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D. J. ROSS

2,269,128

LAMP SHADE

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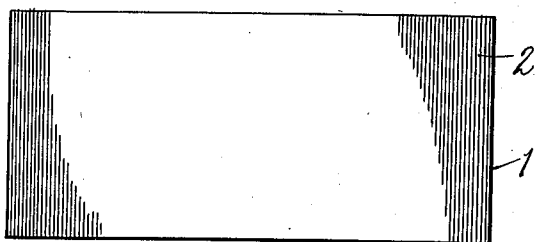


Fig. 1

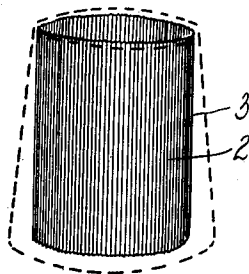


Fig. 2

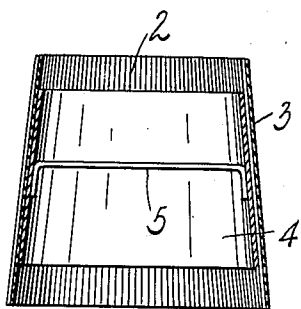


Fig. 3

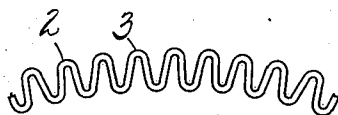


Fig. 4

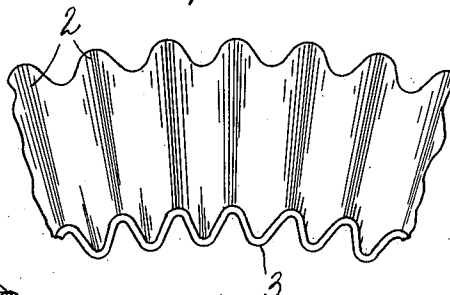


Fig. 5

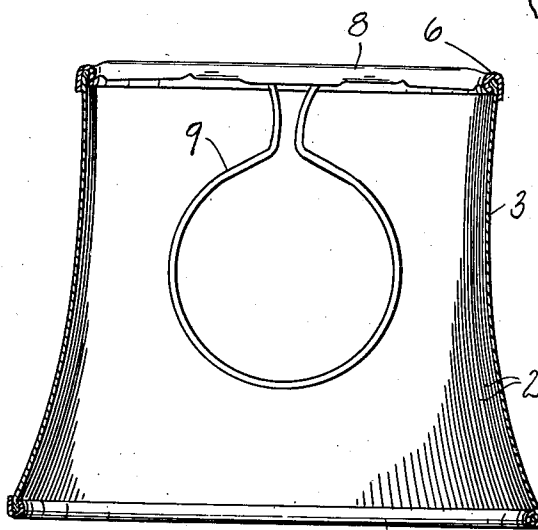


Fig. 6

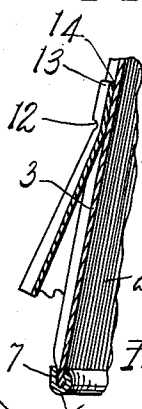


Fig. 7

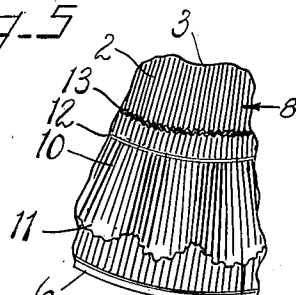


Fig. 8

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LAMP SHADE

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5 Claims. (Cl. 240—108)

This invention relates to improvements in lamp shades.

This invention relates to lamp shades and the method of producing them. It has for its objects:

First, the production of a new and improved lamp shade.

Second, the production of such a lamp shade in which sheet cellulose acetate or the like is employed.

Third, to produce such a lamp shade in which the cellulose acetate or the like is pleated.

Fourth, to produce such a lamp shade in which the cellulose acetate forming the walls of the shade is bowed inwardly to give a graceful and beautiful appearance to the shade.

Fifth, to produce such a shade in which it is not necessary to employ stays or connecting wires between the top and bottom rings in order to hold the rings together or to give the desired form to the walls of the shade.

Sixth, to produce such a lamp shade which may be made simply and economically.

Seventh, to produce such a lamp shade having a decorative skirt which may be easily applied to the shade and retained in position.

Eighth, to produce a new and improved method of producing lamp shades of pleated sheet cellulose acetate.

Ninth, to produce such a method which gives to the lamp shade a pleasing and graceful shape.

Tenth, to produce such a method in which the walls of the lamp shade are bowed inwardly on graceful lines.

Eleventh, to provide such a method which may be carried out economically and simply.

Twelfth, to produce a new and improved method of applying a decorative skirt to a lamp shade made of cellulose acetate or the like.

Further objects and advantages pertaining to details and economies of construction and operation will appear from the description to follow. Preferred embodiments of my invention appear in the accompanying drawing, in which:

Fig. 1 is a plan view of a sheet of cellulose acetate used in practicing my invention.

Fig. 2 is a perspective view of a tube formed of pleated sheet cellulose acetate or the like used in practicing my invention.

Fig. 3 is a detail sectional view through a lamp shade in the process of construction in accordance with my invention, showing the form used to expand the tube shown in Fig. 2.

Fig. 4 is a detail view showing a portion of the

wall of a tube employed in carrying out my invention.

Fig. 5 is a detail view of the same portion of the material shown in Fig. 4 expanded and held in position to receive the rings at the top and the bottom to produce the finished lamp shade.

Fig. 6 is a detail sectional view through a finished lamp shade made in accordance with my invention.

Fig. 7 is a view showing a skirt applied to a lamp shade such as is shown in Fig. 6.

Fig. 8 is a detail view taken on line 8—8 of Fig. 7 showing the manner of application of the skirt.

