

March 16, 1937.

J. A. BOYSEN ET AL

2,074,119

GARMENT

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2 Sheets-Sheet 1

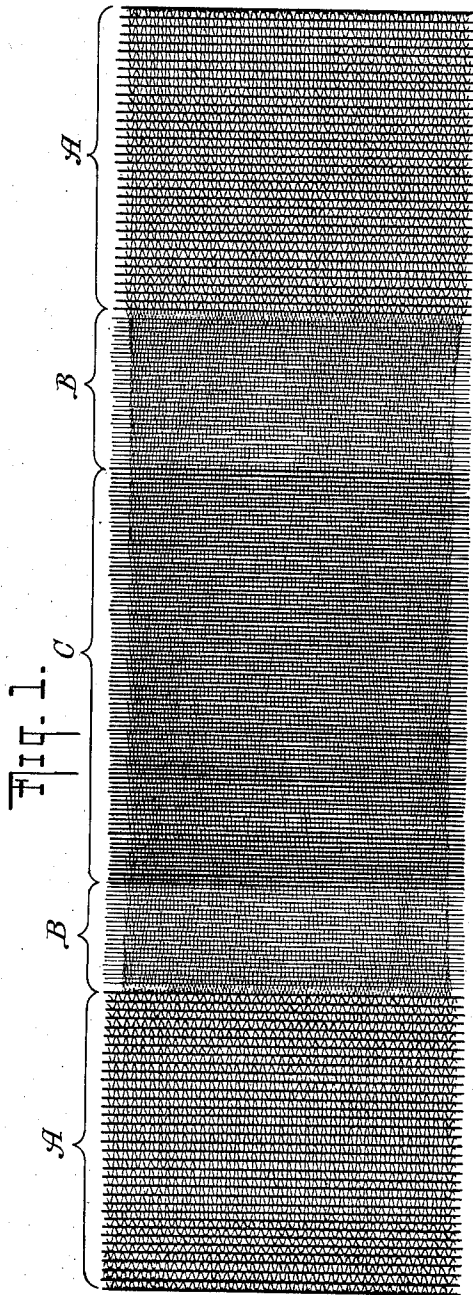


Fig. 3.

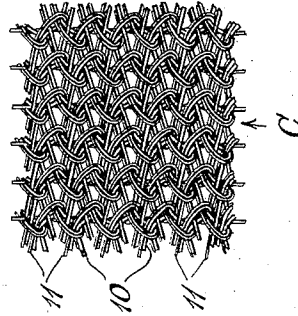
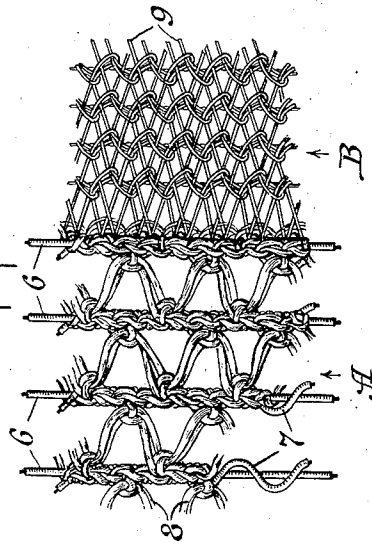


Fig. 2.



