May 9, 1944. J. GREENBERG 2,348,469

MANUFACTURE OF LAMP SHADES

Filed March 11, 1941 2 Sheets-Sheet 1

Fig. 7.

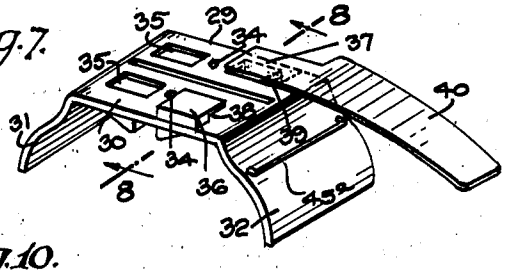
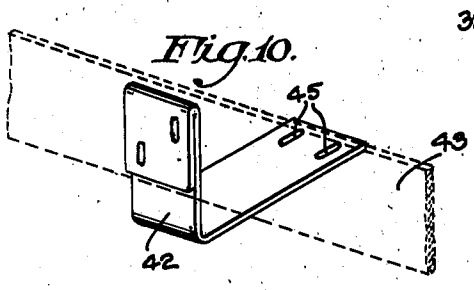


Fig. 10.



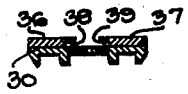


Fig. 8.

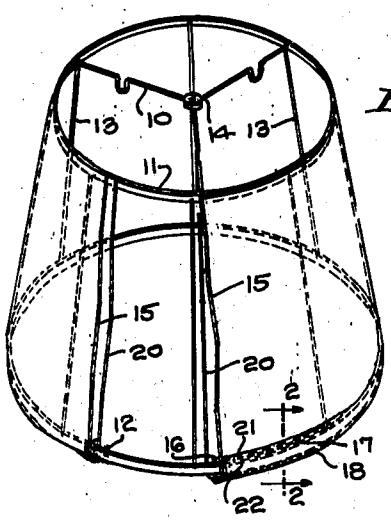


Fig. 1.

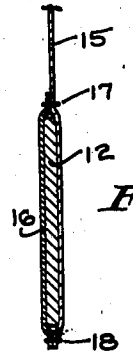


Fig. 2.

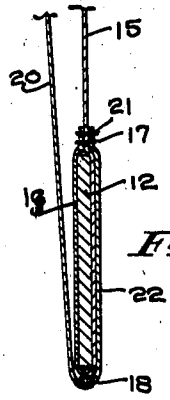


Fig. 3.

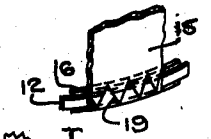


Fig. 4.

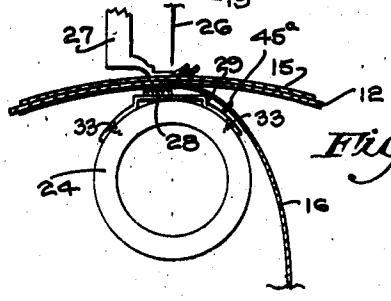


Fig. 9.

