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Soboleski

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[54] **LAMP SHADE AND METHOD OF MAKING THE SAME**

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[52] **U.S. Cl.** ..... **240/108 A,** 240/108 R

[51] **Int. Cl.** **F21v 1/02,** F21v 1/20, F21v 1/26

[58] **Field of Search** ..... 240/108 R, 108 A; 52/80, 81, 403, 456; 161/5, 6, 12, 16, 54

[56] **References Cited**

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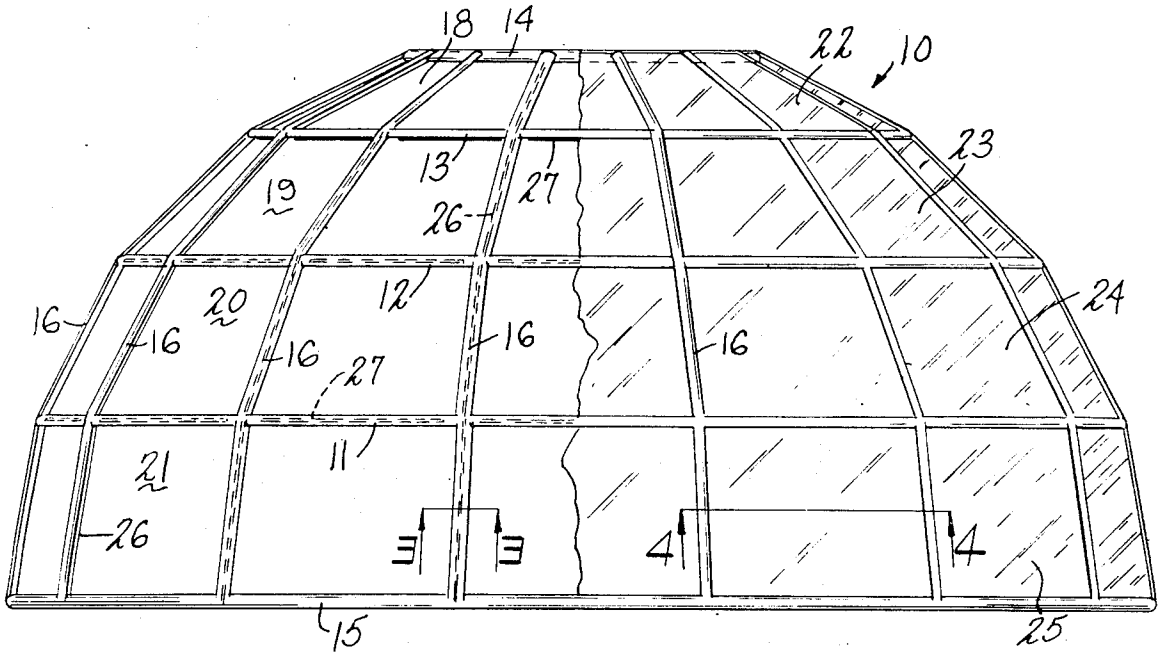
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Assistant Examiner—Russell E. Adams, Jr.
Attorney—Robert H. Montgomery et al.

[57] **ABSTRACT**

A lamp shade frame wherein relatively transverse thermoplastic members define windows therebetween adapted to receive lights therein, and the members have upstanding ribs on the inside thereof defining seating ledges for the lights that may be deformed under heat and pressure to overlie the edges of the lights and lock the lights in the frame.

4 Claims, 5 Drawing Figures



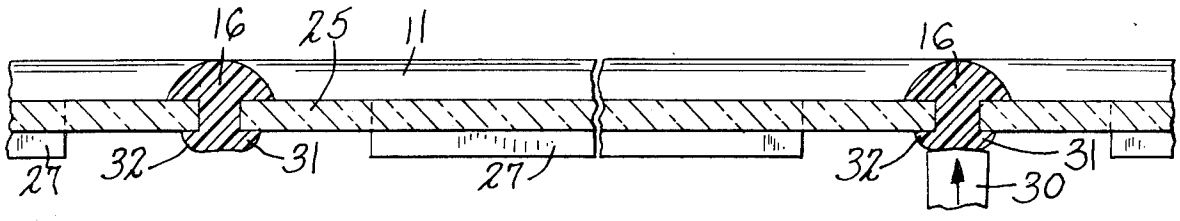


Fig. 1.

