

Jan. 24, 1939.

J. STEIN

2,144,667

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Filed Jan. 22, 1937

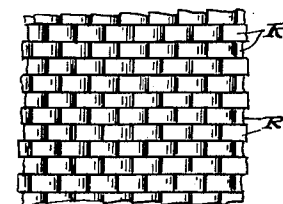
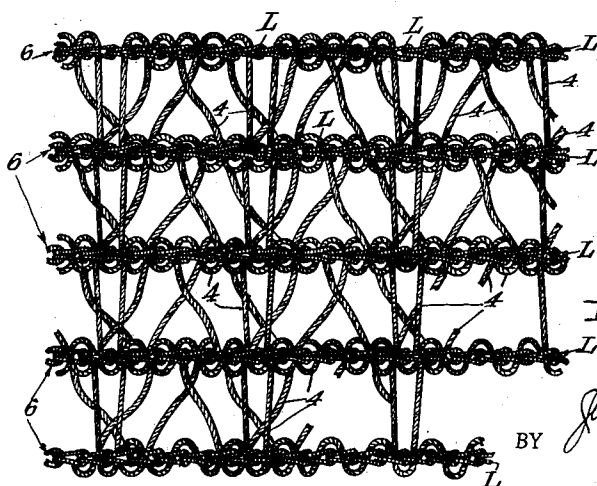
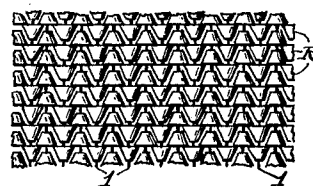
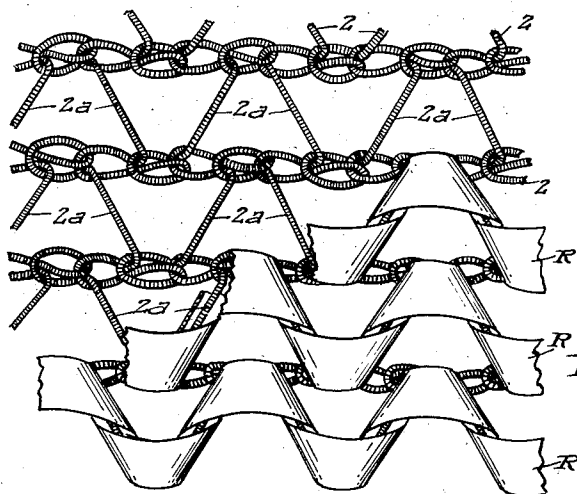
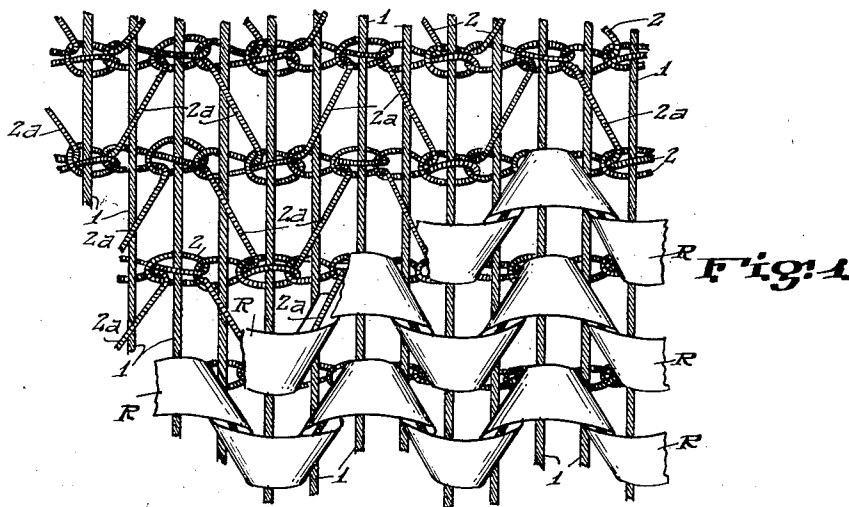


Fig. 5

INVENTOR.

BY *Jacob Stein*
Mock & Blum

ATTORNEYS

UNITED STATES PATENT OFFICE

2,144,667

FABRIC

Jacob Stein, New York, N. Y.

