

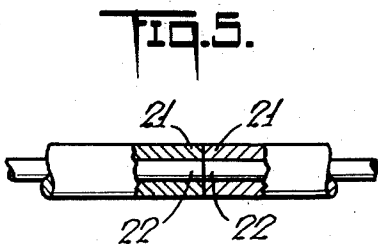
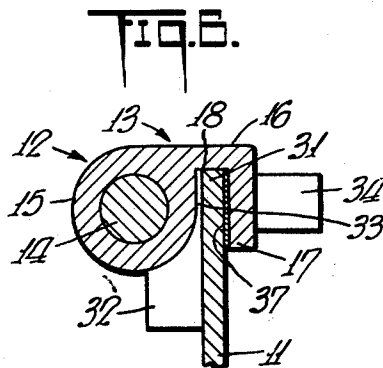
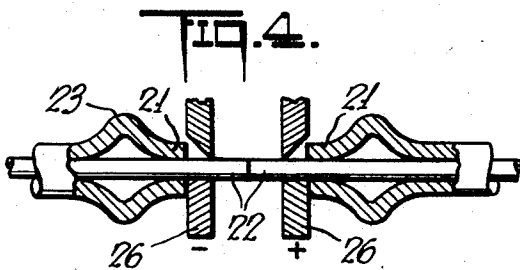
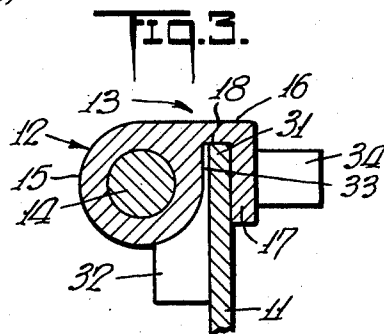
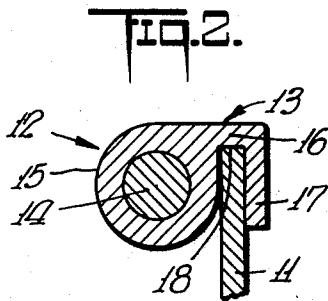
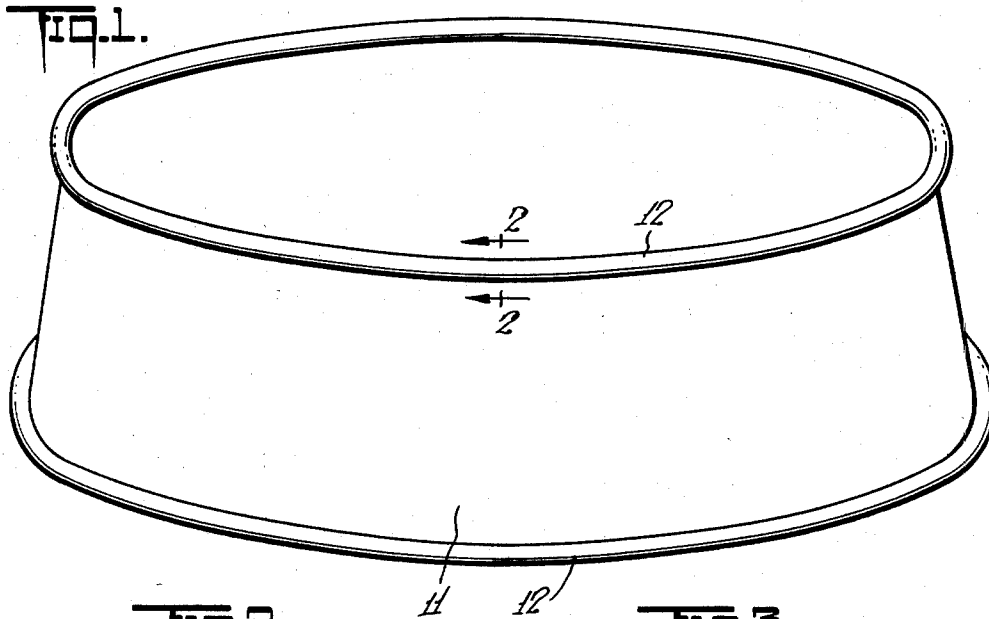
May 17, 1960

