Oct. 17, 1933. E. A. PRIEBE 1,931,206

FUSE PLUG

Filed May 18, 1932

Fig. 1.

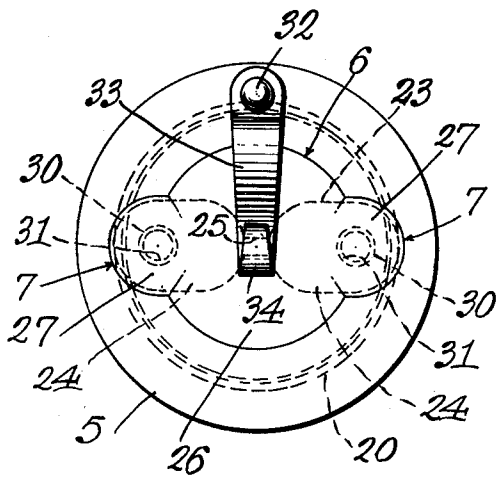


Fig. 2.

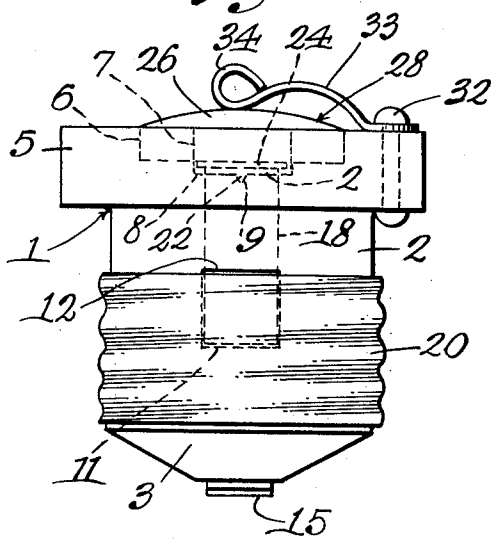


Fig. 3.

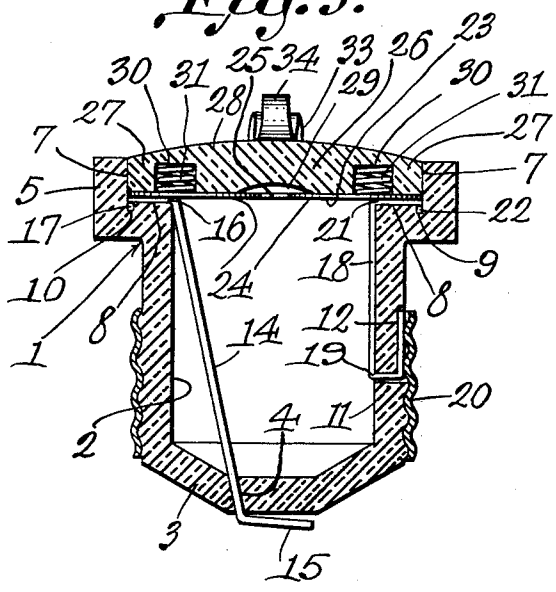


Fig. 4.

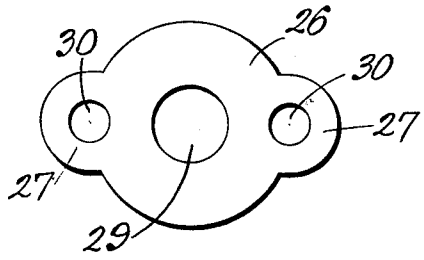
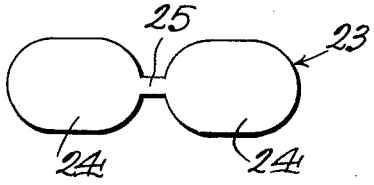


Fig. 5.



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FUSE PLUG

Ernest Adolph Priebe, Meriden, Conn.

Application May 18, 1932. Serial No. 612,132

3 Claims. (Cl. 200—130)

This invention aims to provide a fuse plug which is inexpensive and free of mechanical complications, a quick reloading of the plug being possible, since both ends of the fuse link are engaged by a single clamp, which may be of various kinds.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the invention appertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawing:

Fig. 1 shows, in top plan, a fuse plug constructed in accordance with the invention;

Fig. 2 is a side elevation;

Fig. 3 is a longitudinal section;

Fig. 4 is a bottom plan of the cap;

Fig. 5 is a plan of the fuse link.

The fuse plug forming the subject matter of this application comprises a hollow, tubular body 1, including a tubular neck 2, the neck having an outwardly projecting end wall 3, in which there is a small opening 4. The body 1 includes an enlarged head 5 having an opening 6, which, preferably, is of about the same diameter as the internal diameter of the neck 2. The opening 6 has oppositely disposed, lateral extensions 7, prolonged into the head 5, and these extensions 7 of the opening 6 form internal transverse shoulders 8 in the head 5, the shoulders 8 being arranged at right angles to the axis of the body 1. In one of the shoulders 8, at the outer end thereof, there is a seat 9, arranged parallel to the axis of the body 1, and the opposite shoulder 8 has a corresponding seat 10. There is a hole 11 in one side of the neck 2, and on the outer surface of the neck there is a longitudinal groove 12 which communicates with the hole 11.

The numeral 14 marks a conducting member, disposed within the neck 2 and extended through the opening 4 in the end wall 3 of the neck, the conducting member being bent over at its outer end to form a spring tongue 15, arranged at an obtuse angle to the conducting member 14, and located outside of the end wall 3 of the neck 2. The conducting member 14 has an arm 16 arranged at an obtuse angle to the member 14, and resting on one of the shoulders 8, the arm 16 having a rectangular finger 17, engaged in the seat 10, to aid in holding the conducting member 14 in place.