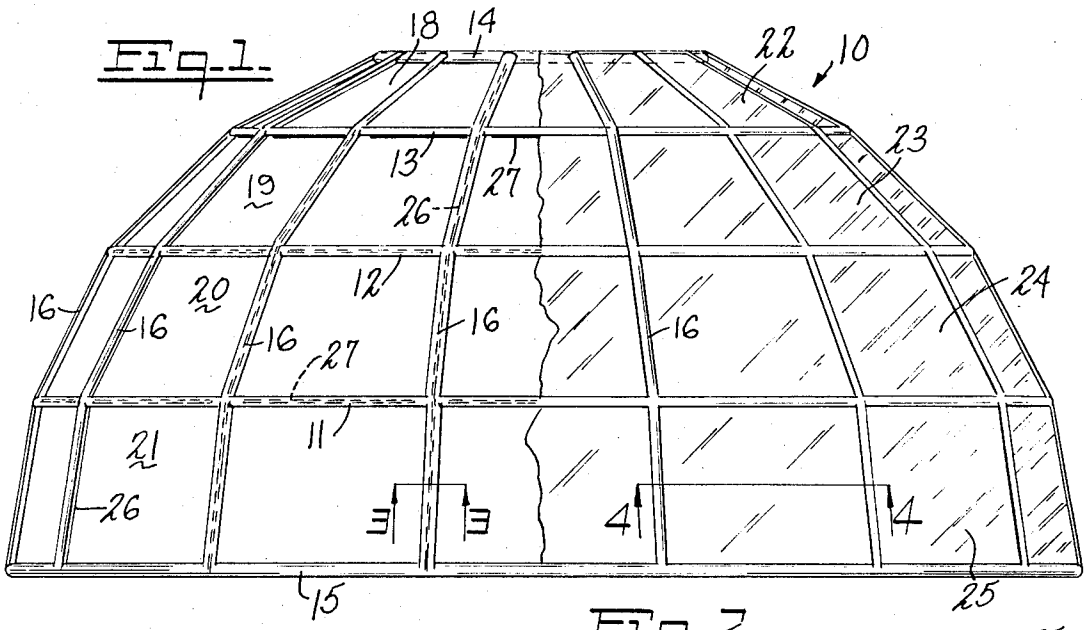


Fig. 2.

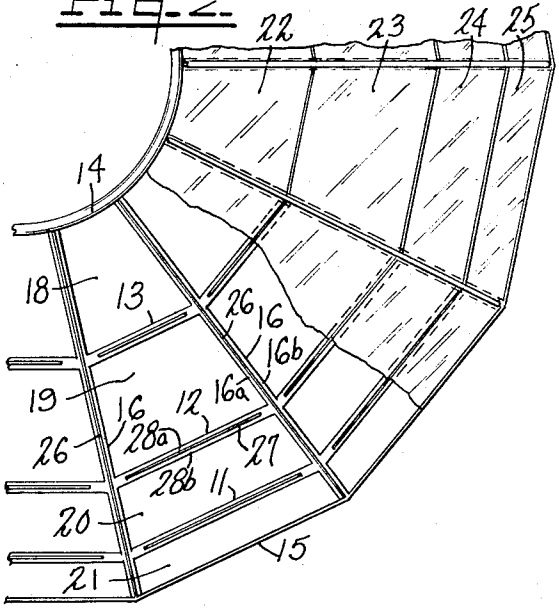


Fig. 5.

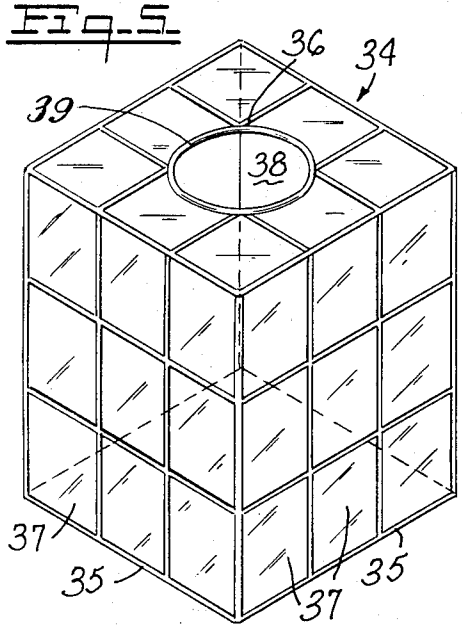


Fig. 3.

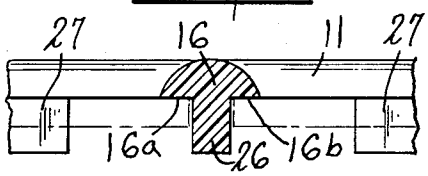
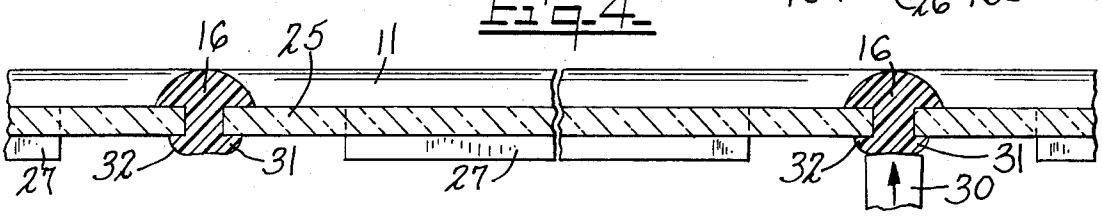


Fig. 4.