A. SCHNEIDER ET AL

2,936,518

METHOD OF FORMING A LAMP SHADE

Filed Oct. 22, 1956



INVENTORS
Abe Schneider
Harold Paitchell
BY
Dean Fairbank & Hirsch
ATTORNEYS

1

2,936,518

METHOD OF FORMING A LAMP SHADE

Abe Schneider, Clifton, N.J., and Harold Paltchell, Brooklyn, N.Y., assignors to Lightolier, Incorporated, New York, N.Y., a corporation of New York

Application October 22, 1956, Serial No. 617,472

1 Claim. (Cl. 29—400)

As conducive to an understanding of the invention, it is noted that where the wire frame, at the top and bottom edges of a lamp shade assembly and the shade portion of the assembly are secured together solely by means of a tape having a glue backing, the temperature changes to which the shade assembly is subjected may cause the tape to peel away from the edge of the shade portion to which it is secured with resultant weakening of the assembly and disfiguration thereof. Furthermore, as the shade portion of the assembly may be of a smooth non-porous material such as a plastic, the glued tape will not securely bond thereto with the difficulties above pointed out.

Where the shade assemblies are of relatively small diameter with a radius of curvature such that the tape cannot be applied without excessive wrinkling, the resultant article is unattractive in appearance.

As the tape straddles the edges of the shade portion, where the innermost portion of the tape extends beyond the outermost portion, the light passing through the shade will cause such innermost portion to cast a shadow which detracts from the decorative effect of the shade portion, especially where it is covered with a pattern or design.

Where, to strengthen the shade assembly, the frame is temporarily secured to the edges of the shade portion as by suitable clips and glue is applied to bond the frame and the shade portion together prior to the application of the tape, in addition to the difficulties incurred with the use of the tape as previously described, the glue may drip onto the body of the shade with resultant disfiguration thereof.

Where the above assembly operations are performed manually, in addition to being time consuming and adding greatly to the cost of the finished product, they require the services of a skilled worker who must exercise a high degree of dexterity and even with a skilled worker, many of the shades will not meet high standards and must be rejected also adding to the cost.

It is accordingly among the objects of the invention to provide a relatively simple method for forming lamp shade assemblies which is applicable to all the shade materials to which a tape binding could be applied and which may readily and expeditiously be performed by a worker with a minimum of training and without the exercise of a high degree of dexterity and which dispenses with the need for tapes and glueing to retain the frame and shade portion together, thereby avoiding the possibility of disfiguration of the shade assembly by reason of shadows cast by the tape, loosening or peeling of the tape or dripping of glue onto the body of the shade, to substantially eliminate rejects and reduce the cost of the finished product.

According to the invention, the lamp shade assembly comprises a shade portion which may be of any suitable shape, but generally is circular and a frame which is secured to the top and bottom edges of the shade portion. The frame is formed to the desired configuration from a strip of tough, non-tacky thermo-plastic material

2

which has a channel defined between a continuous lip and the body of the strip, the edge of the shade being positioned in said channel and secured therein.

In the accompanying drawings in which are shown one or more of various possible embodiments of the several features of the invention,

Fig. 1, is a perspective view of the lamp shade assembly,

Fig. 2 is a sectional view taken along line 2—2 of Fig. 1,

Fig. 3 is a sectional detail view showing the electrodes positioned to effect the bonding of the frame and the shade portion,

Fig. 4 is a sectional view illustrating the joining of the ends of the frame,

Fig. 5 is a sectional view of the ends of the frame, and

Fig. 6 is a view similar to Fig. 3 of another embodiment of the invention.

Referring now to the drawings, as shown in Fig. 1, the lamp shade assembly desirably comprises a shade portion 11 of relatively stiff sheet material and frames 12 for the top and bottom edges of the shade portion.

According to the invention, the frame 12 is formed from a strip 13 which desirably comprises a metal wire 14 which has an extruded plastic coating thereon desirably of thermo-plastic material such as a copolymer of vinyl chloride and vinyl acetate, which may contain suitable dyes or pigments for desired color effect. The strip 13 has an enlarged tubular plastic portion 15 preferably substantially circular in cross section to accommodate the wire 14 and has a lateral flange 16 formed integral therewith with a lip 17 at its outer edge, the enlarged portion 15 and the lip 17 lying in uniformly spaced relation to define a channel 18 therebetween.

