

UNITED STATES PATENT OFFICE.

WILLIAM A. RAGLAND, OF SPRINGFIELD, MISSOURI.

PROCESS OF AND SOLUTION FOR TANNING HIDES.

SPECIFICATION forming part of Letters Patent No. 539,488, dated May 21, 1895.

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To all whom it may concern:

Be it known that I, WILLIAM A. RAGLAND, a citizen of the United States, residing at Springfield, in the county of Greene and State of Missouri, have invented certain new and useful Improvements in Processes of Tanning Hides and Solutions for Same; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in processes for tanning hides and also in tanning solutions employed for this purpose.

The objects of my invention are, first, to produce a process which will most efficaciously eradicate from the hides all adhering flesh and hair as well as other animal-matter and which will leave the leather strong, durable and flexible, and, second, to produce a solution to the action of which hides are to be subjected after being cleansed of hair and flesh and which is calculated to impart to the leather thus subjected the above mentioned properties of strength, durability and flexibility.

With the above objects in view, the invention consists in the process hereinafter described when substantially practiced and in the solution, the ingredients and substantial proportions of which are hereinafter stated.

The hides, as is usually the case, are first, as a preliminary step to the tanning process, subjected to such treatment and manipulation as will thoroughly eradicate all adhering flesh and hair, after which they are subjected to the action of the solution of which mention has been heretofore made.

For the accomplishment of the above numerous methods are employed, any of which are more or less efficacious, but I will proceed to describe one method that I prefer to employ, it being understood that others may be substituted if desired.

The hides are first soaked in perfectly clear water until they are rendered perfectly soft, after which all flesh possible is removed therefrom. I then form a solution for liming the hides, the same consisting of the following ingredients in about the proportions stated: To twenty gallons of water I add twenty quarts of unslaked lime and twenty quarts of wood-

ashes. The solution being formed the hides are placed therein and are handled several times to remove all hair and flesh. After the above step I form a second solution consisting of twenty gallons of water, to which is added one bushel of wheat-bran, four pounds of corn-starch, one pound of muriatic acid, one gallon of butter-milk, the whole being thoroughly stirred and mixed. This forms a "bating" solution to which the hides are subjected in bath so as to remove all lime and render them perfectly soft and pliable. To do this they must be handled several times a day. After the removal of the lime and the rendering of them soft and pliable, they are thrown upon a table and worked well on their flesh-side with a steel-sleek and on their grain-side with a stone-sleek, after which they are in condition to be subjected to the tanning solution, in which it will be understood they are thoroughly soaked, said hides being handled several times during the soaking.

The tanning-solution is composed of the following ingredients formed in a solution, as stated, and combined in substantially the proportions stated: To fifteen gallons of water I add fifteen pounds of animal brains, and ten pounds of *Uva ursi* leaves, the whole being stirred well until these ingredients are thoroughly dissolved. In this solution the hides are frequently handled, and as a result the leather thereby tanned is rendered tough, strong and flexible.

The phosphorus in the animal brains combined with the tannic acid in the *Uva ursi* produces an insoluble tannate of albumen and sets the same in the leather, thus rendering the same tough, durable and yet perfectly flexible.

Having described my invention, what I claim is—

1. The herein described process of tanning hides, the same consisting of first removing all hair and flesh from the same, and finally subjecting them to a bath composed of water, animal brains and *Uva ursi* leaves, these ingredients having been combined to form a solution, substantially as specified.

2. The herein described tanning-solution, the same consisting of water, animal-brains, and *Uva ursi* leaves, combined in substantially the proportions stated.

3. The herein described process of tanning

hides, the same consisting in first soaking the
hides in clear water, second, in removing so
far as possible all adhering flesh, third, hand-
ling them at intervals in a liming solution,
5 consisting of water, unslaked lime and wood
ashes, fourth, in handling them several times
in a second solution consisting of water, wheat
bran, corn starch, muriatic acid, and butter
milk, fifth, in submitting the hides to a thor-

ough working with sleeks, and sixth, in sub- 10
mitting them to a tanning solution composed
of water, animal brains, and *Uva ursi* leaves.

In testimony whereof I affix my signature
in presence of two witnesses.

WILLIAM A. RAGLAND.

Witnesses:

T. V. RAGLAND,
G. A. ATWOOD.