Aug. 28, 1945. G. E. HOLMES 2,383,484

FUSE PLUG

Filed Nov. 30, 1943

Fig. 2.

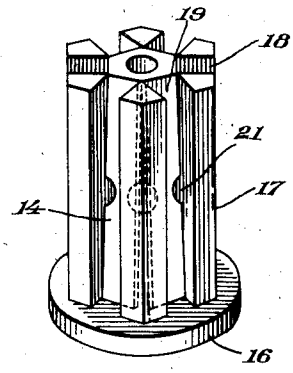


Fig. 1.

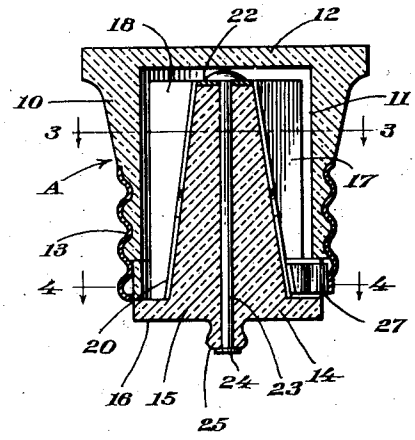


Fig. 3.

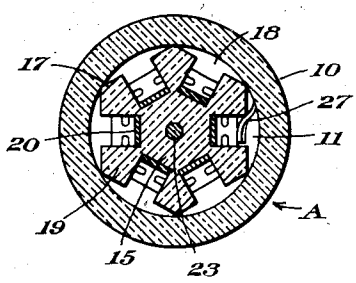


Fig. 5.

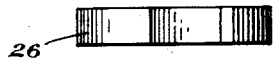


Fig. 6.

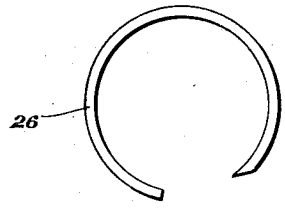


Fig. 4.

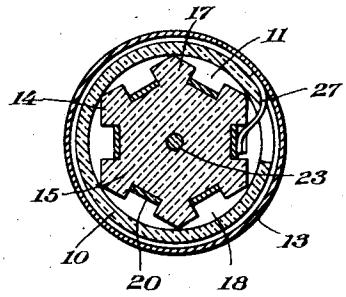
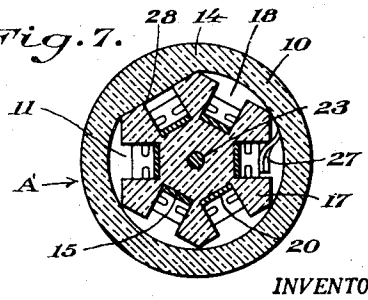


Fig. 7.



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Patented Aug. 28, 1945 2,383,484

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FUSE PLUG

George E. Holmes, Dearborn, Mich.

Application November 30, 1943, Serial No. 512,372

2 Claims. (Cl. 200—125)

The invention relates to an electrical fuse unit, and more especially to a multiple replaceable fuse unit involving refinements over the subject-matter of Letters Patent No. 2,102,206, issued on or about December 14, 1937.

The primary object of the present invention is the provision of a fuse unit of this character, wherein a carrier for a plurality of fuse elements is adjustably supported in a plug receptacle, so that a ratchet acting contact is engageable with any one of the plurality of fuse elements other than the spent one, for the renewal thereof, to bring the substituted fuse element into service and into electrical contact with the contact members in said receptacle.

Another object of the invention is the provision of a fuse of this character, wherein the same in its entirety constitutes refinements over the subject-matter of Letters Patent No. 2,102,206, issued on or about December 14, 1937.

A further object of the invention is the provision of a fuse unit of this character, wherein the fuse carrier is rotatably fitted within the receptacle therefor, and is constructed to carry a plurality of renewable fuse elements which may be successively brought into service for the continued use of the fuse unit, and these elements are replaceable when spent, the unit being unique and novel in its structural make-up.

A still further object of the invention is the provision of a fuse unit of this character, which is extremely simple in construction, thoroughly reliable and efficient in operation, strong, durable, readily and easily adjusted, conveniently assembled, and inexpensive to manufacture.

With these and other objects in view the invention consists in the features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawing, which shows the preferred embodiment of the invention, and pointed out in the claims hereunto appended.

In the accompanying drawing:

Figure 1 is a vertical sectional view of the fuse unit constructed and assembled in accordance with the invention.

