

UNITED STATES PATENT OFFICE.

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COMPOSITION OF MATTER TO BE USED IN DYEING.

SPECIFICATION forming part of Letters Patent No. 330,275, dated November 10, 1885.

Application filed February 14, 1885. Serial No. 155,963. (No specimens.)

To all whom it may concern:

Be it known that we, MARTIN E. WALDSTEIN and ARMAND MÜLLER, of the city, county, and State of New York, have invented a new and Improved Composition of Matter to be Used in Dyeing; and we hereby declare the following to be a full, clear, and exact description of the same.

Our invention relates to the class of dyes intended for use in dyeing and printing textile fabrics and yarns in a black color, which employ in their composition aniline or its homologues, or mixtures thereof. Heretofore the preferred mode of making a dyeing composition of the above character has been substantially as follows: Salts of aniline or its homologues soluble in water are made by the combination, with such aniline or its homologues, of hydrochloric, sulphuric, oxalic, or other acid. To a solution of such salts is added an oxidizing medium—such as bichromate of potash, permanganate of potash, &c., in an acid solution, or ferri-cyanide of potash in an alkaline solution—whereby the salts of aniline or its homologues are oxidized and a precipitate formed of so-called “aniline-black.” This precipitate deposits partially on the fiber immersed in the liquid. There are serious disadvantages incident to the use of the dye as thus made, however, among which may be mentioned the waste of material, inasmuch as the fiber does not absorb the whole of the aniline-black formed, a lack of uniformity in the color produced on the fiber, and generally a lack of uniformity in its operation, and particularly that the color produced on the fiber by the employment of a dye so made is not a fast color, and easily rubs or wears off.

It is the object of our invention to provide a dyeing composition which shall give a uniform fast color to the fabric or yarn to which it is applied without unnecessary waste of material; and to this end our invention consists in a composition of matter to be used in dyeing composed of sulphoricinoleic acid, sulpholeic acid, or other sulpho compound of the fatty acids, having added thereto a quantity of crude aniline-oil, the mixture being neutralized by the addition of an alkali.

The process which we prefer to employ for the manufacture of the dye is as follows: To a quantity of sulphoricinoleic acid, sulph-

oleic acid, or other sulpho compound of the fatty acids is added an equal quantity of aniline-oil containing the highest possible amount of aniline, and being as free as possible from toluidine and the higher homologues. The mixture is then neutralized by the addition of an alkali, preferably ammonia, when the mixture becomes clear and absolutely soluble in water.

The proportion of sulpho compounds of the fatty acids and aniline-oils above given may be varied to some extent; but we prefer in practice to use an equal or nearly equal quantity of each.

For the purpose of applying the dye to textile fabrics or yarns, we prefer to use a solution of about ten parts, by weight or measure, of the composition in about ninety parts of water, in which the boiled fabric or yarn is thoroughly soaked, after which the fabric or yarn is immersed in an oxidizing bath of an acid solution of bichromate of potash, or any other oxidizing agent.

We are aware that it is not new to combine with an aniline color a solvent for the purpose of rendering the coloring-matter soluble in benzine and essences, said solvent comprising a composition of oil or fat, acid, ether, and alkali; but we are not aware that the composition set forth in this specification for the purpose described has ever before been known or used.

What we claim as new, and desire to secure by Letters Patent, is—

1. A composition of matter to be used in dyeing, containing a sulpho compound of the fatty acids, aniline or its homologues, and a neutralizing alkali, substantially as described.

2. A composition of matter to be used in dyeing, containing a sulpho compound of the fatty acids—such as sulphoricinoleic acid and sulpholeic acid and aniline-oil—having a large proportion of aniline and almost free of toluidine and the higher homologues, in substantially the proportions named, and ammonia, substantially as described.

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In presence of—

JULIUS GOLDMAN,
J. ALEXANDER KOONES.