Feb. 7, 1950 E. K. MADAN ET AL 2,496,482

LAMP SHADE AND METHOD OF MAKING THE SAME

Filed Aug. 14, 1947 2 Sheets-Sheet 1

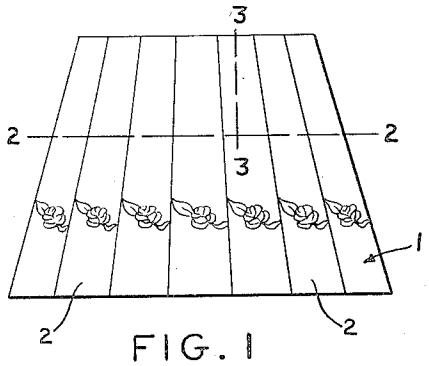


FIG. 1

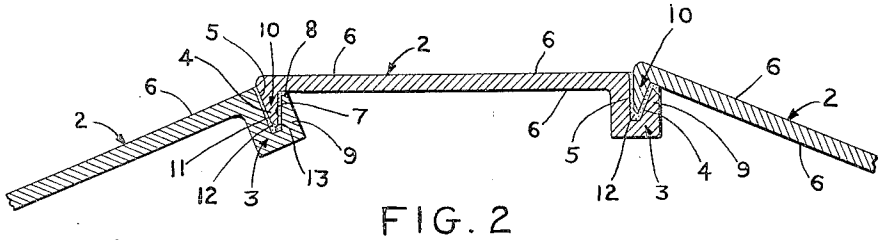


FIG. 2

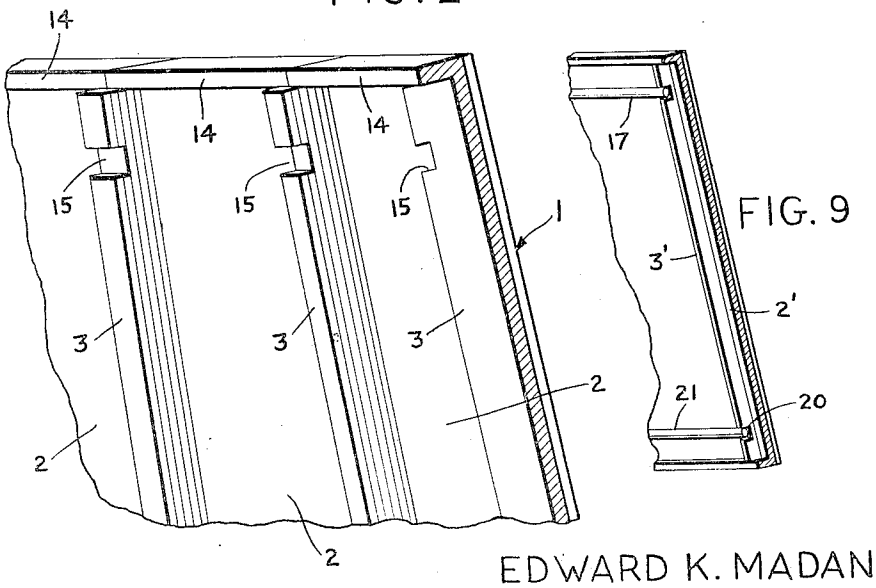


FIG. 3

FIG. 9

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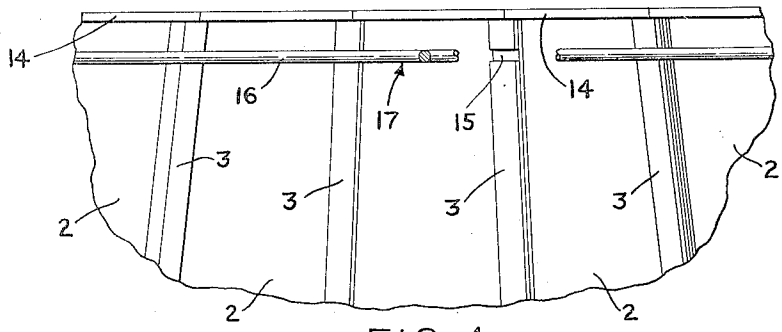