Figure 2 is a perspective view of the fuse element carrier of the unit separated from its receptacle.

Figure 3 is a sectional view taken on the line 3—3 of Figure 1, looking in the direction of the arrows.

Figure 4 is a sectional view taken on the line 4—4 of Figure 1, looking in the direction of the arrows.

Figure 5 is a side view of an insulating ring or collar of the unit.

Figure 6 is a top plan view thereof.

Figure 7 is a further transverse sectional view through the unit.

Similar reference characters indicate corresponding parts throughout the several views in the drawing.

Referring to the drawing in detail A designates generally the electrical fuse unit in its entirety constructed in accordance with the invention as hereinafter set forth.

The unit A comprises a receptacle 10, preferably made from glass or other transparent material, provided with a central circular socket 11, which opens through one end of the said receptacle, while the other end of the said socket is closed by a head portion 12 of the receptacle. A threaded metal shell 13 encircles the open end of the receptacle 10, exteriorly of the latter, and is threaded thereon in the conventional manner.

Adapted to be removably fitted in the receptacle 10 to have encasement by the latter is a fuse carrier 14 formed with a truncated conical central core 15 which is designed to be confined within the socket 11, and this core is integral with a circular closure cap 16, the carrier 14 being entirely formed from glass or other transparent material. The core 15 longitudinally thereof is provided with spaced radial ribs 17, effecting therebetween channels or grooves 18, these being formed with sloping bottoms 19, while the ribs are straight throughout.

Disposed within the channels or grooves are strip-like fuse elements 20, each having a fusing portion or area 21, and these elements extend from a crowning web 22 for the core 15. The web 22 is held fast to the core 15 by a contact post 23 fitting the longitudinal central axis of the carrier 14, and terminally protrudes at 24 through a knob-like lug 25 on the outer side of the cap 16 for electric contact purposes when the unit A is screwed into an electric distributing socket member.

Concentrically arranged on the carrier 14 next to the cap 16 thereof is a split insulating retainer ring 26, which when in place is overhung by the shell 13 for confinement thereby when the carrier 14 is inserted in the socket 11 in the receptacle 10, so that a metal contact spring 27 will be held engaged with one of the fuse elements 20 and the shell 13, respectively. This spring 27 will have ratchet action on the ribs 17 when the carrier is turned or rotated in the receptacle, to bring such spring into contact with another ele-

ment 20, should the previous element having contact with such spring have become spent or fused.

The shell 13 in this manner is the other contact of the fuse unit A. The receptacle 10 at the wall of the socket 11 is flat faced at 28 next to the closed end of the socket so as to frictionally hold the carrier 14 against rotation within the receptacle 10 when such carrier is fully inserted in the latter, it being necessary to partially extract the carrier from the receptacle should it be desired to turn or rotate the said carrier for a changing of a fuse element.

In the operation of the invention the fuse unit A, assembled as shown in Figure 1 of the drawing, is threadedly inserted in a fuse box or socket member in a well known manner, and completes an electrical circuit thereby until an overload occurs sufficiently to blow the fuse. When this happens the unit is removed from the box or member and adjustment is made to the unit for setting-up a new fuse element therein to enable the unit to be further used.

When all of the fuse elements 20 have been spent then a new carrier is inserted in the receptacle with its fuse element set-up.

What is claimed is:

1. A fuse unit of the kind described, comprising a receptacle having a cylindrical socket of uniform diameter therein opening through one end only of the receptacle, a fuse carrier formed with a tapered core inserted within socket of the receptacle and spaced ribs extending outwardly of the core and having outer edges paralleling the inner wall of the socket, fuse elements arranged concentrically of the core, in spaced relation to each other, an electric contact centrally of the carrier and common to the fuse elements, a threaded shell-like contact exteriorly engaged on the receptacle next to the open end of the socket, springy ratchet acting contact means selectively engaging the fuse elements and the shell-like contact, respectively, a retaining means fitting the core of the carrier for holding the contact means in working position with respect to the elements and shell-like contact, and a flattened portion interiorly of the socket for engaging faces of the ribs for holding the carrier against rotation in the receptacle when the said carrier is fully inserted in the latter.

2. The invention as defined in claim 1 wherein said ribs have their side faces flared outwardly and their end faces converging outwardly toward an outer edge portion adjacent the inner wall of the socket, and wherein the flattener portion engages an end face of two adjacent ribs for holding the carrier against rotation when fully inserted in the socket.

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