

# UNITED STATES PATENT OFFICE.

WILLIAM M. NORRIS, OF PRINCETON, NEW JERSEY, ASSIGNOR OF ONE-HALF  
TO HENRY BURK, OF PHILADELPHIA, PENNSYLVANIA.

## PROCESS OF TAWING HIDES OR SKINS.

SPECIFICATION forming part of Letters Patent No. 498,077, dated May 23, 1893.

Application filed February 3, 1893. Serial No. 460,862. (No specimens.)

*To all whom it may concern:*

Be it known that I, WILLIAM M. NORRIS, a citizen of the United States, and a resident of Princeton, Mercer county, New Jersey, have  
5 invented an Improved Process of Tawing or Tanning Hides or Skins, of which the following is a specification.

This invention relates to an improved process of tanning or tawing hides or skins, and  
10 consists in first subjecting them to a bath prepared by dissolving in water a metallic salt, such as bichromate of potash, and adding an acid such as hydrochloric acid, and then treating the same to a bath prepared by  
15 dissolving in water a soluble sulphide, such as the sulphide of potassium or of sodium, and adding an acid such as hydrochloric acid.

In carrying out my process I prepare hides or skins for tawing or tanning by subjecting  
20 them to the usual processes of soaking, liming, unhairing, bating, washing, &c. I then place them in a bath prepared by dissolving in water an amount of a metallic salt, such as bichromate of potash, equal to about five  
25 per cent. of the weight of the hides or skins to be treated therewith, and adding about one half the quantity of a suitable acid, preferably hydrochloric acid.

The skins are allowed to remain in the  
30 above described bath until they have thoroughly absorbed the chromium compound, when they are removed, the surplus liquor is pressed out, and the skins thrown into a second bath. This second bath is prepared by  
35 dissolving in water an amount of a soluble sulphide such as sulphide of potassium equal to about five per cent. of the weight of the skins, and adding about one half the quantity of a suitable acid, preferably hydrochloric acid. The skins are allowed to remain in  
40 this second bath until the interaction between the chromium compound, the sulphide of pot-

ash and the hydrochloric acid has reached the desired point in its effect upon the skins. This is clearly indicated by a change of color  
45 in the skins from a yellowish red to a bluish green. The skins are now removed from this bath and may be subjected to the usual processes of staining, fat-liquoring, coloring and finishing, as now employed on chrome-tanned  
50 stock.

I do not limit myself to the described proportions of ingredients.

I do not claim broadly the tawing of skins by first subjecting them to the action of a  
55 bath prepared from a metallic salt (such as bichromate of potash) and then to the reducing action of hydrogen sulphide, as that forms the subject of an application filed by me July 14, 1891, Serial No. 399,448; nor do I claim  
60 subjecting the hides or skins to the combined action of a soluble sulphide, a metallic salt (such as bichromate of potash) and an acid (such as hydro-chloric acid) in the presence of each other, as that forms the subject of  
65 an application filed by Arthur D. Little, June 23, 1891, Serial No. 397,234.

I claim as my invention—

The herein described process of tawing or  
70 tanning hides or skins, consisting in first subjecting them to a bath of a solution of a metallic salt, such as bichromate of potash, with an acid such as hydrochloric acid, and then treating the hides or skins to a bath of a solution of a soluble sulphide, such as sulphide  
75 of potassium, with an acid, such as hydrochloric acid, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM M. NORRIS.

Witnesses:

JOSEPH H. KLEIN,  
HUBERT HOWSON.