WITNESS

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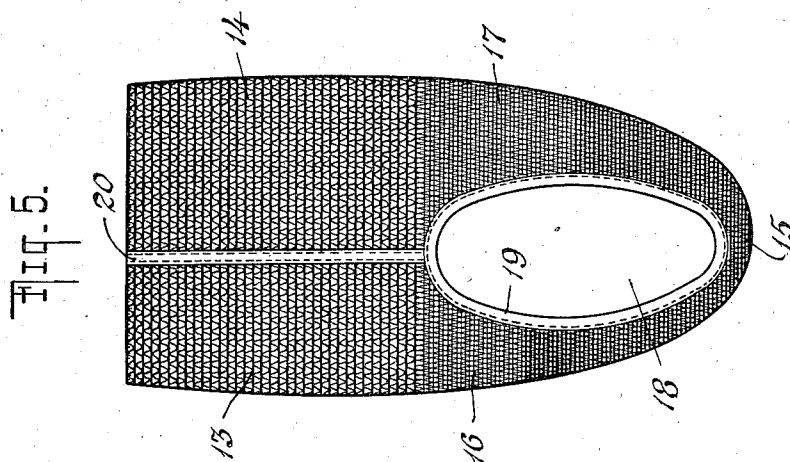
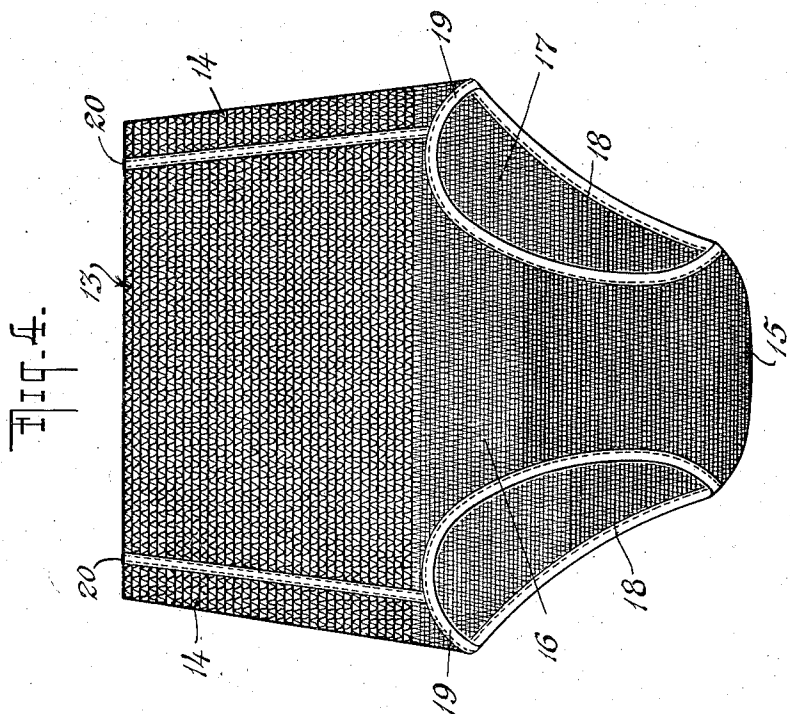
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2 Sheets-Sheet 2



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2,074,119

GARMENT

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6 Claims. (Cl. 66—175)

Our invention relates to a novel fabric material and to garments made therefrom, particularly men's or women's undergarments known in the trade as "shorts" and "panties".

5 The invention relates more particularly to a fabric material constituted of a plurality of sections of which the two outermost sections comprise knitted material capable of stretching in two or more directions and an intermediate section formed of non-stretchable material of which intermediate section a portion is preferably formed of heavier knit construction than the remaining portions of such intermediate section. The invention thus contemplates the provision of a strip of fabric material, the two end portions of which have a capacity of stretching in two or more directions while the intermediate section or sections are formed of non-stretchable yarn or thread. The invention also contemplates the construction of an undergarment, such, for instance, as a man's undergarment in which the two end sections of the fabric strip constitute portions of the undergarment forming bands adapted to overlie the abdominal region of the 25 wearer and the region of the body of the wearer about the small of the back, with the intermediate non-stretchable portion of the fabric material constituting the crotch portion of the undergarment and the portion intermediate said crotch portion and said bands. Thus, the portion of the undergarment which does not require any capacity for stretching is formed of the portion of the fabric strip having no capacity to stretch while those portions of the undergarment which require stretchability so as to form a comfortable fit snugly to the body under all conditions of movement of the body of the wearer, are formed of the sections of the composite fabric strip which have a capacity to stretch in substantially all directions.

