

UNITED STATES PATENT OFFICE

JIHACHI INOUE, OF MINAMIKU, AND TSURUMATSU DOGURA, OF KAWAKAMI, JAPAN.

PROCESS OF TANNING HIDES AND SKINS.

No. 877,341.

Specification of Letters Patent.

Patented Jan. 21, 1908.

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To all whom it may concern:

Be it known that we, JIHACHI INOUE, of 2896 Motomachi Sanchome, Namba, Minamiku, Osaka, Japan, and TSURUMATSU DOGURA, of 69 Otaki, Kawakami, Yoshino, Nara Prefecture, Japan, have invented an Improved Leather and New Process of Tanning; and we do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement.

Our invention relates to a new process of tanning hides or skins; and the object thereof is to devise a process which will accomplish the tanning of hides or skins in less time than is required in tanning processes now in use, and which will result in a stronger and at the same time a more pliable leather than is produced by former tanning processes.

With the above objects in view we prepare a solution composed of the following ingredients in substantially the proportion stated, although it will be understood that the amount of each ingredient is subject to variation. However, a solution made up of the ingredients in the quantities stated has been found to give the best results, and the proportion stated is the best with which we are acquainted:

Water.	100.00	parts
Ferrous sulfate	11.25	"
Potassium nitrate	4.00	"
Potassium bichromate	1.25	"

A small amount of acetic acid is added if it is desired to produce a soft and extremely flexible leather.

Hides or skins to be tanned are first subjected to a preliminary preparatory treatment in general use in the art of tanning, such as to a treatment with salt, lime, pigeon's dung, acetic acid, etc.; after which they are immersed in the solution above mentioned for a period ranging from 8 to 40 hours, according to the condition of the hides or skins to be tanned.

The purpose of using the above solution is to accomplish the action of tanning by means of iron alum and chrome alum, which action

is the result of a chemical reaction between the ferrous sulfate, potassium nitrate, potassium bichromate, and the organic substance of the hides or skins, and which action is aided by the small amount of ferric sulfate and free sulfuric acid usually present in commercial ferrous sulfate.

In the use of our process above set forth a leather of greatly increased tensile strength is produced, which leather is at the same time flexible to a degree not present in leather tanned by former processes. These two qualities render the leather produced by our process especially applicable for the manufacture of leather belts for power transmission purposes.

The leather produced by our process also resists the action of moisture and water containing chemicals in solution to an unusual degree, which renders it well suited for use in exposed positions.

In the use of our process it has been found that inferior hides, and such as are generally considered as incapable of being tanned by former processes, may by our process be successfully converted into leather.

While specific uses of the product produced by our process have been mentioned, it will of course be appreciated that the leather produced may be used for any purpose for which leather is suitable.

Having thus disclosed our invention and explained in what manner the same is to be performed, we claim and desire to secure by Letters Patent:

The method of tanning hides or skins after they have been subjected to a suitable preparatory treatment, which consists in treating them with a solution formed from water, ferrous sulfate, potassium nitrate, and potassium bichromate in the proportion substantially as above set forth.

In witness whereof we have signed this specification in presence of two witnesses.

JIHACHI INOUE.
TSURUMATSU DOGURA.

Witnesses:

REN YABE,
UMAO ABE.