Oct. 13, 1942. L. L. RAYMOND 2,298,588

SMALL LAMP REFLECTOR

Filed April 7, 1939

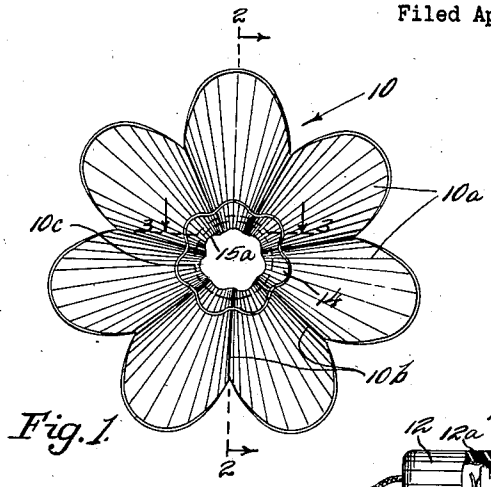


Fig. 1.

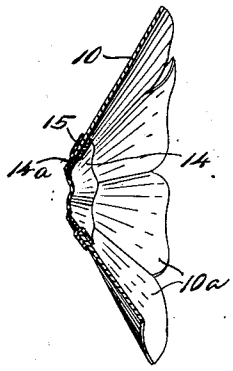


Fig. 2

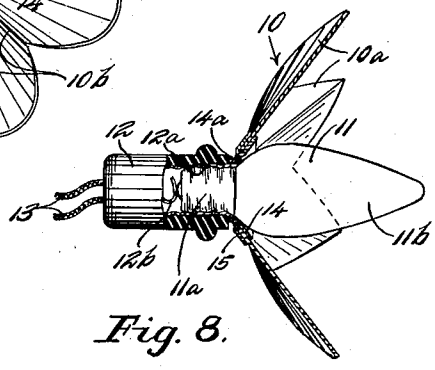


Fig. 8.

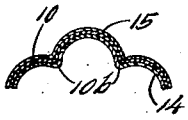


Fig. 3.

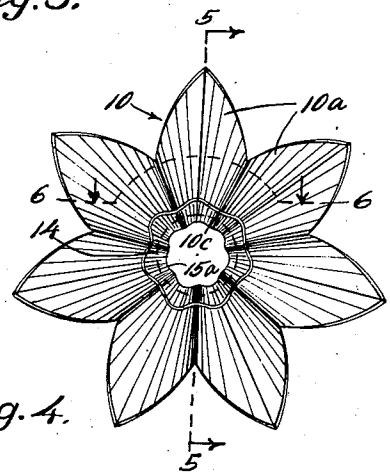


Fig. 4.

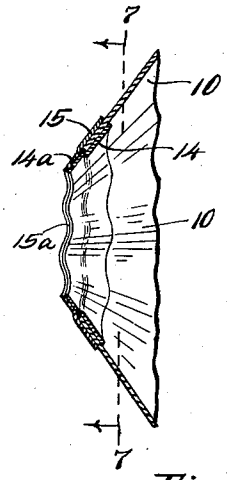


Fig. 5.

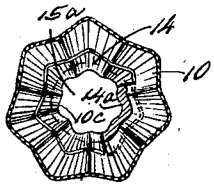


Fig. 7.



Fig. 6.

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SMALL LAMP REFLECTOR

Lambert L. Raymond, Minneapolis, Minn.

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3 Claims. (Cl. 240—103)

This invention relates to a Christmas tree reflector or a reflector adapted to be used with the small lamps used on Christmas trees or with similar lamps.

Such a reflector must be quite ornamental and it is desirable that it be of such construction that it can be easily and inexpensively made. Such reflectors are usually constructed with a central opening through which the plug or stem of the lamp bulb passes. It is necessary that the reflector have some sort of an insulating bushing about its central opening to prevent short circuiting of the lamps. Much inventive effort has been placed on these bushings.

It is an object of this invention to provide a Christmas tree reflector made of very light material and one which is very simple and inexpensive.

It is a further object of the invention to provide a simple and efficient Christmas tree reflector having a novel and simple means at the center thereof forming the insulating bushing about the opening in the reflector through which the plug of a lamp passes, said means comprising layers of flexible material.