Application January 22, 1937, Serial No. 121,734

5 Claims. (Cl. 66—192)

My invention relates to a new and improved fabric.

One of the objects of my invention is to provide a fabric which is stretchable either in one direction, or stretchable in all directions, and which will be of superior strength and which will have superior ornamental appearance.

Another object of my invention relates particularly to producing a fabric which can be used for making bathing suits, parts of bathing suits, bathing caps, or articles of bathing attire and beach accessories such as the uppers of bathing shoes of bathing sandals or the like.

Another object of my invention consists in providing a fabric, such as a woven fabric, or a netted or knitted fabric of the type used in making lace, embroidery and the like, having a base portion which is made either in whole or in part of elastic threads, together with face members which can be made of rubber, rubberized fabric, and any suitable lacquered fabric, such as fabric which has been treated with any of the ordinary pyroxylin lacquers.

Where the fabric has a base portion which is woven, the weft threads can be suitably spaced, and said weft threads can be made of elastic yarn of the "Lastex" type, and said elastic weft or filler threads can be joined at several portions of their length by equally spaced warp threads, and said filler threads can have secured thereto twisted strips of rubber or rubberized fabric or strips of a suitable lacquered fabric or the like.

Whenever I use strips or ribbons of rubber or of rubberized fabric, the rubber may be acid cured, or steam cured, or it may consist of vulcanized latex or pure gum rubber.

The lacquered fabric strips or ribbons can be finished in any suitable form or color, and the invention also includes the use of "Cellophane" or the like.

If the base of the fabric is woven, both the filler threads and the warp threads, or either the filler threads or the warp threads, may be made of said elastic "Lastex" material, and said filler threads and said warp threads can be of equal thickness or they may have different thicknesses. The warp threads may be separated by intervening spaces of from 1/32nd of an inch to one inch.

The surface strips, if made of rubber or of rubberized fabric or of waterproof fabric of any kind, may vary in width from 1/32nd of an inch to one inch or more.

The completed fabric may be backed with rubber or with latex, in order to make it completely waterproof.

Likewise the individual yarns, ribbons, strips or the like, may be made of waterproof material or they may be suitably waterproofed.

Other objects of my invention will be set forth in the following description and drawing which illustrate preferred embodiments thereof, it being understood that the above statement of the objects of my invention is intended generally to explain the same without limiting it in any manner.

Fig. 1 is an enlarged top plan view showing material made according to one embodiment of the invention, said material being shown in stretched condition, the representation of part of the ornamental facing of said material having been omitted, in order to show the base portion of the material more clearly.

Fig. 2 is a top plan view, drawn substantially to scale and to normal size, of the material which is shown in Fig. 1, in the unstretched condition.

Fig. 3 is a view generally similar to Fig. 1 of a second embodiment of the invention, in which the ornamental material is also elastic.

Fig. 4 is a top plan view, drawn substantially to scale and to normal size, of the material which is shown in Fig. 3, in the unstretched condition.

Fig. 5 is a top plan view of material made according to a third embodiment of the invention, this being also drawn to an enlarged scale. This material may be used for making a part of a bathing suit.

Referring to Fig. 1, this shows a material or fabric having a netted base portion. In this embodiment, the yarns or threads 1 and 2 of the base portion of the fabric are elastic and they are of the "Lastex" type, having elastic rubber cores covered helically with one or more layers of cotton yarn, silk yarn, etc. Said covering yarn is waterproofed, according to the invention herein.

The yarns 2 are looped or connected, so that they form elastic ribs.

The fabric is provided with an ornamental facing, which consists of yarns or ribbons or strips R. Said members R may be made of elastic rubber, or of rubberized fabric (preferably elastic) or else said elements R may be made of material which is substantially non-elastic. For example, the elements R can be made of lacquered and waterproofed silk, cotton, rayon or the like. Even if the ribbons or elements R are made of non-elastic material, the fabric can be stretched in one direction or in all directions, since said ribbons R are formed with bights when the fabric is in the normal un-

stretched condition shown in Fig. 2, so that the bights can be extended, without stretching the material of the elements R. If said elements R are made of stretchable material, the exposed portions of said elements R can be relatively flat. 5 instead of being upstanding.