To form the frame 12 from the strip 13, the latter is bent into a loop in suitable manner such as by being helically coiled to substantially the desired diameter of the frame so that the convolutions may be severed to form open loops. The ends 21 of the coating are then pushed back from the ends 22 of the wire as shown in Fig. 4 forming bulge 23 and such ends are abutted and welded together as by electrodes 26. The pushed back ends are then pulled toward each other to eliminate the bulges 23 and to recover the wire as shown in Fig. 5.

To join the shade portion 11 and the frame 12, an edge 31 of the shade is inserted into channel 18 of frame 12 as shown in Fig. 3 and an electrode 32 having a relatively thin fin 33 is positioned between enlarged portion 15 and the edge 31 and a second electrode 34 is positioned against lip 17 to compress the lip and the shade edge therebetween, the electrodes desirably being curved to conform to the curvature of the frame.

Thus, when radio frequency currents are passed through electrodes 32, 34 which act as the plates of a capacitor, the edge 31 of the shade and the lip 17 therebetween which act as a dielectric, will heat up. Where the shade is of plastic material, the plastic lip and shade edge softened by the heating thereof will fuse together. Where the shade is not of plastic but is porous, the softened plastic lip will embed in the pores of the shade material to form a strong bond.

Where the shade is of smooth, non-porous, non-plastic material, as in the embodiment of Fig. 6, the surface of the edge thereof adjacent lip 17 is desirably coated with a suitable thermo-plastic 37 prior to insertion into the channel 18 so that such coating 37 and the lip 17 will bond together upon heating.

Inasmuch as no pressure or heat is applied to the outer surface of the frame 12, it will not be deformed by the dielectric heating action above described. Furthermore, as the width of lip 17, which illustratively is on the interior of the assembly, is no greater in height

3

than the diameter of enlarged portion 15 of the frame, such lip will not cast shadows on the shade portion which are visible from the exterior.

As the fabrication of the shade assembly requires only a few relatively simple operations, it is apparent that workers may rapidly be trained and require a minimum of skill, yet will turn out high quality products with a minimum of rejects.

The shade assembly above described is strong, rigid and form retaining even against impact such as might occur if it was accidentally dropped. By reason of the tough thermoplastic coating of the frames, scuffing thereof is avoided which in the case of the usual paper tape might tear such tape with resultant disfiguration of the shade assembly. As the bond of the frame to the shade portion is at least as strong, if not stronger, than the usual shade material, and as considerable heat, far in excess of that radiated by the conventional light bulb used with the shade assembly, is required to soften the thermo-plastic material, the assembly is not likely to come apart and hence has long life. As the plastic coating of the frame may be of any desired color, the shade assembly will fit any decorative scheme.

As many changes could be made in the above method and articles, and many apparently widely different embodiments of this invention could be made without departing from the scope of the claim, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent of the United States is:

4

The method of forming a lamp shade of the type including a shade portion formed of a sheet of relatively stiff material and a loop frame, which comprises forming on a length of wire a coating of thermo-plastic resin including a portion encompassing such wire and a lip laterally offset from such portion defining a channel with respect thereto, forming a loop from such coated wire, pushing back the plastic coating adjacent the ends of the wire, abutting such ends and welding them together and pulling the pushed back portions of the plastic coating to recover the wire adjacent its connected ends, inserting the edge of such shade portion into the channel and applying pressure and heat against one of the channel walls and to the edge of the shade portion in the channel to bond the shade portion and the channel wall together.

References Cited in the file of this patent

UNITED STATES PATENTS

20	2,457,498	Russell et al. -----	Dec. 28, 1948
	2,478,132	Schade -----	Aug. 2, 1949
	2,585,176	Scherer -----	Feb. 12, 1952
	2,593,272	Cohon -----	Apr. 15, 1952
25	2,677,756	Priester -----	May 4, 1954
	2,765,400	Scherer -----	Oct. 2, 1956

FOREIGN PATENTS

	294,722	Great Britain -----	Aug. 2, 1928
30	568,406	Great Britain -----	Apr. 3, 1945
	727,355	Great Britain -----	Mar. 30, 1955