

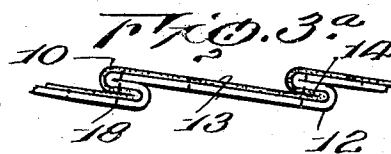
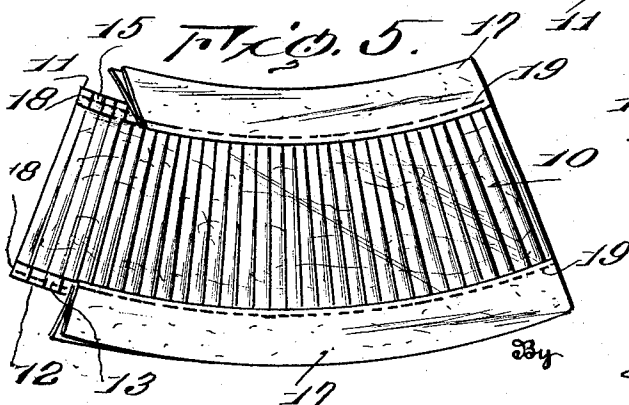
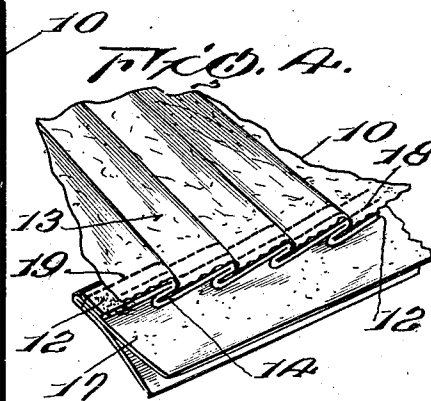
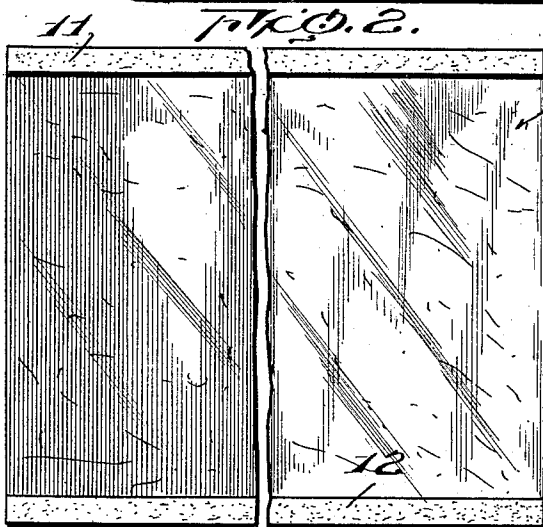
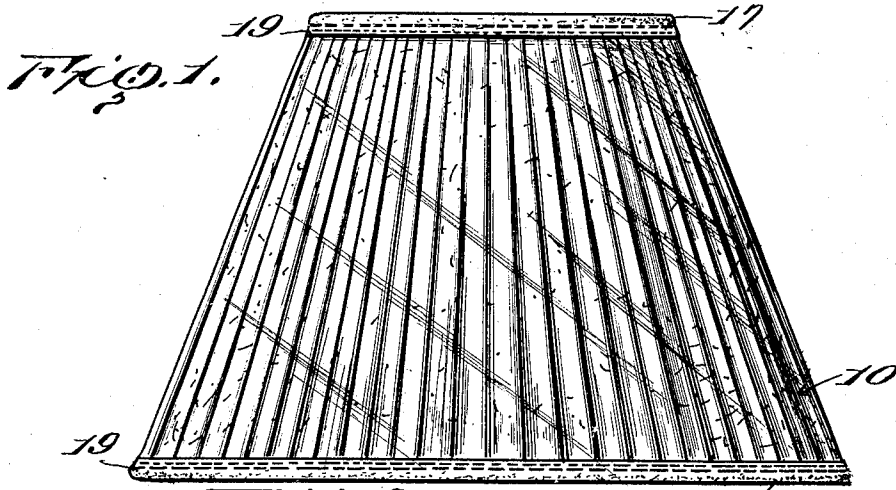
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L. OBER

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PLAITED FABRIC

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Inventor

Leonard Ober,

By *Andrew P. Mason,*
Attorney

UNITED STATES PATENT OFFICE

LEONARD OBER, OF BALTIMORE, MARYLAND, ASSIGNOR TO THE LEDOR COMPANY,
OF BALTIMORE, MARYLAND, A CORPORATION OF MARYLAND

PLAITED FABRIC

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This invention relates to improvements in methods of plaiting fabrics, and to the article obtained thereby.

This invention while not limited thereto, is peculiarly adapted to, and will be described hereinafter in connection with lamp shades from a limp fabric. In making such articles, a limp fabric is provided with plaits which are of substantially uniform dimensions, and which are permanently held in their proper relation to each other, so that the plaited article may be readily and easily applied to a lamp shade frame in the course of assembling the lamp shade itself.