FIG. 4

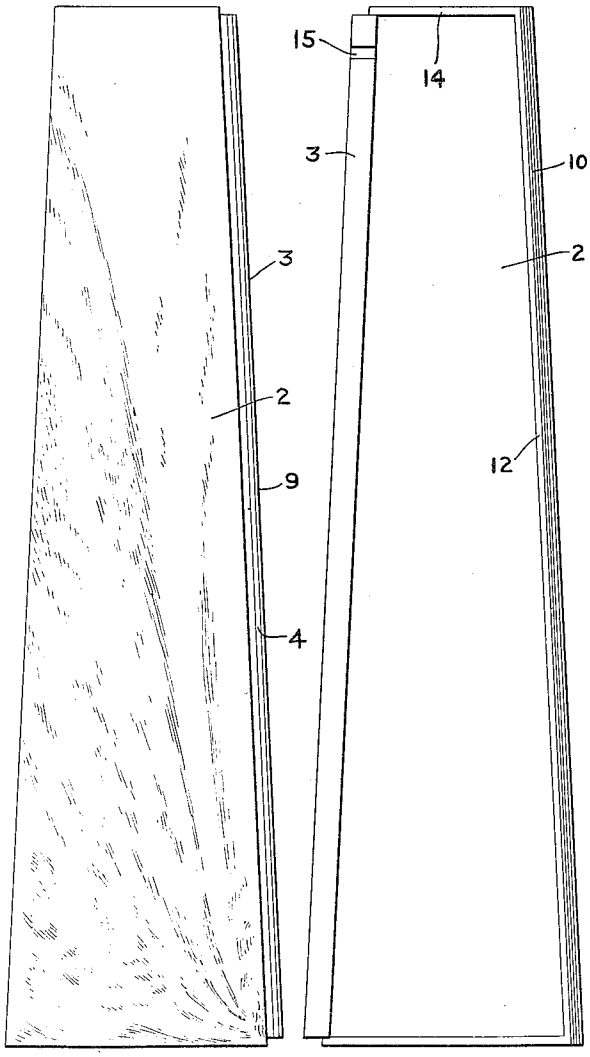


FIG. 5

FIG. 6

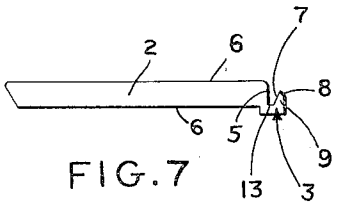


FIG. 7

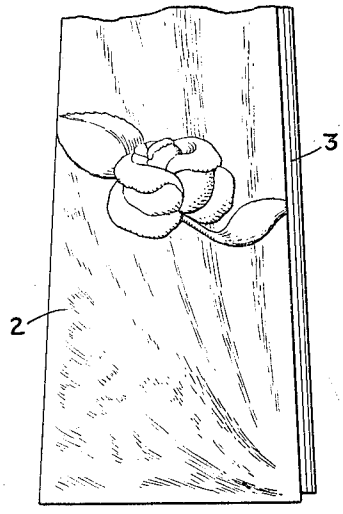


FIG. 8

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LAMP SHADE AND METHOD OF MAKING THE SAME

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Application August 14, 1947, Serial No. 768,592

8 Claims. (Cl. 240—108)

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This invention relates to lamp shades and, more particularly, to lamp shades composed of a plurality of inter-locked permanently connected sections made of a thermoplastic such as that commercially known as "polystyrene," or of any other suitable known plastic.

An object of the present invention is to provide an attractive appearing lamp shade which is rigid throughout its entire construction, is translucent, and can be made in any color or combination of colors and which due to the nature of the thermoplastic of which it is constructed, will present a true, beautiful color effect when the lamp is lighted or unlighted.

Another object of the present invention is the provision of a plastic lamp shade which is made up or assembled of a plurality of panels of the same shape and size, thereby permitting stock manufacture of the panels and assembly into lamp shades of different sizes, within the predetermined limits of size. The panels have novel engaging edge sections so constructed and arranged that the sections may be quickly and easily assembled and which will insure the proper assembled relationship between the sections without requiring extreme care in their assembly or connection one to the other.

A further object of the invention is to provide simple, novel means for attaching and holding the lamp base engaging metal frame to the lamp shade.

Another object of the present invention is to provide a lamp shade of plastic panels whereby all of the panels may be of the same or one color, or various combinations of different colored panels may be assembled to form the shade, or certain of or all of the panels may incorporate luminous material so that the shade or parts thereof will glow and be visible at night when the lamp is out.

