

June 11, 1940.

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2,203,721

CREPE YARN AND THE MANUFACTURE THEREOF

Filed July 4, 1939

FIG. 1

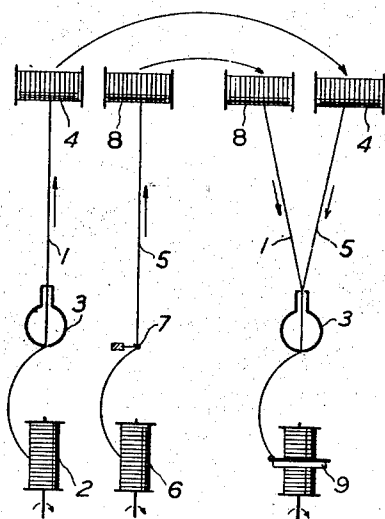


FIG. 2

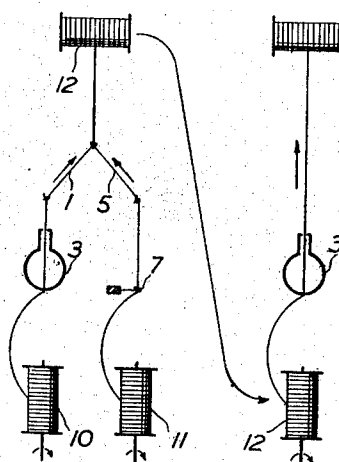
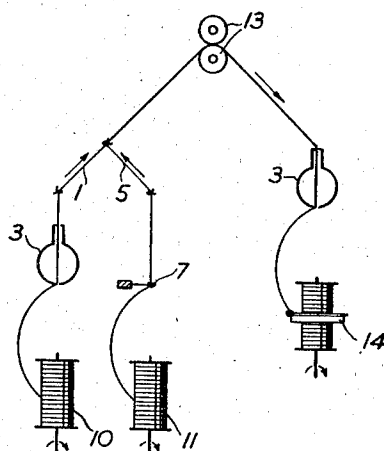


FIG. 3



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UNITED STATES PATENT OFFICE

2,203,721

CREPE YARN AND THE MANUFACTURE THEREOF

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Application July 4, 1939, Serial No. 282,780
In Great Britain July 15, 1938

6 Claims. (Cl. 57-140)

This invention relates to crepe yarns and the manufacture thereof, and in particular to crepe yarns made of or containing filaments or fibres of cellulose acetate or other organic derivative of cellulose. The invention is particularly concerned with crepe yarn which although suitable for the more usual two-box loom utilising yarn of opposite twist, is capable of giving attractive crepe fabrics when used in single-box looms.

The crepe yarn according to the invention is composite in character, comprising at least two ends preliminarily twisted in the same direction, one in the presence of steam or other hot aqueous medium, and the other in the absence of such medium, the two ends being doubled together and in the doubling operation being given a final twisting also in the same direction in the presence of steam or other hot aqueous medium. Possibly because the component that has been subjected in the preliminary twisting to the action of the steam or other hot aqueous medium does not react in the further twisting operation to the second treatment by the medium to the same extent as the other component, the final composite yarn has a pronounced crepe effect and yields fabric with appreciable shrinkage. Even though, in weaving the yarn as weft into a fabric, yarn having only one direction of twist is used instead of alternate weft picks with opposite directions of twist, the crepe effect in the fabric is very attractive. The yarn is particularly suitable for crepe fabric of the heavier type, for example marocain and crepe satin.

The crepe effect produced by the use of yarn produced in accordance with the invention may be enhanced by other means. Thus, the fabric after weaving and before scouring to bring out the crepe effect may be subjected to an embossing process between pressing surface having a raised design adapted to encourage the subsequent development of the desired crepe figure. By these and similar means greater flexibility may be obtained in the utilisation of the yarn according to the invention.

By way of example some methods of carrying out the invention will now be described in greater detail with reference to the accompanying drawing, in which

Fig. 1 is a diagrammatic illustration of one such method;

Fig. 2 is a diagrammatic illustration of second and preferred method; and

Fig. 3 is a diagrammatic illustration of a third method.

The yarn according to the invention may be

produced as shown in Fig. 1 by drawing one component yarn 1 from a package 2 which is rapidly rotated to impart a crepe twist to the yarn, the yarn being drawn through a steam applying device 3 in the form of a steam pipe with a short offset branch and nipples thereon, by means of which steam or other hot aqueous medium is applied to the yarn at a point where it is actually receiving twist. The yarn 1 is collected on the package 4. Another yarn 5 is drawn from a similar rotating package support 6 through a simple guide 7 instead of the device 3 and thence to a take-up package 8 the yarn 5 on the package 8 being thereby "dry-twisted." The yarns 1 and 5 are then doubled by being drawn from the packages 4 and 8 through further steam applying device 3 and thence to a crepe-twisting ring spindle 9, the device 3 applying steam or other hot aqueous medium to the yarns 1 and 5 at a point where they are actually receiving the doubling twist imparted by the spindle 9.

