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MOULINEE YARN AND METHOD OF MAKING THE SAME

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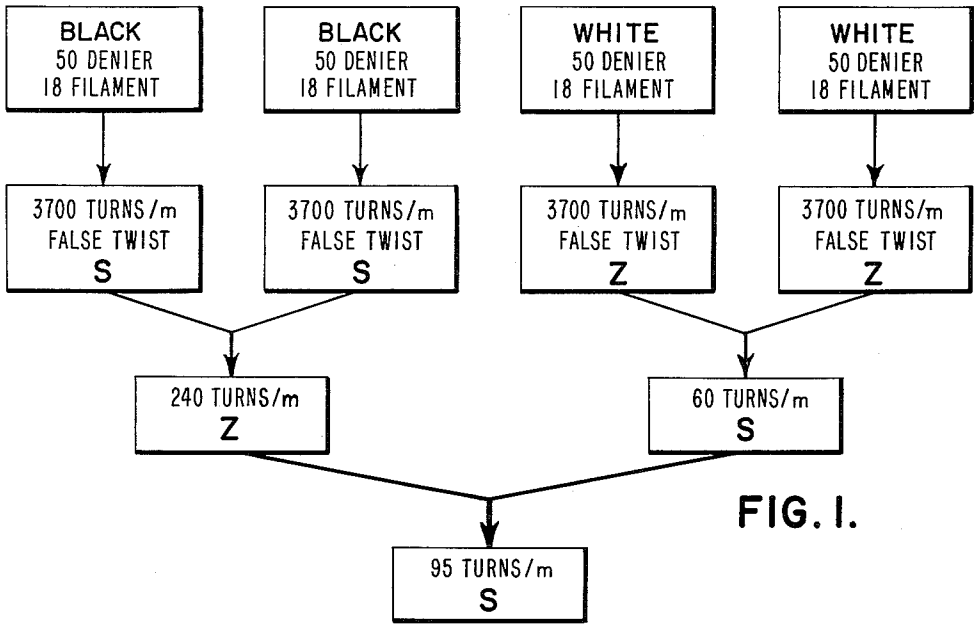

FIG. 1.

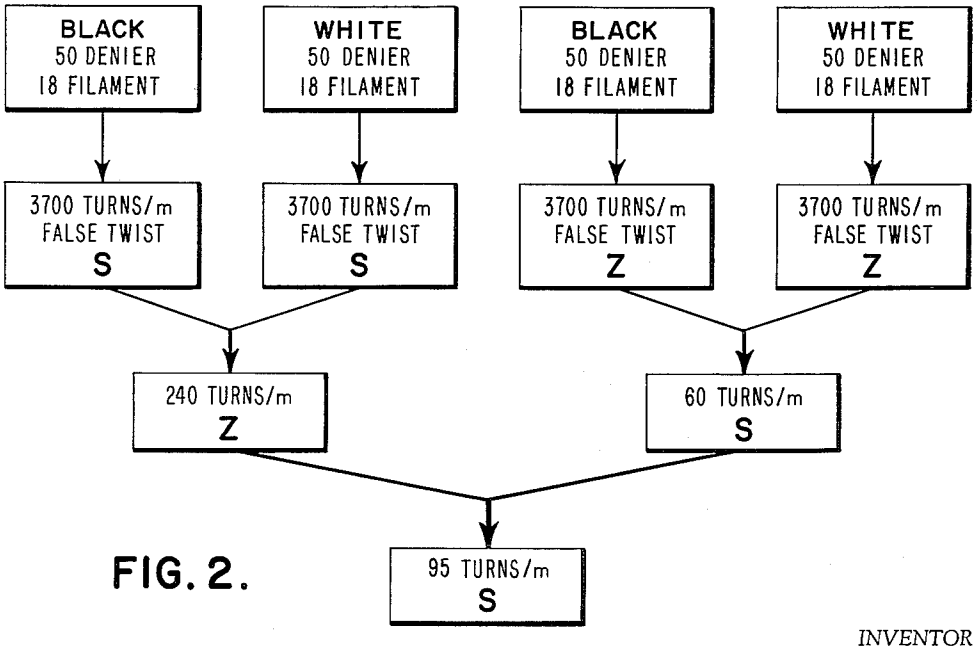

FIG. 2.

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4 Claims. (Cl. 57—140)

This invention relates to moulinee yarn and to a method of making the same. Moulinee is a term used in the textile industry in Europe to describe yarns which are obtained by twisting together yarn components of different colors.

It is known to weave or knit moulinee yarns into fabrics but the resulting products have heretofore had a rather undesirable color which, of course, is due to the way the yarns of different colors mix. In the past there has been an attempt to relieve this coarseness of appearance by the use of melange or jaspé yarns, i.e., staple-fiber yarns, the colored fibers of which are mixed before or during the drawing process. While mixing the colors at this stage produces a very satisfactory yarn and a very satisfactory appearance in the final product, there are several serious disadvantages. In the first place, the system is not applicable to continuous filament yarns and in the second place, melange or jaspé made by the staple-fiber method are quite expensive.

