April 2, 1946. A. R. BELL 2,397,460

SEWING THREAD FOR ELASTIC FABRICS

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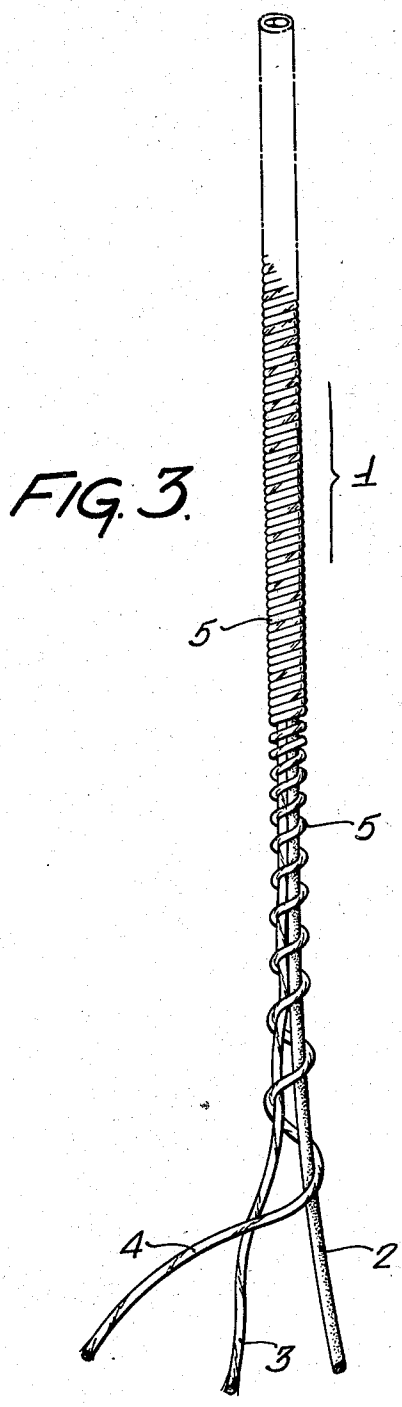


FIG. 3.

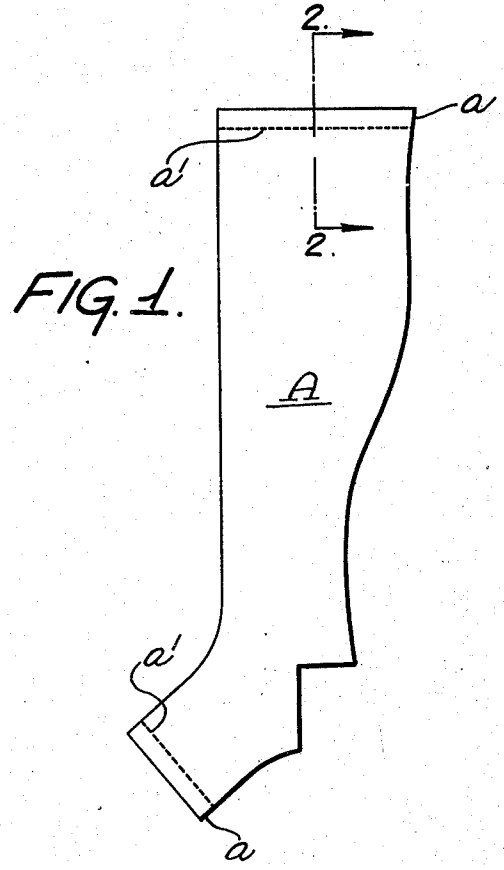
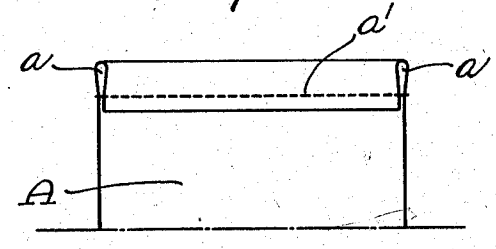


FIG. 1.

FIG. 2.



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SEWING THREAD FOR ELASTIC FABRICS

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1 Claim. (Cl. 28—78)

This invention relates to elastic garments, such as surgical hosiery, arm and leg bands, etc. wherein the garment is formed of knitted fabric composed of a rubber covered thread, i. e. a thread or yarn consisting of a rubber core strand or filament spirally wound with a cotton, silk, rayon or other suitable covering thread of a relatively inelastic character per se.

