

United States Patent Office.

EDWARD S. FRYE, OF SALEM, MASSACHUSETTS.

Letters Patent No. 100,997, dated March 22, 1870.

IMPROVEMENT IN REMOVING COLORS FROM LEATHER.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, EDWARD S. FRYE, of Salem, in the county of Essex and State of Massachusetts, have invented a Process of "Clearing" Leather, or Removing the Coloring-Matter therefrom; and I hereby declare that the following is a full, clear, and exact description thereof.

In the process of tanning, much coloring-matter, gums, and other foreign substances often pass into the hide with the tannic acid, rendering the leather dark colored, and injuring its quality.

This dark colored leather is much less desirable, and does not command so high a price as that of a light color, for the reason that it cannot be so generally used for all purposes to which the class of leather is adapted.

My invention has for its object to enable me to remove, or partially remove, the coloring-matter and other foreign substances from leather, so as to render it light colored, and consists in subjecting the leather first to an alkaline solution, which extracts the coloring-matter, &c., and afterwards to an acid solution, which removes it from the surface of the leather, so that its color and general appearance when dry will be improved to a great degree, while no injurious effects are produced upon the leather, as the alkali and acid neutralize each other.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

I first make an alkaline solution by dissolving from six to seven pounds of sal-soda in one hundred gallons of water, at a temperature of about 100° Fahrenheit. The leather is then dipped into this alkaline solution, and after being removed therefrom is immediately dipped into a solution formed by mixing from six to seven pounds of sulphuric acid with one hundred gallons of water. The leather is then removed, rinsed in cold water, and hung up to dry.

The alkaline solution partially extracts the coloring-matter, gums, and other foreign substances, which have passed into the leather with the tannic acid dur-

ing the process of tanning, and the acid removes this matter from its surface, so that when dry it will be clear and bright, and of a much lighter color than before being treated, no injurious effects being produced upon the leather, as the alkali and acid neutralize each other, while the removal of the coloring-matter, gums, &c., greatly improves the quality of the leather.

By means of the above process, dark-colored leather, which could only be used for inferior purposes, can be partially decolorized or rendered many shades lighter than before, in consequence of which it will be much more saleable, and will command a higher price than it would before being treated, as it can be employed for any purpose to which the class of leather is applicable.

I prefer to use sal-soda and sulphuric acid, as they are the cheapest alkali and acid, but any chemical equivalents thereof in the proper proportions may be used instead.

I find in practice that it is sufficient to dip the leather into the alkaline and acid solutions, and allow it to remain in each for a few moments only.

Instead of treating the leather after being tanned, it may be removed from the vat while being tanned, and subjected to my decolorizing process, which will open the pores of the leather, so that more tannic acid will be admitted, which will render the leather more solid, and thereby improve its quality.

Claim.

What I claim as my invention, and desire to secure by Letters Patent, is—

The within-described process of "clearing" or decolorizing leather, by subjecting it first to an alkaline and afterward to an acid solution, substantially as set forth.

Witness my hand this 23d day of February, A. D. 1870.

EDWARD S. FRYE.

Witnesses:

P. E. TESCHEMACHER,
W. J. CAMBRIDGE.