Nov. 13, 1951 F. V. GOODCHILD 2,574,737

ELASTIC STOCKING AND THE LIKE

Filed Jan. 7, 1950 2 SHEETS—SHEET 1

FIG. 1

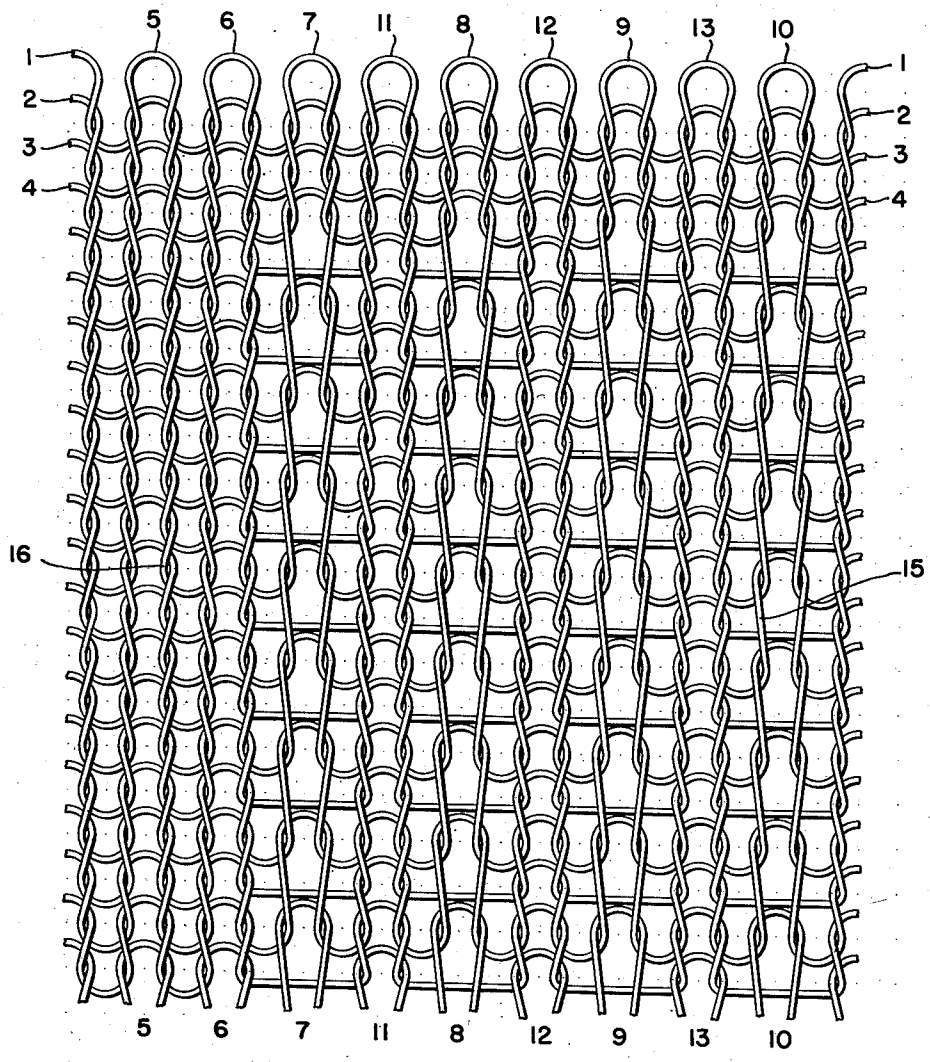
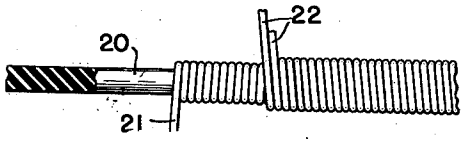


