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FLAT KNIT GOODS AND YARN THEREFOR

Isaac P. Davis, Swarthmore, and Edgar S. Kennedy, Wayne, Pa., assignors to American Viscose Corporation, Wilmington, Del., a corporation of Delaware

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This invention relates to low denier high strength synthetic yarns and knit goods produced from said yarns. More particularly, the invention relates to low denier high strength synthetic yarns and flat knit goods such as full fashioned hosiery and the like produced from said yarns.

It has been found that flat knit goods produced from low denier synthetic yarns in the ordinary manner do not have sufficient elasticity with the result that articles of apparel formed therefrom do not retain their shape and do not fit satisfactorily. Also the operation of knitting such yarns on a flat knitting machine is accompanied by many difficulties.

An object of this invention is to produce flat knit goods from low denier high strength synthetic yarn.

Another object of this invention is to produce low denier high strength synthetic yarns for use in flat knit goods.

Other objects and advantages of the invention will be apparent from the following description and appended claims.

In carrying out this invention, any high strength synthetic yarn may be used that has a tensile strength when wet of from 1½ to 4½ or more grams per denier and an extensibility when dry of from 16 to 23%, including regenerated cellulose yarn made by the viscose process, cellulose acetate yarn and yarns made from resinous materials such as those known in the trade as Vinyon. Filaments or yarn of from 10 to 75 denier are given a twist of from 60 to 25 turns per inch to form a single. The single is then knitted on a flat knitting machine to form fabrics or other flat knit goods such as full fashioned hosiery. It is found that the fabric or goods knitted with this type of yarn shows an improved elasticity and resistance to snagging and abrasion. It is substantially dull in appearance as contrasted with the bright or shiny appearance of ordinary flat knit goods. Also the twist in the yarn remains substantially uniform throughout the goods.

Where heavier flat knit goods are desired, such as in the welt portion of full fashioned hosiery, a yarn may be used comprising two or more of the above singles that have been plied together. The ply twist is in a direction opposite to the direction of twist in the singles and is less than the singles twist. The ply yarn may also be used in sewing flat knit goods such as the back seam in full fashioned hosiery.

The following examples are illustrative of the invention:

1. A 25 denier, 12 filament regenerated cellulose yarn made by the viscose process having a wet strength of 2 grams per denier and a dry strength of 3 grams per denier is given a twist of 50 turns per inch. The yarn is then knitted on a flat knitting machine such as a full fashioned hosiery machine.

2. A 40 denier, 19 filament regenerated cellulose yarn made by the viscose process having a wet strength of 2 grams per denier and a dry strength of 3 grams per denier is given a twist of 40 turns per inch. The yarn is then knitted on a flat knitting machine such as a full fashioned hosiery machine.

3. A 50 denier, 24 filament regenerated cellulose yarn made by the viscose process having a wet strength of 2 grams per denier and a dry strength of 3 grams per denier is given a twist of 35 turns per inch. The yarn is then knitted on a flat knitting machine such as a full fashioned hosiery machine.

4. A 75 denier, 36 filament regenerated cellulose yarn made by the viscose process having a wet strength of 2 grams per denier and a dry strength of 3 grams per denier is given a twist of 25 turns per inch. The yarn is then knitted on a flat knitting machine such as a full fashioned hosiery machine.

5. Two yarn singles, made in accordance with Example 1, are given a twist of 20 turns per inch in a direction opposite to the direction of twist in the singles. This yarn is knitted on a flat knitting machine such as a full fashioned hosiery machine where a heavier fabric is desired, for instance in the welt portion of the stocking.

6. A 50 denier, 24 filament regenerated cellulose yarn made by the viscose process having a wet strength of 2 grams per denier and a dry strength of 3 grams per denier is given a twist of 20 turns per inch. Three of these singles are then plied together with a twist of 22 turns per inch in a direction opposite to the direction of the singles twist. This yarn may be used in sewing flat knit goods of either silk or synthetic yarn, for instance in the back seam of full fashioned hosiery.

While preferred embodiments of the invention have been shown, it is to be understood that changes and variations may be made without departing from the spirit and scope of the invention as defined by the appended claims.

What we claim is:

1. A low denier, high strength regenerated cel-

lulose yarn comprising a multifilament single of from approximately 10 to 75 denier having a twist in inverse proportion to the denier of from approximately 60 to 25 turns per inch respectively, said filaments having a tensile strength when wet of at least from 1.5 to 4.5 grams per denier and an extensibility when dry of from 16% to 23%.

2. A low denier, high strength regenerated cellulose yarn comprising a plurality of multifilament singles of from approximately 10 to 75 denier having a twist in inverse proportion to the denier of from approximately 60 to 25 turns per inch respectively, plied together in a direction opposite to the direction of twist in the singles, the ply twist being less than the singles twist, the said filaments having a tensile strength when wet of at least from 1.5 to 4.5 grams per denier and an extensibility when dry of from 16% to 23%.

3. Flat knit goods comprising a low denier, high strength regenerated cellulose yarn comprising a multifilament single of from approximately 10 to 75 denier having a twist in inverse proportion to the denier of from approximately 60 to 25 turns per inch respectively, said filaments having a tensile strength when wet of at least from 1.5 to 4.5 grams per denier and an extensibility when dry of from 16% to 23%.

4. Flat knit goods comprising a low denier, high strength regenerated cellulose yarn comprising a multifilament single of approximately 50 denier having a twist of approximately 35 turns per inch, said filaments having a tensile strength when wet of at least from 1.5 to 4.5 grams per denier and an extensibility when dry of from 16% to 23%.

5. Flat knit goods comprising a low denier, high strength regenerated cellulose yarn comprising a plurality of multifilament singles of from approximately 10 to 75 denier having a twist in inverse proportion to the denier of from approximately 60 to 25 turns per inch respectively, plied together in a direction opposite to the direction of twist in the singles, the ply twist being less than the singles twist, the said filaments having a tensile strength when wet of at least from 1.5 to 4.5 grams per denier and an extensibility when dry of from 16% to 23%.

ISAAC P. DAVIS.
EDGAR S. KENNEDY.