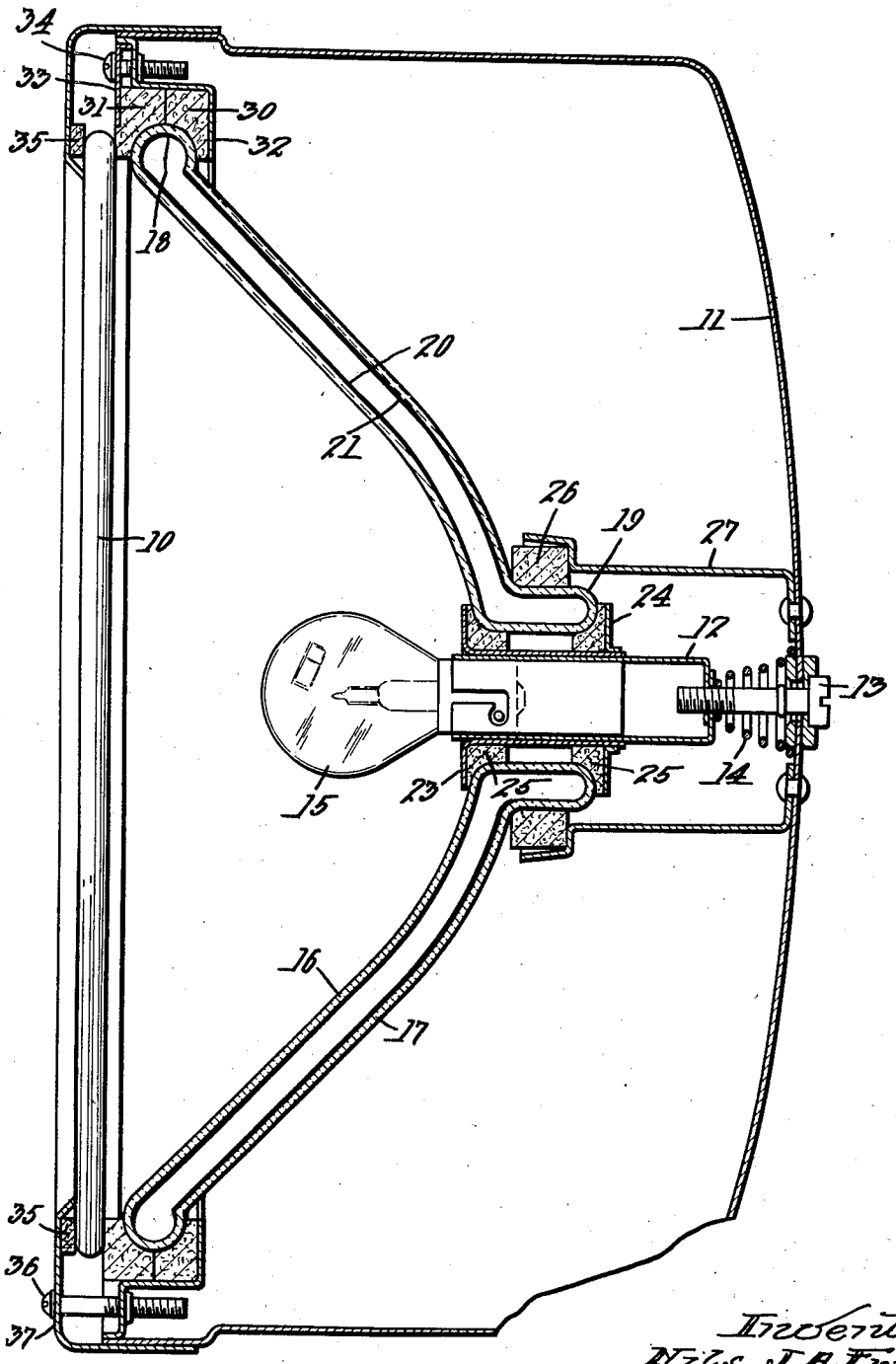
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REFLECTOR FOR LIGHT PROJECTORS

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# UNITED STATES PATENT OFFICE

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## REFLECTOR FOR LIGHT PROJECTORS

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This invention relates to a reflector for automobile electric headlights, spot lights, search lights and for similar purposes.

The principal objects of the invention are to provide a reflector to be used with an incandescent lamp fastened through the axial center of it with means whereby the front surface of the reflector can be cleaned and scrubbed as often as desired without any danger of the removal or deterioration of the metallized surface producing the reflection; to provide a construction in which the mirror will be of a better and more efficient character than those usually employed for automobile lights, and to provide a construction in which the metal surface for producing the reflection will not be affected by moisture.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawing which is an axial central sectional view of a head light constructed in accordance with this invention.

I have shown the invention as applied to a lamp having a glass closure or lens 10, casing 11 and a center adapter 12 arranged axially, adjustable by a screw 13 and spring 14 carrying the usual electric lamp 15 of the incandescent variety.

The reflector, which is the principal feature of this invention, consists of a hollow piece of glass with the inside of concave form and made hollow. It comprises an inner front wall 16 and a back wall 17 of glass formed of a single integral structure having a surrounding hollow bead 18 at the edge and a cylindrical neck 19 at the rear.

