

UNITED STATES PATENT OFFICE.

STODDARD JOHN DOBSON, OF LINCOLN, NEBRASKA, ASSIGNOR TO THE
DOBSON PATENT TANNING PROCESS COMPANY, OF SAME PLACE.

TANNING HIDES AND SKINS.

SPECIFICATION forming part of Letters Patent No. 340,199, dated April 20, 1886.

Application filed January 28, 1886. Serial No. 190,073. (No specimens.)

To all whom it may concern:

Be it known that I, STODDARD JOHN DOBSON, of Lincoln, in the county of Lancaster and State of Nebraska, have invented a new and useful Improvement in Tanning Hides or Skins, as well as in curing them and in preparing them for being tanned; and I do hereby declare the same to be described as follows:

The invention has reference particularly to that for which a patent, No. 236,559, dated January 11, 1881, was granted to Robert F. and Isaac Dobson, the process covered by such patent consisting in first immersing the hides for a suitable period in a bath formed of strong brine and "tanning extract," and next subjecting them, in a suitable compartment, to the action of fumes of burning sulphur.

In practice it has been found that instead of subjecting the hides (after preparation in the usual way) to a bath of tanning extract and salt-water, and next to the fumes of sulphur, it is far better to first subject them to the action of a bath of chloride of sodium—in other words, salt-water or brine—and next to the sulphur fumes, and afterward to a bath of the tanning extract or coloring-liquid, and, finally, again, to the action of the sulphur fumes, the leather produced by the improved process being much stronger, more pliable and durable than "bark-tanned leather," and better in several respects than the leather produced by the process set forth in the said patent. Furthermore, by the new or improved process, leather can be treated at about half the cost of that usually required for the production of bark-tanned leather.

The ordinary process of producing bark-tanned leather includes one operation, termed "bating," which is not only for neutralizing the lime absorbed by the hides in the unhairing process, but for rotting or destroying the gelatinous matter in them. This bating process, besides being disagreeable, laborious, and expensive, is apt to distend and weaken the fibers of the hides, and, at certain times before the tanning process is completed, to render them liable to be injuriously affected by ozone in the atmosphere, especially during a thunderstorm, or when the air is surcharged with electricity. I have discovered that the bating process may be dispensed with preparatory to

the tanning of the hides, and that the subjection of them to a bath of chloride of sodium, or to strong salt-water or brine, and next to the fumes of burning sulphur, may be substituted, whereby they are left uninjured, and the strength of their fibers is unimpaired, and their pliability is improved, the dirty and offensive work of the bating process, as well as much of the labor incident thereto, being thereby avoided.

Experience has demonstrated that when hides, before being bark-tanned, are treated by a bath of salt-water, and next fumigated, as mentioned, they are in a much better condition for the absorption and retention of the tanning material than they are after being treated by the bating process, and that they can be thoroughly tanned with very much less material, and in a much shorter time, and, besides, are generally softer, stronger, better in color, and more durable. The action of the salt, or chloride of sodium, and the sulphurous fumes or gas upon the gelatine of the hides appears to be such as to decompose it or entirely change its character, without producing putrefaction of it, it being left in and not materially extracted from the hides. After thus treating the hides or skins they may be tanned, carried, and finished in the usual way. So hides, at any stage of tanning them, may generally, if not always, be improved by subjecting them to a bath of brine, and subsequently to the action of fumes of burning sulphur.

In treating the skins or hides I usually proceed as follows: First, unhair them in the usual way, and next wash them in a wheel or otherwise for about half an hour in cold water, after which the fine or remaining hair, if any, is to be removed from them, and they are to be immersed for from twenty-four to thirty-six hours in a bath of salt-water or brine, in strength usually about 9° to 11° salinometer, they being handled once in the meantime; next they are to be subjected to the fumes of burning sulphur, good judgment being used as to the size of the compartment in which they may be placed for being fumigated, and the amount of the gas to which they may be exposed. I usually use a room about sixteen feet square on its floor and nine feet in height,

and having apertures for the admission of a proper amount of air for keeping up the combustion of the sulphur. A charge of eight to ten pounds of sulphur in two or more iron pots
 5 or vessels gives better results than in one single pot, such being sufficient for one hundred and sixty heavy sides, or two hundred to two hundred and forty light sides of forty to fifty pound hides. The hides are to be suitably
 10 suspended in the apartment for the sulphurous fumes to thoroughly gain access to them, and there generally to remain from twelve to fourteen hours. After removal of the hides from the fumigating-apartment they are ready
 15 for the coloring or tanning bath, in the making of which I generally use, for forty sides, about one hundred and twenty pounds of gambier, about two hundred pounds of salt, and fifteen pounds of alum. The liquor
 20 with the hides, I put in a suitable or wheel vat and subject them to its action for about twenty-four hours. The strength of the liquor may be about 11° to 12° tannometer and 9° to 11° of the salinometer. After one pack of
 25 the hides may have been removed from the vat the liquor therein may be strengthened for another pack by the addition to it of about half a pound of gambier to each side and eight to ten pounds of alum for all of them.
 30 The hides, after having thus been treated and brought into a suitable condition, are to be skived and split. The grain portion I usually afterward put into gambier-liquor and the other or flesh portion into hemlock-liquor,
 35 leaving them therein for from twelve to twenty-four hours. The flesh portion will then be ready for being dried and for sale or use. The grain portion I generally next subject to the action of sulphur fumes for about twelve
 40 hours and afterward wash it. Having "slicked it off" on the grain side, it will be

ready for being "stuffed" with grease or oil, which may be accomplished by means of a stuffing-wheel, as used by tanners. It subsequently may be finished as leather usually is
 45 after being stuffed.

I do not herein claim the application to hides of a solution of salt and tanning extract and subsequently subjecting them to the action of fumes of burning sulphur, as set forth
 50 in the patent hereinbefore mentioned; nor do I claim the process or processes as claimed in the United States Patent No. 328,978, as I employ no alum in the bath of salt, nor any tanning-liquor consisting of water, common
 55 salt, alum, sulphuric acid, and extract of bark, as mentioned in said patent.

I claim—

1. The improved process, substantially as hereinbefore described, of treating the hides,
 60 it consisting in subjecting them to the action of a bath of salt-water or brine, next to fumes of burning sulphur, next to a bath of tanning extract or coloring-liquor, and afterward to fumes of burning sulphur, all essentially as
 65 specified.

2. Subjecting the hides to a bath of strong salt water or brine, next to fumes of burning sulphur, and afterward tanning them by a
 70 solution of tanning extract or a decoction of bark, or other proper tanning agent, all being substantially as specified.

3. Subjecting hides in the process of tanning them to the action of a bath of brine or common salt, and next exposing them to contact
 75 with the fumes of burning sulphur, all being essentially as set forth.

STODDARD JOHN DOBSON.

Witnesses:

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J. A. BUCKSTAFF.