Dec. 15, 1953 R. C. BARKER 2,662,953

FUSE HOLDER

Filed May 4, 1953

FIG. 1

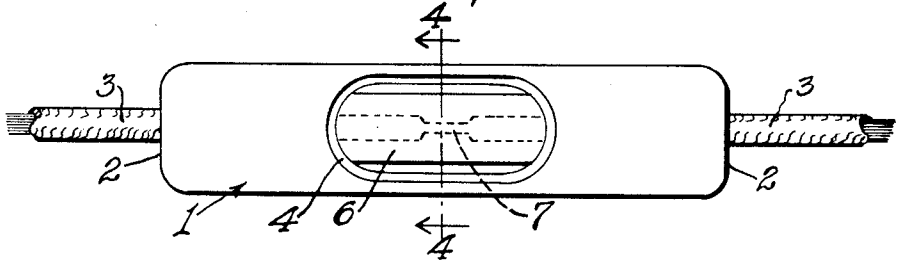


FIG. 2

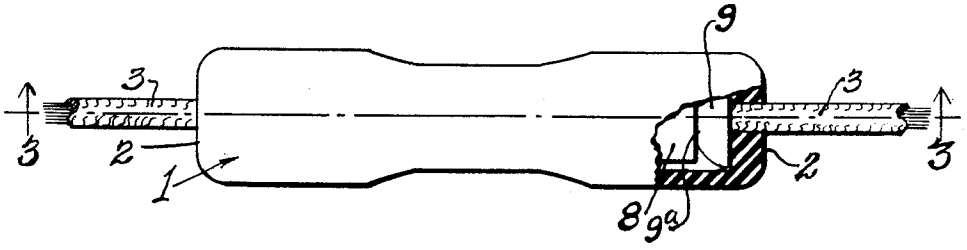


FIG. 3

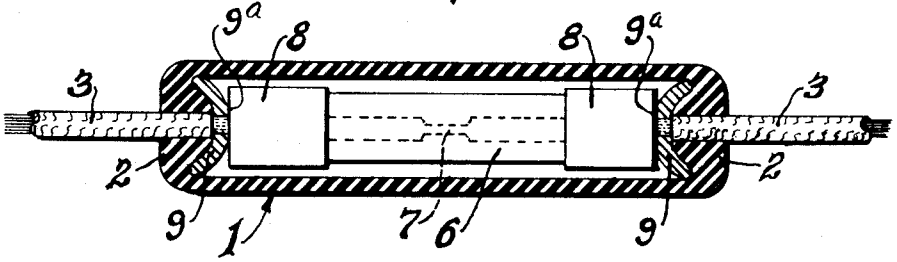
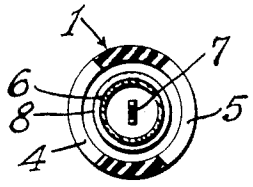


FIG. 4



INVENTOR.
Ray C. Barker
BY Frank J. Schraeder Jr.
Attorney

Patented Dec. 15, 1953

2,662,953

UNITED STATES PATENT OFFICE

2,662,953

FUSE HOLDER

Ray C. Barker, Wichita, Kans.

Application May 4, 1953, Serial No. 352,823

6 Claims. (Cl. 200—133)

1

This invention relates to a fuse holder and has among its objects the provision of a resilient or elastic hollow container of electrically non-conductive material having spaced contact members therein which are disposed within an electric conductor having portions extending into the container; the container having at least one opening in the wall thereof medially of the ends of the container for insertion therethrough of a fuse that is held under compression between and in engagement with the spaced contact members by stress resulting from an elongation of the container when the fuse is forcibly inserted between the contact members of the conductor.

Another object of the invention resides in the provision of a resilient or elastic tubular container for an electric fuse disposed therein between spaced contacts of an electric conductor extending therein through the opposite ends of the container and which container is capable of being stretched to permit forced insertion of the fuse between the spaced contacts, or the removal of the fuse therefrom, through an accessible opening, or a pair of transversely aligned openings, in the body of the container.

Another object of the invention is found in the provision of a fuse holder constructed from resilient material, such as rubber, artificial or synthetic rubber or certain flexible plastics, for the above-stated purposes and to obviate shorting or grounding of electrical circuits in the event the holder accidentally comes in contact with metallic structures or other uninsulated electrical conductors.

The various features of novelty whereby the present invention is characterized will hereinafter be pointed out with particularity in the claims, but, for a full understanding of the invention and of its objects and advantages, reference may be had to the following detailed description taken in connection with the accompanying drawing, wherein:

Fig. 1 is a side elevation of a fuse holder embodying my invention.

Fig. 2 is a side elevation of the fuse holder, turned ninety degrees on its longitudinal axis from that of Fig. 1, parts being shown in section for a convenience of illustration.

Fig. 3 is a longitudinal sectional view, taken on line 3—3 in Fig. 2, looking in direction of the arrows.

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

The invention herein disclosed relates to a fuse holder that may be interposed in an electrical conductor and supported thereby in any suitable position and location.

2

The invention finds embodiment in an elongated tubular and preferably cylindrical container 1, said container being hollow and provided with closed perforated ends and molded or otherwise formed from material having elastic or resilient and electrically insulating properties such as rubber or flexible plastics.