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MANUFACTURE OF LAMP SHADES

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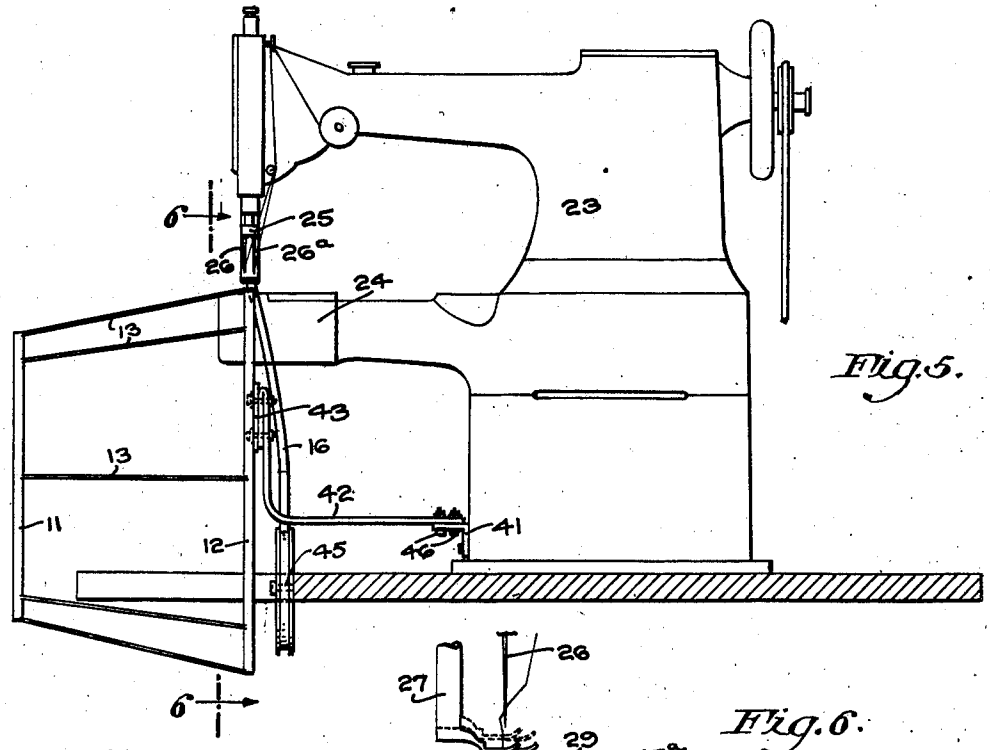


Fig. 5.

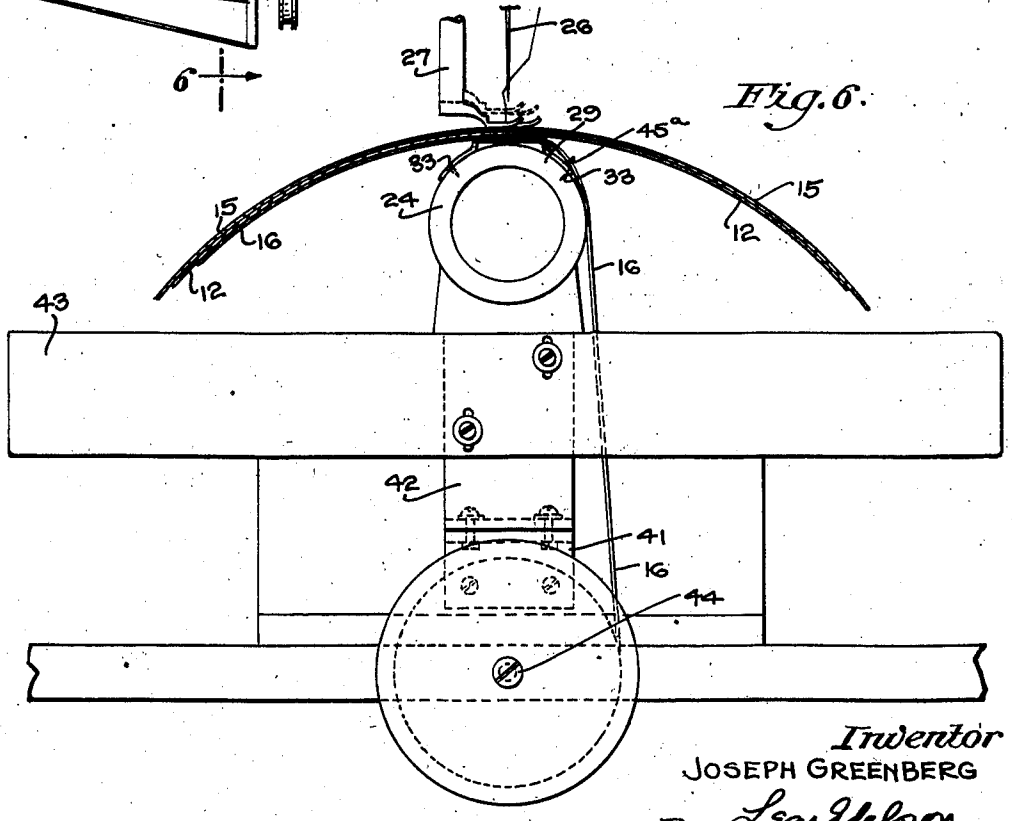


Fig. 6.

