Nov. 9, 1965 S. MARGULIES 3,216,223

STOCKING AND METHOD OF MAKING THE SAME

Filed July 16, 1963 2 Sheets-Sheet 1

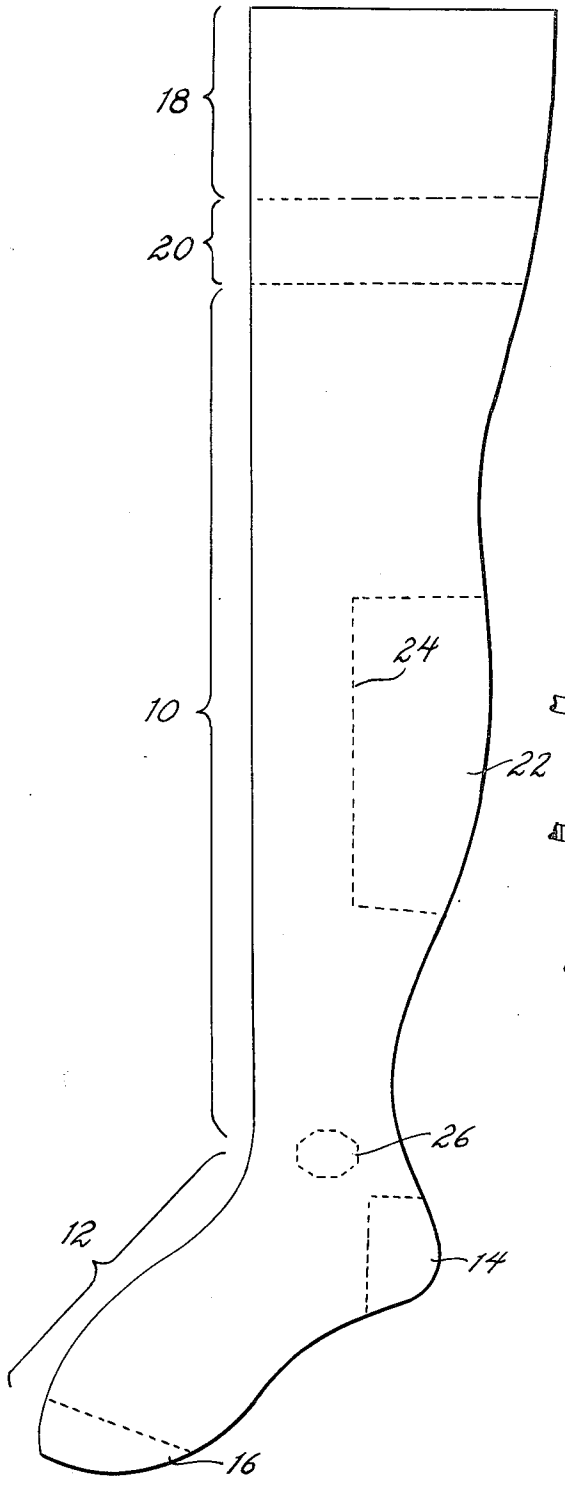


Fig. 1.

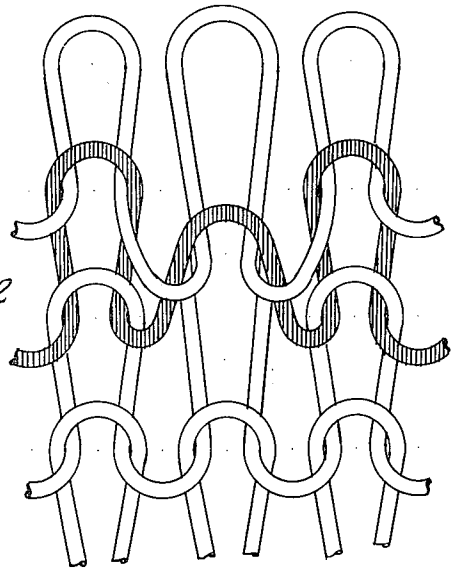


Fig. 3.

