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MANUFACTURE AND PRODUCTION OF COLORED ARTIFICIAL FILAMENTS, THREADS, BANDS, AND THE LIKE

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3 Claims. (Cl. 18—54)

The specification of British Patent No. 181,902 to Courtauld's, Ltd., and L. J. Wilson, filed April 23rd, 1921, accepted June 29th, 1922 describes the production of colored filaments by adding a leuco vat coloring matter to viscose which is then mixed. filtered, ripened, evacuated and spun. The vat coloring matter may be, for instance, of the indigoid, sulphur or indanthrene type. The specification United States Patent No. 1,823,769 of September 15th, 1931 to William Henry Stokes describes a particular method of introducing the leuco vat coloring matter into the viscose, according to which the viscose is first filtered and evacuated and then passed towards the spinning machine, and during its passage, whilst the viscose is no longer in bulk, the leuco vat coloring matter is added to the viscose and mixed therewith, while avoiding any introduction of air into the viscose, and the mixture thus obtained is then passed to the spinning machine. It is also stated in the said United States patent that the solution of the leuco coloring matter can first be mixed with a small quantity of the viscose, so as to make a more or less concentrated solution of the leuco coloring matter in the viscose, and this mixture can be subsequently added at a measured rate, if necessary after filtration and removal of air, to the main body of the viscose, which main body has already been filtered and freed from air.

It has been found that when a considerable quantity of the leuco vat coloring matter is mixed with a small quantity of viscose so as to produce a solution which it is intended subsequently to feed into the main body of the solution as it is passed towards the spinning machines, there is a tendency for the leuco vat coloring matter to crystallize out, so that in some cases it is difficult or impossible to obtain sufficient depth of color in the spun viscose filaments, threads, bands and the like.

I have now found that the addition of glycol ethers such as diethylene glycol mono ethyl ether or ethylene glycol mono ethyl ether or the corresponding methyl or butyl ethers of either of these compounds assists considerably in retaining the leuco vat coloring matter in solution, so that by the employment of these compounds, considerably darker shades of colored artificial filaments, threads, bands and the like can be obtained.

The following examples will further illustrate how the said invention may be carried out in practice but the invention is not limited to these examples. The parts are by weight.

Example 1

200 parts of Caledon blue R. C. paste, as sold by the Imperial Chemical Industries Ltd., are mixed with 300 parts of cold water, and 44 parts of 20 per cent caustic soda solution are added. The whole is warmed to 60° centrigrade, 15 parts of sodium hydrosulphite are added and the whole allowed to stand for 20 minutes. 100 parts of diethylene glycol mono-normal-butyl ether are then added and the whole cooled to 20° centrigrade. This mixture is then added slowly, while stirring, to 27,000 parts of viscose and when this is at the correct age, it is spun into a spinning bath containing 8 per cent of sulphuric acid, 12 per cent of sodium sulphate, 1 per cent of zinc sulphate and 10 per cent of glucose and the product desulphurized and bleached. The artificial filament, thread, band or the like so obtained has a good blue color, which is very level and fast.

Example 2

874 parts of Caledon brown R paste are mixed with 700 parts of water and 350 parts of 20 per cent caustic soda and heated to 60° centigrade. 145 parts sodium hydrosulphite are added and the whole allowed to stand for 20 minutes at 60° centigrade; the solution is allowed to cool to 30° centigrade and 535 parts of diethylene alkali mono ethyl ether added. The solution is further cooled to 15° centigrade and added to 22,650 parts of viscose while stirring. This concentrated solution of dye in viscose can be either spun direct, as described in Example 1, or passed in a measured quantity into the main viscose supply to the spinning machine, as described in the specification No. 290,693.

What I claim is:—

1. The production of colored artificial filaments, threads, bands and the like by spinning a viscose containing leuco vat coloring matter and a glycol ether.

2. The production of colored artificial filaments, threads, bands and the like by spinning a viscose containing a leuco vat coloring matter and a glycol ether chosen from the group consisting of the methyl, ethyl and butyl ethers of mono-ethylene and di-ethylene glycol.

3. The production of colored artificial filaments, threads, bands and the like by spinning a viscose containing a leuco vat coloring matter and di-ethylene glycol mono ethyl ether.

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