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Patented May 9, 1944 2,348,469

UNITED STATES PATENT OFFICE

2,348,469

MANUFACTURE OF LAMP SHADES

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Application March 11, 1941, Serial No. 382,739

6 Claims. (Cl. 240—108)

This invention relates generally to the manufacture of lamp shades and more particularly to improvements in the construction and method of making the same as well as to an improved construction of sewing machine for facilitating the operation of sewing the lamp shade coverings, both outside and inside, to the shade frame.

Heretofore and prior to this invention, the more or less conventional practice employed in the art of making cloth covered lamp shades has been to hand-sew the outer covering and the inside lining thereof to strips of tape or other such binding material spirally wound or wrapped by hand about the upper and lower circular bands of the lamp frame. Not only is this conventionally employed method expensive and laborious, but also the results obtained have not been entirely satisfactory from the standpoint of finished appearance of the shade, the lower edge thereof being usually "lumpy" and therefore unsightly in appearance.

The present invention has as its objective to provide a sewing machine attachment the use of which facilitates the securement of the lamp shade coverings to the frame and which eliminates the time-consuming operation of first wrapping the lower band of the frame with the tape to which the coverings are secured and then sewing by hand the coverings to said tape.

A further object is to provide a lamp shade construction in which the outside covering as well as the lining thereof are machine sewed to the bottom circular band of the shade frame, the arrangement being such as to produce lamp shade structure having a uniformly smooth bottom edge of neat and attractive appearance.

A still further object is to provide a construction of lamp shade in which the outer covering, as well as the lining thereof, may be securely applied by machine inexpensively, rapidly and uniformly and without requiring the services of specially skilled operators.

Other objects and advantages of the present invention will appear more fully hereinafter, it being understood that it consists substantially in the combination, construction, location and relative arrangement of parts, all as will be described in detail hereinafter, as shown in the accompanying drawings and as finally pointed out in the appended claims.

In the accompanying drawings:

Figure 1 is a perspective view of a lamp shade frame showing the same partially covered in accordance with the principles of the present invention;

Figure 2 is a vertical sectional view taken on the line 2—2 of Figure 1 showing only the outer covering secured to the lower band of the shade frame;

Figure 3 is a vertical sectional view similar to Figure 2 but showing in addition thereto the lining secured to the lower band of the shade frame;

Figure 4 is a view showing a modified form of stitching for securing the outer covering in place;

Figure 5 is a side elevational view of a sewing machine constructed in accordance with the present invention and operative to produce the lamp shade of the present invention;

Figure 6 is a transverse view of the machine taken substantially on the line 6—6 of Figure 5;

Figure 7 is a perspective view of the special plate for guiding the work through the sewing machine head;

Figure 8 is a transverse sectional view taken on the line 8—8 of Figure 7;

Figure 9 is a partial sectional view through the sewing head of the machine; and

Figure 10 is a perspective view of the bracket for supporting the lateral guide for the lamp shade.

Referring now to the drawings and more particularly to Figures 1 to 3 thereof, it will be observed that the present invention has been embodied in that type of lamp shade wherein a wire frame 10 of generally frustro-conical shape is covered both inside and out with suitable covering fabric, such as silk or the like, the outer covering being drawn taut over the frame in either plain or pleated form, as may be desired. The frame 10 generally consists of an upper ring member 11 and a bottom ring member 12 secured together in axially spaced relation by suitable bars 13, the upper ring member 11 being conventionally provided with a spider 14 for supporting the shade to the standard of a lamp base (not shown). Generally, the ring members 11 and 12 are formed of flat strip metal.

