

UNITED STATES PATENT OFFICE.

S. W. PINGREE, OF METHUEN, MASSACHUSETTS.

IMPROVEMENT IN THE ORDER OF APPLYING TAN-LIQUOR TO HIDES.

Specification forming part of Letters Patent No. **15,896**, dated October 14, 1856.

To all whom it may concern:

Be it known that I, SAMUEL W. PINGREE, of Methuen, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Tanning Hides and Skins; and I do hereby declare that the same is fully described in the following specification.

My invention will be found to be especially useful in tanning hides and skins with their hair upon them, and so that when said hides or skins are tanned the hair with the epidermis shall remain on the leather; and in order to facilitate the process of tanning the hide or skin after it has been washed and beamed and the surplus flesh removed from the inner surface of the corium in the ordinary way, the corium or inner layer of the skin, and so much of the middle layer as may be necessary to reduce the skin to an equal thickness throughout, may be skived or removed from the remainder of the skin or hide. When the hide is reduced to an even thickness all its parts will be tanned equally in the same time.

In carrying out my invention, after the hides have been prepared in the usual way, or in manner as above described, I proceed as follows in tanning, say, twenty-five hides: I add to five hogsheds of water one peck of lime, five pounds of sal-soda, and twelve pounds of soda-ash; or, instead of the sal-soda and soda-ash, fifteen pounds of soda-ash may be used. The hides are to be placed and allowed to remain in this solution about twelve (or more) hours, but not long enough to start or loosen the hair. Next, they are to be rinsed in water and subsequently steeped in another solution composed of five hogsheds of water, one bushel muriate of soda, and twelve pounds of sulphuric acid. In this solution they should be suffered to remain twenty-four hours, or more, according to the thickness of the hide, and while in such solution the hides should be well stirred, so that the acid may act upon the glutinous matter and neutralize the alkali remaining in them, and prepare them for the re-

ception of the tanning-liquor. This assists the penetration of the tanning-liquor into the hides. Next, the hides are to be immersed for three days in a solution composed of five hogsheds of water and fifty pounds of Bombay catechu. This solution not only partially tans the hide, but has an effect to toughen it upon the grain side, so that when the hide is next subjected to the action of the bark-liquor such may not weaken the outer side or grained surface of the hide. Next, steep the hides in a strong bark-liquor, and suffer them to remain in the same ten or twelve days. Next, add to the bark-liquor fifty pounds of sumac and twenty-five pounds of ground alum, and suffer the hides to remain one week longer in such solution, they being stirred occasionally in the meantime. This completes the process.

The object of using sumac and alum at the stage of the process above described is to soften the partly-tanned skins or to retain them in a soft state, so that they may be pliable when the tanning process is completed. The alum toughens the hide.

I do not claim the separate use of any of the chemical materials hereinbefore mentioned for the process of tanning, as I am aware that all of them have been before employed, and particularly I do not claim the neutralization of the alkali by the use of sulphuric acid preparatory to the introduction of the hides into the tanning-liquor; but

What I do claim as an improvement is—

The use of the catechu and the sumac and alum, with reference to the application of the bark or strong tanning-liquor, as stated, and so as to produce effects as set forth and in the order as specified, when the hide is tanned with the hair on it.

In testimony whereof I have hereunto set my signature this 19th day of June, A. D. 1856.

SAMUEL W. PINGREE.

Witnesses:

R. H. EDDY,
F. P. HALE, Jr.