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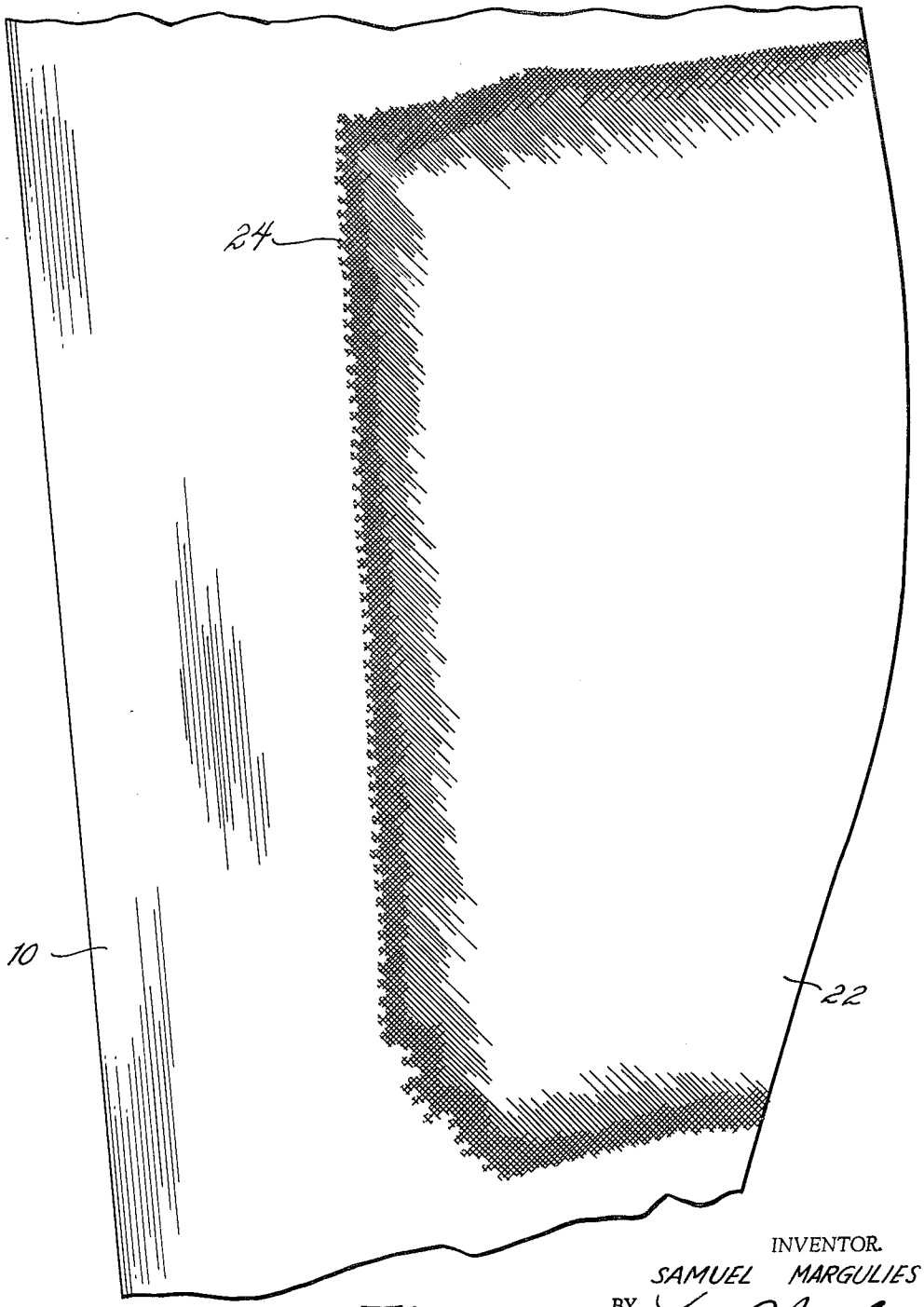


Fig. 2.

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3,216,223

STOCKING AND METHOD OF MAKING THE SAME

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1 Claim. (Cl. 66—178)

This invention relates to the art of manufacturing seamless stockings.

A seamless stocking is made on a machine which has a fixed number of needles and produces a tube of uniform diameter throughout its length. After a tube of the desired length is formed, it is placed on a leg-shaped form and subjected to the usual boarding operation to set the tube in the shape of a leg.

Experience shows that, after a stocking thus formed has been washed repeatedly, and especially if it is washed in relatively hot water, the stocking tends to lose its shape. This effect is most pronounced in the ankle and other areas which owe their shape to the boarding and setting operation, exclusively. As far as I am aware, all attempts to produce a seamless stocking of the type set forth which will retain its shape after repeated washings have failed.

It is therefore one object of the present invention to produce a seamless stocking which retains its shape and snug fit, repeated wearing and washing notwithstanding.