In accordance with the principles of the present invention, the outer shade covering 15 extends circumferentially about the frame and is secured along its top and bottom edges respectively to the upper and lower ring members 11 and 12. In order to effect this, a fabric tape 16 is disposed flatwise against and extended circumferentially about the inner surface of the bottom ring member 12 of the frame, this tape 16 being of a width such that its opposite edges

project freely beyond the corresponding edges of the frame member 12. The outer shade covering 15, which overlies the outer surface of the member 12, is then secured along its lower marginal edge to the tape 16 by parallel rows of stitching 17 and 18 extending circumferentially about the frame member 12 and in close proximity to the opposite edges of said member 12. The outer covering 15 and the inner tape 16, when so secured together, provide in effect a closed tube along the bottom edge of the covering 15 within which is encased the flat bottom member 12 of the lamp frame. If desired, instead of employing the two parallel rows of stitching 17 and 18 as shown in Figures 1 to 3, a single zig-zag row of stitching 19 may be employed to secure the outer covering 15 to the tape along opposite edges of the frame member 12, as shown, for example, in Figure 4.

Having thus secured the outer shade covering 15 to the bottom ring member 12 of the lamp frame, the upper marginal edge of the said shade covering is then secured to the upper ring member 11 of the frame in any suitable manner, it being understood, of course, that in this operation the shade covering 15 is drawn tautly about the wire frame 10. Generally, the operation of securing the upper marginal edge of the covering 15 to the upper ring 11 of the shade frame will be performed by hand, the shade covering material being hand-sewn to a tape which had been preliminarily wrapped or spirally wound about said upper ring. On the other hand, the lower marginal edge of the outer shade covering is secured to the bottom member 12 of the frame preferably by machine sewing in the manner and by means of the sewing machine attachment to be presently described.

After the outer shade covering has been secured, about the frame 10 in the manner just described, the inner lining for the shade frame is applied. This inner lining is designated generally by the reference numeral 20, the lower marginal edge thereof being secured, by one or more rows of stitches 21, to the outer shade covering 15 immediately above the bottom ring member 12 of the shade frame. A portion 22 of the lining 20 thus overlies that portion of the outer shade covering 15 which extends circumferentially about the bottom ring member 12 of the shade frame, the inner lining 20 being then drawn tautly about the lower edge of the member 12 and upwardly along the inside of the shade frame so as to present the upper edge of the inner lining in position to be secured to upper ring member 11 of the shade frame. As appears most clearly in Figure 3 the inner lining 20 of the shade embraces the bottom frame member 12 and covers from view the bottom row of stitching 18 which secures together the corresponding marginal edges of the outer shade covering 15 and the inner tape 16. There is thus provided a uniformly smooth and neat appearing edge along the bottom of the shade.

The foregoing arrangement is employed where separate and different materials are used for the outer covering and inner lining of the shade. There may be instances, however, where the outer covering and the inner lining may be formed of one and the same material and in such case the outer covering material, after being secured to the inner tape 16 as hereinbefore described, is extended upwardly along the inside of the frame to form the inner lining therefor.

By employing the flat tape 16 as the medium for securing the lower marginal edges of the outer covering and the inner lining of the lamp shade to the bottom ring member 12 of the frame, it becomes possible to machine-sew the parts together in the particular relationship shown in Figures 2 and 3. However, in order to perform this machine-sewing operation, the machine is provided with a special attachment which will now be described and which is illustrated in Figures 5 to 9.

