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STOCKING AND METHOD OF MAKING THE SAME

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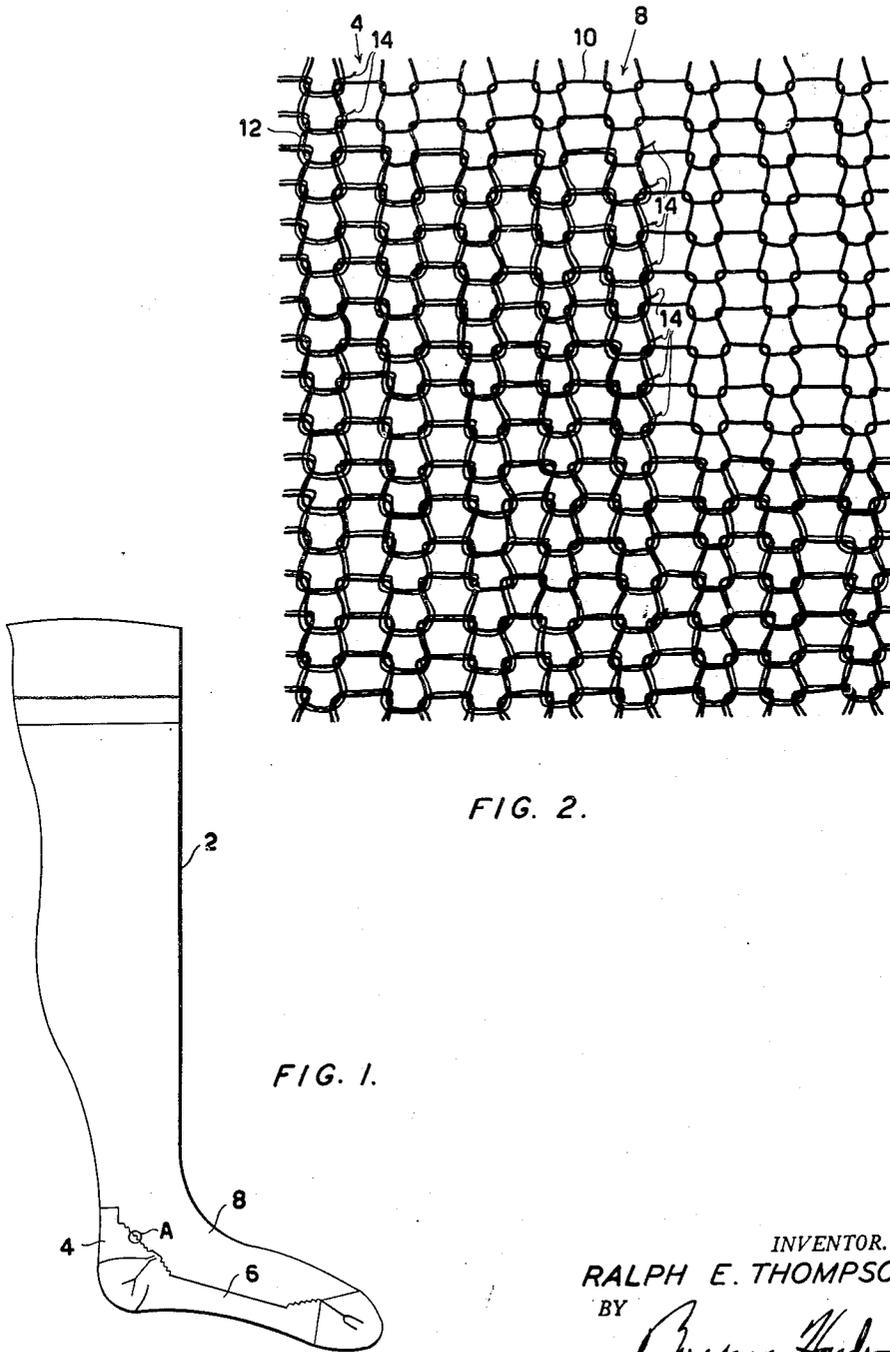


FIG. 2.

FIG. 1.

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STOCKING AND METHOD OF MAKING THE SAME

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This invention relates to stockings and methods of making the same, and has particular reference to the proper formation of the edges of reinforcements in stockings, the reinforcing yarn of which, at least, is of thermoplastic type, such as nylon.

In women's sheer hosiery it is customary to provide reinforcing in a high splice above the heel and/or in the foot by the addition of an auxiliary reinforcing yarn which is omitted from the instep of the stocking. The ends of this reinforcing yarn are cut off at the boundaries of the reinforced area. If the stocking is of sheer type the cut ends, if they exceed about one-sixteenth of an inch in length, will form an unsightly fringe producing the appearance of a ragged edge along the boundaries of the reinforced area. Such a fringe will be unnoticeable if the remaining free ends of the reinforcing yarn are less than about one-sixteenth inch in length. If, however, the thermoplastic reinforcing yarn, such as nylon, is used the yarn is so slippery that even if ends longer than one-sixteenth of an inch exist they will tend to pull out the last stitch or stitches in which they are knit, thereby producing a poorly defined or irregular edge for the reinforced area. This condition is aggravated if the ends are cut off to lengths shorter than one-sixteenth of an inch. In accordance with the present invention the difficulties indicated are avoided by setting the stitches by preboarding before dyeing the stockings either before or after looping and then shaving the yarn ends, which shaving, in this case, may be carried out to such extent that the ends are substantially flush with the inner surface of the stocking, i. e., terminate substantially at the ends of the last loops in which the reinforcing yarn is knitted. It has been found that in accordance with this procedure even such a slippery yarn as nylon may be satisfactorily used as a reinforcement though the free ends are less than one-sixteenth of an inch in length.