40 An object of the invention, therefore, is to provide a strip of fabric material which may be readily formed into a garment having considerable elasticity across the abdominal and back regions of the wearer while preventing any undue stretching of the garment so constituted, in the crotch region.

45 A further object of the invention is the provision of a strip of fabric material which may be utilized in the construction of a one-piece undergarment to cover the lower regions of the torso and which when worn will be conducive to the greatest comfort of the wearer and will eliminate any danger of undue or uncomfortable strain during periods of the most strenuous exercise in which the wearer may partake.

50 A particular embodiment of the invention is illustrated in the accompanying drawings in which Fig. 1 is a plan view of a strip of fabric material constructed in accordance with our in-

vention; Fig. 2 is a greatly enlarged plan view showing the manner of construction of a portion of one of the two outermost sections of the fabric material and a portion of the intermediate section of the fabric strip; Fig. 3 is a greatly enlarged view of the portion of the intermediate section which is reinforced in accordance with our invention by being knitted with more threads and therefore heavier, than the remaining portions of the intermediate section; Fig. 4 is a front view of an undergarment constructed from the strip of fabric material illustrated in Fig. 1 in accordance with our invention; and Fig. 5 is a side view of such undergarment.

Referring more particularly to the drawings, 15 in which similar reference characters identify similar parts in the several views, A designates each of the two outermost sections of the novel strip of fabric material; B designates each of the sections adjoining such outermost sections; and C designates the reinforced portion constituting the substantially central section of the composite fabric strip.

25 The sections A are built up of a plurality of warp threads 6 of rubber-elastic structure such as is commonly called in the trade "Lastex". Such rubber-elastic thread is constituted as shown in Fig. 2 of a core of elastic textile thread, which core has been extended to its full length and in such extended condition encased within or wrapped with a rubber tubing, the thread being thus given a great amount of elasticity. Superimposed upon the warp threads 6 in a sinuous fashion, as shown in the lower left-hand corner of Fig. 2, is a second rubber-elastic thread 7. Connecting the warp threads 6 and the superimposed threads 7 are connecting threads 8 of cotton, or synthetic textile material such as acetate yarn, viscose, or rayon. Such connecting threads hook into the finer Lastex threads 7 and in conjunction with such finer Lastex threads and the warp threads 6 form a fabric material stretchable in all directions.

45 The sections B adjacent the outermost sections A of the strip of fabric material constructed in accordance with our invention is formed, as indicated in the right-hand portion of Fig. 2, of yarn or cotton threads 9 which are not stretchable, as distinguished from the Lastex threads. This section of the fabric material is of single thread construction. The section C intermediate the sections B is knit from yarn or cotton threads 10 and 11, not stretchable, but is distinguished from the sections B by being made of heavier knit construction than the sections B so as to form a reinforced section.

55 The reinforced section C is thus made up of two threads, the introduction of more threads giving a heavier weight, greater strength and durability in the crotch region of the garment 60

into which the strip of fabric is made. The use of a heavy thread 10 and of a lighter thread 11 in the knitted structure affords a closer disposition of threads, and therefore less visibility through the fabric, while at the same time providing a softer texture, so as to avoid any possibility of chafing in the crotch region of the garment.

The entire strip of fabric material just described is made on a flat warp knitting machine.

The reinforced section C may be made of such size and disposition in the portion of the strip intermediate the end sections as will best fit the requirements of the particular garment formed of the strip of material. In the particular embodiment illustrated, the reinforced section is off-center, i. e., disposed so as to extend somewhat more to one side of the center line of the strip than to the other side of such center line. The portion of the section extending more to one side of the center line is preferably formed into the front of the garment, as clearly shown in Figs. 4 and 5, as the region of the back of the wearer which the unreinforced section B is to overlie is greater than that at the front.

