Nov. 22, 1960 J. FELIKS 2,961,009

ELASTIC WOVEN PRODUCT WITH STIFF FILLERS

Filed April 20, 1959 2 Sheets-Sheet 1

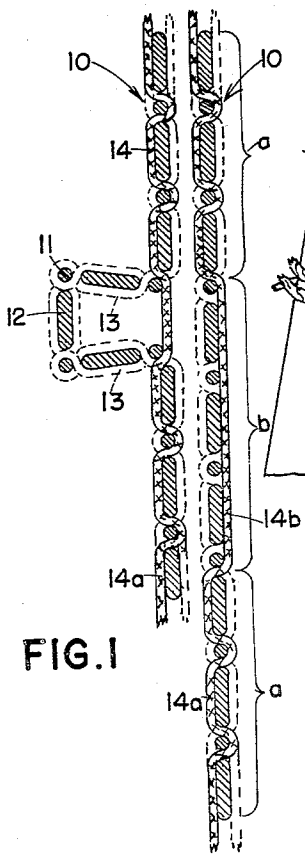


FIG. 1

FIG. 2

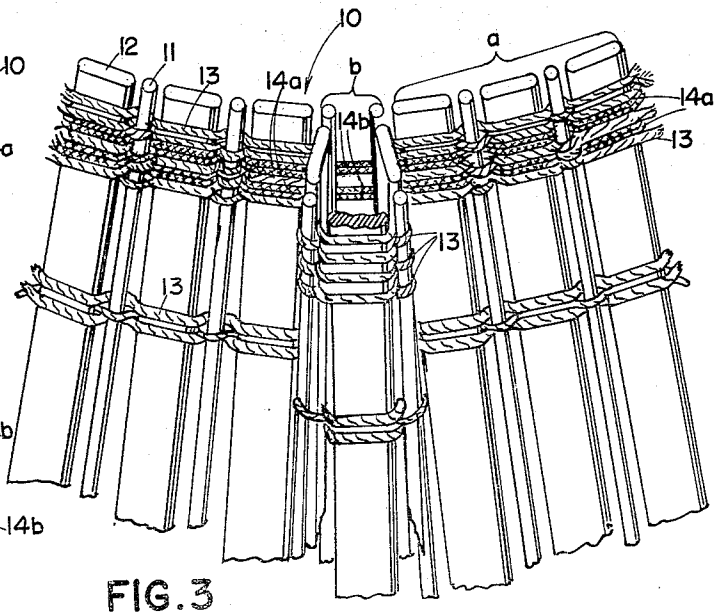


FIG. 3

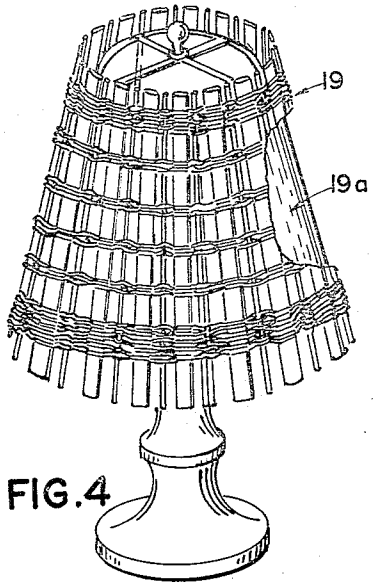


FIG. 4

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ELASTIC WOVEN PRODUCT WITH STIFF FILLERS

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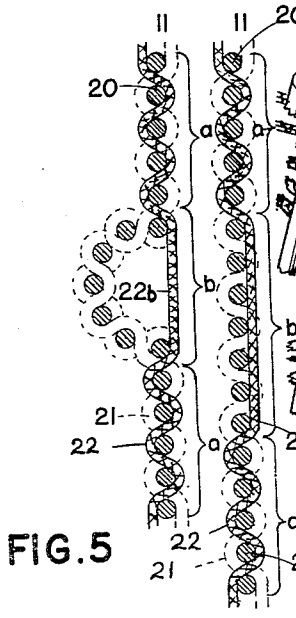