The container 1 is provided with apertured ends 2 through which insulation covered electric conductors, or wires 3, extend. Intermediately of the ends 2 of the elongated body of the container 1, and located in diametrically opposite sides of the body, is a pair of elongated openings 4 and 5, said openings being provided for the purpose of inserting a conventional fuse 6 therethrough and into the container. Said openings further provide windows for visually inspecting the fuse 6 by observing the condition of its protective fusible link 7.

For electrically connecting each of the conductors 3 to the respective metallic end cap members 8 of the fuse 6, the inner end of each conductor 3 is secured to a suitably shaped contact member 9, preferably convexoconcave in form, the convex side preferably having a small flattened central portion 9a positioned in contact with a corresponding respective end 8 of the fuse, while the concave side of the member 9 engages an inner convex face of an end closure wall of the container 1. Each contact member 9 has an axial aperture in which the insulation-stripped end portion of the electric conductor 3 is suitably secured, as by soldering or the like. The engagement of the contact member 9 with the inner side of its respective container end 2 will resist the possibility of the contact member 9 pulling through the apertured end 2 should undue force be applied to the conductor 3.

The contact members 9, with portions of their respective conductors 3 secured thereto, may be positioned in place during the time of forming the container, otherwise the conductors 3 with their contacts 9 may be inserted through one of the openings 4 or 5 of the container 1 and the conductors 3 threaded through the apertures in the ends 2, and then pulled until the contact members 9 come to engagement with their respective seats in the ends 2 of the container.

It will be understood that to remove a fuse, the container is stretched sufficiently, by gripping the container adjacent its ends to thus permit one end of the fuse to be swung outwardly

through one of the openings 4 or 5 and then pushed or pulled bodily out of the container. When replacing a fuse, one end thereof is inserted through one of the openings 4 or 5 and moved longitudinally inwardly as far as possible into one end of the container, after which, the container may be stretched sufficiently to permit the other end of the fuse to be passed through the opening and then released and responsively to the tension in the stretched container forced into engagement with the contact 9 of the other conductor 3. The container remains slightly stretched after the fuse is inserted and its ends engage both contact members 9 whereby sufficient stable contact is maintained between fuse 6 and contact members 9.

The body of the holder, with fuse inserted therein, protects the fuse from short circuits or grounding out of electrical components coming in accidental contact therewith, and the fuse containing holder may be readily inserted in any electrical system.

The fuse equipped holder may be supplied with electrical conductors 3 of predetermined length for convenient installation.

While the invention as specifically described is at present preferably the manufactured structure, the same may be altered therefrom with respect to details of structure, form and proportion, and other modifications may be made as lie within the scope of the appended claims.

I claim:

1. In a fuse holder comprising a hollow container of material having elastic and insulating properties, a pair of spaced electric contact members carried in the container, an electric conductor secured to each contact member and extending outwardly from the container, said container having an opening in a wall thereof for insertion therethrough of a fuse into said container, and a fuse held under compression between and in engagement with said contact members by stress resulting from an elongation of the container when the fuse is forcibly inserted between said contact members.

2. In a fuse holder comprising an elongated resilient hollow container of electrically insulating material, a metallic contact member positioned in the container adjacent each end thereof and adapted to be secured to an electrical conductor extending into the container, a fuse in said container, said container having accessible means medially of its ends for permitting replacement of the fuse into the container, and said container being forcibly elongated when said fuse is installed within the container between said contact members thereby urging said contact members into engagement with said fuse.

3. In a fuse holder, in combination, a hollow container having apertured ends and a resilient body between said ends longitudinally forcibly extensible, an externally positioned electric conductor having portions extending through each end aperture into the container, a metallic contact member secured to each conductor portion and positioned within and adjacent to its respective end of the container, and a removable fuse forcibly interposed between and into pressure contact with said contact members in response to forcible extension of said resilient body as closing means for a circuit through said conductor, said container having flexible accessible means medially of said resilient body for insertion therethrough of said fuse into said container.

4. In a fuse holder, an elongated hollow container made of elastic and insulating material, said container having ends of like material to close the same and openings in the container intermediately of the ends thereof, providing access for a fuse into and from the container, a fuse positioned in the container, a metallic convexo-concave member positioned in contact with each end of the container inwardly thereof and in contact with an end portion of the fuse, and an electric insulated conductor extending through each end of the container and secured to its respective contact member.

5. In a fuse holder comprising a cylindrical hollow container made of elastic and insulating material and having oppositely disposed ends into which electrical conductors are adapted to be inserted, a metallic contact within each end of the container and in electrically conductive association with one of said electric conductors, said container having oppositely disposed openings located a spaced distance inwardly of the ends of said container for insertion therethrough of a fuse into said container under compression between said contacts responsively to stretching the said container during the insertion of the fuse between said contacts.

6. In a fuse holder, of the class described, comprising an elongated hollow container of elastic and insulating property, a metallic contact member within the container adjacent each end portion of the container, an electrical conductor extending through each end portion of the container and being secured to its respective contact member, a removable fuse positioned in the container, completing an electrical circuit from one contact member to the other, said container having access openings for replacing the fuse in the container and affording visual inspection of the fuse in said container, and said container being stretched when inserting said fuse therein to thereby retain the fuse under compression in electrical engagement with said metallic contact members.

RAY C. BARKER.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,798,859	Woodruff	Mar. 31, 1931
1,798,860	Woodruff	Mar. 31, 1931
2,053,899	Dunbar	Sept. 8, 1936