

UNITED STATES PATENT OFFICE

FREDERICK W. SULLIVAN, JR., OF WHITING, INDIANA, ASSIGNOR TO STANDARD OIL COMPANY, OF WHITING, INDIANA, A CORPORATION OF INDIANA

TEXTILE OIL

No Drawing.

Application filed December 9, 1926. Serial No. 153,731.

The present invention relates to improvements in textile oils, and more particularly in oils intended for softening and preparing textile fibers and threads for use in weaving and knitting machines, and for lubrication of the parts of the latter.

In accordance with the present invention I prepare a textile oil by admixing with a suitable textile lubricant oil such as purified mineral oil of low viscosity, lard oil, purified degreas or compounded oils, an emulsifying agent such as an alkali metal soap, a sulfonated fatty oil compound or an alkali metal salt of a preferentially oil soluble sulfonic acid derived from the treatment of a mineral oil with strong or fuming sulfuric acid. To the mixture add 0.1 to 2.0% of a suitable anti-oxidant, such as beta-naphthol, diphenylamine or the like. Thus a suitable composition prepared in accordance with my invention and particularly suitable for use on rayon may contain from 12 to 15% of a sulfonic acid soap of the character hereinbefore described, 12 to 15% of oleic acid, 2% of beta-naphthol and the remainder of mineral oil of the character above described. In use the oil may be diluted with an oil of a lower viscosity until the mixture has a desired viscosity below 70 sec. Saybolt (100° F.) (for example, cleaners' naphtha). The proportion of diluent required may vary from 5 to 30%, but in general, none is required. It is readily apparent that a considerable proportion of this diluent evaporates from the treated rayon.

The textile fiber is treated with the oil, suitably in skein form. Thus, the skeins of the fibers may be immersed in a bath of the above oil and subsequently centrifuged to remove excess oil, or the oil may be distributed through the skeins, after being sprinkled thereupon, by capillary action.

It has been found that the softening and lubricating agents ordinarily used on other fabric materials than rayon cannot be used upon the latter material, by reason of an excessive and permanent weakening of the rayon fiber, discoloration of the fiber, great difficulty in subsequent removal in washing, and other difficulties which apparently arise out of the peculiar character of the rayon fiber.

These difficulties, are to a large part, removed by the use of an oil of the nature described in the co-pending application of Ansel M. Kinney, Serial No. 158,834, filed January 3, 1927, upon the composition of which the present invention is an improvement. By the use of the present invention, in connection with such oils, the product may be used at any time within a substantial period after manufacture without causing discoloration or other permanent defects in the rayon fiber or the articles woven therefrom. A similar result is secured by the use of the present invention in connection with oils suitable for use on other textiles.

I claim:

1. A lubricating composition for the treatment of textile fibers for weaving, knitting and the like comprising an oil, an emulsifying agent and a small proportion of an anti-oxidant.

2. A lubricating composition for the treatment of rayon for weaving, knitting and the like comprising an alkali metal soap of a sulfonic compound derived from mineral hydrocarbon oils, oleic acid, a mineral oil and a small proportion of an anti-oxidant.

3. A lubricating composition for the treatment of rayon for weaving, knitting and the like comprising an alkali metal soap of a sulfonic compound derived from mineral hydrocarbon oils, oleic acid, a mineral oil and beta-naphthol.

4. A lubricating composition for the treatment of textile fibers for weaving, knitting and the like comprising an oil, a sulfonated oil body as an emulsifying agent, and a small proportion of an anti-oxidant.

5. The method of preparing rayon fiber for weaving, knitting and the like which comprises incorporating therein an oil, an emulsifying agent, oleic acid and a small proportion of an anti-oxidant.

6. The method of preparing rayon fiber for weaving, knitting and the like which comprises incorporating therein an oil, an emulsifying agent, oleic acid and 0.1% of beta naphthol.

7. The method of preparing rayon fibre for weaving, knitting and the like, which com-

prises incorporating an oil therewith, adding a preferentially oil-soluble sulfonate derived from mineral oils as an emulsifying agent to the oil whereby it may be washed from the fibre, and employing a small portion of antioxidant for preventing the deterioration and loss of strength of the oiled rayon fibre.

8. The method of claim 5 wherein the emulsifying agent comprises a sulfonic compound derived from mineral hydrocarbon oils.

FREDERICK W. SULLIVAN, JR.

15

20

25

30

35

40

45

50

55

60

65