FIG. 2



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FIG. 3

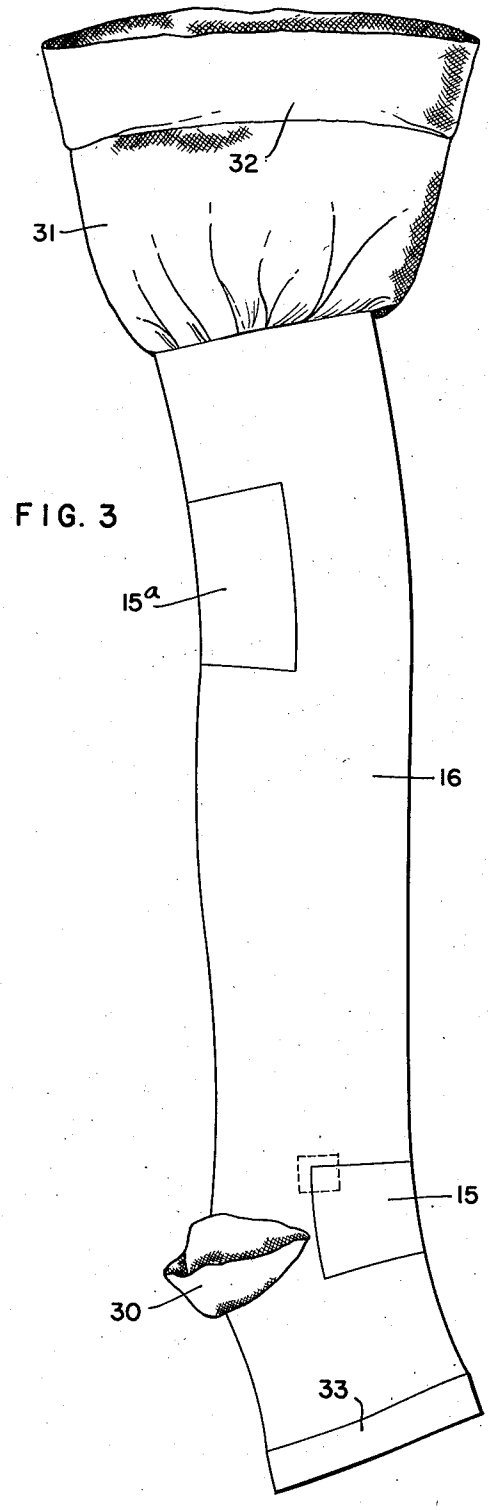


FIG. 4

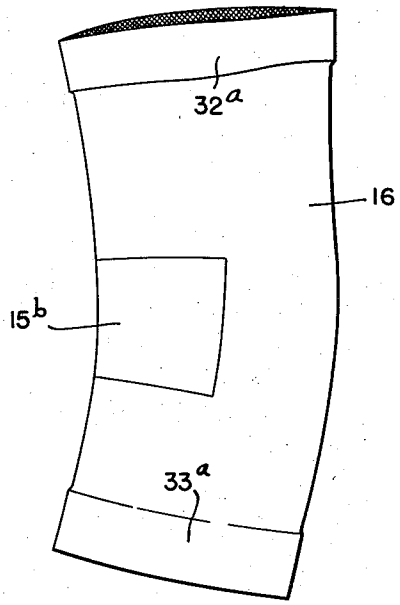
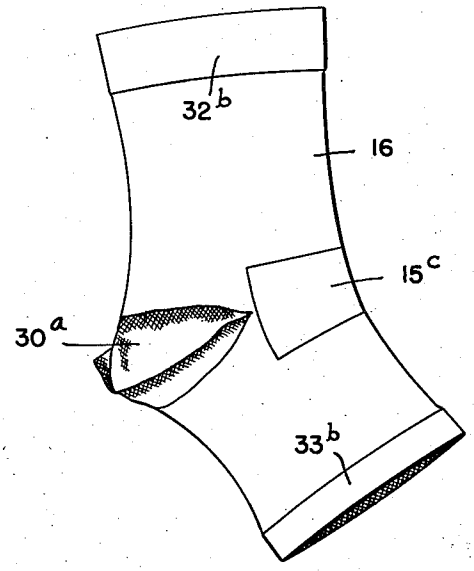


FIG. 5



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UNITED STATES PATENT OFFICE

2,574,737

ELASTIC STOCKING AND THE LIKE

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Application January 7, 1950, Serial No. 137,438

5 Claims. (Cl. 66—178)

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This invention relates to elastic stockings and the like and it relates more particularly to the fabric employed in the formation of elastic stockings and the like, which are used for surgical purposes and for the treatment of ailments.

Heretofore most of the elastic stockings in common use have utilized a knitted ribbed fabric, with a covered rubber thread inlaid in the courses of the stitches of which the fabric was composed. Elastic fabrics knitted in this manner were open to the objection that the stretch was not uniform in all directions by reason of the covered rubber thread being disposed circumferentially in the fabric of the tube.