Referring to Figs. 1 and 2, in this particular embodiment, the yarns or threads 2 are provided with yarn branches or yarn portions 2a, which are arranged preferably in regular rows. In this particular embodiment, the yarn portions 2a are inclined to each other in each of said rows, so that consecutive yarn portions 2a of each row are oppositely inclined. This relation exists when the fabric is in the normal unstretched condition shown in Fig. 2, and also in the stretched condition shown in Fig. 1. The elements R are twisted in loop form around said yarn portions 2a. In the particular embodiment disclosed in Fig. 1, each element R is twisted once around each yarn portion 2a, so as to form exposed portions which extend on opposite sides of the respective yarn portion 2a. If desired, each element R could be twisted more than once around each yarn portion 2a, or around selected yarn portions 2a. In the particular embodiment shown in Fig. 1, the width of the element R is substantially one-half the distance between the adjacent elastic ribs of the base portion of the fabric, but this relationship could also be varied. 30

Hence, in the embodiment shown in Fig. 1 and in Fig. 2, the exposed portions of the elements R have a general tapered shape. As shown in Fig. 2, the exposed portions of the elements R are arranged in regular rows, these exposed portions being in staggered relation in each row. The consecutive exposed portions are oppositely tapered in each said row. 35

When the fabric has the normal shape which is shown in Fig. 2, these exposed bights or portions of the elements R are located in continuous rows as the eye cannot readily detect said irregular or zig-zag formation. 40

This fabric presents a superior ornamental appearance. Likewise, water can readily pass through the spaces between the exposed portions of the elements R, and through the spaces between the yarns which form the base portion of the fabric. Hence, if this material is used for making a bathing suit, the water can contact quite freely with the body of the user, and the fabric presents the required substantially continuous appearance. Likewise, by making all parts of the fabric of waterproof material, or by waterproofing the textile portions of the fabric, the improved material sheds the water very rapidly, so that a bathing suit made of this material is extremely comfortable. While it has hitherto been proposed to make elastic yarns of the "Lastex" type, by covering a rubber core with one or more helical layers of cotton or silk or the like, it has not hitherto been proposed to waterproof said outer yarn coverings of silk or cotton or rayon or the like. Therefore these outer yarn covers absorbed water, thus producing an uncomfortable feel when the suit was wet. Likewise, bathing suits which have been knitted with the use of this "Lastex" type of yarn, have been necessarily closely knitted and the same was true of woven fabrics made from this type of thread. According to the invention herein, each and every element of the fabric is non-absorbent, and a relatively loose fabric structure is secured, so that the water can come into relatively free contact with the skin of the user. 75

The embodiment shown in Fig. 3 is particularly desirable if the fabric is to be stretchable in both directions. In this embodiment, the yarns 1 are omitted, and the base of the fabric consists of the interconnected or netted yarns 2, having the inclined yarn-portions 2a, as previously mentioned. 5

The yarns 2 can be made of elastic material throughout. The ribbons R are twisted or bent around the inclined yarn-portions 2a in the manner previously specified. 10

The tension of the elastic yarn which is shown in the embodiment of Fig. 3 causes the exposed bights of the ribbons R to closely abut each other in each row, and said exposed bights have substantially rectangular shapes when the fabric has the normal shape shown in Fig. 4, instead of having the tapered shapes which are illustrated in the extended condition shown in Fig. 3. 15

When the fabric shown in Fig. 3 is allowed to contract to the normal unstretched shape and dimensions illustrated in Fig. 4, the yarn-portions 2a are substantially parallel to each other, instead of being inclined to each other. 20

The ribbons R are retained on the base of the fabric by friction in all the embodiments illustrated in Figs. 1-4, so that it is not necessary to secure the ribbons R to the base of the fabric by stitches or the like. 25

Fig. 5 shows a netted or knitted fabric of the lace or embroidery type. The pattern or design of the fabric shown in Fig. 5 may be changed as desired. In this embodiment the pattern or design of the fabric is made by means of the yarn or yarns 4, and the base of the fabric is made of thread or yarn L which holds the pattern part of the garment together. Said yarn L is of elastic material of the "Lastex" type, in which the outer yarn covering has been rendered non-absorbent by dipping it into latex, etc. 30

