

UNITED STATES PATENT OFFICE.

CHARLES TOPPAN, OF SALEM, MASSACHUSETTS.

SCOURING COMPOSITION FOR FIBERS AND FABRICS.

SPECIFICATION forming part of Letters Patent No. 381,444, dated April 17, 1888.

Application filed April 4, 1887. Serial No. 233,620. (No specimens.)

To all whom it may concern:

Be it known that I, CHARLES TOPPAN, a citizen of the United States, and a resident of Salem, Essex county, Massachusetts, have invented an Improved Scouring Composition, of which the following is a specification.

The object of my invention is to produce a composition of matter for scouring, cleansing, and removing oil, grease, or stains from animal or vegetable fibers and from textile fabrics, and for preparing yarns and textile fabrics for being dyed or printed; and the invention consists in a compound of benzine, the expressed fixed oil of mustard-seed, and a suitable alkali, as hereinafter fully described.

In carrying my invention into practice I have employed ten parts, by measurement, of benzine of 60° Baumé, thirteen parts of the expressed fixed oil of mustard-seed, and ten parts of a solution of caustic soda known in the market as "Gantz's White Rock Potash," of 20° Baumé. I first thoroughly mix the benzine with ten parts of the mustard-seed oil, and then add the alkali, stirring the mixture vigorously while the alkali is being poured in. The mixture is then stirred intermittently—say every two or three hours—for a period of about twelve hours, at the end of which time I add the other three parts of the expressed fixed oil of mustard-seed. During this mixing process I maintain a temperature, as nearly even as possible, of from 90° to 100° Fahrenheit. The mixture is kept to about this temperature, and intermittently stirred for about four or five days. I then allow the mixture to stand, preferably in a cool place, for about four or five days longer, by which time the compound has become an apparently homogeneous mass of a consistency about that of soft soap.

I do not limit myself to the exact relative proportions of ingredients above set forth, as those proportions may be departed from to some extent without materially affecting the result; but the said proportions are those which I have found to be the best in my practice.

In using the composition for the "scouring" of wool it is dissolved in warm water in the proportion of from one-quarter to one-half an ounce of the composition to each gallon of water, and the wool to be scoured is immersed in the bath thus formed and allowed to remain there from five to ten minutes.

For the scouring of woolen or worsted yarns I find a suitable bath to be a solution of about three-quarters of an ounce of the composition to each gallon of water, and I find that the process may be expedited by employing a temperature of about 150° Fahrenheit. Immersion for a few moments in the bath of that temperature, or thereabout, effectually removes the "oily" or "greasy" matters from the woolen or worsted yarns, and without subsequent "shrinkage" or "harshness" of the yarns or tendency to become "felted."

A suitable bath for the scouring of woolen or worsted cloths in the "gray," or before being dyed, may be made by dissolving my composition in warm water in the proportion of about one-quarter of an ounce of the composition to each gallon of water.

I find that the cloth will take on a fuller dye when it is run through my composition in the scouring-vat "open," as dyers term it. The cloths, after immersion in this bath for, say, two hours, or about the period usual for scouring, are thoroughly cleansed from oil, grease, or dirt without being rendered harsh by the treatment and without material subsequent shrinkage. I find that for the finer qualities of woolen goods it is desirable to slightly increase the proportion of my composition added to each gallon of water in order to insure the prevention of shrinkage. I have also found that my composition operates to fix and intensify colors, whether on cotton, wool, or silk, and hence it is valuable not only for cleansing and restoring the colors of old and faded fabrics, but for preparing yarns or fabrics to be colored by dyeing or printing.

In using my composition in the process of dyeing it has been found to be an effectual and desirable method to immerse the yarns or fabrics for a short time, immediately before placing them in the dye-vat, in a solution of the composition made in the proportions of from one-quarter to one-half an ounce of the composition to one gallon of water, and also to mix a quantity of the same solution with the dye-stuff in the vat. In dyeing black it has been found sufficient, however, to use a preliminary immersion of the fabric in a separate solution of the compound.

I have found that dyed fabrics which have

been treated with my compound before or in the dyeing present a greater vividness and evenness of coloring than fabrics dyed in the ordinary manner, and that my compound takes the place of the ordinary mordants so effectively that it has been found practicable, by the use of my compound, not only to dye without "mordanting," but to dye mixed fabrics of wool and silk at one and the same operation.

When this compound is thus used in the process of dyeing or of printing, it is desirable, after dyeing or printing, to wash the dyed or printed yarns or fabrics in a solution of the compound invented by me (and set forth in application for patent of even date herewith) for clearing, brightening, and setting the colors, preventing smutting or crocking, and imparting a soft lustrous finish.

My compound may also be used for making a "stripping" solution for dyed yarns and fabrics—that is, for removing a color from dyed goods to prepare them for being redyed another color. For that purpose I make a solution in the proportion of about half an ounce of my compound to each gallon of water, and

use this solution on the goods in the ordinary way, at a temperature of about 190° Fahrenheit, until the color has been "stripped" to the desired degree. This solution strips the goods of their color without injury to the goods, and yet so effectively that they may be redyed of a lighter color than they had before the stripping operation.

I claim as my invention—

1. A composition, substantially as herein described, of benzine, mustard-seed oil, and an alkali.

2. A composition, substantially as herein described, of benzine, mustard-seed oil, and caustic soda.

3. A bath for the treatment of yarns and fabrics, consisting of a mixture of benzine, mustard-seed oil, and an alkali in water.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES TOPPAN.

Witnesses:

WILLIAM D. CONNER,
HARRY SMITH.