As is shown in these figures the machine employed for this purpose is of the type known generally as a cylinder bed machine having a sewing head for two-line lock, chain or covering stitching. Referring now more particularly to Figures 5 and 6 wherein this machine is designated generally by the reference numeral 23, it will be observed that it is provided with a conventional cylinder bed 24 and with a conventional two-line stitching head 25. Inasmuch as the operating mechanism within the bed 24 and in the head 25 are conventional and well understood in the art, such mechanisms are not shown in the drawings and are not described in detail herein, it being deemed sufficient for the purposes of the present invention merely to point out that the cylinder bed mechanism operates conjointly with the needle head mechanism to form a pair of parallel lines of stiching in fabrics fed through the machine. The laterally spaced needles of the machine are designated in the drawings by the reference numerals 26 and 26*a*, the machine additionally including as part of its conventional mechanism a presser foot 27 and a serrated feed plate 28 (see Figure 9) which is operable in a manner well understood in the art to feed the material to be sewed together through the stitching head of the machine.

In order to facilitate the machine sewing together of the several parts of the lamp shade as shown in Figures 2 and 3, there is employed the guiding attachment which is shown in perspective in Figures 7 and which is designated generally by the reference numeral 29. This attachment is in the form of a plate having a substantially flat central part 30 and curved wings 31 and 32 which are shaped to snugly fit the rounded surface of the cylinder bed 24 of the machine, the winged portions of the work guiding unit 29 being secured to the cylinder bed by the screws 33—33. It will be understood, of course, that the unit 29 is secured in position such that its flat central portion 30 is disposed immediately beneath the reciprocating needle head of the machine, it being noted that said central plate portion 30 of the unit is provided with a pair of laterally spaced apertures 34—34 which are respectively in alignment with and through which the needles 26—26[a] project during operation of the machine. In addition, the said flat plate portion 30 of the guide unit is provided with a pair of laterally spaced openings 35—35 through which respectively project the serrated work-feeding plates 28, these latter operating in such timed relation to the operation of the reciprocating needles as to feed the work through the stitching head progressively as the stitches are formed by the needles. Secured to the flat portion 30 of the unit forwardly of the needle apertures 34—34 are a pair of laterally spaced members 36 and 37 which are raised somewhat above the upper surface of the plate 30. If de-

sired, and preferably so, these members 36—37 are formed as integral parts of the unit 29. As appears most clearly in Figure 7, the inner or facing edges of the members 36 and 37 are respectively longitudinally under-cut, as at 38 and 39, to provide a pair of laterally spaced parallel grooves adapted respectively to receive the opposite edges of the tape 16 (see Figures 2 and 3), it being noted that these grooves 38 and 39 are in longitudinal alignment with the laterally spaced needle apertures 34—34. Extending forwardly of the right-hand guide member 37 as viewed in Figure 7, is an extension 40 which is slightly curved forwardly and downwardly out of the flat plane of the curved member 37, the function of this member 40 being apparent hereinafter. The lateral spacing of the members 36—37 is such as to snugly accommodate therebetween the bottom annular band 12 of the lamp frame, it being understood that in operation of the machine this band is superimposed upon and fed conjointly with the tape 16 through the stitching head of the machine. The thickness of each of the members 36—37 is approximately equal to that of the said circular band 12 of the frame in consequence of which said members 36 and 37 serve as lateral guides for the metal band as it is fed through the machine.

Secured to the base of the machine as by means of a bracket 41 (see Figures 5 and 6) is a support 42 for a transversely extending raised bar 43, this bar being disposed below the cylinder bed 24 of the machine and extending forwardly and rearwardly thereof for distances sufficient to engage the forward and opposite extremities of the greatest diameter lamp shade upon which the machine may be operated. Suitably supported beneath the cylinder bed of the machine is a spindle 44 adapted to support a roll of the tape 16, the upper free end of this tape being drawn from its roll and fed through the stitching head of the machine automatically as the machine operates to sew together the parts of the lamp shade as shown in Figures 2 and 3. In order to insure proper movement of the tape 16 through the stitching head of the machine, the guiding unit 29 is preferably provided upon its leading side with a guide bail 45a (see Figure 7) through which the tape is threaded prior to its delivery to and through the grooves 38 and 39 of the laterally spaced guiding elements 36—37 on the plate 30.

