April 28, 1953 S. TAIT, JR 2,636,369

STOCKING FABRIC

Filed June 6, 1952

FIG. 1

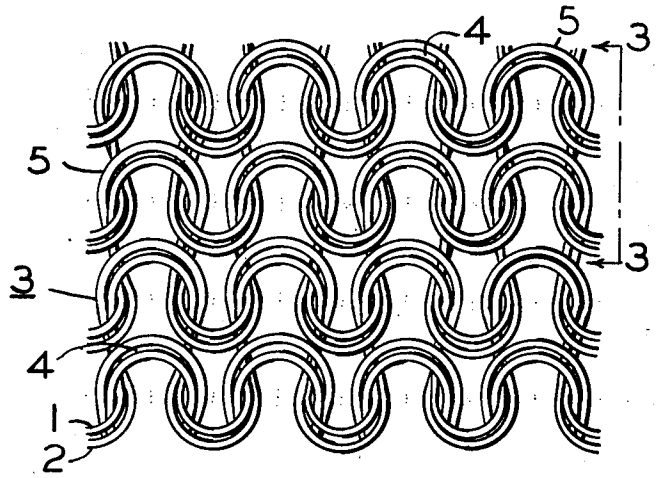


FIG. 2

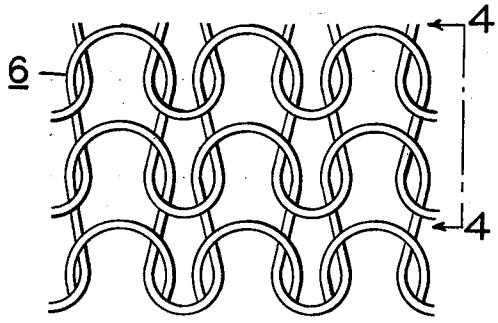


FIG. 3

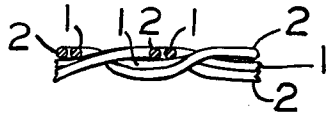


FIG. 4



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STOCKING FABRIC

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2 Claims. (Cl. 66—178)

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My invention is an improved knitted fabric having a high resistance to wear, snags and runs and having a sheer, dull finish.

Knit fabrics, such as women's full fashioned hosiery, are quite generally made with single loops each dependent upon the next adjoining course and loop for the permanence of the individual loop. Such a fabric contains a minimum amount of yarn and has a sheer appearance. The principal objections to this conventionally knit fabric are that it snags and runs quite easily and if made from monofilament synthetic yarns it has a shiny and reflective appearance which is not favored by the leaders of fashion. Attempts have been made to overcome the running characteristic by interknitting the loops in order to produce locked stitches which will prevent a runner in the fabric proceeding beyond a locked stitch. Thus, in these constructions a snag frequently results in a run but its course is limited. A snag or run, therefore, may take on the appearance of a hole in the fabric which in some instances is just as unsightly as the run which this construction was designed to overcome.

The current mode of making fine knitted fabrics, such as full fashioned hosiery, makes use of 15 and 30 denier nylon yarns, and even finer yarns when obtainable. A 30 denier yarn made out of nylon is conventionally made from several strands or filaments, usually 10, twisted together to form a cable-like yarn, but a 15 denier nylon yarn is but a single filament having a smooth, continuous, cylindrical-like surface.

A conventional fabric made from 15 denier yarn does not have the wearing qualities and runs more quickly and readily than a fabric made out of heavier yarns made of the same standard of construction but the 15 denier fabric is nonetheless much more saleable than fabrics made from the heavier yarns because of its sheerness.

My improved fabric is made from a plurality of monofilament yarns but has the sheerness of a fabric made from a single monofilament yarn and has a resistance to wear, runs and snags not found even in fabrics made from service weight yarns.

An object of my invention is to produce a sheer fabric having a high resistance to wear, snags and runs.

A further object of my invention is to produce a fabric wherein a snagged filament may be cut off from the fabric with no apparent damage to the fabric.

A further object of my invention is to produce

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a sheer fabric from monofilament yarns which has a dull appearance.