Recently there became available an elastic yarn made of a much lighter strand of rubber or latex covered by one or more layers of threads of fibrous material such as cotton, silk, rayon, nylon, or the like, wound in helical form on the rubber or latex core. Such yarns may be readily worked in ordinary knitting machines and plain stitches used in the formation of the fabric. Furthermore articles made therefrom are more uniformly stretchable in all directions so that the stocking or other article will conform better to the part of the body to which the same is applied.

However upon the making of surgical stockings and the like, employing such yarns, considerable difficulty occurred in connection with the shaping or fashioning of the fabric at the ankle, knee and similar locations by reason of the formation, at such places, of wrinkles in the fabric when the leg or foot was flexed, particularly when such stockings were made on seamless machines, which are the kind most commonly employed in the making of surgical stockings.

The principal object of the present invention is to provide surgical stockings and the like made of an elastic knitted fabric freely stretchable in all directions and so fabricated at the ankle, knee, and similar locations, that the same may be readily flexed without causing wrinkles to occur at such places in the stocking.

A further object of the invention is to provide elastic stockings and the like, of the character aforesaid, which may be made on ordinary seamless knitting machines.

The nature and characterictic features of the present invention will be more readily understood from the following description, taken in connection with the accompanying drawings forming part hereof, in which:

Figure 1 is a plan view, to a certain extent diagrammatic, of a portion of a fabric used in stockings, and the like, embodying the main features of the present invention;

Fig. 2 is an enlarged view of a portion of a preferred form of yarn employed in the making of the fabric;

Fig. 3 is a side elevation of a completed stocking illustrating preferred relative locations of fashioning areas;

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Fig. 4 is a similar view of an elastic knee band illustrating the location therein of a fashioning area; and

Fig. 5 is an anklet band also having a fashioning area incorporated therein, as well as a heel pocket which may be, and preferably is, made of ordinary non-elastic yarn.

It should, of course, be understood that the description and drawing herein are illustrative merely, and that various modifications and changes may be made in the fabric, and in the elastic articles in which fashioning areas are incorporated, without departing from the spirit of the invention.

The main or body portion of each of the various articles coming within the scope of the present invention is preferably knitted of plain ordinary stitches, as it is not necessary in the carrying out of the present invention to use a ribbed or similar fabric. However, the yarn employed should be of a highly elastic character, preferably of the type shown in Fig. 2 of the drawings, and comprising a central core 20 of rubber or the like around which is wound one or more strands of fibrous material, such as cotton, silk, rayon, nylon, or the like, disposed in helical form on the rubber or latex core. When more than one layer of strands of the fibrous material is disposed on the elastic core, the same would be arranged in the several layers in reversed pitch, so that the outer strand 22 will not tend to pass within the convolutions of the inner strand 21.

Whenever an "elastic yarn" is referred to herein, the same is meant to refer to a highly elastic yarn of the character above described with a central core of rubber or the like, and not to an ordinary yarn of fibrous material which, of course, does have a certain small amount of elasticity, such yarn, however, being herein referred to as "ordinary yarn" or "non-elastic yarn."

In Fig. 1 of the drawing there is shown a portion of a fabric of which the novel elastic articles of the present invention are made. In the main portion thereof as, for example, in the courses 1, 2, 3, and 4, and in the wales 5 and 6 plain ordinary stitches are preferably employed, whereas in the other or what might be regarded as the fashioning portion of the fabric, ordinary stitches are used in alternate wales 11, 12 and 13, whereas in the other alternate wales 7, 8, 9 and 10, draw stitches are employed, which may be formed by burying the needles which normally form the stitches in these wales during each alternate course. When thus formed the yarn is floated across the alternate wales in each alternate course.

By reason of the provision of the areas 15 in which the draw stitches are used, such areas will be internally stressed to a greater extent than the main body of the fabric, thus causing bends in the article by reason of the construction of

the same at the desired locations as, for example, opposite the knee and heel.

Referring now more particularly to Fig. 3 of the drawings, there is there shown, in side elevation, a surgical stocking employing in its construction a fabric embodying the main features of the present invention. Said stocking as there shown comprises a body portion 10 which is knitted of elastic yarn and preferably using ordinary stitches. Some slight variations of diameter may be obtained at the calf and ankle portions by variations in tension of the elastic yarn during the knitting operation.

