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2,103,538

REFLECTOR

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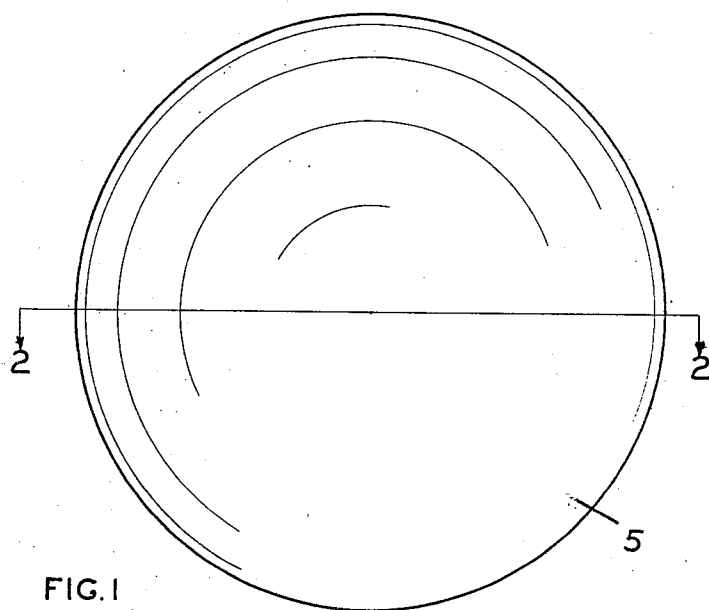


FIG. 1

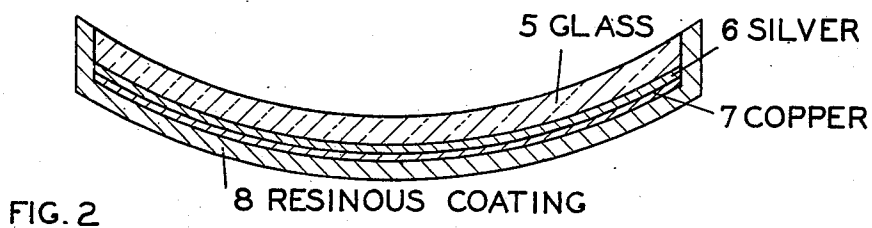


FIG. 2

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REFLECTOR

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2 Claims. (Cl. 88—105)

The present invention relates to reflectors having a glass body and a metallic backing and more particularly to such reflectors which are to be subjected to relatively high temperatures.

5 In the making of reflectors for projectors, searchlights or the like, it has heretofore been the practice to chemically deposit silver upon a glass body portion, to electrolytically deposit a layer of copper upon the silver and to give the backing a protective coating. The main constituents of this protective coating were sodium silicate, asbestos and calcium carbonate. Such a coating takes up moisture when cool, losing it when heated and shrinking as the moisture is driven off. As the coating is relatively thick, strong and closely adherent to the backing, this shrinking process causes it to destroy the backing and even to destroy the surface of the glass body. Thus the life of these reflectors was relatively short and repairing them required regrinding and repolishing the glass as well as resilvering.

One of the objects of the present invention is to provide a new and improved reflector having a relatively long life and being easy and simple to repair. Another object is to provide a reflector having a protective coating which is impervious to moisture and efficient in heat radiation. A further object is to provide a reflector having a protective coating including glycerol phthalate and aluminum powder. These and other objects and advantages reside in certain novel features of construction, arrangement and combinations of elements as will hereinafter be more fully set forth and pointed out in the appended claims.

In the drawing:

Fig. 1 is a face view of a reflector embodying my invention.

Fig. 2 is a section taken on line 2—2 of Fig. 1. My invention is illustrated in the drawing wherein 5 indicates a concavo convex glass body which is ground and polished on both surfaces and a reflective layer 6 of silver is chemically deposited on the convex surface. A layer 7 of copper is electrolytically superimposed upon the silver in the usual manner. Reflectors having a glass body, a layer of silver and a layer of copper are old and their preparation is well known to those skilled in the art.

A coating 8 is applied to protect the metallic backing and prolong the life of the reflector. This coating 8 must be waterproof and strong and must be resistant to heat at least up to the permissible temperature for silver reflectors. It

is also essential that the coating 8 be free from excessive expansion and contraction and it must be incapable of tearing out pieces of the glass body when it does expand or contract. The synthetic resins combine these properties and glycerol phthalate, sold under the trade name of "Glyptal" has been found to serve very well. Such a substance can be spread onto the reflector in a very thin coat which is moisture proof, yet of insufficient strength to pit the glass surface regardless of the amount of expansion or contraction.

A metallic pigment, preferably aluminum powder, is incorporated in the resinous coating to radiate the heat from the reflector. Other pigments can be used but metallic pigments are preferred because of their radiating powers and because the flatness of metallic flakes permits the use of a thinner coating.

Silver and copper backed reflectors should not be subjected to temperatures above 600 degrees F. Another advantage from the use of glycerol phthalate is the fact that it deteriorates at this temperature. This affords an indicator showing whether or not the reflector has been subjected to excessive heating.

In the event that the reflecting backing of the reflector is destroyed or damaged, it is necessary only to resilver, recopper and recoat the glass body portion. Failure of the backing does not destroy the surface of the glass and hence it is not necessary to repeat the costly steps of regrinding and repolishing the glass body portion. The reflecting backing alone can be replaced at relatively small cost.

From the foregoing it is apparent that I am able to attain the objects of my invention and provide a new and improved reflector having a long life and being easy and inexpensive to repair. Various modifications can, of course, be made without departing from the spirit of my invention.

I claim:

1. A reflector comprising a glass body, a reflective layer of silver on said body, a layer of copper on said silver and a protective coating, said coating being composed principally of glycerol phthalate and containing a metallic pigment.

2. A reflector comprising a glass body, a reflective layer of silver on said body, a layer of copper on said silver and a protective coating, said coating being composed principally of glycerol phthalate and containing an aluminum powder.

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