The method of manufacture of the shade embraces, besides the manufacture of identical stock panels and the novel manner of assembling the panels into shade formation, the novel step of injecting the plastic material into a hot pressure mold, in which the panels are molded, so as to form an attractive pattern in each panel, with the patterns of all of the panels conforming in general appearance and being of a similar general pattern which will combine in the assembled shade to provide an artistic and attractive appearance.

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With these and other objects in view, as may appear from the accompanying specification, the invention consists of various features of construction and combination of parts, which will be first described in connection with the accompanying drawings, showing a lamp shade and method of making the same of a preferred form embodying the invention, and the features forming the invention will be specifically pointed out in the claims.

In the drawings—

Figure 1 is a side elevation of a lamp shade of the present invention.

Figure 2 is an enlarged cross section on the line 2—2 of Figure 1.

Figure 3 is an enlarged longitudinal section on the line 3—3 of Figure 1.

Figure 4 is an enlarged fragmentary view of the interior of the shade.

Figure 5 is a front elevation of one of the panels of which the shade is assembled.

Figure 6 is a rear elevation of one of the panels.

Figure 7 is an end view of one of the panels.

Figure 8 is a fragmentary view of one of the panels showing one manner of decoration thereof to provide an attractive appearing shade.

Figure 9 is a fragmentary vertical section through a modified form of the lamp shade.

Referring more particularly to the drawings, the lamp shade 1 is made up of a plurality of connected panels 2. In manufacturing the lamp shade the various panels 2 are made independently, and as all of them are identical in size and shape a large number of panels may be made at one period and, subsequently, assembled into shades of different sizes, within predetermined limitations of size. This will enable the running or making of a large number of white panels at one time, a large number of pink panels, blue panels or panels of any other color which may be assembled subsequently into shades of all one color, or into shades made up or assembled from a plurality of panels of different colors thus reducing the cost of manufacture of the lamp shades.

As is shown in Figure 5 of the drawings, the side edges of the panel taper towards each other from the bottom of the panel towards the top

so that when they are connected one with another a flaring shade will be provided.

While the panels shown in the drawings are of a specific definite shape, it is to be understood that any practical shape may be manufactured without departing from the spirit of the invention.

Each of the panels has a receiving rib 3 formed longitudinally along one of its edges and extending inwardly from the inner face of the panel, as is clearly shown in Figure 2 of the drawings. The receiving rib 3 has a longitudinally extending groove 4 molded or formed therein, the inner side wall 5 of which is perpendicular to the plane of the flat faces 6 of the panel, while the outer face or wall 7 of the groove is cut at an acute angle to a plane perpendicular to the face 6 of the panel 2. The edge portion 8 of the portion 9 of the receiving rib outwardly of the groove 4 is cut at an obtuse angle to the outer angular face 7 of the groove and at an acute angle to a plane perpendicular to the face 6 of the panel 2.

The panel 2 has an inserting rib 10 formed along its edge opposite to the edge along which the receiving rib 3 extends, and while this inserting rib 10 projects at right angles to the plane of the panel 2 it has its outer face 11 cut at an acute angle to a plane perpendicular to the face 6 of the panel while its outer edge 12 is cut at an obtuse angle to the plane of the outer face 11 of the inserting rib and at an acute angle to a plane perpendicular to the face 6 of the panel 2. The inner edge 13 of the groove 4 is cut substantially parallel to the face 6 of the panel 2. By shaping the groove 4 in the receiving rib 3 and by shaping the inserting rib 10 in the manner just described, two adjacent panels will automatically be forced into their proper angular position relative to each other when the inserting rib 10 of one is inserted into the groove 4 of the receiving rib 3 of the adjacent panel, during the assembly of the shade and thus extreme care in the accurate placing of one panel relative to another will be eliminated, resulting in a reduction in the time and cost of assembly of the panels into a shade.

A plastic cement of any suitable type is placed in the grooves 4 of the panels prior to the insertion of the inserting ribs thereinto so that when the panels are connected and this cement sets the panels will be rigidly and permanently connected in shade formation.