More conveniently, however, as shown in Fig. 2, the two component yarns 1 and 5 may be crepe-twisted on adjacent spindles 10, 11 of a crepe-twisting machine of which only alternate spindles 10 are arranged to apply steam or other hot aqueous medium to the part of the yarn actually receiving twist, as by means of a device 3. The two yarns are collected in the machine by parallel winding on a single bobbin 12 which is then used as the supply bobbin for a second operation of twisting, again involving the application of steam or other hot aqueous medium to the part of the yarn actually receiving the doubling twist.

A third method is shown in Fig. 3, in which the yarns 1 and 5 drawn from the packages 10 and 11, and instead of being collected on the single bobbin 12, are drawn from the machine by means of feed rollers 13 by means of which they are fed directly to a crepe-twisting device 14 by means of which they are doubled together, steam or other hot aqueous medium being applied to them on their way to the device 14 by means of an applying device 3 at a point where they are actually receiving the doubling twist.

The deniers of the component yarns are selected in accordance with the weight desired for the final composite yarn. The components may be of the same, or different characteristics. For example they may have the same or different denier and may contain filaments having the same or different filament deniers and/or otherwise differing in characteristics, e. g. of lustre or colour. Continuous filament components or

components of staple fibre or having spun yarn characteristics may be used, or in the one final yarn continuous filament and spun or staple fibre components may be used together.

- 5 More than two components may be employed, part of the total number receiving their preliminary twist in the presence of the steam or other hot aqueous medium and the remainder not.

By way of example the following details are
10 given of a construction of yarn suitable for weaving marocain or similar heavy crepe fabric.

Example

The yarn comprises two 100 denier ends twisted
15 to 40 turns per inch, the one in the presence of steam or other hot aqueous medium, the two yarns then being doubled together again in the presence of steam or other hot aqueous medium, the doubled twist amounting to 20, 30 or 40 turns
20 per inch in the same direction as the twist in the separate components. This yarn may be used in a single-box loom.

The final crepe yarn may be doubled with any other type of yarn, crepe or otherwise, of continuous filaments or of spun or staple fibre characteristics, as for example to produce a bouclé or other effect yarn.

Having described our invention, what we desire to secure by Letters Patent is:

30 1. Method of making crepe yarns, comprising twisting in the same direction at least two ends of yarn, at least one in the presence of steam or other hot aqueous medium and at least one other in the absence of such medium and doubling said
35 ends together with a final twisting also in the same direction effected in the presence of steam or other hot aqueous medium.

2. Method of making crepe yarns, which comprises twisting in the same direction at least two
40 ends of yarn having a basis of an organic derivative of cellulose, at least one in the presence of steam or other hot aqueous medium and at least one other in the absence of such medium and doubling said ends together with a final twisting
45 also in the same direction effected in the presence of steam or other hot aqueous medium.

3. Method of making crepe yarns, which comprises twisting in the same direction at least
50 two ends of yarn having a basis of cellulose acetate, at least one in the presence of steam or other hot aqueous medium and at least one other in the absence of such medium and doubling said

ends together with a final twisting also in the same direction effected in the presence of steam or other hot aqueous medium.

4. Method of making crepe yarns, which comprises simultaneously twisting in the same direction at least two ends of yarn on a single crepe twisting machine arranged to supply steam or other hot aqueous medium to at least one of said ends at parts thereof actually receiving twist and to twist at least one other of said ends in the absence of such medium, collecting the several ends by parallel winding on a single bobbin and subsequently doubling the several ends together with a final twisting also in the same direction effected in the presence of steam or other hot aqueous medium, the said bobbin being employed as the supply bobbin for the said doubling operation.

5. Method of making crepe yarns, which comprises simultaneously twisting in the same direction at least two ends of yarn having a basis of an organic derivative of cellulose on a single crepe twisting machine arranged to supply steam or other hot aqueous medium to at least one of said ends at parts thereof actually receiving twist and to twist at least one other of said ends in the absence of such medium, collecting the several ends by parallel winding on a single bobbin and subsequently doubling the several ends together with a final twisting also in the same direction effected in the presence of steam or other hot aqueous medium, the said bobbin being employed as the supply bobbin for the said doubling operation.

6. Method of making crepe yarns, which comprises simultaneously twisting in the same direction at least two ends of yarn having a basis of cellulose acetate on a single crepe twisting machine arranged to supply steam or other hot aqueous medium to at least one of said ends at parts thereof actually receiving twist and to twist at least one other of said ends in the absence of such medium, collecting the several ends by parallel winding on a single bobbin and subsequently doubling the several ends together with a final twisting also in the same direction effected in the presence of steam or other hot aqueous medium, the said bobbin being employed as the supply bobbin for the said doubling operation.

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