, 1944. H. F. JOHNS 2,351,816

RENEWABLE FUSE PLUG

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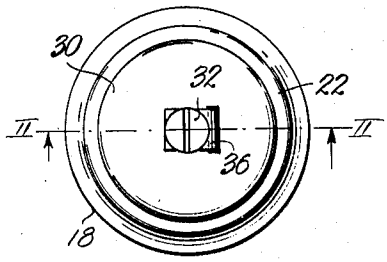

Fig. 1.

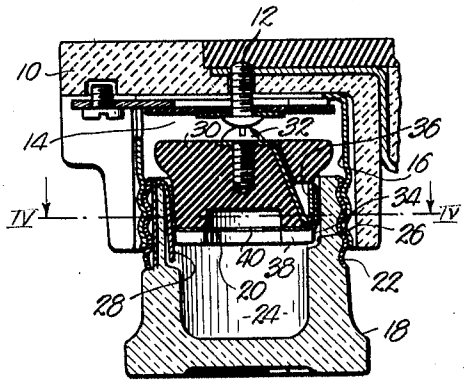

Fig. 2.

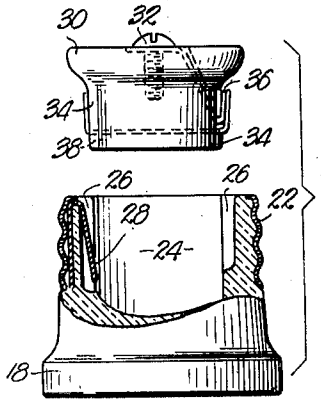

Fig. 3.

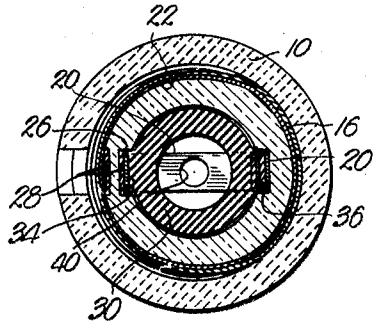

Fig. 4.

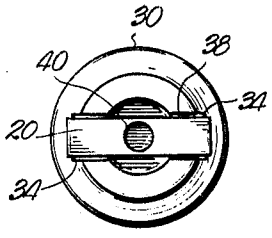

Fig. 5.

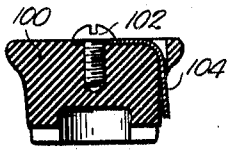

Fig. 8.

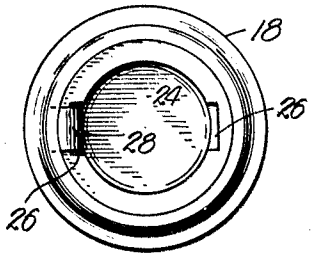

Fig. 6.

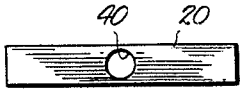

Fig. 7.

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RENEWABLE FUSE PLUG

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Application March 5, 1942, Serial No. 433,425

3 Claims. (Cl. 200—130)

This invention relates to electrical fuse plugs of the replaceable type and especially those usually employed for safeguarding circuits having a fuse block provided with a number of sockets.

The primary object of this invention is to provide a fuse plug assembly capable of having the parts thereof separated only when the same is removed from the operative position, which separation is for the purpose of renewing the fusible link thereof.

A yet further aim of the instant invention is to provide a renewable fuse plug having as the important component parts thereof a socketed body; an insert frictionally carried by the body; and a pliable, fusible link maintained in place between the body and plug when the fuse plug assembly is in the operative position where it is supported by a fuse block.

This invention has for a further object, the provision of a fuse plug provided with separable bodies, the zone of juncture between which is contoured to prevent accidental displacement whereby a renewable, fusible link is secured in position to complete the circuit through the fuse block.

Other objects of the invention will appear during the course of the following specification, referring to the accompanying drawing wherein:

Fig. 1 is a plan view of one end of a renewable fuse plug made in accordance with the present invention.

Fig. 2 is a longitudinal central sectional view through the plug taken on line II—II of Fig. 1 and showing the same in position on a fuse block.

Fig. 3 is a stretch-out view illustrating the manner in which the main parts of the plug may be separated.

Fig. 4 is a cross sectional view taken on line IV—IV of Fig. 2.

Fig. 5 is a inverted plan view of the removable insert showing a complete link in place.

Fig. 6 is an end elevational view of the fuse body.

Fig. 7 is a plan view of a link of the character employed in the fuse assembly; and

Fig. 8 is a central sectional view through an insert made in accordance with the modified form of the invention.

