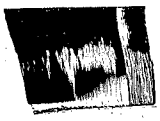
F6966 OR 333,875 RS,



UNITED STATES PATENT OFFICE.

WILLIAM MATHER, OF SALFORD, COUNTY OF LANCASTER, ENGLAND.

PROCESS OF BLEACHING.

SPECIFICATION forming part of Letters Patent No. 333,875, dated January 5, 1886.

Application filed March 31, 1885. Serial No. 160,817. (No specimens.)

To all whom it may concern:

Be it known that I, WILLIAM MATHER, a citizen of England, residing at Salford, in the county of Lancaster, England, have invented a new and useful Process for Bleaching Cotton Yarns and Fabrics, of which the following is a specification.

In my application for a patent filed March 27, 1885, No. 160,253, I have described means of soaking, boiling, dyeing, or treating with vapors or gases textile materials by loading them in open-framed or lattice trucks, which are run into a vessel like a horizontal boiler, having its ends closed tightly by sluice-doors, and therein exposing the materials to the action of liquors, vapors, or gases admitted to the vessel while they are kept moist by liquor distributed over them.

I have found that by the use of apparatus of this kind in conjunction with other known apparatus, the bleaching of cotton yarns and fabrics can be very thoroughly effected with great economy of time, labor, chemicals, and heat, simplification and cheapness of the apparatus, reduction of the space required, and with advantageous results in respect of the weight and width of the materials treated.

My present invention relates to a complete process for this purpose, which consists of the following successive steps of operation, taking cotton yarns or fabrics in the grayish-brown state in which they are spun or woven, whether washed or not.

First. I pass them through a boiling solution of caustic soda having a strength of from 3° to 6° Twaddell, taking care that they are thoroughly soaked with the solution, which is insured by their being passed several times continuously through the vessel containing the solution and squeezing-rollers.

Secondly. The soaked materials as they come from the solution are piled in lattice-trucks, such as are described in my application for a patent above referred to, and the charged trucks are run into the vessel described in the said application. In the case of woven fabrics they may be placed in the trucks spread out to their full width, either piled in folds or wound on rollers. Within the vessel the materials in the trucks are exposed from one to five hours to the action of steam admitted to the vessel, while they are moistened occasionally with the soda-liquor discharged over them by the distributing nozzles in the upper part of the vessel.

Thirdly. After this steaming the trucks are run out of the vessel and are emptied, their contents being passed through an ordinary washer. For heavy goods it is generally advisable to repeat the three steps above described, and after washing the materials may be soured in the usual way; but I do not consider souring to be essential at this stage of the process.

Fourthly. The washed materials, whether soured or not, are passed through chlorine-liquor in the usual way.

Fifthly. Again the materials are washed.

Sixthly. The materials are soured.

Seventhly. The materials are again washed, and are now sufficiently bleached and ready for drying in the usual way.

Having thus described the nature of my invention, and the best means I know for carrying it out in practice, I claim—

The improvement in the art of bleaching cotton yarns and fabrics, which consists in first treating them with a boiling solution of caustic soda, then subjecting them to the action of steam in a closed vessel, and while so subjected to steam occasionally introducing the soda-liquor, then washing the yarns or fabrics, these steps being repeated, if necessary, then subjecting the material to the action of chlorine-liquor, then washing them, and finally souring the same, substantially as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 16th day of March, A. D. 1885.

WILLIAM MATHER.

Witnesses:

HERBERT E. DALE,

GEO. J. B. FRANKLIN,

Both of 17 *Gracechurch Street, London, E. C.*