Heretofore it has been difficult and expensive to make plaited covers for lamp shades from limp fabric. It has been customary to gather and plait the edges of the fabric by hand, and by hand sewing to secure it to the shade frame: a great amount of care was required in obtaining the plaits exactly in the proper directions, and it is obvious that a departure of any plait from the proper direction would result in an imperfect and objectionable article. It has been attempted to form tucks in the fabric in a sewing machine by use of the well-known attachment provided for such purpose, but in practice the plaits are not uniform in width due to difference in tensions, and oftentimes with open-mesh fabrics, the stitches would pull through and injure the fabric during the stretching incident to assembly on a wire frame. Furthermore, in making conical shades, only one edge can be so treated, owing to the needed difference in length of edge in the finished cover. If finer stitches be employed, the time of manufacture is proportionately increased.

The present invention presents means of avoiding such difficulties, and proposes an article which is self-sustaining and capable of easy assembly upon a shade frame.

In the drawings:

Figure 1 is a side elevation of the completed shade.

Fig. 2 is a view showing a piece of fabric with stiffening strips applied thereto.

Figs. 3^a and 3^b are enlarged views of the respective bottom and top lateral edges of

the fabric with stiffening strips thereon, after crimping.

Fig. 4 is a similar view after the crimped folds have been secured in permanent relation.

Fig. 5 is a view on a smaller scale than Fig. 1, showing the finished article.

The invention is applicable generally to plaited articles and the method of producing them, but is illustratively shown and described as applied in making fabric covers for lamp shades of the frusto-conical, commonly called conical, type. A limp fabric such as thin silk georgette is here employed in combination with paper stiffening strips.

By "limp" fabric is intended a material which lacks sufficient stiffness to retain creases or folds during the usual dry creasing operations, i. e., in the absence of wetting or pressing. Georgette is likewise illustratively employed as an instance of an open-mesh fabric which is stiffened and reinforced by the paper strip so that the stitches employed as a securing means will not pull and distort the threads of the fabric nor cause a rupture of the material itself, since the paper is cemented to the entire adjacent surface of the fabric and the strain is thus distributed for the entire area.

The paper is substantially non-extensible, and hence uniform creasing or crimping is produced without variable tension in the fabric. The stiffness of the paper causes it to retain the lines of folds, so that the predetermined lines are maintained.

In the illustrative form, a piece of fabric of substantially uniform width and length (Fig. 2) has two strips of stiff paper of the same length fastened at the lateral edges. One strip of paper is cemented at each edge so that the paper and fabric are joined throughout their length. The sheets of paper are then passed through a crimping machine, whereby crimps are formed in both the paper and the fabric; these crimps are flattened down to form regular and uniform folds along the length of each strip. As shown in Figs. 3^a and 3^b, when a conical shade is to be made, it is necessary to have the overlaps at the lateral edge which will constitute

the base of the shade of a less extent than the overlaps at the other lateral edge. These folds are then held permanently and fixedly in position, for example, by sewing through them by a regular stitching machine of known type. In this way, the fabric has the tops and bottoms of the plaits defined by the stiff reinforcing material.

It is preferred to further stiffen the secured folds by fastening a strip of material thereto so as to take up any longitudinal strains along the length of the piece of fabric. Such for example is the bias binding tape which during the assembly of the shade upon the wire frame is passed around a frame ring and then sewed in place by a further stitching which may likewise pass through the stiffening strip. When this sewing has been finished, the tension in the direction of the width of the fabric between the rings will produce the plaits as determined by the folds in the stiffening strip, and these plaits may be further fixed by pressing or wet-stretching.

Referring to the drawings, the piece of fabric 10 preferably of uniform length and width is provided at its edges with two strips of stiff paper 11 and 12 which are cemented thereto. The strips of paper with adherent fabric are then passed through a crimping machine, different types of crimping rollers being employed for the individual strips, so that as shown in Fig. 3^a, the lateral edge of the fabric which is to form the base of the shade, e. g., that having the paper strip 12, is formed into successive crimps having a long leg 13 and a short leg 14, the fabric 10 following the paper in all its folds. It will be seen from this that the length of the leg 14 is much less than one-half the length of the leg 13. As shown in Fig. 3^b, the strip of paper 11 which will be at the top of the finished shade is folded so that the long leg 15 is about twice the length of the short leg 16. In this way, the length of the paper strip 12 after crimping is greater than the length of the paper strip 11.

The folds formed by crimping the paper are then permanently fixed together, for example by passing a stitch 18 through the successive legs 13, 14 and 15, 16 as shown by way of example in Fig. 4. The stiffness and material of the paper prevent tearing by the fine stitches and assure that the edges of the fabric will be held in predetermined folds. As a result, the article appears as shown in Fig. 5, i. e., a segment of a ring, which by an appropriate selection of the length and width of the original piece of fabric 10, and of the relative length of the arms 13, 14 and 15, 16, will be of proper dimensions for assembling into a lamp shade of the desired size with plaits of the selected widths. The method of calculating such dimensions is obvious and need not be described.

It is preferred, as shown in Figs. 4 and 5, to join a binding tape 17 to each edge of the piece of fabric, by a stitch 19 which preferably passes through the stiff paper, and further assists in holding the folds in permanent position, and resists longitudinal stresses.