The longitudinal relation of one panel to another in assembling the panels is determined by the engagement of the upper end of the receiving rib 3 with the inner edge of a lateral rib 14 which extends across the top of each of the panels 2 and extends inwardly at right angles to the panel as clearly shown in Figures 3 and 4 of the drawings. As shown in Figure 4 of the drawings, the receiving rib 3 of each panel is shorter than the length of the panel by the thickness of the lateral rib 14 so that when the two panels are connected by placing the inserting rib 10 of one in the groove 4 of the receiving rib 3 of the adjacent panel and are moved longitudinally, the upper end of the receiving rib 3 will, upon coming in contact with the lateral rib 14, limit such endwise movement and cause the panels to assume their proper longitudinal relationship one to the other.

The receiving ribs 3 of each of the panels 2 have a transverse groove 15 cut or molded therein a predetermined distance downwardly from the upper end of the panel, and when all of the panels are assembled in shade formation all of these transverse grooves 15 align or lie in the same plane. The transverse grooves 15 are provided for receiving therein the wire or annular rim 16 of the metal frame 17 by means of which the lamp shade is connected to and supported from a lamp base (not shown). Thus, the metal connecting frame 17 may be quickly, easily, and accurately positioned in the shade with a minimum amount of labor and the resiliency inherent in these metal frames, which are ordinarily made of wire is sufficient to rigidly hold the frame 17 in position with its rim 16 engaging the transverse grooves 15.

As is clearly shown in Figure 5 of the drawings, the panels have an artistic pattern and this pattern is formed by novel steps in the method of manufacture of the panels.

The panels are formed, as is usual in the molding of plastic articles, in dies by hot press plastic molding machines (not shown) which are well known on the market, and in forming the panels of the present invention granular thermoplastic material such as polystyrene, of which the panels are made, is made up of a mixture of granules of a color of the basic color desired such as pink, blue, yellow, green, or the like, white and clear granules. If the panel is to be white, then only white and clear granules are mixed. This mixture of either the basic color, white and clear granules, or of the basic color and clear granules is flowed into the mold from the upper end thereof towards the lower end. The pattern shown in Figure 5 of the drawings, which is a spray wave-like pattern, is formed by flowing the mixed granules into the mold from the top end of the mold in a slightly diagonal manner providing the spray wave-like pattern which terminates in a whorl pattern at the bottom of the panel. If the diagonal wave-like pattern is not desired and a whorl pattern alone is desired, this can be provided by a straighter directional flow of mixed plastic material into the mold. By mixing the various color and clear granules in the mixture, the pattern provided in the panel will be composed of segments or configurations of the deep basic color, white, and clear, and some segments of the pattern will be of a paler shade of the basic color provided by the mixture of the white and basic color granules and their union during the melting and molding section of the press.

The method of molding the panels will permit molding embossed designs on the panels rather than a plain polished surface, if desired; or the panels may be molded with a pattern of openings left therein, if desired.

A further manner of decorating the panels is shown in Figures 1 and 8 of the drawings. These views show an artistic design, printed, painted or otherwise put on the panels, in such manner that when the panels are assembled in a complete shade, the designs on the individual panels cooperate to form the complete design on the shade. It is to be understood that any suitable artistic design may in this manner be put upon the panels in any of many well known manners of surface decoration.

Also, in the mixing of the thermoplastic granules, luminous material may be mixed with the granules so that when the panels are formed this luminous material will be incorporated in the panel structure providing a panel which will absorb light when light is available and give off a glow in darkness so that a lamp shade may have panels incorporating luminous material or

embodying some panels which incorporate the luminous material and will be visible at night or in the dark.

As previously stated, a lamp shade may be made up of panels of all of one color, of panels of different contrasting colors, of panels all of which embody the luminous material, or of panels of which only a predetermined number embody luminous material.

It may be necessary or desirable, in making relatively large lamp shades in accordance with the present invention, to provide reenforcement for strengthening or increasing the rigidity of this lamp shade. Figure 9 of the drawings shows a modified form of the invention wherein the panels 2' have grooves 20 cut in the receiving ribs 3' near the lower ends of the panels. A circular reenforcing wire 21 is snapped into the grooves 20 and extends completely around the assembled shade for reinforcing it.

If it is so desired, the grooves 20 and the reenforcing ring 21 may be located at any place along the lengths of the panel 2' and one or more of these rings may be employed depending upon the size of the shade.

It will be understood that the invention is not to be limited to the specific construction or arrangement of parts shown, but that they may be widely modified within the invention defined by the claims.

