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TANNING

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6 Claims. (Cl. 149—5)

The present invention relates to a process for the manufacture of leather.

More especially our invention is concerned with a modification and improvement of the method of tanning animal hides and skins with the aid of watersoluble zirconium compounds. It is known that by treating hides and skins with watersoluble zirconium salts well tanned leathers of a light white color can be obtained. However, as regards the shade and uniformity of their coloration they still show some disadvantages in so far as the shade of the finished leather depends very much on the color of the original hide; for instance, a dark or patchy-colored hide will not yield a leather of the desired uniform white color. Besides, uniform deacidification and also uniform taking-up of fat in the so-called liquor-process meet with certain difficulties, the feel and shade of the finished leather being often somewhat impaired during the said stages of manufacture.

We have now found that the aforementioned disadvantages can be greatly diminished by applying to the hides or leathers in any desired stage of the tannage an aqueous solution of a watersoluble silicic acid compound. As such compound, for example, watersoluble colloidal silicic acid or watersoluble silicates, like the alkali silicates, may be applied to the hides or leathers at different stages of the tannage; for instance, they may be added to the tanning liquors or to any of the finishing baths used in the manufacture of leathers.

A particularly advantageous method in accordance with our invention comprises neutralizing the acid zirconium salt tanning liquor during the last phases of the tannage by gradually adding a silicate solution thereto, or on the other hand, deacidifying the leathers in a fresh bath by means of a silicate solution. It is well worth noticing that in our process we may use an amount of silicates which per se would be quite insufficient to effect any tanning of the silicate tannage type also known in the art.

The leathers obtained according to our said invention besides being unimpaired as regards their touch, feel and other properties, exhibit a pure white and uniform color, even if the original hides were dark or unevenly colored.

The following examples illustrate the invention without limiting it thereto, the percentages being calculated on the weight of the hides.

Example 1

100 kgs. pickled calf hides are tanned in a solution of 8% anhydrous sodium sulfate in 100% of water, to which gradually during the tannage a solution of 7.8% of zirconiumoxychloride and hydrochloric acid (basicity of the solution: 25%) has been added. After neutralizing with an

aqueous solution of sodiumbicarbonate the material is pared and drummed in 400% of water at 30° C. During drumming, a dilute solution of 4% of water glass (technical, 39° Bé.) is gradually added in several portions, and the whole is caused to drum for a further half hour. Thereupon the leathers are rinsed in running water, until the leather cut shows a pH-value of 4.5 to 4.8, and afterwards greased. Taking up of fat takes place much more slowly and evenly than with the non-aftertreated leather, and the feel is less greasy. After slicking, drying, moistening, staking, tacking and drying, the finished leather exhibits a uniform pure white shade.

Example 2

Cow hides having received a formic acid pickle are treated in a solution of 60% water, 2% common salt and 4% sodium sulfate, to which a solution of 20% water, 7% zirconiumoxychloride and 0.8% sulfuric acid (66° Bé.) is added in 4 parts in intervals of half an hour. After about 6 to 8 hours an aqueous solution of 3% water glass of 37° Bé. diluted 1:10 with water, is gradually added to the tanning liquor during one hour and the hides are treated therein for another hour. Thereafter the leather is staked for 24 hours, trimmed, rinsed until it shows a pH of 4.5 and fat-liquored. For the water glass an equivalent amount of potassium silicate may be substituted with a similar result.

We claim:—

1. In the process of tanning with watersoluble zirconium compounds the modification which comprises applying to the hide or skin material in any stage of the tannage an aqueous solution of a watersoluble silicic acid compound of the group consisting of water soluble colloidal silicic acid and the water soluble silicates.
2. In the process of tanning with watersoluble zirconium compounds the modification which comprises gradually adding during the last phases of the tannage an aqueous solution of a watersoluble silicic acid compound of the group consisting of water soluble colloidal silicic acid and the water soluble silicates to the tanning liquor.
3. In the process according to claim 1 a modification in which a watersoluble alkali silicate is used as the watersoluble silicic acid compound.
4. In the process according to claim 2 a modification in which a watersoluble alkali silicate is used as the watersoluble silicic acid compound.
5. In the process according to claim 1 a modification in which water glass is used as the watersoluble silicic acid compound.
6. In the process according to claim 2 a modification in which water glass is used as the watersoluble silicic acid compound.

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