On the front side of the stocking tube opposite the ankle portion there is provided a fashioning area 15 of any desired shape or extent, and in like manner a similar fashioning area 15a may be provided at the rear of the tube for the knee flexing. On the rear side of the tube, opposite the ankle fashioning area 15 there may be knitted in a heel pocket 30 made of ordinary yarn, preferably of the same fibre as that employed for the covering of the rubber core of the elastic yarn employed for knitting the main or body portion of the tube.

The top of the stocking may also be provided with a portion 31 made of ordinary yarn and having a welt 32 formed therein in the usual manner. Likewise, at the bottom of the tube the fabric may be turned and stitched to provide a welt 33 at that end.

In the making of the various other elastic fabric articles, such as the knee caps shown in Fig. 4 of the drawings, the entire article may be made of the elastic yarn. The same may be provided with a fashioning area 15b opposite the knee portion, and also the same may be provided with welts 32a and 33a at the respective ends which may be formed in the usual manner, as by holding the stitches on the needles for the desired number of courses, and then interknitting the same into the body of the fabric, or by turning the fabric and stitching the same.

The article shown in Fig. 5 of the drawings, designed as an anklet for use on the ankle portion of the wearer, may be made in a manner substantially similar to that of the article shown in Fig. 4, with the exception that there is provided a heel pocket 30a which may be and preferably is knitted of ordinary yarn. The fashioning area 15c in this article may be formed as in the other articles, as also may be the welts 32b and 33b.

A tubular elastic bandage made in accordance with the present invention is much more comfortable when worn for the treatment of certain ailments than those heretofore available. This is so, not only by reason of the substantially uniform stretchability in all directions, but also by reason of the fact that the fabric itself can be made much lighter in texture for an equal amount of binding effect upon the portion of the body where the same is to be worn.

Furthermore, it will be found that in such a bandage there will be much less tendency of the fabric to wrinkle at the places where the limbs of the wearer are flexed when the same is provided with fashioning areas in the portions opposite the joints.

I claim:

1. An elastic bandage the main or body portion of which is formed by knitting a highly elastic yarn in ordinary stitch formation, and having fashioning areas at desired locations in which a similar yarn is employed but in which draw stitches are employed, said draw stitches being formed by floating said highly elastic yarn in certain courses between wales of ordinary stitches and interknitting said highly elastic yarn in the other wales in loops extending over at least two courses.

2. An elastic bandage the main or body portion of which is formed by knitting a highly elastic yarn in ordinary stitch formation, and having fashioning areas at desired locations in which a similar yarn is employed but in which draw stitches are employed at spaced locations therein, said draw stitches being formed by floating said highly elastic yarn in certain courses between wales of ordinary stitches and interknitting said highly elastic yarn in the other wales in loops extending over at least two courses.

3. An elastic bandage the main or body portion of which is formed by knitting a highly elastic yarn in ordinary stitch formation, and having fashioning areas at desired locations in which a similar yarn is employed but in which draw stitches are employed in spaced wales, said draw stitches being formed by floating said highly elastic yarn in spaced courses between wales of ordinary stitches and interknitting said highly elastic yarn in the wales across which said yarn is floated in loops extending over the courses in which said yarn is floated.

4. An elastic bandage the main or body portion of which is formed by knitting a highly elastic yarn in ordinary stitch formation, and having fashioning areas at desired locations in which a similar yarn is employed but in which draw stitches are employed in alternate wales, said draw stitches being formed by floating said highly elastic yarn in alternate courses between alternate wales of ordinary stitches and interknitting said highly elastic yarn in the intermediate wales in loops extending over two courses of the body fabric.

5. An elastic bandage the main or body portion of which is formed by knitting a highly elastic yarn in ordinary stitch formation, and having fashioning areas at desired locations in which the same yarn is employed as in the main or body portion but in which draw stitches are employed in alternate wales, said draw stitches being formed by floating said highly elastic yarn in alternate courses between alternate wales of ordinary stitches and interknitting said highly elastic yarn in the intermediate wales in loops extending over two courses of the body fabric, said elastic yarn comprising a central core of rubber covered by at least one layer of a fibrous strand wound thereon in helical form.

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