It is another object of the invention to provide a reflector made of very thin metal having a concave front surface with a highly reflective coat of colored lacquer or enamel thereon, said reflector having a series of points or petal-like divisions about its edge, said divisions forming zones in said reflectors and being divided by lines extending radially of said reflector, the zones being of concave or trough-shaped form between said lines, together with layers of tough, flexible paper-like material at each side of the reflector extending about the central opening therein and secured together inwardly of said opening.

It is still another object of the invention to provide such a reflector as set forth in the preceding paragraph in which the said layers of flexible material conform to the shape of said reflector and said divisions thereof.

These and other objects and advantages of the invention will be fully set forth in the following description made in connection with the accompanying drawing in which like reference characters refer to similar parts throughout the several views and in which—

Fig. 1 is a view in front elevation showing one form of the reflector;

Fig. 2 is a central, vertical section taken on line 2—2 of Fig. 1 as indicated by the arrows;

Fig. 3 is a horizontal section taken on line 3—3 of Fig. 1 as indicated by the arrows;

Fig. 4 is a view in front elevation of a different form of reflector;

Fig. 5 is a vertical section taken on line 5—5 of Fig. 4 as indicated by the arrows;

Fig. 6 is a horizontal section taken on line 6—6 of Fig. 4 as indicated by the arrows;

Fig. 7 is a vertical section taken on line 7—7 of Fig. 5 as indicated by the arrows; and

Fig. 8 is a view showing the reflector of Fig. 4 in operative relation to a lamp socket and lamp.

Referring to the drawing, particularly Figs. 1, 2, 3 and 5, a reflector 10 is shown which will be made of very thin sheet material such as metal and preferably made from one piece of sheet metal, pressed or molded into the desired form. As shown in Fig. 2 the reflector is of general conical or concavo-convex form and is symmetrical about a central horizontal axis as clearly seen in Fig. 1. Said reflector has a plurality of zones 10*a* having outer curved or rounded and convex edges, said zones being separated by radial lines 10*b*. Each zone has a concave or trough-shaped surface which is symmetrical about a line extending radially and centrally of said zone. Said reflector has a central opening 10*c* adapted to have pass therethrough a plug portion 11*a* of a lamp 11, the glass bulb portion 11*b* of which is disposed at the outer side of the reflector when the reflector and lamp are held in operative relation to a socket 12 as shown in Fig. 8. Conductors 13 are shown as extending to socket 12 and said socket is shown as having the usual sleeve 12*a* and tip contact 12*b*. A layer of tough flexible paper or paper-like sheet material 14 extends about opening 10*c* and is provided with adhesive at one side by means of which it is secured to the surface of reflector 10. Another piece of similar material of the same form as member 14 extends about opening 10*c* at the rear of the reflector and is secured thereto by adhesive on said member 15. Said members 14 and 15 are of annular form and at their inner edges they extend inwardly beyond opening 10*c* of the reflector and are secured together by the adhesive thereon inwardly of opening 10*c* as shown at 14*a* in Figs. 5 and 7. Members 14 and 15 also have central openings therein so that their connected portions shown at 14*a* have a central opening 15*a* therethrough which is of smaller diameter than the opening in reflector 10. When the reflector is mounted to its form and the concave or trough-shaped surfaces formed in the zones 10*a*, the members 14 and 15 are conformed to the shape of these zones so that the trough in each zone continues through the members 14 and 15 and the straight lines 10*b* dividing the zones also extend through the members 14 and 15 to the opening 15*a*. The shape of the members 14 and 15 can be readily seen in Fig. 3.

In Figs. 4 and 5, a somewhat different form of reflector is shown in which the portions 10*a* have pointed ends instead of the rounded ends shown in Fig. 1. In all other respects the con-

struction is the same as shown in Figs. 1 and 2 including the members 14 and 15, with the opening 15a therein.

While various materials might be used, in practice the reflectors have been made of very thin sheet aluminum, the same having an enameled or lacquered surface having a highly reflective surface. This lacquer or enamel is made of different colors. While members 14 and 15 might be made of various kinds of thin flexible adhesive material, in practice it has been found very suitable to make these of a well known commercial gummed paper strip of tough texture or of the well known fabric adhesive tape. These materials are usually provided with adhesive at one side and they thus readily adhere to the reflector and the members 14 and 15 thus adhere firmly at their portions which extend inwardly of opening 10c.

