

CATION OF TEXTILES & FIBERS,

UNITED STATES PATENT OFFICE.

CHARLES TOPPAN, OF SALEM, MASSACHUSETTS.

BLEACHING FABRICS.

SPECIFICATION forming part of Letters Patent No. 263,365, dated August 29, 1882.

Application filed January 23, 1882. (No specimens.)

To all whom it may concern:

Be it known that I, CHARLES TOPPAN, of Salem, in the county of Essex and State of Massachusetts, have invented certain new and useful improvements in bleaching cotton, linen, and other fabrics composed in whole or part of vegetable fibers, or similar fibers, as raw cotton, &c., containing vegetable coloring-matter, of which the following is a specification.

Heretofore it has required twenty-four hours at least to bleach cotton fabrics, and it has been found somewhat difficult to remove perfectly all traces of the chlorine employed. In consequence thereof many times the fabric is injured, being rendered tender by the action of the chlorine upon the fibers of the goods, and thereby very materially reducing the strength thereof.

The objects of my invention are to obviate these defects and objections, and at the same time impart to the goods or fabrics bleached other desirable qualities by softening the fabrics in a very great degree, rendering the same very much more pliable, and also more susceptible to receive and retain colors or dyes, particularly such as belong to the class of aniline colors; and, furthermore, by my process and treatment of such fabrics in bleaching they are rendered antiseptic, thus preventing mildew and absorption of moisture, and thus permitting their exportation long distances or to hot climates without extra care or attention in packing the same. I accomplish these and other desirable objects without deteriorating the quality or the weight of the fabric or goods; and it consists essentially in the process and treatment of the fabric or fiber in a raw state, as hereinafter more fully described, and set forth in the claim.

In carrying out my invention I proceed as follows: First, I boil the fabric in a solution of pure water and "Sinapetroline" No. 2, which is a compound known in commerce by that name, the base of which was patented by me January 23, 1877, Letters Patent No. 186,640. To prepare the solution, I add to each gallon of water three ounces of the sinapetroline No. 2, placing the fabric or goods in the solution in a vessel, which may be closed, and then boil

the same two hours, remove and rinse in warm water, then place the fabric into a new clean solution of the same strength and boil one hour, then remove and rinse again in warm water, then place the fabric into a solution of chloride of lime and water of a density from 3° to 5° when hot, (measured by the hydrometer of Baumé,) then remove and expose to a current of air, repeat the operation one or more times or until sufficiently bleached. As soon as the bleaching is finished, remove the fabric, or, when the airing shows the action of the chlorine to be sufficient, wash the goods in a strong solution of boiling water and sinapetroline No. 2, which will instantly remove all traces of the chlorine. I find by experiment that sinapetroline No. 2 has an affinity for the vegetable coloring-matter contained in raw cotton or cotton fabric, and that it assimilates therewith when the solution of chloride of lime has acted upon the coloring-matter, followed by the solution of hot water and sinapetroline No. 2. The tar-like coloring-matter is very quickly and effectually freed and removed from the fiber of the cotton from which the fabric is produced. I find, furthermore, that this process and treatment tends to soften the fabric to a very remarkable degree, and yet does not reduce the original weight of the goods, but rather adds or somewhat increases their weight.

To carry out this process or art of bleaching cotton or linen fabrics in a superior manner only requires from two to three hours, whereas the processes heretofore employed has required twenty-four hours to produce an inferior result.

Having now described my invention, what I claim is—

The herein-described art or process of bleaching, consisting in boiling the fabric or goods in a solution of water and sinapetroline No. 2, then treating the fabric or goods with a solution of chloride of lime and water, and airing the same, and then washing the fabric or goods in a solution of hot water and sinapetroline No. 2, as and for the purposes set forth.

CHARLES TOPPAN.

Witnesses:

SYLVENUS WALKER,
C. E. NEWTON