Patented Dec. 7, 1943

2,336,221

UNITED STATES PATENT OFFICE

2,336,221

DYEING WOOLED SHEEPSKINS

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No Drawing. Application June 14, 1941, Serial No. 398,111. In Great Britain June 26, 1940

1 Claim. (Cl. 8—10)

The present invention relates to the dyeing of wooled sheepskins and furs. More particularly it relates to a process for dyeing said materials employing for the purpose acid dyestuffs in the presence of an assistant, as hereinafter described.

In the art of dyeing wooled sheepskins and furs it has been customary to use oxidation amine dyestuffs, such as p-aminophenol, and natural dyestuffs, namely, woods, such as log-wood. The range of colours obtainable in this manner is, however, somewhat narrow, being mainly limited to black, grey and brown shades. Moreover, the method of applying oxidation dyestuffs, involving, as it does, development of the colour by the step of oxidation on the fibre, tends to be lengthy, and involved. Then acid dyestuffs came also to be employed. These have the advantages of ease and simplicity of application and have extended the range of shades obtainable. Hitherto, however, it has only been possible to apply in this way a limited number of the acid dyestuffs available. Comparatively few acid dyestuffs, such as Citronine Y (Colour Index No. 146), have sufficient affinity for the wool (or animal fibre) to be capable of dyeing at the relatively low temperature (40–50° C.) necessary to avoid injury to the skin. A considerable number, e. g., Lissamine Green V (Colour Index No. 735) and Naphthalene Black 12B (Colour Index No. 246) can be dyed on the wool after it has been chlorinated or at the higher temperatures (75–80° C.) permissible when the skin has been chrome-tanned. Some acid dyestuffs will not dye the wool suitably for commercial purposes even under these conditions. Amongst these are for example, Lissamine Fast Yellow 2G (Colour Index No. 639) and Azo Geranine 2G (Colour Index No. 31). Moreover the processes of chlorination and chrome tanning are accompanied by many disadvantages. The former degrades the wool, impairs the handle and tends to make the resultant dyeing uneven. The latter is difficult to control and liable to vary in its effect on different skins in a pack. Furthermore the dyeings hitherto obtainable in the above manner are apt to be uneven by reason of the preferential affinity of the acid dyestuff for the tip as compared with the root of the wool.

We have now found that by adding to the dyebath a small proportion of an assistant as hereinafter defined, not only can the dyeing be carried out without the previous chlorination or chrome-tanning referred to above but the resultant shade is of improved levelness and increased tinctorial strength. The last named advantageous improvements are also shown when the present process is applied in the case of those acid dyetuffs which dye wooled sheepskins without said pretreatments. Particularly is there found to be increased levelness attained as between tip and root. A further advantage of this invention is that it permits the use of many acid dyestuffs hitherto inapplicable for the present purpose.

Accordingly the present invention relates to a process for dyeing wooled sheepskins, lambskins and the softer furs by means of acid dyestuffs, comprising adding to the dyebath an assistant, as hereinbelow defined.

As assistant in the dyebath there is used according to the present invention a condensation product derivable from higher fatty or cycloaliphatic acids of not less than 8 carbon atoms, and an excess of glycerol under such conditions as to give an ester of polyglycerol (see British specification No. 450,868) mixed with 5 to 25% of its weight of a quaternary ammonium salt, derived from an alkyl halide containing not less than 6 carbon atoms and a tertiary amine the nitrogen atom of which is part of a heterocyclic nucleus (see British specification 379,396).

For example there may be used as assistant polyglyceryl ricinoleate containing a small proportion of cetyl pyridinium bromide. Polyglyceryl ricinoleate may be made by heating castor oil (30 parts) with glycerol (150 parts) in the presence of soap (5 parts) at 280° C. for 5 hours under steam jacketed reflux, and dissolving the product in twice its weight of water. Cetyl pyridinium bromide may be made by heating cetyl bromide (31 parts) with pyridine (8 parts) at 145° C.

By the term acid dyestuffs we mean to include also those water-soluble dyestuffs which contain an alkyl-sulphato grouping alkylene-O-SO_2-OH- (cf. British specification No. 237,739), as, for example, the dyestuff obtained by coupling diazotised p-nitroaniline with N-ethyl-N-sulphatoethylaniline. The expression "the softer furs" is intended to designate for the purposes of this invention such materials as moleskins and allied furs.

By applying acid dyestuffs in the dyeing of wooled sheepskins, lambskins and the softer furs in accordance with the present invention there are obtained shades of excellent levelness and good fastness to rubbing, light and washing.

The following examples in which the parts are by weight illustrate but do not limit the invention.

Example 1

2 parts of Lissamine Fast Yellow 2G (Colour Index 639) are dissolved together with an as-

sistant consisting of 3.2 parts of polyglyceryl ricinoleate and 0.2 part of cetyl pyridinium bromide, in 2000 parts of water. This solution constitutes the dyebath.

100 parts dry weight of alum-vegetable-tanned long-haired Lincoln wooled sheepskins are immersed in the above solution at 45° C. After 25 minutes 2 parts of 30% acetic acid are added and dyeing continued for 20 minutes longer. The skins are then removed from the dyebath, well rinsed in water at 30–35° C., drained and dried at a temperature not exceeding 45° C. The wool is dyed a clear bright yellow shade, level from tip to root of good fastness to rubbing, light and washing.

Example 2

100 parts dry weight of vegetable-tanned lambskins are immersed in a dyebath consisting of a solution of 1½ parts Lissamine Green V (Colour Index No. 735) and 3.4 parts of the same assistant as in Example 1 in 1500 parts of water at 45° C. After dyeing for 15 minutes 1½ parts of 30% acetic acid are added to the dyebath. After a further 15 minutes the lambskins are removed, well rinsed in water at 30–35° C., drained and dried at a temperature not exceeding 45° C.

The skins are dyed a bright green shade of very good levelness, and good fastness properties.

Example 3

A dyebath is made by dissolving in 500 parts of water, the following:

	Parts
1-amino-4-anilinoanthraquinone - 2 - sulphonic acid	½
p-Nitroaniline→N - ethyl - N - sulphatoethylaniline	½
Citronine Y (Colour Index No. 146)	1¼
The assistant of Example 1	2.6

50 parts dry weight of oil-dressed moleskins are introduced into the above dyebath at 45° C. After 25 minutes there are added 2 parts of 30% acetic acid. Dyeing is continued for 20 minutes longer. The moleskins are then removed, thoroughly rinsed in water at 30–35° C., drained and dried at a temperature not exceeding 40° C. There is thus obtained a clear level-dyed brown shade.

I claim:

A dyebath which contains Lissamine Green V (Colour Index No. 735) and, for improved levelness is dyeing the softer furs, an assistant, the ratio of said dye to said assistant being about 1 parts of said dye to 2.23 parts of the assistant, said assistant consisting essentially of about 5% to about 25% of cetyl pyridinium bromide and the remainder essentially polyglycerol ricinoleate.

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CERTIFICATE OF CORRECTION.

Patent No. 2,336,221. December 7, 1943.

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It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, second column, line 24, claim 1, for "is" read --in--; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 8th day of February, A. D. 1944.

(Seal)

Henry Van Arsdale,
Acting Commissioner of Patents.