What is claimed is:

1. In a lamp shade, a shade body made up of an assembly of a plurality of panels of plastic, each of said panels comprising a flat body having a receiving rib extending along one edge thereof and an inserting rib extending along its opposite edge, said receiving rib having a longitudinal groove therein for receiving the inserting rib of an adjacent panel in the shade assembly, and plastic cement in said groove for permanently connecting the receiving rib and inserting rib of adjacent sections.

2. In a lamp shade, a shade body made up of an assembly of a plurality of panels of plastic, each of said panels comprising a flat body having a receiving rib extending along one edge thereof and an inserting rib extending along its opposite edge, said receiving rib having a longitudinal groove therein for receiving the inserting rib of an adjacent panel in the shade assembly, plastic cement in said groove for permanently connecting the receiving rib and inserting of adjacent sections, and a lateral rib extending across the top edge of each panel, said receiving rib having its outer portion at its top cut away so as to permit the top end of the receiving rib of one panel to engage against the lateral rib of an adjacent panel for regulating the longitudinal relative positions of adjacent panels during assembly of the shade.

3. In a lamp shade, a shade body made up of an assembly of a plurality of panels of plastic, each of said panels comprising a flat body having a receiving rib extending along one edge thereof and an inserting rib extending along its opposite edge, said receiving rib having a longitudinal groove therein for receiving the inserting rib of an adjacent panel in the shade assembly, said inserting rib having its outer face cut at an acute angle to a plane perpendicular to the face of the panel body and the outer edge of the inserting rib being cut at an acute angle to the plane of the outer face of the inserting rib and at an obtuse angle to a plane perpendicular to the face of the flat body of the panel, the groove in said receiving rib having its outer face cut at an acute angle to a plane perpendicular to the face of the flat body of the panel and its inner face perpendicular to the plane of the face of the panel body, the edge portion of the portion of the receiving rib outwardly of the groove being cut at an obtuse angle to the angular outer face of the groove and at an acute angle to a plane perpendicular to the face of the panel body whereby when two adjacent panels are connected by their receiving and inserting ribs the said panels will assume the proper angular relation one to the other in the shade asembly, and means permanently connecting the panels.

4. In a lamp shade, a shade body made up of an assembly of a plurality of panels of plastic, each of said panels comprising a flat body having a receiving rib extending along one edge thereof and an inserting rib extending along its opposite edge, said receiving rib having a longitudinal groove therein for receiving the inserting rib of an adjacent panel in the shade assembly, said inserting rib having its outer face cut at an acute angle to a plane perpendicular to the face of the panel body and the outer edge of the inserting rib being cut at an acute angle to the plane of the outer face of the inserting rib and at an acute angle to a plane perpendicular to the face of the flat body of the panel, the groove in said receiving rib having its outer face cut at an acute angle to a plane perpendicular to the face of the flat body of the panel and its inner face perpendicular to the plane of the face of the panel body, the edge portion of the portion of the receiving rib outwardly of the groove being cut at an obtuse angle to the angular outer face of the groove and at an acute angle to a plane perpendicular to the face of the panel body whereby when two adjacent panels are connected by their receiving and inserting ribs the said panels will assume the proper angular relation one to the other in the shade assembly, and means permanently connecting the panels, the lateral rib extending across the top edge of each panel, said receiving rib having its outer portion at its top cut away so as to permit the top end of the receiving rib of one panel to engage against the lateral rib of an adjacent panel for regulating the relative longitudinal positions of adjacent panels during assembly of a shade.

5. A lamp shade as claimed in claim 1 wherein the receiving ribs of all of the panels have transverse grooves formed therein near their upper ends all of which transverse grooves align in an assembled shade, and a lamp base engaging frame including an annular rim, said annular rim engaging in said transverse grooves.

6. A lamp shade as claimed in claim 2 wherein the receiving ribs of all of the panels have transverse grooves formed therein near their upper ends all of which transverse grooves align in an assembled shade, and a lamp base engaging frame including an annular rim, said annular rim engaging in said transverse grooves.

7. A lamp shade as claimed in claim 3 wherein the receiving ribs of all of the panels have transverse grooves formed therein near their upper ends all of which transverse grooves align in an assembled shade, and a lamp base engaging frame including an annular rim, said annular rim engaging in said transverse grooves.

8. A lamp shade as claimed in claim 4 wherein the receiving ribs of all of the panels have transverse grooves formed therein near their upper ends all of which transverse grooves align in an assembled shade, and a lamp base engaging frame including an annular rim, said annular rim engaging in said transverse grooves.

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