For purpose of illustration and making full explanation of the invention, the fuse plug assembly has been shown in use with a conventional fuse block 10 having a contact point 12 disposed at the bottom of the cavity 14, the annular sides of which are lined with a screw-threaded skirt 16 of conducting material. When the renewable fuse plug contemplated by the present invention is in position as seen in Fig. 2, the component parts thereof are held in assembled relation.

The fuse plug assembly comprises a body 18 formed of non-conducting substance, such as glass. Glass is preferred because the hereinafter described link 20 is viewable therethrough and when said link has been melted as a result of electrical overload, the same may be seen without removing any part of the plug.

A jacket 22 of conducting material is formed to present external screwthreads by means of which body 18 may be positioned within cavity 14. Body 18 has an axial socket 24 formed therein which extends inwardly from one end of the body. The annular side walls of body 18 are provided with notches 26 that cooperate with parts of the hereinafter described insert to preclude relative displacement.

A contact finger 28 joined to jacket 22 extends downwardly and inwardly of socket 24 and has the free end in spaced relation with the lowermost wall of one of notches 26. This finger 28 is resilient in character and moves into frictional engagement with the part which enters notch 26.

Insert 30 is formed of insulating material; has a central contact 32 on one end; and is molded to present ribs 34 engageable within notches 26 of body 18. The interengagement of notches and ribs 26 and 34 respectively, is distinctly illustrated in Fig. 4. Tongue 36 is angled upwardly and outwardly from a point on one of ribs 34. This tongue 36 is the end portion of a conductor extending into engagement with contact 32.

A groove 38 across one end of insert 30 receives link 20, which is turned laterally at both ends to maintain the same in place. The marginal end of link 20 overlying tongue 36 moves into one of notches 26 where the effective frictional relation between the two is insured. The other end of link 20 lies against the annular outer surface of insert 30 and is pressed against contact finger 28 when the insert is pressed into socket 24.

In the modified form of the invention, illustrated in Fig. 8, insert 100 has contact 102 joined by tongue 104, but this tongue extends downwardly and outwardly to be overlapped by one laterally extended end of link 20. This slight modification is illustrated and described merely to indicate that rearrangement of parts may be easily made.

When the fuse plug assembly is in the operative

position, insert 30 lies between body 18 and fuse block 10. A violent rupturing of link 20 will not therefore blast any part of the fuse plug assembly from the fuse block, as is now the case with a number of plug arrangements.

The circuit is completed through contact points 12 and 32, tongue 36, link 20, finger 28 and jacket 22 in the customary manner. The hole 40 in the central part of link 20 may be varied in diameter to present metal capable of withstanding currents of various strengths. When body 18 is screwed into cavity 14, insert 30 will not be accidentally moved about its axis to disconnect the parts but will be held securely in place by interengaged ribs and notches 34 and 26 respectively.

The advantages arising from a fuse plug assembly of the character above described, will be obvious to those skilled in the art and while the preferred embodiment of the invention has been described in detail, it is desired to be limited only by the scope of the appended claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A fuse plug assembly of the character described, adapted for insertion into a socketed fuse block, comprising in combination a socketed body having means for securing the plug assembly in place; a contact finger adjacent to the inner face of the body and within the socket; an insert of substantially circular cross section frictionally held within the socket of the body having a contact point on the outer end thereof for engagement with a contact of the fuse block when the plug assembly is mounted in said block; a conductor leading from the contact point of the insert to the periphery thereof; and a fusible link frictionally held between the insert and body for bridging the space between said conductor and contact finger.

2. A fuse plug assembly of the character described adapted for insertion into a socketed fuse block, comprising in combination a socketed body having means for securing the plug assembly in place; a resilient contact finger adjacent to the inner face of the body and within the socket; an insert of substantially circular cross section frictionally held within the socket of the body having a contact point on the outer end thereof for engagement with a contact of the fuse block when the plug assembly is mounted in said block; a conductor leading from the contact point of the insert to the periphery thereof and terminating in a resilient tongue; and a fusible link having one end portion seated between said tongue and the body and having its opposite end seated between said insert and the contact finger.

3. A fuse plug assembly of the character described adapted for insertion into a socketed fuse block, comprising in combination a socketed body having means for securing the plug assembly in place and having opposed notches in its socket; a resilient contact finger extending into one of said notches of the socket; an insert of substantially circular cross section frictionally held within the socket of the body and having opposed ribs for seating in said notches; a contact point on the outer end of the insert; a conductor leading from said contact point to the periphery of the insert and terminating in a resilient tongue for engaging the other of said notches; and a fusible link having one end portion seated between said tongue and the body and having its opposite end seated between said insert and the contact finger.

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