The undergarment illustrated in Figs. 4 and 5 is constructed in accordance with our invention by folding the strip of fabric material illustrated in Fig. 1 so that the outermost sections A overlie each other, one of such sections forming a top band 13 of the garment adapted to overlie the abdominal region of the wearer of the garment, while the other section A forms the top band 14 of the garment overlying the region of the small of the back of the wearer. The reinforced section C will thus form the crotch portion 15 of the garment while the intermediate sections B form the sections 16 and 17, respectively, lying intermediate the crotch portion and the two band portions of the garment. The garment is constructed in the usual manner with leg openings 18, 18 which are edged with the usual binding 19. The front and rear bands of the garment formed of the sections A are joined together by tapes 20, 20 in well-known manner.

A strip of fabric material such as illustrated in Fig. 1 may be cut according to specific patterns for a particular size and configuration of undergarment and the edges of the cut material bound at the portions necessary to construct the garment. However, the particular configuration of the strip of fabric material illustrated in Fig. 1 may be designed in accordance with the requirements of the particular undergarment which is to be constructed therefrom. For instance, in the case of the garment illustrated in Figs. 4 and 5, the sections A may be knitted in the particular form and configuration required for the front and rear sections of the garment as may also be the sections B and C.

A novel undergarment constructed in accordance with our invention will thus have the two bands of the garment, namely those forming the front top portion of the garment and the rear top portion thereof, of fabric material capable of stretching in at least two directions so as to conform readily to the body of the wearer of the garment. The lower sections of the garment constituted of the fabric sections B and C need no amount of elasticity and are therefore constituted of the non-stretchable material of the fabric section. However, the crotch portion 15, in order to form a portion of a garment of last-

ing quality should be reinforced and is therefore, in accordance with our invention, formed of the reinforced portion of the fabric section intermediate the two end sections. Such reinforcement may be secured by making the intermediate section C of heavier knitted construction, as described.

While we have described a particular undergarment constructed in accordance with our invention and a particular strip of fabric material made in accordance with such invention, it is obvious that various modifications may be made both in the structure of the strip of fabric material and in the structure and configuration of the several parts making up the undergarment.

We claim:

1. An undergarment constituted of a plurality of sections of a fabric material, two sections of such material comprising knitted material having a capacity of stretching in at least two directions, one of such sections being adapted to overlie the abdominal region of the wearer and the other of said sections adapted to overlie the region of the small of the back of the wearer, two sections joined to the lower edges of said first named sections and formed of a non-stretchable material and a section of reinforced character but formed of non-stretchable material connected to said intermediate sections and constituting the crotch portion of the garment.

2. An undergarment constituted of a plurality of sections of a fabric material, two sections of such material comprising knitted material having a capacity of stretching in two directions, said sections forming the front and rear bands of the garment overlying the abdominal region and the region of the small of the back of the wearer, respectively, two intermediate sections joined to the lower edges of said first named sections and formed of non-stretchable threads and a section of reinforced character but formed of non-stretchable threads connected to said intermediate sections and constituting the crotch portion of the garment.

3. An undergarment as claimed in claim 2 in which the two band sections are formed of warp threads of rubber-elastic character connected by threads of a synthetic textile material not stretchable.

4. An undergarment as claimed in claim 2 in which the two band sections are formed of warp threads having superimposed thereon in a sinuous manner rubber-elastic threads of smaller diameter than said warp threads.

5. An undergarment as claimed in claim 2 in which the two band sections are formed of warp threads of rubber-elastic character connected by threads of a synthetic textile material not stretchable, the sections adjacent said outermost sections being formed of non-stretchable material such as cotton.

6. An undergarment as claimed in claim 2 in which the two band sections are formed of warp threads having superimposed thereon in a sinuous manner rubber-elastic threads of smaller diameter than said warp threads, and a reinforced section of heavy knitted material intermediate said outermost sections and separated therefrom by non-stretchable sections of single knit construction.

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