In the operation of the sewing machine, the tape 16 is initially threaded through the sewing machine so that it lies flat on the plate 30 of the guiding attachment 29, the opposite edges of the tape being respectively disposed in the laterally spaced grooves 38 and 39 and overlying the needle apertures 34—34. Thereupon, the lamp shade frame 10 is disposed in the position shown most clearly in Figures 5, 6 and 9 with the lower band 12 thereof superimposed upon the tape 16, the band 12 being disposed centrally between the facing edges of the guide members 36 and 37. The inner edge of the forwardly projecting element 40 engages the free edge of the frame member 12 and serves to prevent skewing of the latter as it is fed through the machine. At the same time, the raised bar 43 engages the free edge of the band 12 at spaced points beneath the cylinder bed 24 of the machine to assist in maintaining the band in proper positional alignment with the stitching head as the stitching operation progresses. Inasmuch as it is desirable to maintain the band 12 of the shade frame in flatwise relation to the cylinder head, provision is made for limited adjustments of the bracket 42, whereby the raised bar 43 may be shifted somewhat in position to hold the lamp shade in whatever position may be required to insure that the band 12 at the point where it engages and rests upon the guiding attachment 29 lies in a plane substantially at right angles to the operating axes of the needles 26—26a. This last-mentioned adjustment is readily effected by providing the inner end of the bracket 42 with elongated slots 45—45 (see Figure 10) through which are respectively projected the bolts 46—46 for securing the support 42 to its supporting bracket 41.

Having placed the frame member 12 flatwise upon the tape 16, the marginal edge of the outer covering 15 is then superimposed upon the frame member 12 and thereupon the three superimposed members are fed through the stitching head of the machine simultaneously with the result that the tape 16 and the outer covering 15 are secured together by the two lines of stitches 17 and 18 to embrace therebetween the member 12 of the frame. It will be understood, of course, that during this operation the lamp shade frame rotates about its axis to successively present every portion of the circular band 12 of the frame in the stitching head of the machine. Should the bars 13 of the frame be such as to interfere with the smooth feeding of the circular band 12 through the machine, the operator will so operate the machine that as each of said bars approaches the stitching head the needles will be lifted sufficiently to permit the bar 13 to move across the operating axes of the needles before the regular stitching operation is resumed.

Having so secured the outer covering 15 to the tape by the two parallel lines of stitches 17—18, the lamp shade is removed from the sewing machine and all surplus material of the cover and fabric extending freely beyond the outer line of stitching 18 is cut away or trimmed off. At the same time, the opposite or free marginal edge of the lamp shade covering is secured in any suitable manner to the upper ring member 11 of the frame.

Following this operation, the tape 16 is removed from the stitching head of the machine and thereupon the frame is again placed in position with the band 12 thereof disposed centrally between the laterally spaced guide members 36—37 of the guide unit. Following this, the lower marginal edge of the lining material is superimposed upon the stitched portion of the lamp shade by feeding the latter together with the lining material through the machine in the manner hereinbefore described. While in this latter operation of securing the bottom of the shade, both lines of stitching 17 and 18 may be produced through the use of the two needles 26 and 26a, it is deemed preferable to throw out of operation the needle 26a so as to produce only the single line of stitching 21 for securing the inner lining 20 to the outer shade covering 15, the inner lining 20 being then drawn inwardly and upwardly about the lower edge of the preliminarily covered frame member 12 for subsequent securement along its upper edge to the upper member 11 of the frame. This provides a neat and uniformly smooth covering along the bottom edge of the shade. The final operation, of course, is to cover the external stitched portion of the shade by a suitable ornamental trim extending circumferentially about the bottom

of the shade, this trim being applied in any suitable manner generally by the use of a suitable adhesive or by tacking the same in place.