This mirror is made hollow and the inner surfaces 20 and 21 are silvered or coated with silver, gold or other metal to form reflecting surfaces. After the metallizing is done, the interior is exhausted and the structure sealed up so as to preserve a vaccum therein.

By having the inner surface 20 silvered, it will be seen that a much more efficient reflecting surface is provided than with the usual construction in which the outer or concave surface is silvered. This is due to the fact that the application of the metal to the inner surface of a piece of glass renders that inner surface brightly reflecting and the metal does not have to be polished in any way or smoothed on the back to get a perfect reflecting surface.

The more important advantage is that the concave surface of the reflector, which gathers dust and dirt, can be cleaned, scrubbed and polished to any desired extent without any possibility of this cleaning taking off some of the metallic surface. This is a great improvement over the ordinary metal reflector because the metal is usually on the concave front surface and gradually disappears with the cleaning operations that are necessary and people who realize that fail to clean their reflectors and thus get poor results.

Furthermore, the exhaustion of the air in the interior removes the moisture and there is practically no chance of any chemical action, due to moisture or other acids damaging the metal inside.

The lamp is mounted in the cylindrical opening through the neck of the reflector by the use of a metal sleeve 23 extending through the opening and receiving the lamp adapter 12 and locked in place by a ring 24 of a flat shape with an annular flange fitting the sleeve. To prevent the ring and sleeve coming in contact with the glass reflector, or with the neck thereof, a pair of cork insulators 25 are placed in contact with the glass on one side and with the two metallic members 23 and 24 on the other. These cork insulators are concave on one side and flat on the other so as to fit the parts with which they come in contact.

To prevent injury to the reflector from road shocks an insulator 26 is pressed over the outside of the cylindrical neck of the reflector and inserted into a seat in the cup 27 of the metal, which acts as a means for holding the reflector in proper relation to the lamp casing 11, to which the cup 27 is riveted.

The way of supporting the reflector at the center and the lamp in the center of the reflector therefore provides for enough resiliency to absorb the vibrations, the insulator 26 being made of cork or other soft yielding insulating body.

The edge or mouth of the reflector is held in position by means of annular insulators 30 and 31 having concave surfaces for engaging the bead of the reflector. These constitute gaskets or shock absorbers and preferably are formed of ground cork like the other gaskets 25 and 26, although other non-metallic and flexible material could be used.

They are held in place between a metal retaining ring 32 of annular form and clips 33 by means of screws 34 by which these metallic elements can be caused to grip the two gaskets with the desired amount of pressure.

The lens 10 is shown as being held between a portion of the gasket 31 and a gasket 35 of flat form which is pressed against the lens by screws 36 which pass through the retaining ring 32 and in the exterior rim or bezel 37, which also engages the gasket 35 and finishes the front of the lamp passing outside the edge flange of the casing 11.

By this construction, the reflector can be cleaned in the ordinary manner and scrubbed as hard as may be desired without injuring the metallic surface of the reflecting medium. The glass can be blown or molded, as desired, and has no joints and the metallic reflecting surface is not subjected to variations in moisture and is protected from deterioration from that source.

The lamp is held to the reflector by resilient gaskets or the like and can be adjusted axially by the screw 13 and is held resiliently by the spring 14 to absorb vibration and in fact all vibrations normally are absorbed by the several gaskets. The casing is closed in a convenient but simple and effective manner.

Although I have illustrated and described only one form of the invention, I am aware of the fact that modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore, I do not wish to be limited in this respect, but what I do claim is:—

1. As an article of manufacture, an electric lamp for the purpose described comprising a casing, a reflector having a hollow wall, a silvered interior surface, and a space therein, sealed under a vacuum to prevent the effect of moisture on the silvered surface and having a passage through it axially and a neck bounding said passage, a lamp fixture extending through the neck but spaced therefrom, cork gaskets fitting the inner and outer edges of the neck to hold the reflector in position, metallic members surrounding the lamp fixture and holding the cork gaskets firmly in position, whereby the lamp is firmly but yieldingly mounted in the mirror, and a cork gasket outside the neck and supported by the body of the lamp casing to hold the mirror at its center.

2. An electric lamp comprising a reflector having a double wall with an exhausted space between the walls and the inside surfaces of both walls silvered and provided with an incandescent lamp extending through the center thereof, a casing surrounding the mirror, said mirror having a bead around its outer edge integral with it, soft resilient gaskets surrounding the bead and supporting it on opposite sides, a lens bearing on the outer gasket and means for adjustably pressing the edge of the lens against the gasket.

3. An electric lamp comprising a reflector having a double wall with the inside of the rear surface silvered and with an exhausted space between the walls provided with an incandescent lamp extending through the center thereof adjustably mounted, a casing surrounding the mirror, said mirror having a bead around its outer edge integral with it, a pair of cork gaskets surrounding the bead and supporting it on opposite sides, a retaining ring on the backside of the bead holding one of said gaskets against the bead, clips on the front side holding the other gasket against the bead, and a lens bearing on the outer gasket.

In testimony whereof I have hereunto affixed by signature.

NILS J. A. FYRBERG.