

UNITED STATES PATENT OFFICE

1,935,217

WASHING AND CLEANSING TEXTILE
FIBERS

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hafen-on-the-Rhine, Germany, assignors, by
mesne assignments, to General Aniline Works,
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ware

No Drawing. Application May 4, 1929, Serial No.
360,617, and in Germany November 8, 1926

10 Claims. (Cl. 87—5)

An application was filed in Germany Nov. 8, 1926, bearing Serial No. I. 29,470.

The present invention relates to a process of washing and cleansing textile fibers.

5 The subject-matter of the present application is a continuation-in-part of one copending application for an improvement in "Treatment of vegetable, animal and other industrial materials" Ser. No. 243,466, filed December 29, 1927.

10 We have found that aliphatic or mixed hydroaromatic-aliphatic ammonia derivatives, which contain one or more hydroxy alkyl groups (—ROH; R=alkyl or cycloalkyl) can be employed with advantage as auxiliaries for wash-
25 ing and cleansing textiles, for instance animal textile fibers. For the sake of brevity the afore-said aliphatic or mixed hydroaromatic-aliphatic ammonia derivatives are hereinafter referred to collectively as "aliphatic ammonia derivatives containing at least one hydroxy alkyl group".
20 Both these bases and their salts are very readily soluble in water, and assist the thorough wetting or complete penetration of the said material by the aqueous washing and cleansing baths. The
25 washing and cleansing properties of the said bases, or their salts, for instance with higher fatty acids, are due to their dissolving and dispersing action on fats, oils, waxes, resins and the like. They may be used either alone or in
30 conjunction with organic saponaceous substances, that is soaps, Turkey-red oils, sulphonic acids, especially alkylated aromatic sulphonic acids, or their salts, or with organic solvents, or a plurality of these substances. Cyclohexylmonoethanolamine, cyclohexyldiethanolamine, butyl-
35 ethanolamines, triethanolamine, diethanolamine and the like may be mentioned as typical bases of the kind in question.

By reason of the fact that the bases to be used
40 despite their powerful basic properties do not attack the animal fiber, even when in high concentration, they are excellently adapted for the washing and cleansing of such fibers in all cases where the use of substances with an alkaline
45 action is essential, and where the use of other alkaline substances would involve the risk of damaging the quality of crude, semi-finished and finished materials made from animal fibers. Owing to the favorable properties of the bases
50 to be used, the usual working methods can be carried out in a substantially more energetic manner, woolen goods, for example, being treated with the said organic bases at boiling heat, which is impossible when other alkaline agents
55 are employed.

The following examples will further illustrate the nature of the said invention which however is not limited thereto.

Example 1

A hot stripping bath (60° to 70° centigrade) for 100 kilograms of shoddy rags, is mixed with 4 kilograms of 80 per cent formic acid and 2 kilograms of dibutylethanolamine, and after the goods have been entered, 3 kilograms of zinc
65 formaldehyde sulphoxylate are added, the bath being raised to ebullition and kept boiling for another 25 minutes, after which the goods are rinsed. Owing to the excellent solvent properties of the dibutylethanolamine towards dyestuffs and
70 their decomposition products, an extremely good stripping effect is obtained.

Cyclohexylmonoethanolamine may be used instead of dibutylethanolamine.

Example 2

A bowking liquor is mixed with 500 grams of tripropanolamine per 100 kilograms of cotton material. The high solvent capacity for cotton wax, and the high penetrative power of the tri-
80 propanolamine, assists the bowking process in a very high degree, and enables the usual period of boiling to be shortened by a third to a half.

Example 3

A scouring bath (at 40° centigrade) for 100 kilograms of oily and greasy wool is mixed with 5 grams of soap and 5 cc. of diethanolamine per litre of bath liquor, and the goods are worked
85 for half an hour, squeezed and rinsed. An excellent cleansing effect is obtained.

Example 4

50 kilograms of unfinished worsted fabric are subjected to the usual treatment in the carboniz-
95 ing apparatus, with an addition of 1 to 2 grams of triethanolamine per litre. This treatment completely removes all the softening oil present in the goods.

What we claim is:—

1. The process of washing and cleansing textile fibers with the aid of an aqueous bath, with which an aliphatic ammonia derivative containing at least one hydroxy alkyl group is incorporated.
2. The process of washing and cleansing animal
105 textile fibers with the aid of an aqueous alkaline bath, with which an aliphatic ammonia derivative containing at least one hydroxy alkyl group is incorporated.
3. The process of washing and cleansing animal
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textile fibers with the aid of an aqueous alkaline bath, in which an ethanolamine is incorporated with the said bath.

4. The process of washing and cleansing animal textile fibers with the aid of an aqueous alkaline bath in which a triethanolamine is incorporated with the said bath.
5. As a composition of matter, a washing and cleansing bath comprising a soap and an aliphatic ammonia derivative containing at least one hydroxy alkyl group.
6. As a composition of matter, a washing and cleansing bath comprising an organic saponaceous substance and an aliphatic ammonia derivative containing at least one hydroxy alkyl group.

7. As a composition of matter, a washing and cleansing bath comprising an organic saponaceous substance and an ethanol amine.

8. As a composition of matter, a washing and cleansing bath comprising an organic saponaceous substance and triethanol amine. 80

9. As a composition of matter, a washing and cleansing bath comprising an organic saponaceous substance and a propanol amine.

10. As a composition of matter, a washing and cleansing bath comprising an organic saponaceous substance and a butyl ethanol amine. 85

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DISCLAIMER

1,935,217.—*Heinrich Ulrich and Curt Schuster*, Ludwigshafen-on-Rhine, Germany.
WASHING AND CLEANSING TEXTILE FIBERS. Patent dated November 14, 1933. Disclaimer filed July 7, 1934, by the assignee, *General Aniline Works, Inc.*

Enters this disclaimer to certain of the claims of the above identified patent, and

Hereby disclaims from the scope of claims 1 and 2 any process in which the aliphatic ammonia derivative is employed in the form of a salt of such aliphatic ammonia derivative with an acid.

Hereby disclaims from the scope of claims 3 and 4 any process in which the ethanol amine is employed in the form of a salt of such ethanol amine with an acid.

Hereby disclaims from the scope of claims 6-10, inclusive, any composition in which the organic saponaceous substance is in chemical combination with the aliphatic ammonia derivative.

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