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P. NATHANSON ET AL

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ELASTIC FABRIC

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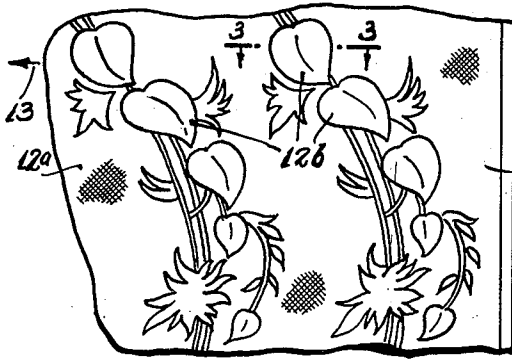


Fig. 1.

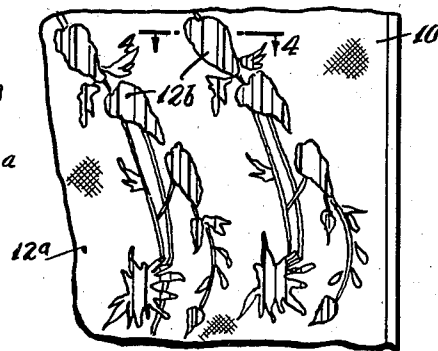


Fig. 2.

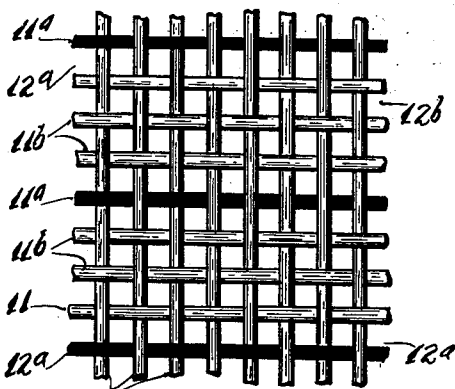


Fig. 3.

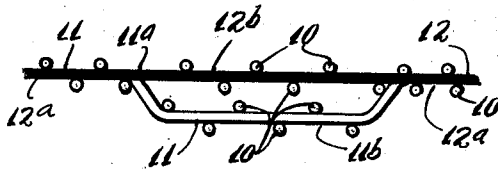


Fig. 4.

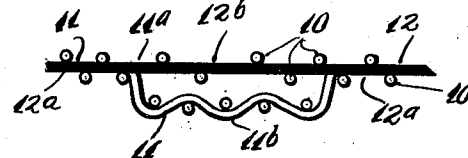


Fig. 5.

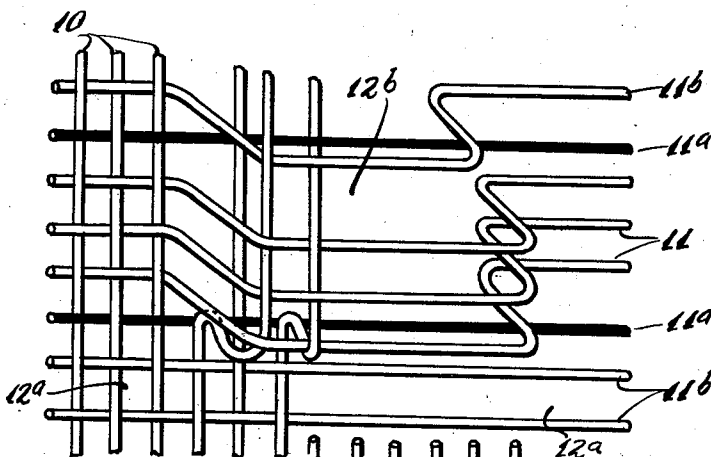


Fig. 6.

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ELASTIC FABRIC

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Application October 6, 1938, Serial No. 233,617

5 Claims. (Cl. 139—421)

This invention relates to new and useful improvements in an elastic fabric with a woven design.

More specifically, the invention proposes the construction of a woven fabric which may be used for bathing suits or other similar garments and woven in a single color or in a combination of colors to add to the decorative value thereof.

Still further it is proposed to provide the fabric with certain undesigned areas where all threads in the weft and warp are woven together to form a single layer.

Another object of this invention is to provide the fabric with certain designed areas having certain of the threads in the weft interlaced with certain of the threads in the warp for producing a design area, and at the design area certain cotton threads in the weft are woven with certain threads in the warp in a particular manner to produce a design area having a double layer in which the outer layer is contracted due to the contraction of the elastic threads in the back area.

A further object of this invention is to alternate the elastic threads with cotton threads in the weft only for providing the fabric with inherent resiliency in its width, useful in the construction of bathing suits, permitting the threads to be stretched when the suit is engaged on the body for extending the design areas.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:

Fig. 1 is an elevational view of the elastic fabric in its stretched condition.

Fig. 2 is a view similar to Fig. 1 but illustrating the fabric in its contracted condition.

Fig. 3 is an enlarged sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is a sectional view on the line 4—4 of Fig. 2.

Fig. 5 is an enlarged detailed view showing the manner in which the threads are interlaced for forming a piece of cloth having designed and undesigned areas.

Fig. 6 is an exaggerated perspective view of Fig. 5.