The general object of the invention is the attainment of the foregoing results of providing reinforcements of thermoplastic yarns which have, and retain during periods of wear, sharp boundaries. The general object and other objects particularly relating to details of procedure and construction will become apparent from the following description read in conjunction with the accompanying drawing in which:

Figure 1 represents an elevation of a stocking embodying the invention; and

Figure 2 is a diagrammatic enlargement of the

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small area at the edge of a reinforcement indicated at A in Figure 1.

The stocking generally indicated at 2 is of sheer type, the body yarn of which may be of any desired yarn, such as silk, nylon or other thermoplastic yarn, the advantages of the invention, however, being most apparent when the body yarn is a thermoplastic yarn such as nylon. There is indicated at 4 a reinforcing area constituting the high splice of the stocking and at 6 the reinforcing area constituting the sole. These reinforcing areas involve the inclusion of yarn in addition to the body yarn which alone is used to form the instep 8.

Referring to Figure 2 the body yarn is indicated at 10 and, as stated, this may be of silk or thermoplastic composition, such as nylon. In the last case it may be of monofilament or multifilament type. The reinforcing yarn is indicated at 12 and in accordance with the invention this yarn is of a thermoplastic type, for example nylon (polyamide) yarn or one of the known thermoplastic yarns, such as one of the copolymers of vinylidene chloride and vinyl chloride or one of the copolymers of vinyl chloride and vinyl acetate. The reinforcing yarn, in any case, may be of the monofilament or multifilament type.

If knit into the stocking in the usual and conventional fashion such reinforcing yarn will have relatively long ends projecting from the last loops of the boundaries of the reinforced areas.

In accordance with the present invention, the stockings, following the knitting and closure of the toes by looping, will be preboarded at the usual temperatures. In the case of stockings having a nylon reinforcing yarn this preboarding may be carried out at about 253° F., more or less, through the use of steam at fifteen to sixteen pounds gauge pressure; while if other thermoplastic yarns are used other suitable temperatures may be used as known to the art. In any case, such boarding is carried out so as to impart a fixed set to the reinforcing yarn loops, which set is retained upon cooling.

Following this preboarding the interiors of the stockings are shaved using, for example, electric shaving heads while either suction or air pressure is applied to cause the ends to stand upwardly from the interior of the fabric. Shaving devices provided with suction means are known and, alternatively, with the stocking inside out air pressure may be provided at the interior of the stocking to blow the yarn ends upwardly to insure close shaving. In accordance with the invention this shaving is carried out so as to leave

reenforcing yarn ends 14 quite short, i. e., no more than one-sixteenth inch in length from the point where they leave the needle wales. Actually, the shaving may be so carried out that these ends are even shorter and substantially flush with the interior surface of the stocking.

The stocking, following this shaving, may be dyed and then given a finishing boarding treatment at a temperature somewhat lower than that of the preboarding.

It has been found that stockings finished as described above will resist the slippage of the reenforcing yarn to the extent of its becoming unknitted in the terminal loops of the reenforced areas even though very short ends remain from the shaving operation. This result is apparently due to the fact that by the preboarding operation the reenforcing yarn ends are definitely set in their looped shapes so that even though in wearing the loops are stretched and distorted the ends will not slip out of proper concatenation with the loops. It has been found that even after prolonged wear and repeated washings the ends retain their positions without slipping out to become fringes and to destroy the sharpness of the boundaries of the reenforced areas. This condition is particularly pronounced if both the reenforcing yarn and the body yarn are of thermoplastic type since the body yarn in this last case is also definitely set and will not tend to pull away from the set ends of the reenforcing yarn.

While preboarding while the reenforcing yarn ends are long is desirable before the shaving operation it has been found that satisfactory results are generally secured even if the shaving precedes the preboarding since there will not usually occur in the boarding of the stocking for the preboarding operation such disturbance of the loops as will cause the reenforcing yarn ends to become disengaged from the loops in which they were knit at the edges of the reenforced areas.

What is claimed is:

1. In the formation of a stocking of the type comprising a reenforced area provided by heat settable, thermoplastic yarn knit with a body yarn and in which said thermoplastic yarn has free ends beyond terminal loops in each course of said reenforced area, the steps of preboarding such stocking while said ends extend substantially

beyond said terminal loops, said preboarding being carried out at such temperature as to set the loops of said thermoplastic yarn, and then of cutting off the ends of said reenforcing yarn to lengths not exceeding one-sixteenth of an inch.

2. In the formation of a stocking of the type comprising a reenforced area provided by heat settable, thermoplastic yarn knit with a heat settable, thermoplastic body yarn and in which the first mentioned thermoplastic yarn has free ends beyond terminal loops in each course of said reenforced area, the steps of preboarding such stocking while said ends extend substantially beyond said terminal loops, said preboarding being carried out at such temperature as to set the loops of said thermoplastic yarns, and then of cutting off the ends of said reenforcing yarn to lengths not exceeding one-sixteenth of an inch.

3. A stocking having a reenforced area provided by heat settable, thermoplastic yarn knit with a body yarn, the ends of said reenforcing yarn having lengths not exceeding one-sixteenth of an inch beyond terminal loops in each course of said reenforced area, the loops of said thermoplastic yarn being set to prevent disengagement of said terminal loops from the body yarn.

4. A stocking having a reenforced area provided by heat settable, thermoplastic yarn knit with heat settable, thermoplastic body yarn, the ends of said reenforcing yarn having lengths not exceeding one-sixteenth of an inch beyond terminal loops in each course of said reenforced area, the loops of said thermoplastic yarns being set to prevent disengagement of said terminal loops from the body yarn.

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