

UNITED STATES PATENT OFFICE.

JOHN T. WARING, OF YONKERS, NEW YORK.

IMPROVEMENT IN REMOVING VEGETABLE FIBER FROM FELTED FABRICS.

Specification forming part of Letters Patent No. **142,063**, dated August 19, 1873; application filed April 9, 1873.

To all whom it may concern:

Be it known that I, JOHN T. WARING, of Yonkers, in the county of Westchester and State of New York, have invented an Improvement in the Manufacture of Felted and Woven Cloths, of which the following is a specification:

This invention relates to the manufacture of "woolen" cloths, both felted and woven, in which pure wool is mixed with shoddy or other material containing more or less of cotton or other vegetable substance, or in which wool containing burrs or other vegetable matter is used.

In manufacturing cloths of this description there has heretofore been more or less failure of the vegetable substances in them to dye in like manner and in common with the wool, as the whole is dyed together in the made article, thus giving a speckled appearance to the goods, so that what has been gained by using more or less of shoddy or other cheap material containing vegetable substances has been, in a measure, lost by the inferior appearance of the goods.

This invention consists in treating felted or woolen cloths, made, as described, of wool combined with vegetable substances, in a bath of sulphuric or other acid solution to kill the cotton or vegetable fiber, and afterward neutralizing or soaking or washing out the acid, such process to be performed after the goods have been formed or hardened, or at any stage in the fulling or felting process; or, in the case of felted cloth, between any two of the felting stages, or after the fulling or felting

has been completed, but in every instance before dyeing. By this treatment of felted or woolen cloths I am enabled to produce a cheap felted or woven fabric of a regular color or uniform dye on its surface.

From actual experiment I find that a bath of sulphuric-acid solution of a strength of from 6° to 12°, more or less, of the Baumé hydrometer, will answer, exposing the fabric therein for a period of from six to eight hours, more or less. The fabric should then be dried with the acid in it at a temperature of about 120° Fahrenheit, more or less, and subsequently the acid be neutralized by alkalies, or be soaked or washed out with water. After this the fabric is dyed, and should any surface dust, consequent on the killing of the vegetable substances, remain, it is readily removed in the after operations of finishing the goods, leaving nothing on the surface of the latter but wool.

I claim—

The process, substantially as herein described, of treating felted or woven woolen cloths after the same have been formed or hardened, and before dyeing, at any stage in the process of felting or fulling, or between any two stages thereof, or after the felting or fulling is completed, by exposing the same to an acid solution and afterward removing the acid from the fabric, for the purpose or purposes herein set forth..

JOHN T. WARING.

Witnesses:

H. W. BASHFORD,
WILLIAM R. MOTT.