The elastic fabric with a woven design, according to this invention, includes a plurality of warp threads 10 all of cotton, acetate or similar

material. Weft threads 11 are arranged in groups consisting of an elastic thread 11^a and several cotton or similar threads 11^b, preferably three in number. The fabric 12 formed by the weft and warp threads is provided with certain undesigned or base areas 12^a and certain designed areas 12^b. At the undesigned areas 12^a all warp threads and all weft threads are interlaced with each other in the customary manner.

At the design areas 12^b the elastic threads are free without any interlacing on the face figure, but the elastic threads 11^a on the back of the figure are interlaced in regular formation with certain of the warp threads 10 and form a separate interlacing in the back of the figure. A careful inspection of Figs. 3 and 4 will show that the design areas 12^b are of double layer with all cotton threads 11^b of the weft 11 interlaced with certain of the warp threads 10. All the elastic threads 11^a are interlaced with certain of the warp threads behind the cotton threads 11^b of the weft.

The cotton threads 11^b of the weft 11 are interlaced in the design area of the face of the fabric 12 and the elastic threads are interwoven in the back under the figure created by the cotton threads, forming pocket areas which are adapted to be raised and drawn together due to the contraction of the elastic threads. This contraction of the elastic threads applies in the width of the fabric only. When a pull is applied in the width, that is in the direction of the arrows 13 in Fig. 1, the elastic threads 11^a in the back layer of the design areas 12^b will be extended and still leave the pockets on the designed figure so that the figure remains plastic.

However, when the pull is released the design area will be again released and shrivel up as shown in Fig. 2 emphasizing the appearance of the woven design.

In weaving the material certain ends of the warp threads are raised or drawn out of alignment to permit the shuttle which carries the weft threads to pass between the warp threads. The design is determined by the method of raising or moving the warp threads out of alignment. When weaving with elastic threads in the design areas 12^b of the fabric the elastic threads are interlaced in the back of the fabric only with certain threads of the warp.

It is to be understood that any number of cotton or similar threads 11^b may be arranged between the elastic threads 11^a.

While we have illustrated and described the preferred embodiments of our invention, it is to

be understood that we do not limit ourselves to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

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

1. An elastic fabric with a woven design, comprising warp threads, weft threads arranged in groups consisting of an elastic thread and several cotton threads, the warp and weft threads at areas having no design being all interwoven forming a single ply area, at areas having the woven design the elastic threads being absolutely free without any interlacing on the face of the woven design, but the elastic threads on the back of the woven design being interlaced in regular form with certain of the warp threads and forming a separate interlacing in the back of the woven design, the cotton threads of the weft being interlaced in this woven design, in sequence determined by the design, but the elastic threads being interwoven only in the ground and under the woven design thereby forming raised pockets due to the contraction of the elastic threads.

2. An elastic fabric with a woven design, comprising warp threads, weft threads arranged in groups consisting of an elastic thread and three cotton threads, the warp and weft threads at areas having no design being all interwoven forming a single ply area, the areas having the woven design the elastic threads being absolutely free without any interlacing on the face of the woven design, but the elastic threads on the back of the woven design being interlaced in the regular form with certain of the warp threads and forming a separate interlacing in the back, the cotton threads of the weft being interlaced in the woven design in sequence determined by the design, but the elastic threads being interwoven only in the ground and under the woven design thereby forming raised pockets due to the contraction of the elastic threads.

3. An elastic fabric, comprising a piece of material having base areas of a single layer and designed areas of two layers separate of each other, and said piece of material consisting of warp threads of cotton or other similar material, weft threads arranged in groups consisting of an elastic thread under tension and several cotton or other similar threads, said weft threads and said warp threads being interwoven at said base areas to form said single layer, said cotton threads in said weft being interwoven with certain threads of said warp to form one of said layers at said designed areas, and said elastic

threads of said weft being interwoven with certain other of said warp threads to form the other of said layers at said designed areas, whereby when the tension is released on said elastic threads they will contract to pucker the layer of said designed areas consisting of the cotton threads of the weft and certain threads of the warp.

4. An elastic fabric, comprising a piece of material having base areas of a single layer and designed areas of two layers separate of each other, and said piece of material consisting of warp threads of cotton or other similar material, weft threads arranged in groups consisting of an elastic thread under tension and several cotton or other similar threads, said weft threads and said warp threads being interwoven at said base areas to form said single layer, said cotton threads in said weft being interwoven with certain threads of said warp to form one of said layers at said designed areas, and said elastic threads of said weft being interwoven with certain other of said warp threads to form the other of said layers at said designed areas, whereby when the tension is released on said elastic threads they will contract to pucker the layer of said designed areas consisting of the cotton threads of the weft and certain threads of the warp, said designed areas when said elastic threads are under tension being extended causing the woven design of said designed areas to be shaped.

5. An elastic fabric, comprising a piece of material having base areas of a single layer and designed areas of two layers separate of each other, and said piece of material consisting of warp threads of cotton or other similar material, weft threads arranged in groups consisting of an elastic thread under tension and several cotton or other similar threads, said weft threads and said warp threads being interwoven at said base areas to form said single layer, said cotton threads in said weft being interwoven with certain threads of said warp to form one of said layers at said designed areas, and said elastic threads of said weft being interwoven with certain other of said warp threads to form the other of said layers at said designed areas, whereby when the tension is released on said elastic threads they will contract to pucker the layer of said designed areas consisting of the cotton threads of the weft and certain threads of the warp, the formation of said designed and base areas being controlled by the movement of the warp threads out of alignment for permitting said weft threads to pass therethrough.

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