LAMP SHADE AND METHOD OF MAKING THE SAME

This invention relates to lamps, and more particularly relates to shades therefor and a method of making the same.

Many constructions have been proposed for lamp or light shades of the type having a plurality of structural grid elements defining windows with light transmissive elements either clear or colored supported therein.

In most instances, such frames are made with tab-like members which fold over to secure a pane or light in the window opening. This type of construction only loosely holds the glass therein and in some cases a non-uniform appearance of the lights in the various windows is apparent to the viewer. Other techniques of holding the glass in the panes, including flexible inserts, wedges, etc. have also been used.

However, these previously known techniques have been rather time-consuming in assembly, thus increasing the costs of this type of shade.

Accordingly, the present invention provides a new and improved lamp shade and method of making the same which allows the framework to be inexpensively formed and a plurality of windows positioned in the frame and then simultaneously locked or sealed therein with a tight fit.

Briefly stated, the invention in one form thereof comprises a lamp shade having longitudinal and lateral structural members defining a plurality of lights or windows. On the inside of one of the lateral or longitudinal members are defined spacing ribs or elements to locate a light in a window while on the other of the members is formed a deformable rib. The deformable rib, as well as the grid members, is preferably made of a thermoplastic material so that when the lights are inserted into the windows, and pressure and heat applied on the upstanding rib, the rib may be changed to a semiplastic state, deformed and forced to overlie the edges of adjacent lights.

An object of this invention is to provide a new and improved lamp shade of the type described.

A further object of this invention is to provide a new and improved method for making a lamp shade of the type described.

Another object of this invention is to make a new and improved lamp shade of the type described wherein the lights may be easily assembled into the windows and securely mounted therein.

The features of the invention which are believed to be novel are particularly set forth and distinctly claimed in the concluding portion of this specification. However, the invention both as to its organization and operation, together with further objects and advantages thereof may best be appreciated by reference to the following detailed description taken in conjunction with the drawings, wherein:

FIG. 1 is a side elevation of a lamp shade embodying the invention;

FIG. 2 is a view of the portion of the shade of FIG. 1 seen from the inside thereof;

FIG. 3 is a view seen in the plane of lines 3-3 of FIG. 1.

FIG. 4 is a view seen in the plane of lines 4—4 of FIG. 1;

FIG. 5 is a view in perspective of another lamp shade which may embody the invention.

One embodiment of the invention comprises a frame **10** shown in FIG. **1** as being of generally hemispherical form. Frame **10** is defined by a plurality of lateral members **11, 12** and **13** spaced between an upper circular member **14** and a bottom terminating member **15.** Member **14** defines an opening for reception of a lamp within the frame. The frame further comprises a plurality of longitudinal members **16** extending between the upper member **14** and the lower member **15.** In the embodiment shown, all of the longitudinal members **16** are equi-angularly spaced with respect to the center of member **14.**

The relatively transverse longitudinal and lateral members define therebetween four series of annularly extending windows **18, 19, 20** and **21** which, as exemplified, are generally of trapezoidal shape.

As shown in FIG. **3,** both the longitudinal and lateral members have outer arcuate surfaces.

The windows **18, 19, 20** and **21** are adapted to receive therein lights or panes **22, 23, 24** and **25,** respectively, all of substantially trapezoidal shape but of different sizes in each series. For example, all of windows **18** will receive lights **22** of one size. All of windows **19** will receive lights **23** of another size, etc.

The longitudinal members **16** have ribs **26,** FIG. **2,** on the inside thereof which are preferably continuous along the length thereof and extend a dimension greater than the thickness of the lights as indicated by the relative dimensioning of lights **25** and ribs **26** in FIG. **3.** The ribs **26** are of lesser dimension than members **16** so as to provide seating ledges **16*a*** and **16*b*,** FIGS. **3** and **4,** for adjacent lights on either side of ribs **16.** Formed on the lateral members **11 – 15** between the longitudinal member **16** are inwardly extending positioning ribs **27.** The positioning ribs **27** are of lesser thickness than the lateral members so as to provide seats **28*a*** and **28*b*** on either side of the lateral members for the edges of the lights.