A further object of my invention is to produce a fabric which has a sheer appearance but which can be worn under the same conditions as heavy, service weight fabrics with no resulting damage to the fabric.

A further object of my invention is to produce a sheer fabric which clings to the wearer and resists twisting while being worn.

The characteristic features of my invention will further appear in the accompanying drawings and the following description.

Fig. 1 illustrates a portion of my improved fabric having two monofilament yarns per loop;

Fig. 2 illustrates a conventionally knit fabric having a single monofilament yarn per loop;

Fig. 3 illustrates an edge view of my improved fabric taken along the line 3—3 of Fig. 1; and

Fig. 4 illustrates an edge view of a conventionally knit fabric taken along the line 4—4 of Fig. 2.

In my improved fabric illustrated in Fig. 1, I knit two monofilament yarns 1 and 2 in each loop 3. These yarns 1 and 2 are laid on the sinkers and dividers of a conventional knitting machine in such manner as to produce loops having a space 4 between the yarns 1 and 2 at the bights 5.

The loops of my fabric have the same general appearance as the loops 6 found in single yarn fabrics and both yarns 1 and 2 are in the same flat or horizontal plane in the bights. As both yarns of my fabric are in the same flat plane over most of their length, the fabric has a sheerness and translucency closely approximating that of the single yarn fabric. However, there is enough variation in the thickness of the fabric, particularly along the legs of the loops, to produce a dull appearing fabric rather than the shiny appearing fabric of the conventional single yarn fabric, illustrated in Fig. 2. The dull appearance of my fabric appears to have the characteristic surface property of a creped fabric.

The spacing of the yarns 1 and 2 in the bights generally averages not more than the thickness of a yarn, but I find that this spacing is sufficient to subject the yarns to individual, rather than joint, snagging. Thus, yarn 1 may be pulled without the snagging particle also engaging yarn 2. If the yarn 1 is withdrawn from the surface of a fabric to a great extent it may be cut off close to the fabric and the ends of the yarn then withdraw into the body of the fabric and are, to all appearances, hidden therein and not discernible. This, of course, leaves one course in

which the loops have but a single yarn and should this single yarn be snagged, cut or broken, it would result in a run in the same manner as a run would develop in the conventionally knit fabric illustrated in Fig. 2. However, due to the great number of courses, it is highly unlikely that the same course will be snagged on two different occasions. I have found that rarely, if ever, is a run produced by two individual snaggings in the same place of one course.

The resistance to snagging or running is further aided by the additional yarn present in the loop giving it a greater surface and resistance to penetration as compared with the single yarn fabric.

Three or more monofilament yarns may be included in each loop but the additional yarns present difficulties in producing a fabric wherein each yarn lies apart from each other and in the same horizontal plane at the bights thereof.

When multifilament yarns are knitted in this manner, the yarns build up in vertical planes rather than spreading in a single flat or horizontal plane, and the result is that the fabric has a very heavy appearance. Thus, two multifilament yarns knitted together in this manner produce a fabric wherein the yarns are not spaced at the bights. Such a fabric appears to have been knit from a yarn twice as large as that actually used and is, of course, unacceptable to the trade. A fabric knit with a single monofilament and a single multifilament yarn does not separate like the two monofilament, smooth surface yarns but rather the monofilament yarn intertwines itself

in and around the multifilament yarn so that it is substantially embodied therein. This affinity of multifilament yarns for other yarns renders it useless in making a fabric similar to my fabric above described.

It must be recognized that in addition to being monofilament yarns, the yarns to be used must have the characteristic of a smooth, non-clinging surface, such as nylon, rather than natural or synthetic yarns now obtainable which have an affinity for each other.

Having described my invention, I claim:

1. A knitted stocking fabric comprising plural yarn loops composed of mono-filament yarns with the yarns spaced from one another at least partially along the bights of the loops.

2. A knitted stocking fabric comprising plural yarn loops composed of mono-filament yarns with the yarns spaced from one another at least partially along the bights of the loops, and with the length of one of the yarns in the bights of the loops greater than that of the other yarn.

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