The article may be pressed or wet-stretched as desired to "seat" the folds, in case of a relatively stiff silk fabric.

The article may be placed on the market in its then condition, or it may be used at the factory by assembling upon an ordinary wire frame having upper and lower rings with spacing struts. The binding tape is passed around the upper ring, for example, and is sewed in place. The shade cover is then stretched along the lines of the generatrices of the conical shade and the lower binding tape is brought around the lower wire ring, and is sewed into position, whereby a shade is produced with the plaits thereon in substantially predetermined relationship and size with regard to each other.

It is obvious that the invention is not limited to the illustrative form or materials described, and that it may be applied in any wise within the scope of the appended claims.

Having thus described my invention, what I claim is:

1. In a lamp shade cover, a limp fabric strip incompetent to maintain creases, a stiffening strip competent to maintain creases formed therein, means to secure said strips together substantially throughout their lengths so that said stiffening strip reinforces said fabric strip, said strips being folded transversely to the length of the strips to form plaits, and means to secure said folded parts of said strips together.

2. In a cover for a lamp shade of frusto-conical shape, a strip of limp fabric, a plurality of relatively narrow stiffening strips, means to secure said stiffening strips to said fabric strip substantially throughout their lengths, one of said stiffening strips being located adjacent each lateral edge of the fabric strip and secured thereto substantially throughout the length, said strips being folded to form plaits, the plaiting overlap at one of said edges being greater than at the other edge whereby to form a segment of a ring, the edges of the respective plaits being substantially radial with respect to the center of such segment, and means to secure said folded strips in such relation.

3. In a cover for a lamp shade, a fabric strip of limp fabric, a stiffening strip secured substantially throughout its length adjacent an edge of said fabric strip, said strips being folded to form plaits at substantial angles to said edge, a binding tape to cover the exposed side of the stiffening strip, and means to secure said binding tape and said folded strips together.

4. In a cover for a lamp shade, a strip of limp fabric, a paper stiffening strip, a layer of cement to secure said stiffening strip adjacent an edge of said fabric strip, said strips being folded to form plaits at substantial angles to said edge, a binding tape to cover the exposed side of the stiffening strip, and a stitching to secure said binding tape and said folded strips together.

5. A plaited lamp shade comprising a piece of limp fabric, a narrow band of stiff material of the same length as the fabric fastened thereto throughout their lengths, said limp fabric being incompetent to maintain creases formed therein and said stiff material being competent to maintain such creases, said fabric and band having folds therein transverse to the direction of length of said narrow band, and fastening means to hold said folds fixedly together.

6. A plaited cover for a truncated or frusto conical lamp shade comprising a piece of fabric of substantially uniform width and length, narrow bands of stiff material of the same length as said piece and fastened at the lateral edges thereof throughout the respective lengths, said fabric and bands having folds therein, the overlap of said folds at the lateral edges of the shade cover which is to form the bottom of the shade being less than the overlap at the lateral edge which is to form the top of the shade, and means to hold said folds fixedly together.

7. The method of forming plaited articles from limp fabrics, which consists in securing to said fabric adjacent the part to be folded a stiffening member extending at a substantial angle to the proposed plaits, folding the fabric and member together to form the plaits, and securing the fabric and member together in the folded form.

8. The method of forming plaited articles from limp fabrics, which consists in cementing a stiffening strip to the fabric adjacent an edge to be folded, folding the fabric and strip at a substantial angle to said edge to form the plaits, and stitching the folded fabric and strip together in plaited form.

9. The method of forming plaited covers from limp fabrics for frusto-conical lamp shades, which consists in securing a stiffening member to said fabric adjacent an edge to be folded, folding the fabric and strip at a substantial angle to said edge to form the plaits, laying a binding tape over the exposed side of the stiffening member, and securing said binding tape and said folded fabric and member together, whereby said binding tape projects beyond the edge of said fabric.

10. The method of forming a cover for a frusto-conical lamp shade from a limp fabric, which consists in securing to a body portion of such fabric stiffening elements adjacent the top and bottom edges, forming a given number of narrow plaits in one of said

elements and the same number of wide plaits in the other of said elements, and securing said plaits in said body portion and elements, whereby a cover having the form of a segment of a ring is formed, the lines joining the respective upper and lower plaits coinciding with generatrices of the conical shape in the finished shade.

11. The method of forming plaited articles from limp fabrics, which consists in stiffening a fabric along its length for a part of its width so that it will hold creases when formed therein, folding the stiffened part of the fabric to form plaits extending transverse to the said length of the fabric, and securing the folded parts together.

12. As an article of manufacture, a plaited material comprising a piece of limp fabric incompetent to maintain creases formed therein, a narrow band of stiff material competent to maintain creases formed therein, said narrow band being of the same length as said piece of limp fabric and fastened thereto throughout their lengths, said material and fabric having folds formed therein extending transversely to the direction of the length of said narrow band, and fastening means holding said folds together.

In testimony whereof, I affix my signature.

LEONARD OBER.