When the reflector is used with the lamp 11 and the lamp socket 12 as shown in Fig. 8, the plug portion 11a as already stated screws into the socket in the usual manner. The rear portion of the lamp bulb 11b engages the member 14 and the members 14 and 15 at the portion 14a conform to the curvature of the lamp bulb and are pressed firmly against the end of the socket. The reflector is thus very firmly held in place. The members 14 and 15 are of insulating material and form a very efficient bushing so that there is no danger of short circuiting the lamp by the reflector. It will be readily seen that by flattening members 14 and 15 and the folds or convolutions therein, that the diameter of the opening through said members will be increased.

From the above description it is seen that I have provided a very simple reflector having a very simple and efficient form of bushing thereon. The metal used is quite thin and the reflector can be easily stamped or pressed to the desired form. The material of members 14 and 15 being flexible, the same conforms to the shape of the reflector. It will be noted that there is no flat portion at the center of the reflector extending in a plane perpendicular to the axis thereof. The material for members 14 and 15 is quite inexpensive and can be quite easily made and applied. The reflector gives a very pleasing and highly ornamental effect when used with an illuminated lamp and forms a highly decorative feature for a tree when the lamps are not illuminated. The trough-shaped surfaces of portions or zones 10a cause shadows to be cast along certain parts thereof and the high light lines or reflections extend substantially radially of the portions 10a and adjacent the centers thereof. This combination of high lights and shadows is very effective and the same varies, of course, with the position of the reflector relative to the observer. The reflector having the different colors and being quite mirror-like in its reflecting qualities, gives varied and beautiful effects with different colored lights. The reflective effect is very striking. The members 14 and 15 are of quite thin material and do not add appreciably to the thickness of the reflector which, as stated, is made from very thin metal. The thickness is somewhat exaggerated in the drawing since it is difficult to show the device thin with a plurality of lines. There is a particular combinative relation, therefore, between the thin metal used in the reflector and the parts 14 and 15 used for the bushing. The reflector has been amply demonstrated in actual practice, found to be very successful and efficient and is being commercially made.

This application is a continuation in part of applicant's copending application S. N. 125,747, filed February 15, 1937, on "Christmas tree reflector structure" for all parts common thereto.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the parts, without departing from the scope of applicant's invention, which generally stated, consists in a device capable of carrying out the objects above set forth, in the parts and combinations of parts disclosed and defined in the appended claims.

What is claimed is:

1. A reflector for Christmas trees comprising a sheet of very thin metal having a polished surface, said sheet being of general concavo-convex form and symmetrical about a central axis, said reflector having regular circumferentially spaced convolutions therein and having a central opening and a layer of thin tough flexible insulating paper having adhesive on one side secured to each side of said reflector about said opening and extending inwardly of said opening, said layers being secured together by said adhesive inwardly of said opening and having an opening therethrough smaller than and concentric with said first mentioned opening adapted to receive the plug portion of a lamp, said layers acting to insulate said sheet from said plug portion.

2. A reflector for Christmas trees comprising a sheet of quite thin metal having a surface of high reflecting quality, said sheet being of general concavo-convex form and symmetrical about a central axis and having an aperture therethrough, a thin sheet of non-metallic flexible insulating material secured to each side of said portion by adhesive, said sheets extending inwardly of said aperture having an aperture therethrough of smaller diameter than said first mentioned aperture and axially alined therewith, said sheets thus extending within said first mentioned aperture and being secured together within said first mentioned aperture, said reflector having a plurality of similar zones divided along radial lines, each zone having a front trough-shaped surface curved about a radially extending axis, said lines and trough-shaped surfaces extending to and through said sheets of insulating material.

3. A reflector for Christmas trees made of very thin sheet material and having a serrated edge symmetrical about a vertical axis, said reflector being of concavo-convex form and provided with radial folds or creases the concave side forming the front thereof, said reflector having a central opening therethrough, sheets of thin flexible fabric insulating material secured to each side of said reflector about said opening and secured together within said opening, the same having an opening therethrough smaller than said opening and substantially coaxial therewith, said radial folds of said reflector being continued through said last mentioned sheets to the opening therein, whereby the opening through said last mentioned sheets may be enlarged by flattening or expanding said folds.

LAMBERT L. RAYMOND.