The shade is cast or molded as by injection molding in one integral piece of a thermoplastic material. The frame may be turned upside down or on its side as exemplified in FIG. **2** and then a series of lights **22, 23** and **24** placed therein in several columns. Then a tool T which is heated to above the plastic temperature of the material is moved along the ribs **26** with some pressure exerted thereon as exemplified by the tool **30** in FIG. **4.** The heat of the tool will change the ribs **26** to a semiplastic or plastic state and the pressure exerted thereon will force the semi-plastic material into ears **31** and **32** overlying the edges laterally of adjacent lights as exemplified in FIG. **4.** The lights are prevented from any movement in the longitudinal direction by the positioning ribs **27** and are permanently secured in the windows by the overhanging ears **31** and **32** of the thermoplastic ribs **26** which will again become rigid when the heat and pressure of tool **30** is removed. The frame may be injected in any suitable thermoplastic including polypropylene, polycarbonate, polystyrene, MBS, etc. Generally, it is preferred to use a material which becomes semi-plastic and deformable under a small pressure in the range of 410° – 450° F.

The lights may be of glass cut to size and shape or may be of plastic material, as the case may be, and the manufacturer desires. As used herein, the term lights includes mirrors placed in the windows.

The outer surfaces of the shade **10** may be sprayed with a metallic paint or other metalizing process prior

to insertion of the lights to give the appearance of any type of metal frame such as copper, bronze, cast iron, steel, etc. If desired, a shade may be made of two generally hemispherical sections of the type shown in FIG. 1 to define a complete globe. Suitable supporting or attachment members generally extending from the lamp fixture may be inserted within the shade through the opening defined by member 14 to support the shade in the desired spaced relation with respect to the lamp.

FIG. 5 exemplifies another form of shade which may be constructed in accordance with the invention. This shade 34 generally comprises four side frames 35 and an upper frame 36 all integrally formed to define a plurality of rectangular windows 37 receiving rectangular lights all of the same size.

The inside of the frame members defining each window are constructed in the same manner as described for the shade of FIG. 1, that is, with positioning ribs on opposite sides of a window and deformable ribs on the other two opposite sides.

In the device of FIG. 5 it will be seen that shade 34 may be laid on one of its sides 35, nine lights positioned in one side and then all nine lights locked therein with four strokes of a tool 30. The upper frame 36 of shade 34 may have an opening 38 defined therein by an annular member 39 to receive a lamp therethrough.

The invention may also be utilized and embodied in shades having other window configurations; for example, diamond, hexagonal, etc. Shades of various geometric configuration such as pyramidal, hexagonal, octagonal, or unsymmetrical sides may also be made in accordance with the invention.

It may thus be seen that the objects of the invention set forth as well as those made apparent from the preceding description are efficiently attained. While preferred embodiments of the invention have been set forth for purposes of disclosure further embodiments of the invention as well as modifications to the disclosed embodiments which do not depart from the spirit and scope of the invention may occur to others skilled in the art. Accordingly, the appended claims are intended to cover all embodiments and modifications of the invention which do not depart from the spirit and scope of the invention.

What is claimed is:

1. A method of making a lamp shade of the type having relatively transverse members defining windows adapted to receive lamps therein, comprising the steps of providing a frame of thermoplastic material having first members and second members transverse to each other and defining windows therebetween with positioning ledges defined by upstanding ribs on one of said transverse members, said ribs upstanding a dimension greater than the thickness of lights to be placed in said windows, placing lights in windows on either side of one of said ribs, and deforming said one of said ribs under heat and pressure to cause said rib to overlie lights in windows on either side thereof.

2. A method of making a lamp shade of the type having relatively transverse members defining windows adapted to receive lamps therein, comprising the steps of providing a frame of thermoplastic material having first members and second members transverse to each other and defining windows therebetween with positioning ledges on the insides of one of said transverse members and positioning ledges defined by upstanding ribs on the other of said transverse members, said ribs upstanding a dimension greater than the thickness of lights to be placed in said windows, placing lights in windows on either side of one of said ribs, and deforming said one of said ribs under heat and pressure to cause said rib to overlie lights in windows on either side thereof.

3. A lamp shade of the type having a plurality of first and second spaced apart relative transverse members of thermoplastic material defining a frame with a plurality of windows between said members, at least one of said plurality of members having an upstanding rib thereon along the length thereof defining light seating ledges on either side of said rib, lights positioned in said windows on said ledges, said ribs being deformed under heat and pressure to overlie lights on said ledges and hold said lights between said ledges and said overlying rib.

4. The shade of claim 3 wherein the other plurality of members have upstanding ribs thereon defining spacers between said lights and seating ledges therefor.

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