A conducting strip 18 is arranged opposite to the conducting member 14 and extends along the inner wall of the neck 2. At its lower end, referring to Fig. 3, the conducting strip 18 has a hook 19, extended through the hole 11 in the neck 2, and upwardly in the groove 12 on the outside of the neck. The outer portion of the hook 19 of the conducting strip 18 is in contact with a conducting shell 20, threaded on the outer surface of the neck 2, and also threaded for engagement with the socket (not shown). The conducting strip 18 has a rectangular arm 21 which extends along one of the shoulders 8, and the arm 21 terminates in a rectangular finger 22, disposed parallel to the strip 18, and engaged in the seat 9, to aid in holding the conducting strip 18 in place. It will be obvious that the conducting member 14, including the tongue 15, constitutes one contact terminal of the plug, the conducting strip 18 and the shell 20 constituting the other contact terminal of the plug.

A fuse link 23 is provided, and may be of many different constructions. As shown, the fuse link 23 has enlarged ends 24 connected by a reduced neck 25. The ends 24 of the fuse link 23 rest removably on the arm 16 of the contact member 14, and on the arm 21 of the contact member 18.

A cap 26 is provided, and, like the body 1, is made of insulating material. The cap 26 is so shaped as to fit in the opening 6 of the head 5 of the body 1, and has lateral projections 27, fitting in the lateral extensions 7 of the opening 6. The projections 27 of the cap 26 bear upon the ends 24 of the fuse link 23, and hold the ends of the fuse link in contact with the arm 16 of the conducting member 14, and in contact with the arm 21 of the conducting strip 18. The upper surface of the cap 26 is convexed outwardly, as shown at 28. In the lower surface of the cap 26 there is a central recess 29, located immediately above the reduced neck 25 of the fuse link 23. In the lower surface of the cap 26 there are oppositely disposed seats 30, located partly in the projections 27 of the cap. In the seats 30, compression springs 31 are mounted, and these springs bear on the ends 24 of the fuse link 23, and aid in keeping the ends 24 of the fuse link engaged with the arm 21 of the conducting strip 18 and with the arm 16 of the conducting member 14, especially if the cap 26 does not seat on the ends

of the fuse link 23, which is something that may happen due to irregularities in manufacture, or to the presence of dirt, or to the fact that the cap binds in the opening 6 of the body. The springs 31 have another function which will be made manifest hereinafter.

In the head 5 of the body 1, externally of the neck 3, a pivot element 32 is mounted. The pivot element 32 retains a convexed pressure spring or clamp 33, having an O-shaped finger piece 34 bearing on the convexed surface 28 of the cap 26. The finger piece 34, of course, may be of any desired form. The pressure spring 33 is mounted to swing laterally on the pivot element 32.

In practical operation, the spring 33 is swung to one side, the cap 26 is raised by the strips 31 until the cap can be grasped by the fingers and taken out, the fragments of the burned-out fuse are shaken out of the body 1, the new fuse is inserted, and the parts are restored to the position of Fig. 3, the end 34 of the spring 33 sliding from the end surface of the head 5 upon the smooth upper surface of the cap 26, the marginal portion of the upper surface of the cap being substantially flush with the end surface of the head 5.

The device is characterized by marked simplicity and is capable of quick reloading, especially in view of the fact that both ends 24 of the fuse link 23 are engaged at once by the cap 26, which forms part of the means for clamping the fuse link in place.

What is claimed is:

1. A fuse plug comprising a body having in one end an opening which is provided with oppositely-disposed, outwardly-projecting extensions that form internal shoulders disposed approximately at right angles to the longitudinal axis of the body, conducting members located partly within the body and provided with outwardly-extended arms located in the extensions and on the shoulders, a fuse link having its ends located in the extensions and upon the arms of the conducting members, a cap fitting in the opening and having oppositely-disposed projections fitting in the extensions and overlapping the ends of the fuse link, the cap having a smooth outer surface, the marginal portion of which is substantially flush with the outer end surface of the body, and a spring clamp pivoted to said end of the body, one end of the clamp being slidable from said outer end surface of the body upon said outer surface of the cap, and compression springs mounted on the cap and bearing on the ends of the fuse link, the compression springs having a double function, in that they tend to keep the ends of the fuse link engaged with the arms of the conducting member and also act as lifting springs for the cap, when the arm is swung free from the cap, the engagement of the projections of the cap in the extensions of the opening of the body preventing the cap from rotating and thereby maintaining the compression springs in engagement with the ends of the fuse link.

2. The fuse plug of claim 1, further characterized by seats in the body, at the outer ends of the extensions and arranged substantially parallel to the longitudinal axis of the body, the arms having angular fingers received in the seats and holding the conducting members in place before the cap is mounted in the opening and whilst the conducting members are being made electrically accessible from without the body.

3. A fuse plug comprising a body having in one end an opening which is provided with oppositely-disposed, outwardly-projecting extensions that form internal shoulders disposed approximately at right angles to the longitudinal axis of the body, conducting members located partly within the body and provided with outwardly extended arms located in the extensions and on the shoulders, a fuse link having its ends located in the extensions and upon the arms of the conducting members, a cap fitting in the opening and having oppositely-disposed projections fitting in the extensions and overlapping the ends of the fuse link, the cap having a smooth outer surface, the marginal portion of which is substantially flush with the outer end surface of the body, and a spring clamp pivoted to said end of the body, one end of the clamp being slidable from said outer end surface of the body, upon said outer surface of the cap, and cap-lifting compression springs mounted on the cap and bearing on the ends of the fuse link, to aid in holding the ends of the fuse link engaged with the arms of the conducting members.

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