It is therefore an object of the present invention to produce moulinee yarns of very high quality by a very economical method which is applicable to both continuous filament and staple-fiber yarns.

It is a further object of this invention to provide a new moulinee yarn of very high quality from the point of view of both appearance and handle, said yarn being suitable for knitting and weaving into high quality fabric.

Other objects and advantages of the present invention will be apparent upon consideration of the following detailed description of several species thereof in conjunction with the annexed drawings in which:

FIGURE 1 is a diagram illustrating one method according to the present invention of combining yarns of different color to produce a moulinee yarn; and

FIGURE 2 is a similar diagram of a different method also according to the present invention for producing a yarn which when woven will produce a different but likewise desirable appearance.

In the specific example illustrated in FIGURE 1, the process is begun with 50 denier, 18 filament, polyamino caproic acid yarns. Two of these yarns, black in color, are false twisted in the S direction 3700 turns per meter. While in this condition they are heated to about 170° C. and subsequently detwisted. The resulting yarns are then twisted together in the Z direction 240 turns per meter to form a thread. Two yarns similar to the foregoing, except white in color, are subjected to 3700 turns per meter of false twist in the Z direction, are set at 170° C. while false twisted and subsequently detwisted. These white yarns are combined by twisting them together 60 turns per meter in the S direction. The final moulinee yarn is produced by taking the black thread (240 turns per meter in the Z direction) and combining it with the white thread (60 turns per meter in the S direction) by twisting them

together 95 turns per meter in the S direction. It will be observed that the ply twist is in the S direction which is additive to the twist of the white thread and subtractive to that of the black thread so that black and white components of the final product will have approximately equal twist in their respective directions.

FIGURE 1 sets forth these steps in diagram form. A knitted product made from moulinee yarn prepared according to the method of FIGURE 1 will have a delightful pattern. The overall appearance is, of course, gray, produced by a fine pattern of black and white components in random but pleasing distribution. Handle is excellent.

The method illustrated in FIGURE 2 is essentially the same as that described in connection with FIGURE 1, except that the threads are made by blending black and white yarns instead of by first producing a black thread and a white one and blending the two together. Again polyamino caproic acid yarns of 50 denier, 18 filament are employed. A black one and a white one are false twisted at 3700 turns per meter, set at 170° C. and subsequently detwisted. These are then combined at 240 turns per meter with a Z twist. Another pair of black and white threads are similarly false twisted except in an S direction. These are combined into a thread at 60 turns per meter in an S direction and a final product combines the two threads at 95 turns per meter in the S direction.

While the foregoing description has been directed to the blending of black and white to produce a gray moulinee yarn, the colors of the components, i.e., the starting yarns, may be all different. In that case, best effects are obtained by combining in each pair the two components which show the greatest contrast in color. Of course, if only two or three colors are used, this condition is satisfied almost automatically. The effect of the mixed color of yarn manufactured according to the present invention is especially attractive if the components are filament yarns which are crimped as by stuffer-box crimping, by air blowing, or other known method.

While the specific examples deal with polyamino caproic acid melt products, other thermo setting synthetic yarns may be used. A very desirable feature of the present invention is that the component yarns may be spun dyed for high uniformity and low cost. It has been observed that the product of a high false twist which is thermally set results in a twist bias which seems to promote the mixing and blending of the colors.

What is claimed is:

1. The method of making a moulinee yarn that comprises first imparting and setting a false twist to some yarns in the Z direction and to some yarns in the S direction, combining the yarns of like false twist into pairs, thereafter combining the pairs thus obtained by twisting them together an amount per unit length less than that of the yarn of opposite twist and more than that of the yarn of the same twist.

2. As an article of manufacture, a moulinee yarn comprised of two threads plied together, the components of one of said threads being a pair of yarns of different colors twisted together in one direction and the components of the other of said threads being a pair of yarns of different colors twisted in the other direction, each of said yarns having resilient bias in a direction opposite to the direction of the thread twist.

3. As an article of manufacture, a moulinee yarn comprised of two threads plied together, the components of one of said threads being a pair of yarns both of a first color twisted together in one direction and the components of the other of said threads being a pair of yarns both of second color twisted in the other direction, each of said yarns having a resilient bias in a direction opposite to the direction of the thread twist.

4. As an article of manufacture, a moulinee yarn comprised of two threads plied together, the components of one of said threads being a first pair of yarns twisted together in one direction and the components of the other of said threads being a second pair of yarns twisted in the other direction, said first and second pairs each including at least one yarn of mutually different color, each of said yarns having resilient bias in a direction opposite to the direction of the thread twist and the twist of the thread that is in the same direction as the direction of ply being less than the twist of the thread that is in the opposite direction to the direction of ply.

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