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PROCESS FOR GREASING TEXTILE FIBERS
AND FABRICS

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12 Claims. (Cl. 19—66)

The present invention relates to the treatment of fibrous material and to improved greasing materials therefor.

The principal object of the invention is to provide a fiber-greasing material which will have the desired lubricating and greasing effect and will have no deleterious effects upon the machinery and other apparatus used in working the material.

A further object is to provide a greasing material which can be produced reliably and economically.

As another object the invention aims to provide an improved lubricant and emulsifying composition.

In order to improve the quality and the spinning and working properties of textile materials they are greased with various greasing agents. Various materials have been used for this purpose with varying success. Some greases used have been unsatisfactory in that they have not imparted satisfactory qualities to the yarn. Another of the difficulties commonly encountered is that the greasing or lubricating materials attack the leather and metal parts of the machines used in the spinning, weaving and other processes.

According to the present invention it has been discovered that certain synthetic esters of practically saturated fatty alcohols of higher molecular weight and saturated fatty acids of low molecular weight have the necessary advantages without the disadvantages of materials previously used. These materials comprise the esters of the fatty acids having from 1 to 12 carbon atoms in the chain with aliphatic alcohols having 8 or more, usually 12 to 18 or 22 carbon atoms. The alcohols should be those of low iodine value, the lower the better, preferably not exceeding 20. Alcohols having from 12 to 18 carbon atoms are usually the most practical commercially, but those should be selected which are either saturated or at least have only one double bond in the carbon chain. Commercial alcohols, as for example the cetyl alcohol, which is a mixture of different alcohols, when esterified with acetic acid provide satisfactory products which can be economically produced. Commercially the acids having from 1 to 4 carbon atoms in the chain are preferable and more practicable. These esters effectively grease and penetrate the fibers without causing damage to the machine parts. They are also easily removed especially if combined with emulsifying agents.

These esters may be used alone but are preferably

combined with emulsifying agents, especially such as alcohols of high molecular weight, (preferably saturated) and soap materials including the sulphated and/or sulphonated derivatives of natural fats and oils easily soluble in the esters.

A particularly effective emulsifying agent is produced by sulphating cetyl alcohol and subsequently neutralizing the ester by triethanolamine or piperidine. Various other sulpho salts mentioned in co-pending applications as constituting emulsifying agents may be used as the emulsifying agents.

The proportion of emulsifying material used may vary within wide limits. Usually it is added to the ester in a proportion of the order of ten percent, but as much as fifty per cent or even more is sometimes desirable.

The invention will be better understood from a consideration of specific examples.

Example 1.—100 kg. of worsted yarn are greased with 15 kg. of a mixture consisting of 90 parts of esters of propionic acid and lauryl alcohol and 10 parts of potassium soap of castor oil and then manufactured in the usual manner.

Example 2.—100 kg. of carded wool yarn are greased by 30 kg. of a mixture consisting of 65 parts of acetic esters of lauryl alcohol, 30 parts of cetyl acetate, and 5 parts of cetyl acid sulfate of piperidine, $C_{16}H_{33}OSO_3H \cdot NH(CH_2)_5$. The goods are greased thoroughly and well adapted for manufacturing.

Example 3.—25 kg. of a rag grease, consisting of 60 parts of cetyl acetate, 40 parts of arachis oil, and 10 parts of oleic acid triethanolamine are added to 100 kg. of torn textile fabrics, and entirely torn by an opener.

The foregoing particular description is illustrative merely and is not intended as defining the limits of the invention.

I claim:

1. The method of greasing fibrous materials which comprises treating the materials with an ester of a fatty acid having less than 13 carbon atoms in the molecule and an aliphatic alcohol having 8 or more carbon atoms in the molecule and having an iodine value below 15.

2. The method of greasing fibrous materials which comprises treating the materials with an ester of a fatty acid having less than 5 carbon atoms in the molecule and an aliphatic alcohol having 12 to 18 carbon atoms in the molecule and having a low iodine value.

3. The method of greasing fibrous materials which comprises treating the materials with an

- ester of a fatty acid having less than 5 carbon atoms in the molecule and an aliphatic alcohol having 12 to 18 carbon atoms in the molecule and having a low iodine value, and an emulsifying agent consisting of a mixture of a high molecular alcohol and a soap material easily soluble in the ester.
4. The method of greasing fibrous materials which comprises treating the materials with an ester of a fatty acid of low molecular weight and an aliphatic alcohol of high molecular weight, above 8 carbon atoms, and an emulsifying agent obtained by sulfating cetyl alcohol and neutralizing the product with triethanolamine or piperidine.
5. The method of greasing fibrous materials which comprises treating the materials with an ester of a fatty acid of low molecular weight and an aliphatic alcohol of high molecular weight, above 8 carbon atoms, and potassium soap of castor oil.
6. The method of greasing fibrous materials which comprises treating the materials with an ester of a fatty acid having less than 5 carbon atoms in the molecule and an aliphatic alcohol having 12 to 18 carbon atoms in the molecule and having a low iodine value, and potassium soap of castor oil.
7. A composition of matter for treating fibrous materials comprising acetic esters of lauryl alcohol and cetyl alcohol and cetyl acid sulfate of piperidine.
8. A composition of matter for treating fibrous materials comprising cetyl acetate, arachis oil, and oleic-acid-triethanolamine.
9. Lubricated and conditioned fibrous material having distributed thereon acetic esters of lauryl alcohol.
10. Lubricated and conditioned fibrous material having distributed thereon a composition comprising acetic esters of lauryl alcohol and cetyl acid sulfate of piperidine.
11. A lubricant and conditioner for fibrous material comprising as its principal ingredient material of the group consisting of lauryl propionate, lauryl acetate and cetyl acetate.
12. The method of greasing fibrous materials which comprises treating the materials with an ester of a fatty acid having less than 5 carbon atoms in the molecule and an aliphatic alcohol having 8 or more carbon atoms in the molecule.

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