FIG.5

FIG.7

FIG.6

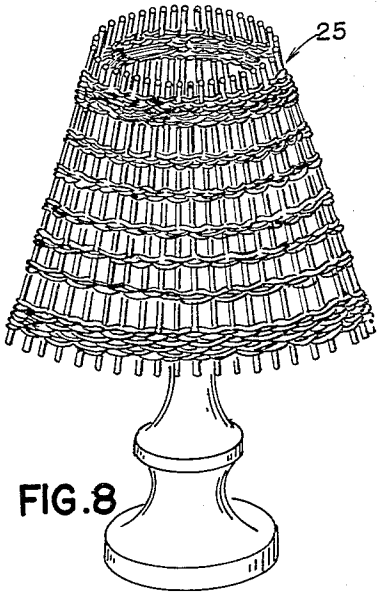


FIG.8

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ELASTIC WOVEN PRODUCT WITH STIFF FILLERS

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Filed Apr. 20, 1959, Ser. No. 807,490

9 Claims. (Cl. 139—384)

This invention relates generally to woven products having relatively stiff fillers or filler members and warp threads some of which are elastic, and more particularly to tubular woven products, such as, for example, covers for lamp shades, baskets, hampers, etc., and to a method for producing the same.

It is an object of the present invention to provide a stretchable tubular body which will conform to the outer surface contour of the article or product to be covered, such as a lamp shade, paper basket, hamper and so forth.

It is a further object of the present invention to provide as an article of manufacture, a woven product, preferably tubular in form, which consists of a number of parallelly arranged elongate relatively stiff filler members woven in with non-elastic warp threads, and parallelly spaced elastic warp threads woven under stretch with alternate groups of said filler members providing non-woven portions of elastic threads between alternate groups of filler members whereby when the stretch is released the non-woven portions of the elastic threads will retract bringing the said other portions of the filler members into closer contiguity producing ribs in the body which partially or wholly unfold when the body is stretched for facile application to the article or product being covered.

A still further object of the present invention is to provide an economical and practical covering for an article which can be easily removed and replaced with a like covering having a different arrangement of filler members either or both as to type and shape or as to finish and/or of warp threads to conform with any change in decor of the surrounding medium.

These and other objects of the invention will appear as the description proceeds, it being understood, however, that it is not intended that the invention be limited to the exact details described herein which illustrate the production of satisfactory examples of many which may be obtained as a result of the knowledge gained through or gleaned from an understanding of the invention; and it is further intended that there be included as part of the invention all such obvious changes and modifications thereof as would occur to a person skilled in the art to which this invention pertains and as would fall within the scope of the appended claims.

In the drawings:

Fig. 1 is a sectional view of a portion of woven body according to the invention, in normal condition (not under tension or stretch);

Fig. 2 is a sectional view similar to Fig. 1, but showing the body under tension or stretch;

Fig. 3 is a perspective view of a portion of the body seen in Fig. 1, the stretch being partially released forming gathered portions or pleats;

Fig. 4 is a perspective view of a covering for a lamp shade applied thereto; and

Figs. 5 to 8, inclusive, are respective views similar to Figs. 1 to 4, showing a body comprising cylindrical, thin elongate filler members.

Referring now more particularly to the drawings which show examples by which the invention may be realized, Figs. 1 to 4, disclose a body generally indicated by the numeral **10** comprising the elongate relatively stiff yet flexible filler members **11, 12**, held in fixed parallel relation by the non-elastic warp threads **13** by weaving operation in a suitable loom. The filler members **11, 12**, are intermittently and progressively fed transversely into the shed formed by the non-elastic warp threads **13** and are beat-up into the warp by the forward movement of the loom lay, for example, in a manner disclosed in my copending application Serial Number 650,635, filed April 4, 1957.

The filler members **11, 12** may comprise the thin cylindrical dowel-like rods **11** and the substantially rectangular elements **12**, preferably alternately disposed with relation to each other. These members may be made of wood, plastic, fiber glass, metal or other suitable materials or combinations thereof. Also, the warp threads may likewise be of cotton, metal, plastic, fiber glass or other suitable materials or combinations thereof.

