

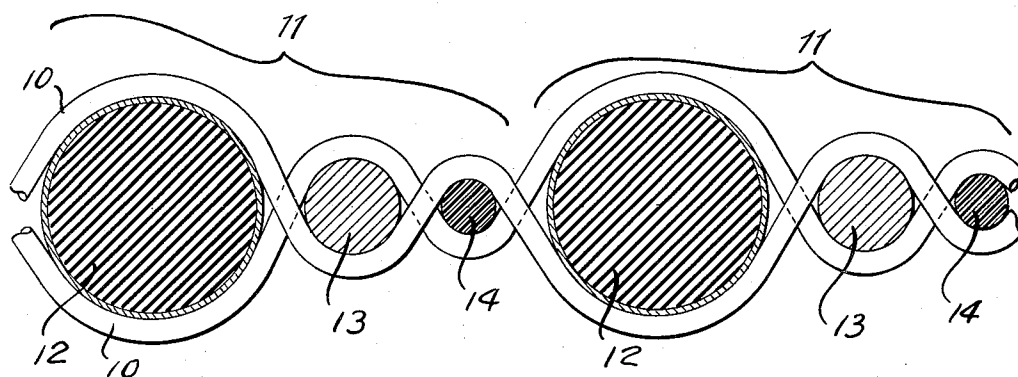
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P. J. AHLERS

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ELASTIC FABRIC

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INVENTOR.
PHILIP J. AHLERS

BY

M. Leek
ATTORNEY

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ELASTIC FABRIC

Philip J. Ahlers, Westport, Conn.

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3 Claims. (Cl. 139—421)

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The present invention relates to improvements in elastic woven fabrics.

One object of the present invention is to provide a new and improved elastic woven fabric which has softness, delicacy and lightness combined with strength and durability even in a wet state, which has the requisite body, but which at the same time is pliable and resiliently alive, which lends itself to fabrication by simple ordinary weaving processes and which is highly suitable for such articles of wear as girdles, brassières, bathing suits and the like.

In accordance with certain features of the present invention, the fabric comprises the ordinary warp threads interlaced with regular successive series of weft or filling threads, each of these series comprising in sequence an elastic thread to impart the necessary resiliency to the fabric, a staple spun thread to impart the necessary body to the fabric, to restrict contraction of the fabric after weaving and to reduce the number of picks in the fabric per unit length, and a thread of continuous synthetic single or multi-filament type to give the fabric the necessary strength not only in the dry state but also when wet without adding as much weight or body to the fabric as the staple spun thread and without materially restricting the stretch or rebound of the fabric.

As another feature, each of the successive series of weft or filling threads comprises a rubber thread, a cotton thread of smaller diameter and a nylon thread of still smaller diameter.

Various other objects, features and advantages of the present invention are apparent from the following particular description and from the accompanying drawing showing in longitudinal section and on an exaggerated scale, an elastic woven fabric embodying the present invention.

Referring to the drawing, the elastic fabric of the present invention comprises the usual warps or longitudinal threads 10 which may be of cotton or of any other suitable material. Interlaced with these warp threads are regular successive series 11 of weft or filling threads, each of these series comprising in sequence a rubber thread 12, a cotton thread 13 and a nylon thread 14 separated by the interlacing undulations of said warp threads. The rubber thread 12 serves to impart to the fabric the required resiliency and is desirably wound or wrapped with rovings or threads to restrict elongation during weaving and to ren-

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der the fabric easily dyeable. This rubber thread 12 desirably is of a size corresponding to 4000 to 8500 yards per pound and is preferably woven while under tension.

The cotton thread 13 is desirably smaller in diameter than the rubber thread 12 and is advantageously 16 to 30 singles in size, or 36/2 to 60/2. This cotton thread serves to impart to the cloth the required degree of stiffness and body and to restrict thereby the contraction of the cloth after weaving, due to the springing back of the rubber threads 12. The cotton threads 13 because of their bulk reduce the number of picks per unit length required compared with a fabric construction containing finer fillings of other types between the rubber threads.

The nylon thread 14 which is desirably of single filament construction preferably has a diameter smaller than that of the cotton thread 13. This nylon thread preferably has a denier of 15 to 200 and serves to impart to the fabric the required strength against stretching and at the same time imparts to the fabric softness, pliability and lightness. The nylon thread 14 when wet does not lose strength as in the case of cotton threads, thereby rendering the fabric suitable for bathing suits and for other purposes where the fabric is expected to retain its strength and resiliency in wet condition.

In a specific fabric construction, the rubber thread 12 may have a size equivalent to 5500 yards per pound, the cotton thread 13 may be 25 singles in size and the nylon thread 14 may be of 70 denier.

When the fabric constructed as described is pulled, each rubber thread 12 pulls against only one heavy cotton thread and one light nylon thread. This construction permits the fabric to stretch more freely than in the case of a fabric having two heavy cotton threads to each rubber thread and to return more quickly towards unstretched condition. The fabric will, therefore, have extreme resiliency and in its use affords substantial freedom and is comfortable.

What is claimed is:

1. An elastic woven fabric comprising warp threads interlaced with regular successive series of weft or filling threads, each of these series comprising in sequence an elastic thread, a staple spun thread of smaller diameter and a continuous synthetic filament thread of still smaller diameter.

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2. An elastic woven fabric comprising warp threads interlaced with regular successive series of weft or filling threads, each of these series comprising in sequence a wrapped rubber thread, a cotton thread of smaller diameter and a nylon thread of still smaller diameter.

3. An elastic woven fabric as set forth in claim 2 in which the rubber thread has a size equivalent to 4000 to 6000 yards per pound, the cotton thread is 16 to 30 singles in size or of equivalent size if plied, and the nylon thread is 15 to 200 denier in size.

PHILIP J. AHLERS

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My invention relates to elastic woven fabrics and more particularly to elastic woven fabrics of the type in which the warp threads are interlaced with regular successive series of weft or filling threads, each of these series comprising in sequence a wrapped rubber thread, a cotton thread of smaller diameter and a nylon thread of still smaller diameter.

The object of my invention is to provide an elastic woven fabric which is strong, durable, and comfortable to wear, and which is capable of being used in a wide variety of applications.

The fabric of my invention is made by weaving warp threads with weft threads in a regular successive series. Each weft thread is composed of a wrapped rubber thread, a cotton thread of smaller diameter, and a nylon thread of still smaller diameter. The wrapped rubber thread is made by wrapping a rubber thread with a cotton thread of smaller diameter. The cotton thread is made by twisting cotton fibers together. The nylon thread is made by twisting nylon fibers together.

The fabric of my invention is strong and durable because of the use of the wrapped rubber thread, the cotton thread, and the nylon thread. The fabric is comfortable to wear because of the use of the cotton thread and the nylon thread. The fabric is capable of being used in a wide variety of applications because of its strength, durability, and comfort.

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