

# UNITED STATES PATENT OFFICE.

LOUIS A. DELABOVE, OF LILLE, NORD, FRANCE.

## BLEACHING THREADS AND FABRICS.

SPECIFICATION forming part of Letters Patent No. 280,141, dated June 26, 1883.

Application filed April 5, 1883. (No specimens.) Patented in France May 18, 1881, No. 142,899; in England August 17, 1881, No. 3,575; and in Belgium August 19, 1881, No. 55,502.

*To all whom it may concern:*

Be it known that I, LOUIS ALEXIS DELABOVE, a citizen of the French Republic, and a resident of Lille, Prov. du Nord, France, have invented certain Improvements in Processes for Bleaching Fibers and Fabrics of Flax and Hemp, of which the following is a specification.

My invention has for its object the complete avoidance of exposure on the grass in the process of bleaching fabrics and fibers of flax and hemp, and the perfect bleaching, by simple means, of such fibers and tissues, whatever may be their species or quality, and whether they are unbleached or have before undergone some treatment, chemical or otherwise.

In carrying out my invention I first submit the material to successive boiling in alkaline liquors, precisely as in treating colors in fabrics, in order to remove or destroy pectic substances which accompany the cellulose and foreign substances in the fiber or fabric due to the anterior treatment, if there has been any. Afterward the material is passed first through a solution of calcium hypochlorite, and immediately after through a solution of aluminium sulphate saturated with aluminium hydrate. These two substances in presence of each other cause a reaction, and develop a decolorizing-power much greater than that of calcium hypochlorite with the addition of an acid, and which has a much less injurious effect on the fiber than an equivalent quantity of the hypochlorite.

The chlorometrical standard of the hypochlorite employed will vary according as the fabric is woven more or less tightly, and as the fibers and threads are more or less coarse or more or less charged with coloring material—that is, according as the material is more or less difficult to bleach. In any case, however, there will be no danger in employing solutions having a strength of 100°.

The quantity of the aluminium sulphate saturated with aluminium hydrate employed will be in a proportion equivalent to the quantity of the calcium hypochlorite. A simple washing suffices to eliminate the products of the reaction that will have been deposited on the material treated.

To secure a perfect white it will sometimes be necessary to submit the fibers or fabrics, after they have undergone a decolorizing treatment, to a bath composed of a solution of soap, with ammonia added, and then to give them a final decolorizing bath, similar to the first.

The advantage of my process will be obvious to all who are familiar with the present mode of bleaching by exposure to the air or the grass in conjunction with bleaching-powder. So far as I am aware this process rarely produces a perfect white; the ordinary tint being yellowish, and to produce good results the treatment must be repeated, often several times. This of course places the bleacher at the mercy of the elements. Sometimes it is too dry and sometimes too cold. In the winter the grass is covered with snow. Then the damage done by gnawing rodents must be taken into account, as well as the damages resulting from high winds. The atmosphere also precipitates matter on the material or fabric which necessitates the labor of washing it out. My method avoids all of these difficulties, and in skilled hands may be relied on to produce uniformly good results. Besides this, the bleacher who employs my process will always know just how long it will take to accomplish the results, as the same causes may always be relied on to produce the same results practically in the same time.

Having thus described my invention, I claim—

The herein-described process of bleaching, which consists in treating fibers of flax and hemp, and threads and fabrics made therefrom, first with a bath or solution of calcium hypochlorite, and afterward with a solution of aluminium sulphate saturated with aluminium hydrate, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

LOUIS ALEXIS DELABOVE.

Witnesses:

G. VANACKERC,  
A. GOBERTLE.