

UNITED STATES PATENT OFFICE.

DANIEL WOODBURY, OF PEABODY, MASSACHUSETTS.

IMPROVEMENT IN TANNING.

Specification forming part of Letters Patent No. 118,089, dated August 15, 1871.

To all whom it may concern:

Be it known that I, DANIEL WOODBURY, of Peabody, of the county of Essex and State of Massachusetts, have invented or discovered a new and useful Improvement in Tanning Leather or Skins; and do hereby declare the same to be fully described as follows.

The purpose of my invention or discovery is to facilitate the process of tanning, or to effect the thorough permeation of the skin or hide by tannin and coloring matter.

In the ordinary process of tanning a skin, the inner layer or *rete mucosum*, being between the outer layers—viz., the corium and the cuticle—is the last to be impregnated with the tannin, and, as a consequence, often becomes imperfectly tanned.

By my process I am enabled to effect in a few hours what generally requires several weeks of time to accomplish by the ordinary process of getting the tannin into the inner layer of the skin after the outer layers have been sufficiently tanned.

In carrying out my said process I submit the skin or hide, after its outer and inner layers may have been tanned sufficiently, to the action of a bath composed of a solution of nitrate or muriate of tin, or nitrate or muriate of tin and a coloring matter, such as turmeric, for instance. In this bath I allow the skin or hide to remain from twelve to twenty-four hours or thereabout, when it will be found, after removing the skin from the bath and washing it, that the tannin in the outer layers, or much of it, will have been thoroughly driven or forced into the inner layer, and a uniform or practically uniform tanning of the whole skin or hide will have taken place. Also, that the tannin or coloring matter will also have penetrated the entire skin so as to color or modify the color of it, as may be desirable. In preparing the bath of nitrate or muriate of tin I usually take for each gallon of nitric or muriatic acid about one pound of the metal tin. The acid is to be poured upon the tin, or the latter is to be immersed in the acid, and the two are to be allowed to stand until the tin may have been dissolved or destroyed by the acid, after which there may be added to the solution the necessary amount of water, say about one hundred and forty gallons, or such and the turmeric or coloring-matter.

I am aware of the process of J. C. Booth, as set forth in his patent of December 5, 1840, and described in "Morfit's Work on Tanning." Booth uses a crystallized salt of tin with muriatic acid, sulphuric ether, alcohol, and water, whereas I employ the tin in the state of a mineral, and I do not use sulphuric ether or alcohol. Furthermore, he simply sponges the leather with his solution, or applies it to the surface by a sponge, whereas I steep the leather upward of twelve hours in a bath of my solution. Booth's process is for bleaching the leather and producing what is termed "fair leather," while mine is to drive the tannin from the outer layers into the inner layer of the skin, and is used only after the skin may have been partially tanned. Booth's process is employed after the completion of the tannin process and to bleach or change the color. Furthermore, by examination of Booth's process it will be seen that he uses one part acid to two parts salt of tin and five parts water. I employ eight parts of tin to one part acid and twelve hundred parts water, or thereabout. Consequently, it will be seen that my solution is a very weak one in comparison to his, and is for an entirely different purpose. So weak is it that I have no occasion to use any ether or alcohol as protectives against the destructive tendency of the acid.

I therefore make no claim to the employment of a strong solution of a crystallized salt of tin with muriatic acid, sulphuric ether, and water to effect the bleaching of a tanned skin.

I claim as my invention or discovery—

1. The employment of a bath of metallic tin and acid, as set forth, and water in or about the proportion as stated, on a partially-tanned skin, in manner substantially as specified, to effect the completion of the tanning process or permeation of the skin by the tannin.

2. The employment of a bath of tin and acid, as mentioned, and water, in or about the proportions set forth, and turmeric, or an equivalent coloring matter, on a partially-tanned skin, substantially in manner as described, to effect the thorough permeation of the skin by the tannin and the coloring or modification of color of it, all being essentially as specified.

DANIEL WOODBURY.

Witnesses:

R. H. EDDY,
J. R. SNOW.