The pattern yarns 4 of the fabric which is shown in Fig. 5, may be different yarns having different colors. This fabric has the elastic yarn interlooped so as to form ribs 6, and in said ribs the pattern yarn 4 is arranged in a series of loops as shown in Fig. 5, so that the yarn 4 can be extended by straightening or extending said loops. The pattern yarn 4 can be made of waterproofed cotton yarn, silk yarn, artificial silk yarn, etc. 35

The loops of yarn L have the loops of the pattern yarns passing through or between the same so that the fabric is held in the general pattern shown in Fig. 5. The ribs 6 may have double rows of interengaging loops, between which the pattern yarns 4 may be located and frictionally gripped. 40

In all the embodiments of the elastic fabrics described, said fabric may have substantially non-elastic yarns or ribbons which are arranged in extensible loops or bights. 45

I prefer that the base of the fabric should be a fabric, of the lace or embroidery type. This may be knitted or netted, or the yarns may be interlocked in any suitable manner. 50

The ribbons or other fabric-elements which have loops which are exposed at one face or at both faces of the fabric, may be made of lustrous and light-reflecting material, such as "Cellophane", which may be white or colored. Said "Cellophane" or other material may be transparent, translucent, or opaque. 55

Referring to Fig. 5, it will be noted that the yarn elements 4 are looped in series around the elastic elements L, in zig-zag formation, so as to produce substantially continuous exposed 60

loops. The same surface effect is produced in the other embodiments.

Referring to Figs. 2 and 4, the visible portions of the surface elements R may lie flat against the base portion of the fabric, or said visible portions may be upstanding so as to present a beaded or irregular surface contour.

If desired, a fabric of the type herein specified may have a backing of vulcanized rubber or of latex.

The improved fabric is also useful for making bags, corsets, and articles of wearing apparel in general.

I do not wish to be limited to any particular surface pattern or design.

The base portion of the fabric is of coarse formation, with substantial areas between its yarns. The yarns should not take up more than fifty per cent of the area of the base portion, although I do not wish to be limited to any specific proportion. The yarns of the base portion may take up an even smaller proportion of the total area of the base portion, so that water can pass through the interstices of the base portion with almost the same effect as though the nude skin was contact with the water.

I have shown preferred embodiments of my invention, but it is clear that numerous changes and omissions can be made without departing from its spirit.

I claim:

1. A non-absorbent fabric comprising a non-absorbent base portion and non-absorbent face elements, said base portion being elastic in at least one direction and including non-absorbent elastic yarn elements having elastic cores which have non-absorbent yarn coverings, said face elements having spaced face portions which are visible at a face of said fabric, said face elements being connected to said elastic yarn elements.

2. A non-absorbent fabric comprising a non-absorbent base portion and non-absorbent face elements, said base portion being elastic in at

least one direction and including non-absorbent elastic yarn elements having elastic cores which have non-absorbent yarn coverings, said face elements having spaced face portions which are visible at a face of said fabric, said face elements being connected to said elastic yarn elements, said face elements being elastic.

3. A non-absorbent fabric comprising a non-absorbent base portion and non-absorbent face elements, said base portion being elastic in at least one direction and including non-absorbent elastic yarn elements having elastic cores which have non-absorbent yarn coverings, said face elements having spaced face portions which are visible at a face of said fabric, said face elements being connected to said elastic yarn elements, said face elements being non-elastic, said face portions being bights of sufficient size to permit the fabric to be extended along said face portions.

4. A non-absorbent fabric comprising a non-absorbent base portion and non-absorbent face elements, said base portion being elastic in at least one direction and including nonabsorbent elastic yarn elements having elastic cores which have non-absorbent yarn coverings, said face elements having spaced face portions which are visible at a face of said fabric, said face elements being connected to said elastic yarn elements, said base-portion having its yarn elements sufficiently spaced to permit the passage of water freely between said yarn elements, the face elements being arranged so as to permit the passage of the water.

5. A fabric having elastic yarn formed into interlaced rows of loops which are disposed substantially parallel to each other, said elastic yarn having an elastic core and an outer covering of non-absorbent material, said fabric also having pattern yarn which forms the essential surface pattern of the fabric, said pattern yarn being non-absorbent and being connected to said rows of loops in extensible loop formation.

JACOB STEIN.