In order to eliminate the possibilities of the knitted fabric raveling at the terminal edges of the garment, it is customary to weave an elastic thread through the terminal courses of the knitted stitches, manually, or to fold the fabric upon itself and stitch the flap to the underlying body fabric with an elastic thread.

It is highly essential in either case, that the thread employed have a degree of elasticity at least as great as the fabric, in order to afford maximum elasticity of the garment at its terminal edges.

The hand method of finishing the terminal edges of garments of this kind is obviously too costly to permit the garments being economically produced; and the elimination of the hand method heretofore has required the use of special machines for handling the elastic sewing thread employed to make the turned hems on the garments.

The object of the present invention is to provide a new kind of sewing thread, for hemming elastic garments, which can be used in an ordinary sewing machine of either the chain stitch type, using a single thread, or a lock stitch type employing a bobbin thread in addition to the needle thread.

The construction of the thread forming the subject matter of the present invention, and the method employed for utilizing it in elastic garments so as to preserve the full range of elasticity of the garment along its terminal edges will be fully disclosed hereinafter, reference being had to the accompanying drawing of which:

Fig. 1 diagrammatically illustrates an elastic stocking wherein the thread of the present invention is employed to form hems at the opposite ends respectively thereof;

Fig. 2 is a sectional view taken on the line 2—2, Fig. 1; and

Fig. 3 is a greatly magnified view of the sewing thread per se.

As shown in Figs. 1 and 2, the particular garment chosen for the purpose of illustrating the present invention is in the form of a surgical stocking A, composed of knitted two-way-stretch fabric normally used in this type of article.

The stocking A is provided with a turned hem *a* at each of its terminal edges, i. e. at the top of the leg portion of the stocking and at the bottom of the foot portion thereof. The hem *a* is formed, in each instance, by securing the turned-over portion of the fabric to the underlying body fabric, by use of a row of stitches *a1*.

The rows of stitches *a1*, *a1*, are formed by a sewing thread 1, shown as being greatly magnified in Fig. 3. The sewing thread 1 comprises a continuous elastic strand or core filament 2 composed of rubber, natural or synthetic, extruded or cut, in a completely relaxed contracted condition longitudinally; a paralleling inelastic fibrous thread 3 of cotton, linen, etc., in a normal state of flaccidity; and a covering thread 4 of cotton, silk, rayon, etc. wound in laterally abutting spiral convolutions 5, 5 around and encasing the elastic core strand 2 and the relatively inelastic paralleling core strand 3.

The hems *a*, *a* are turned and sewn while the fabric is in a smooth relaxed state and the rows of stitches *a1*, *a1* are formed with the sewing thread 1 under tension such as would be normally applied to a sewing thread being used in a sewing machine.

During the sewing operation the relatively inelastic core thread 3 takes all the tension applied to the sewing thread 1 as a whole, leaving the elastic core thread 2 in its completely relaxed state during the entire sewing operation. Thus the elastic strand in no way hinders the normal functioning of the sewing thread during the sewing operation.

After the rows of stitches *a1*, *a1* have been completed with the fabric in a normal relaxed state, the fabric is expanded or stretched in the longitudinal direction of each row of stitches *a1*, *a1*, to an extent beyond the longitudinal elastic limit of the relatively inelastic core thread 3 and until said thread 3 breaks. During this stretching operation the elastic core thread 2, and the elastic fabric in which the rows of stitches *a1*, *a1* are formed, stretches in a normal manner and after the breaking of the relatively inelastic core threads 3, the elastic fabric and the then elastic sewing thread 1 coordinately function in the same manner as though the relative inelastic core thread 3 had never been present in the sewing thread 1.

While the foregoing description refers to the sewing thread 1 as being used in a sewing machine, obviously the thread 1 can be used for hand sewing, and the inelastic core strand 3 may be broken, as described, to afford subsequent un-

restricted functioning of the elastic core strand 2 in the sewn seam.

I claim:

An article composed at least in part of elastic fabric and having adjacent elastic fabric parts joined together at a suture formed by a row of stitches formed by at least one composite sewing thread comprising a substantially rectilinear longitudinally relaxed elastic core strand, a substantially rectilinear relatively inelastic core strand adjacently paralleling said elastic core strand, and a longitudinally extensible and retractible covering encasing and binding said core strands together to complete said thread, said inelastic strand being adapted to break under longitudinal tension applied to said thread in excess of the normal elastic limit of said inelastic strand by stretching the said elastic fabric parts longitudinally of the suture formed therebetween by said composite thread.

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