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PRODUCTION OF A HIGH LUSTER ON DYED FIBERS

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The invention relates to a process for the production of a high luster on dyed fibers, preferably dyed black, more particularly coconut fibers, aloe fiber, sisal fibers and the like, freed from their imbedding substance.

For the use of the fibers as substitute for horsehair, for example for upholstering purposes, and also for other purposes, it is desirable to dye the fibers and to impart to them a luster suggestive of real horsehair.

According to the present invention, highly lustrous fiber material is obtained by subjecting the fibers, freed from their imbedding substance and dyed by the usual methods, for example with the use of organic dyestuffs, to a frictional mechanical treatment, preferably a beating treatment, in the presence of luster-imparting agents.

Talc is primarily considered as a luster-producing agent, and furthermore wax emulsions and the like agents may be employed. The treatment is preferably carried out in the presence of small quantities of wetting agents or emulsifiers, such as soap, Turkey red oil, nekal and so forth. The fiber material is preferably employed in the air-dried condition and subjected to a certain amount of moistening, for example by being sprayed with water or aqueous solutions, for example a soap solution. Finally, it has been found advantageous to carry out the treatment in the presence of agents which have a dyeing effect, for example small quantities of dyestuffs. Preferably, the dyestuffs will be incorporated with the luster-producing agent, for example the talc and will be allowed to act together with the latter on the surface of the fiber. This may be effected for example by making a solution of the dyestuff of suitable concentration, introducing into the latter talc in a powdered condition and in a quantity such that the dyestuff solution is absorbed, converting the mixture into slabs or other suitable form and after the moulded bodies have set and dried, crushing the latter again. The mechanical frictional action may advantageously be accomplished by a beating treatment, for example by introducing the fiber material into a mixing machine equipped with rapidly rotating beater arms and subjecting the material to the beating effect of the rotating members. The production of the luster may be accelerated and promoted by a moderate rise in temperature.

Particularly good results are obtained by employing fiber material which has been treated with alkaline liquids. It is possible for example to subject the fiber material to a preliminary treatment with alkaline solutions at elevated temperatures, if desired at boiling point, the fiber material preliminarily treated in this way being then, after dyeing, treated further according to the invention.

Coconut fibers which have been subjected to a treatment according to the U. S. Patent 1,882,657 have been found to be particularly suitable for carrying out the process. In this case, the coconut fibers, freed from imbedding substance by the usual methods, such as roasting and mechanical treatment, are converted by the action of hot alkaline liquids, preferably strongly diluted alkaline lyes, if desired under high pressures and for example at temperatures of 120–150° C., into a spinnable condition suitable for their manufacture into upholstering material. Fibers thus treated, which if desired will also have been subsequently treated with hygroscopic agents or fatty or oily substances and which will already possess a relatively very smooth surface, are treated further according to the invention by dyeing them according to the usual methods, preferably black, and by subjecting the dyed fiber material to the luster-producing treatment described hereinbefore. The products thereby obtained are remarkable for their particularly beautiful high luster.

Example

10 kilograms of air-dried coconut fibers, treated preliminarily with alkali and dyed black, are sprayed with a solution of 100 grams of soft soap in 1 litre of water. The fiber material thereby moistened is charged into a mixing machine provided with a beater mechanism, with the addition of 120 grams of powdered talc, preferably mixed with a black aniline dye, for example cotton black, and is there worked with the beater mechanism rotating rapidly until the desired luster has been attained, for example 7 to 8 minutes.

The beater machine may comprise for example a drum having a rotating shaft equipped with beater arms. In the lower part, there is preferably provided a perforated plate, through which the components which are separated from the fiber material in the beating operation and the rest of the talc may pass.

The upper part of the drum is provided with closable inlets and outlets for the fiber material and is preferably constructed so that the fiber material seized by the beater arms is thrown upwardly to fall back again to within reach of the beater arms, to be worked again and so forth.

The drum may be heated in a very simple manner, for example by providing a heating device underneath the perforated plate. Even moderate elevations of temperature are sufficient to improve the effect.

The invention enables a permanent high luster to be produced on the fiber material in the simplest and cheapest manner. In the treatment in the beater mechanism a further improvement of the fibers is produced by the separation of dust, any incrustation residues which may still be present, and so forth.

I claim:

1. A process for the production of high luster on fibers of the type of coconut fibers, aloe fibers and sisal fibers which have been freed from their imbedding substances, comprising treating said fibers with alkaline liquids to convert said fibers into a spinnable condition, dyeing said fibers, and beating said dyed fibers in a mixing machine provided with beater arms in the presence of small quantities of substances which impart luster by friction to polish said dyed fibers.

2. A process for the production of high luster on fibers of the type of coconut fibers, aloe fibers and sisal fibers which have been freed from their imbedding substances, comprising treating said fibers with alkaline liquids to convert said fibers into a spinnable condition, dyeing said fibers and beating said dyed fibers in a mixing machine provided with beater arms in the presence of small quantities of dyed substances which impart luster by friction to polish said dyed fibers.

3. A process for the production of high luster on fibers of the type of coconut fibers, aloe fibers and sisal fibers which have been freed from their imbedding substances, comprising treating said fibers with alkaline liquids to convert said fibers into a spinnable condition, dyeing said fibers, and beating said fibers in a mixing machine provided with beater arms in the presence of small quantities of talc to polish said fibers.

4. A process for the production of high luster on coconut fibers free from their imbedding substance, characterized in that the said fibers are converted by treatment with hot alkaline liquids into a spinnable condition in which they can be spun, the fiber material is dyed black, and the dyed fiber material is subjected to a luster imparting treatment in the presence of small quantities of talc in a mixing machine equipped with beater arms.

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