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Lefebvre

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[54] **PROCESS FOR THE MANUFACTURE OF TEXTILE PRODUCTS PRESENTING VARIED SECTIONS**

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[56] **References Cited**

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[57] **ABSTRACT**

Process for the manufacture of textile products presenting varied sections, which process is operated on an initial product of nearly constant section and running at high speed, whereby the product is subjected to a local pretreatment which acts as inhibitor towards the addition or removal of material.

2 Claims, No Drawings

PROCESS FOR THE MANUFACTURE OF TEXTILE PRODUCTS PRESENTING VARIED SECTIONS

The present invention relates to a new process for the manufacture of a textile product of irregular physical structure, and in particular of a textile thread presenting varied sections, i.e. sections of different widths.

By textile thread is intended any supple product whose section is of small dimensions in relation to its length (thread, spun yarns, etc.), and which is composed in part or altogether of a textile material or the like, pure or in mixture.

New effects on finished textile products are constantly being sought, for instance by causing variations in density or volume. Some processes try to obtain these effects at the moment of knitting or weaving. Other processes try to modify the thread before subjecting the latter to the knitting or weaving. Amongst the latter may be quoted the methods of texturing which confer a new configuration on the thread, or the methods by which a number of regular threads are assembled in such a manner as to produce an irregular and original aspect.

It has also been tried to obtain threads of varied sections, that is to say threads presenting thin segments and thick segments. The best known process for synthetic yarn is space-drawing.

However, most of the conventional manufacture processes produce threads of a constant section on their whole length. The local application of additional material or the local removal of excess material has then been tried. Subject of French Patent no. **982,337** (or its equivalent British Patent No. **645,159**) is a process for the local removal of material on a thread running continuously.

The application of these localized processes proves difficult while calling for complex installations, especially when irregular effects are to be obtained.

The present invention has as its object to obtain a thread presenting varied sections on its length by local addition or local removal of material, whereby the process of adding or removing material can be operated continuously.

To this end, the thread running continuously is subjected to a localized and discontinuous pretreatment, which pretreatment acts as inhibitor towards the treatment by which material is added or removed. The pretreated thread then undergoes the process by which material is added or removed, which process is operated continuously. Although the thread is being treated on its whole length, only the areas not having been subjected to the localized pretreatment are treated efficiently.

The pretreatment is preferably a localized impregnation with an inhibiting agent. It is convenient to choose the latter amongst the finishing products.

The choice between adding or removing some material is determined by the initial thread diameter and the final dimensions that are to be obtained. A thread generally is cylindrical, but the same effect would be achieved whatever the section of the thread to be treated may be; the different sections may not even have to be constantly similar on the whole thread length. The distribution of thick and thin segments should preferably be irregular in order to emphasize the new effect that is to be obtained. The same as transition from thin to thick segments may be regular or i regular.

It will be described hereafter the implementation this treatment when removing excess material from thread whose initial diameter is at least equal to tl maximum diameter of the thread after treatment. Tl removal of material may be operated according to ar of the conventional processes which adapts to the typ of thread that is to be treated: immersion in a solve bath at sufficiently high speed to produce only a supe ficial dissolution, action of a flame or any other methc allowing the elimination of a superficial layer of tl thread.

In order to obtain a thread presenting thick segment this treatment of removing material while applied the whole thread length must only be efficient on ce tain areas. The thread is therefore subjected to a pr treatment intended to protect the areas which mu keep the initial thread diameter against the process removing material.

In case the removal of material is being operated b subjecting the thread to the action of a flame, the pr treatment can consist of impregnating certain threa segments with liquid. The liquid can be just water any other product fulfilling the same function. Whe the impregnated segments pass through the flame, tl liquid is vaporized avoiding thereby the removal of m terial in that pretreated segment. On the contrary, tl non-impregnated segments are attacked by the flam

In case the removal of material is being realized b superficial dissolution, the thread can be locally in pregnated with a product neutralizing the solvent an inhibiting thereby the latter's action on the thread.

It is preferable to effect an irregular localized pr treatment. The application of a "Device for the loca ized treatment of a thread", described in French Pate Application No. **72.10,915** (and its equivalent copen ing U.S. application Ser. No. **178,013,** filed Mar. 2 **1973,** suits especially well the result here sought. I fact, this device enables the localized and irregular pr jection of one or several products onto the thread mo ing continuously at high speed.

One of the most important advantages of the pr treatment is the possibility of combining the latter wit other thread finishing processes, as for instance the di persion of dye onto the thread, in which case the dy acts as inhibitor towards the removal of material whil conferring on the treated thread an additional effect intermittent dyeing. It is also possible to use sever dyes. It appears clearly that a wide choice of very ne and varied effects can be obtained, and this on a threa running continuously at high speed.

According to the nature of the treated thread, it ma be more convenient and especially less expensive t adopt the application of additional material onto thread whose initial diameter is no larger than the min mal diameter of the thread after treatment.

The implementation of this treatment does not diffe essentially from the one above mentioned and will nc be described further. For instance, the application c additional material can be operated by projection c material or else by immersing the thread in a coatin bath after a pretreatment having made impossible th adherance of the added material on the pretreate thread segments.

According to the effect to be obtained, the applica tion of additional material may be irregular in volum

nd/or length of treated or pretreated thread segments.

A particular application of this material adding process is the realization of composite threads if the added ıaterial is different from the initial thread composion.

The process has been described as applied to a textile ıread, but it can also be applied to a textile product in ıe form of sliver or even in the form of sheets.

I claim:

1. A process for texturing a textile thread of substanally constant cross section to give a product having ections of varying widths by selective removal of exess material therefrom, which process comprises subcting discreet segments of the continuously running extile thread to a localized impregnation with water, cting as an inhibitor towards the removal of material, nd thereafter removing a superficial layer of the material from the unimpregnated segments of the textile thread by the continuous treatment of passing said textile thread through a flame, which attacks only the unimpregnated segments of said textile thread.

2. A process for texturing a textile thread of substantially constant cross section to give a product having sections of varying widths by selective removal of excess material therefrom, which process comprises subjecting discreet segments of the continuously running textile thread to a localized impregnation with dye, acting as an inhibitor towards the removal of material, and thereafter removing a superficial layer of the material from the unimpregnated segments of the textile thread by the continuous treatment of passing said textile thread through a flame, which attacks only the unimpregnated segments of said textile thread.

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