A stocking fashioned by the boarding operation acquires an increased diameter at the calf portion, for example, at the cost of shortening the over-all length of the tube. This means that the tube has to be made that much longer, at added cost in time and material. Also, if tubes of the same length are boarded to accommodate legs having calf portions of different thicknesses, the stockings produced will be of different lengths and the stockings will not have uniform fit. To have to vary the lengths of the tubes in anticipation of the type of board on which they will be stretched involves disadvantages too obvious to need discussion.

It is therefore a further object of this invention to produce a stocking which is "fashioned," or permanently shaped, during the knitting operation, whereby the effect of the boarding operation is so minimized that when this effect is lost after repeated washings, the stocking will still have a reasonably good fit.

A still further object is to produce a fashioned stocking easily and inexpensively.

These and other objects are attained by this invention as set forth in the following specification and accompanying drawings.

FIG. 1 is a side elevational view of a stocking embodying this invention.

FIG. 2 is an enlargement of the calf portion of this stocking.

FIG. 3 is an enlarged view illustrating the formation of the tuck stitches used in carrying out the invention.

A conventional stocking includes a leg portion **10**, a foot portion **12**, a heel portion **14**, a toe portion **16**, a welt portion **18** and a shadow welt **20**.

In one embodiment of the invention, the entire stocking is knit of conventional chain, or loop, stitches, except for that area **22** thereof which is marked off by broken line **24** in FIG. 1, which area is made of the conventional tuck stitch which, for convenience, is shown on FIG. 3. The upper limit of tuck stitch area **22** is preferably at a point below the narrowed portion of the stocking which is just below the knee, or just above the point at which the calf portion of the leg begins to widen. The lower limit of the tuck stitch area is at a

point where the calf begins to taper, or just above the ankle. As shown in FIG. 2, the lower limit of the tuck stitch area is midway of the narrowest portion of the ankle and the widest portion of the calf of the stocking leg. The vertical edge of the tuck stitch area is preferably located approximately midway of the forward and rear edges of the leg. The limits of the tuck stitch area, as shown in FIG. 1, are approximate and not to scale and their sizes and locations can be varied as desired. For example, for long slender legs, the tuck stitch area is made longer and narrower, and for short, stout legs, the tuck stitch area is made shorter and wider.

As is well known, and as can be seen from FIG. 3, tuck stitches are longer than plain loop stitches knit of the same yarn and under the same tension and therefore a given number of tuck stitches provide more surface area than the same number of plain loop stitches can provide. Therefore the use of tuck stitches in area **22** produces a "pocket," or additional fabric area, which constitutes a preshaped pocket for receiving the calf of the leg. It will be noted that this pocket is permanent in that it has an increased area instead of being induced by the distortions of the fabric during the boarding operation. This means that relatively little further shaping remains to be effected by the boarding operation and correspondingly little shaping to be lost due to repeated washings. This correspondingly reduces the longitudinal tension placed on the fabric during the boarding operation and correspondingly decreases the loss in the length of the tube due to the distortion which would otherwise be necessary to form the bulge of the calf.

A stocking formed according to this invention is boarded in the usual manner, the function of boarding being to set the other portions of the stocking and, because the distortion of the other portions of the stocking during the barding operation is minimized by the provision of a nautral bulge at the calf, the force tending to return the stocking into its original, uniform tube shape, is also minimized. Also, because the bulge at the calf of the stocking is created by the tuck stitches, the tube is not appreciably shortened by the boarding operation and, because the tensions to which the stocking is subjected are reduced, its wearing qualities and its appearance are improved.

If desired, the heel area **14** is also knit of tuck stitches so as to provide a partial heel pocket when the stocking is relaxed, that is, before it is boarded, whereby only a portion of the heel pocket will have to be produced by the boarding operation instead of forming the entire pocket by stretching the corresponding area of the tube.

If desired, the portion of the tube which, in the finished stocking will register with the ankle bones, that is, the area approximately enclosed by broken line **26**, may also be made of tuck stitches so as to provide additional room for the bones. Likewise, for comfort, especially when bending, the portion **20** of the fabric which registers with the knee cap may also be made of tuck stitches.

The various tuck stitch areas referred to may be used separately or in combination with each other.

What I claim is:

A stocking including portions adapted to encase narrow portions of the human leg and other portions adapted to encase the rear portion of the calf and other bulging portions of the human leg,

said other portions being knit of relatively large tuck stitches and the fabric portions contiguous with said other portions being knit of relatively small stitches,

all of said large and small stitches being knit of the same yarn and under the same tensions.

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