In carrying out my invention, I make use of a strip 1 of sheet cellulose acetate or the like having pleats 2 extending transversely of said strip. The strip 1 is formed into a tube 3 as indicated in Fig. 2. The edges are cemented or otherwise fastened together.

The pleated sheet cellulose acetate is a resilient material in that if it is stretched out by expanding the pleats, a tension is set up tending to close up the pleats.

In the tube 3, I insert a frusto-conical sheet metal form 4 which has a cross bar 5 therein to facilitate handling. The altitude of the frusto-conical form 4 is less than the length of the tube 3 and I position the form so as to leave the edges of the material forming the ends of the tube easy of access. The form 4 is of such diameter that it expands the pleats 2 at both ends of the tube 3.

In Fig. 4, I show a cross sectional view of the pleats in the tube 3 prior to the insertion of the form. In Fig. 5, I show the pleats after the insertion of the form. It should be noted that the pleats at both the top and bottom are expanded somewhat.

While the pleats are held in expanded position by the form 4, I fasten to the edges of the material at the ends of the tube rings 6 which are made of sheet metal and are provided with grooves 7 into which the edges of the material of the tube are inserted. After this step the rings are clamped as shown in Fig. 6 to hold the material in expanded form. The upper ring 6 may be provided with a cross bar 8 to which is fastened a wire lamp bulb clamping device shown at 9.

After the rings 6 have been clamped in place, the form 4 is removed. The side walls of the lamp shade assume the graceful inwardly bowed curve shown in Fig. 6.

I believe that this form is assumed because

of internal tension in the material. The pleats at the ends of the tube 3 are expanded and the rings 6 hold them thus expanded. The expansion of the material tends to create a tension tending to close up the pleats 2 and this tension causes the side walls of the shade to assume this form and in the finished shade the material is under tension.

I have found that the degree of bow in the walls of the shade may be determined either by the number of pleats or by the thickness of the material. If there are a small number of pleats, there is a greater tension in the shade so that the walls bow inwardly to a greater extent than in a shade with more pleats. If the material is very thin, there is a greater tendency to bow, since thicker material is stiffer and resists the tension tending to shape the shade. I have found that for small shades of four inches in height, very satisfactory results can be obtained using cellulose acetate or the like three-thousandths of an inch thick. For taller shades, it would be possible to use slightly thicker material.

I have found that in the above mentioned shades very desirable results are obtained when the material is so pleated that its length is reduced to one-third that of the unpleated material. I prefer to use material in which there are sixteen pleats to the inch in such shades, although, of course, there can be variations of these factors.

A highly decorative skirt may be applied to the lamp shade above described. I have found that such a skirt can be produced by running one edge of a strip 10 of pleated cellulose acetate or the like having transverse pleats over a heated roller which expands the pleats at said edge and fixes them in expanded form to elongate the edge and give a ruffled effect as indicated at 11 in Fig. 7.

The application of the skirt is greatly simplified if the strip is scored longitudinally as indicated at 12 between its edges. The elongation above referred to sets up a tension in the strip 10 which tends to distort the untreated edge 13 and the scoring at 12 breaks the strip sufficiently so that the tension created by treating the edge of the strip to ruffle it does not distort the edge 13 of the strip. This edge will lie flat when a ring formed of the strip 10 is applied to the lamp shade with the pleats of the edge 13 in register with the pleats of the shade. When the skirt has been arranged at the desired position, it may be cemented as at 14, either by using a suitable cement or a suitable solvent for the cellulose acetate or the like which will soften it and permit adhesion.

It will be apparent that my shade can be made easily and simply and that the shade has a desirable graceful form which is acquired without use of any stays or wires to interfere with illumination or mar the beauty of the shade when it is in use.

The terms and expressions which have been employed here are used as terms of description

and not as terms of limitation. There is no intention in the use of such terms and expressions of excluding any equivalents of the features shown and described or portions thereof. It is recognized that various modifications are possible within the scope of the invention claimed.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

10 1. A lamp shade comprising a pair of grooved rings connected by and clamping the edges of pleated sheet cellulose acetate having its pleats extending between said rings, the pleats in the material at the rings being expanded beyond the normal position and size they would assume if
15 unrestricted to put the material under tension tending to close up the pleats and the material between the rings being bowed inwardly by tension in the pleated material tending to close up the pleats.

20 2. A lamp shade comprising a pair of rings connected by and holding the edges of pleated sheet cellulose acetate having its pleats extending between said rings, the pleats in the material at the rings being expanded beyond the normal position and size they would assume if unrestricted to put the material under tension tending to close up the pleats and the material between the rings being bowed inwardly by tension in the
25 pleated material tending to close up the pleats.

30 3. A lamp shade comprising a pair of grooved rings connected by and clamping the edges of pleated sheet cellulose acetate having its pleats extending between said rings, the pleats in the material at one of the rings being expanded beyond the normal position and size they would assume if unrestricted to put the material under tension tending to close up the pleats and the material between the rings being bowed inwardly by tension in the pleated material tending to close up the pleats.

40 4. A lamp shade comprising a pair of rings connected by and holding the edges of pleated sheet cellulose acetate having its pleats extending between said rings, the pleats in the material at one of the rings being expanded beyond the normal position and size they would assume if unrestricted to put the material under tension tending to close up the pleats and the material between the rings being bowed inwardly by tension in the pleated material tending to close up the pleats.

50 5. A lamp shade comprising a body portion of pleated cellulose acetate, and a skirt thereon comprising a strip of said cellulose acetate or the like having transverse pleats, the pleats at one edge of said strip being in register with the pleats of the body of the lamp shade and at the other edge fixed in relatively expanded position whereby a ruffled effect is produced, and a line of scoring extending between and parallel to said edges of said strip and breaking the pleats.

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