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J. J. BRAUTIGAM

2,695,347

INDICATING CURRENT LIMITER WITH FABRIC LINING

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FIG. 1.

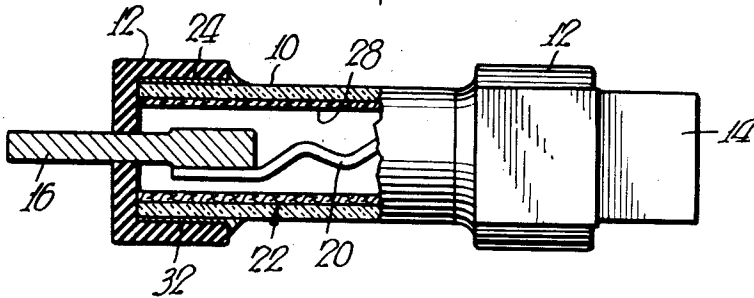


FIG. 2.

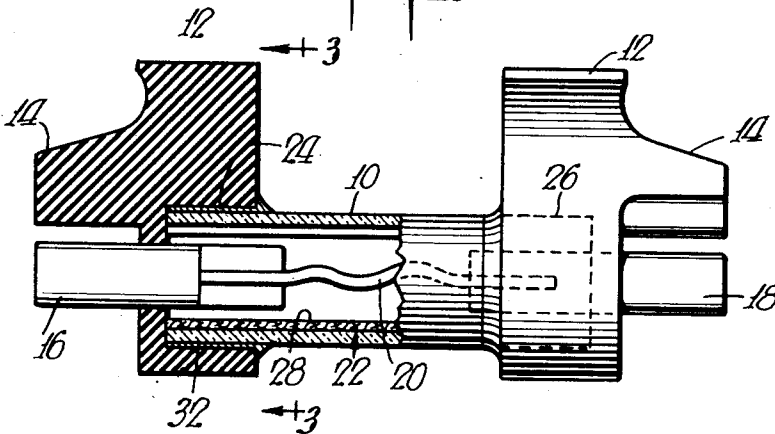


FIG. 3.

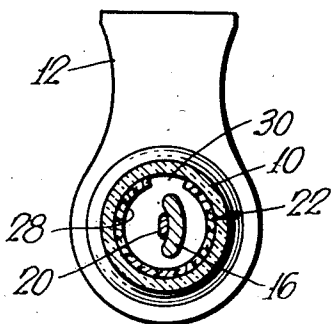
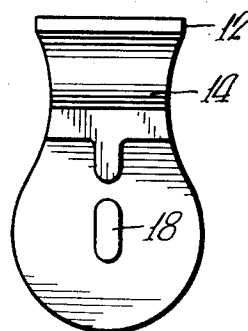


FIG. 4.



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INDICATING CURRENT LIMITER WITH FABRIC LINING

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4 Claims. (Cl. 200—113)

My invention relates to current limiters and more particularly to a current interrupting device having visible indication of its condition.

Objects of my invention are to provide a lightweight airtight, accurate limiter for aircraft adapted to withstand increased generator capacities and voltages used in present-day aircraft without danger of explosion occurring during the interruption, and which will give a positive and easily visible indication of its condition.

These and other objects I accomplish and obtain my new results as will be apparent from the device described in the following specification, particularly pointed out in the claims, and illustrated in the accompanying drawing, in which—

Fig. 1 is a plan view, partly in section, of an embodiment of my indicating current limiter;

Fig. 2 is a side elevation thereof;

Fig. 3 is a cross-sectional view taken in the plane 3—3 of Fig. 2;

Fig. 4 is an end view of my device.

My device comprises a glass tubular enclosure 10 mounted to a pair of knobs 12 provided with finger shields 14, a pair of contact blades 16 and 18, a fusible element 20, and arc suppressing means 22.

The glass enclosure which may be made of Pyrex, is capable of withstanding differential temperature conditions and shock without breakage. The knobs are made of insulating material, such as a phenolic resin having shield portions overhanging the blades, so as to prevent contact therewith during installation or removal. The knobs are recessed as at 24 and 26 forming sockets to receive the ends of the glass. The fusible element 20 is usually made of silver wire brazed to the copper blades which support the element substantially centrally of the glass tube.

Instead of filling the glass tubes with sand particles to absorb the spattering molten fuse, which particles prevent the condition of the limiter from being ascertained, I prefer to insert a small sheet of glass fibers

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woven into a fabric material 28 rolled inside the glass tube and cemented to the inside surface, the ends of the fabric being spaced apart as at 30 sufficiently to permit inspection of the fusible element therethrough. A space of $\frac{1}{8}$ of an inch will permit inspection without danger of injury to the glass envelope. The fabric sheet being non-combustible is capable of absorbing the molten particles without damage or shock to the supporting glass envelope. Asbestos fibers will function similarly.

All the joints are made airtight by sealing with a cement 32. Thus the limiters will always operate at a uniform rating when used in aircraft.

A readily visible highly colored paint is used to facilitate detection of the blown fuse. An example of such a paint is thermidex G-6, product of the Tempil Corporation of New Jersey.

I have thus described my invention, but I desire it understood that it is not confined to the particular forms or uses shown and described, the same being merely illustrative, and that the invention may be carried out in other ways without departing from the spirit of my invention, and, therefore, I claim broadly the right to employ all equivalent instrumentalities coming within the scope of the appended claims, and by means of which objects of my invention are attained and new results accomplished, as it is obvious that the particular embodiments herein shown and described are only some of the many that can be employed to attain these objects and accomplish these results.

I claim:

1. A current limiter having a fusible element, an envelope body therefor, and contacts extending therefrom, an insert non-metallic sheet material contained in said envelope and spaced from the fusible element to absorb the molten fuse particles when the circuit is interrupted, said fusible element provided with a heat discoloring surface.

2. The current limiter of claim 1, wherein the envelope is transparent and the inert material is provided with an opening to permit inspection of the fuse therethrough.

3. The current limiter of claim 1, wherein the inert material is made of glass fibers.

4. The current limiter of claim 1, wherein the inert material is made of asbestos.

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