In the case where the zig-zag type of stitch shown in Figure 4 is desired to be employed, it is merely necessary to employ instead of the type machine hereinbefore described having a head for producing a double row of parallel stitching, a machine of the type having a head for zig-zag stitching, such latter machine being conventional and well-known in the art. In either case, a guide unit of the type shown in Figure 7 would, of course, be employed for guiding the work through the machine.

It will be understood, of course, that the invention is susceptible of various changes and modifications from time to time without departing from the general spirit or general principles thereof and it is accordingly intended to claim the same broadly, as well as specifically, as indicated by the appended claims.

What is claimed as new and useful is:

1. The method of manufacturing fabric covered lamp shades of the type having a frame composed of upper and lower ring members secured together in axially spaced relation which consists in simultaneously laying a fabric tape flatwise over the inner surface only of the lower ring member and one edge of the outer covering for the lamp shade over the outer surface of said ring member, in then simultaneously machine-sewing the opposite edges of said tape to said outer covering whereby to form between the tape and the overlying portion of the outer covering a continuous tube extending circumferentially about and encasing said lower ring member, and in then stretching the unsecured portion of the outer covering about said frame and securing the free edge thereof to the upper ring member of the frame.

2. The method of manufacturing fabric covered lamp shades of the type having a frame composed of upper and lower ring members secured together in axially spaced relation which consists in disposing a fabric tape circumferentially about the inner surface only of the lower ring member in such manner that the opposite edges of the tape project freely beyond corresponding edges of said ring member, in disposing the outer covering for the lamp shade circumferentially about the outer surface of said ring member whereby to embrace the latter between said tape and outer covering, in simultaneously machine-sewing the oppositely projecting free edges of the tape to the outer covering of the lamp shade to form between the tape and the overlying portion of the outer covering a continuous tube extending circumferentially about and completely encasing said ring member, and in then stretching the unsecured portion of the outer covering about said frame and securing the free edge thereof to the upper ring member of the frame.

3. In a method of manufacturing a lamp shade as defined in claim 1 wherein said tape and outer covering are sewed together by parallel lines of stitches disposed to either side of the lower ring member.

4. In a method of manufacturing a lamp shade as defined in claim 1 wherein said tape and outer covering are sewed together by sitches spaced circumferentially and in staggered relation about the encased ring member, certain of the stitches being disposed upon one side of said ring member and others upon the other side thereof.

5. The method of manufacturing fabric covered lamp shades of the type having an open frame including axially spaced upper and lower ring members which consists in embracing the lower ring member between the outer covering for the lamp shade and a fabric tape extending circumferentially about the inner surface only of said ring member, in simultaneously machine-sewing the free edges of said tape to the covering to form a continuous flat tube extending circumferentially about and encasing said lower ring member, in stretching the unsecured portion of said outer covering upwardly about the outer surface of the shade frame and securing the upper edge of the covering to the upper ring member of the frame, in sewing one edge of an inner lining to the outer surface of the shade covering along a line extending circumferentially about and in close proximity to the said lower ring member, and in tautly drawing said inner lining inwardly and upwardly about said lower ring member to present the upper edge of the inner lining in position to be secured to the upper ring member of the frame.

6. In a lamp shade of the type having an open frame which includes an upper ring and a lower ring secured together in an axially spaced relation, an outer covering for said shade frame stretched tautly thereabout, a fabric tape disposed flatwise against the inner surface only of the lower ring member of the frame and extending circumferentially thereabout, said tape being stitched to said outer covering by stitches disposed to either side of and in close proximity to said lower ring member of the shade frame, and an inner lining for the shade having one marginal edge portion thereof arranged in overlying relation to the portion of the outer shade covering which is secured to said tape, said inner lining being drawn inwardly and upwardly about the lower edge of the shade for securement to the upper ring member of the shade frame.

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