The elastic warp threads or yarns **14** while being maintained under tension or stretch are woven simultaneously with the non-elastic warp threads or yarns **13** such that only alternate portions **14*a*** of the stretched elastic threads **14** will be woven with alternate groups *a* of the filler members **11, 12**, leaving unwoven elastic portions **14*b*** with respect to group *b* filler members **11, 12**, so that when the stretch is released the group *b* filler members will gather and form ribs. These ribs may partially or wholly expand when applied to the article to be covered, as seen, for example in Fig. 4 where the body is indicated by the numeral **19**, disposed over shade **19*a***.

Figs. 5 to 8, are views similar to Figs. 1 to 4, and show the body comprising only thin cylindrical dowel-like filler members.

In Figs. 5 to 8, the corresponding elements are indicated as follows. Filler members **20**, non-elastic threads or yarns **21**, elastic threads or yarns **22**. The groups *a* of filler members **20** are woven with the non-elastic warp threads **21** and elastic thread portions **22*a*** and the groups *b* of filler members **20** are only woven with the non-elastic warp threads portions **21*a***.

Fig. 8 illustrates the body **25** applied to a lamp shade. It is understood that bodies **19** and **25**, instead of being applied as a covering for the lamp shade, may comprise the lamp shade per se. The bodies **19** and **25** are formed into the tubular products illustrated in Figs. 4 and 8 by joining together the ends of the material by suitable means, such as, for example, by stitching, lacing or adhesive.

Although the drawings and the above specification disclose the best modes in which I have contemplated embodying my invention, I desire in no way to be limited to details of such disclosures, for in the further practical application of my invention many changes in the form and proportion may be made as circumstances require or experience suggest without departing from the spirit of the invention within the scope of the appended claims.

I claim:

1. As an article of manufacture, a woven product comprising a plurality of parallelly arranged elongate relatively stiff filler members, a plurality of non-elastic warp threads woven with said filler members, a plurality of parallelly spaced elastic warp threads woven with some of said filler members providing non-woven portions of said elastic warp threads with respect to other of said filler members intermediate said some of said filler members, said other of said filler members being normally disposed at said non-woven portions of said elastic threads in close contiguity, providing ribs in said product to per-

mit expansion of said product with said elastic warp threads under tension.

2. As an article of manufacture, a woven product according to claim 1, wherein said product is tubular in shape.

3. As an article of manufacture, a woven product according to claim 2, wherein at least some of said filler members comprise wood strips.

4. As an article of manufacture, a woven product according to claim 2, wherein at least some of said filler members comprise thin and somewhat flexible sticks.

5. As an article of manufacture, a woven product according to claim 1, wherein at least some of said filler members comprise thin and somewhat flexible sticks.

6. As an article of manufacture, a woven product according to claim 1, wherein at least some of said filler members are flat strips and other of said filler members are round strips.

7. As an article of manufacture, a tubular product having a woven body comprising a plurality of closely and parallelly arranged elongate relatively stiff filler members and a plurality of non-elastic warp threads woven with said filler members, and a plurality of parallelly spaced elastic warp threads connected to at least some of said filler members, other of said filler members being disconnected from said elastic warp threads providing ribs in said body for expansion of said product.

8. As an article of manufacture, a tubular product having a woven body comprising a plurality of closely and parallelly arranged elongate relatively stiff filler members and a plurality of non-elastic warp threads woven with said filler members, and a plurality of parallelly spaced elastic members weavingly engaging alternate groups of said filler members under stretch and being out of woven engagement with rib-forming groups of said filler members disposed between said alternate groups of filler members, whereby said product may be expanded with said elastic warp threads under tension.

9. The method of producing a woven tubular product which comprises the steps of weaving into a fabric a plurality of non-elastic threads and a plurality of parallelly spaced elastic threads under stretch with a plurality of parallelly fed filler members in such a manner that portions of the elastic threads remain unwoven intermediate woven portions of the elastic threads, releasing the stretch on the elastic threads whereby the fabric will contract making ribs, and joining the ends of the fabric to make the tube.

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