

# UNITED STATES PATENT OFFICE.

THOMAS CHASE, OF NEW YORK, N. Y., ASSIGNOR TO GEORGE H. RICHARDS.

## IMPROVEMENT IN THE PROCESS OF TANNING.

Specification forming part of Letters Patent No. 1,018, dated November 25, 1838.

*To all whom it may concern:*

Be it known that I, THOMAS CHASE, of the city of New York, have invented an Improvement in the Process of Tanning Hides and Skins, for which process Letters Patent of the United States were granted to George H. Richards, of the said city, dated the 16th day of December, in the year 1833, by which improvement the process is much simplified, room is economized, and the effect is more certain and rapid; and I do hereby declare that the following is a full and exact description thereof.

Instead of employing two vats, as in the process described by the said George H. Richards, I perform the whole operation in one single air-tight vat, which I use in the following manner: I make an air-tight vat, cistern, or case of sufficient strength to sustain the pressure of the atmosphere when the air is exhausted therefrom. Within this vat or cistern I suspend or lay the hides or skins in any convenient manner and completely cover the same with the tanning-liquor. The top of the cistern is fixed and secured to the body of the vat or box by means of screws, or otherwise, with the intervention of leather or other suitable substance to render the same air-tight. By means of an air-pump or other apparatus affixed on or near the top of the cistern I exhaust the air therefrom as completely as possible, and after this I work the air-pump from time to time, as air will continue to be exhausted from the liquid and from the pores of the skins in consequence of the removal of the pressure of the atmosphere from the surface of the liquid. The expansion or extraction of the air in the pores of the skin opens them and gives a ready admission to the liquor or ooze, which in consequence penetrates to the interior of the skin, pervading its whole mass and tanning it perfectly throughout. I sometimes,

after having continued this state of exhaustion for some hours, admit the atmosphere into the vat, so as to exert its pressure upon the surface of the liquid, allowing it to do so for a short period of time, that it may aid in forcing the liquid into the exhausted pores, after which I again work the air-pump and remove the pressure. As occasion may require, I renew the liquor in the vat by withdrawing it by a pump or other means and returning it to a reservoir of bark or other tanning substance, from which reservoir it is again freshly supplied by a tube or other means to the tanning-vat. I also have a barometer or gage connected with the vat, by which to ascertain the degree of atmospheric pressure. After the tanning-liquor has completely penetrated the hides or skins and become incorporated with them extra atmospheric or hydraulic pressure (the latter of which I think the more convenient) may be applied in order to give the hides or skins an additional solidity or firmness.

I do not prescribe any particular mode of constructing the vats or cisterns, there not being anything peculiar in these or in any other part of the apparatus, the whole being such as any competent workman can construct without special directions from me, such apparatus having been before known and used for various purposes, and not being of my invention.

What I claim as constituting my improvement is—

The application of the principle of exhaustion to tan-vats after the skins or hides have been suspended or laid therein and they have been covered with the tanning-liquor, in the manner and for the purpose herein fully set forth.

THOMAS CHASE. [L. s.]

Witnesses:

GILBERT GOLDING,  
J. R. LOWZANA.