

UNITED STATES PATENT OFFICE.

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PLUMPING AND TANNING PROCESS.

SPECIFICATION forming part of Letters Patent No. 695,765, dated March 18, 1902.

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To all whom it may concern:

Be it known that I, SIGMOND SAXE, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented certain new and useful Improvements in Plumping and Tanning Processes, of which the following is a full, clear, and exact description.

10 My invention relates to a process for plumping and tanning hides.

It may be well as a preliminary measure to relate briefly the several steps of the ordinary tanning processes as now practiced.

15 A number of vats are usually provided and are filled with tanning liquor of different degrees of strength, the hides being placed in the vat containing the weakest liquor and thence removed to the next succeeding vat in which the liquor is stronger. Some tanners prefer to let the hides remain in a single vat and to change the liquor around them. When this is done, the liquor first brought into contact with the hides is comparatively weak, 20 and stronger liquors are used as the tanning process progresses. In the ordinary processes of tanning sometimes the natural tanbark—for instance, the bark of the chestnut-oak or the bark of quebracho wood—is leached or steeped in water for the purpose of making the tanning solution. At other times the tanning liquor is made of a solution of some one of the commercial tanning extracts dissolved in water. Sometimes, too, the tanning liquor 25 consists of a double solution containing both the leached extract of natural bark and a commercial tanning extract prepared artificially.

My invention relates more particularly to 40 tanning processes in which either a commercial tanning extract is used exclusively or in which a commercial tanning extract is used in conjunction with the extract of the natural bark made by leaching the same.

45 I take a twenty-five-per-cent. solution of ordinary commercial lactic acid and apportion it to the quantity of hides to be tanned at the ratio of one-half to three-quarters of a pound of this commercial acid for every one hundred pounds of hides. I preserve this arbitrary proportion, no matter what may be the purpose for which the hides are tanned

or what may be the stage of the tanning process. Putting this commercial lactic acid into the solution, the tanning process goes on 55 as stated, with this difference—to wit, the lactic acid plumps the hides—that is, causes them to distend and swell, and thereby tan more quickly. As the commercial tanning extracts are of vegetable origin and as the 60 natural tanning extract obtained from the natural bark produces a tanning solution also of vegetable origin, my process is more peculiarly applicable to so-called “vegetable” tanning. 65

I find that the addition of lactic acid to the tanning liquor of the kind described, whether said liquor be formed from the natural bark or from some one of the commercial tanning extracts, causes the hides to retain in their 70 substance and to combine with a larger proportion of the tannin, thereby making a superior quality of leather having a proportionately heavy weight. This gives the process great commercial value, for the reason that 75 it virtually converts a comparatively cheap substance into a high-priced commodity. In other words, the greater the amount of tannin which can be made to combine with the albumen of the hide the better will be the 80 leather and the greater will be the weight thereof. As this kind of leather is sold by weight, the advantage can readily be seen.

I am aware that the fluid known among tanners as “sour liquor” has heretofore been 85 used with more or less success in the plumping of hides and possibly has been applied successively to hides in various stages of the tanning process. It is possible, too, that this sour liquor contains traces of lactic acid or 90 some acid having more or less similarity thereto. This sour liquor, however, is formed from the natural bark during a fermenting process and is therefore peculiar to the use of the natural bark. When commercial tan- 95 ning extracts are used, there is little or no fermentation, and therefore the organic acids formed are not sufficient in quantity to properly plump the hides. It therefore becomes necessary to add some plumping agent, and 100 I find that commercial lactic acid is quite suitable for the purpose.

Where the hides are tanned by the use of a double solution containing both the extract

of the natural bark and a commercial tanning extract, I find that the sour liquor produced from the natural bark is of such small quantity as to be inadequate for the purpose
5 of properly plumping the hides. I find, too, that lactic acid can be used to advantage in this tanning process as well as in the process employing a commercial tanning extract alone.

10 By the process above described I find that a tanning liquor of the very highest order can be successfully prepared without the direct use of any natural product whatever—that is to say, all of the substances used in
15 the entire tanning and plumping process can be bought in the market as articles of commerce. There are some tanners, however, who because of the abundance and cheapness of the natural bark in a particular locality or who for other reasons desire to use
20 the natural bark to some extent, at least, find, as before stated, that there is not enough sour liquor formed for properly plumping the hides. These last-mentioned tanners can use
25 a commercial lactic acid and a commercial tanning extract along with such proportion of extract made from the natural bark as they may deem proper. It makes no difference what may be the proportion of the natural
30 bark and the commercial tanning extract relatively to each other, the lactic acid working equally well in all cases so far as I have been able to discover. I find, too, that lactic acid can be used to equal advantage, whether the
35 process be one of original tanning or of retanning. A mixture of the extract of natural bark and of a commercial vegetable tanning extract is usually employed for retanning.

40 Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The process herein described, of plumping and tanning hides, which consists in subjecting said hides to the action of a double
45 solution containing commercial lactic acid and also a commercial tanning extract.

2. The process herein described, of plumping and tanning hides, which consists in subjecting said hides to the successive action of

progressively stronger solutions containing a
commercial tanning extract and commercial lactic acid. 50

3. The process herein described of plumping and tanning hides, which consists in subjecting said hides to the action of a solution
55 containing artificially-prepared commercial lactic acid and a commercial vegetable tanning extract.

4. The process herein described of plumping and tanning hides, which consists in subjecting said hides to the action of a double
60 solution containing commercial lactic acid and a tanning liquor, said tanning liquor containing an active agent made partly from leaching bark and partly from adding a commercial vegetable tanning extract. 65

5. The process herein described, of plumping and tanning hides, which consists in forming a tanning solution by leaching natural
70 bark in water, adding to said solution a quantity of an artificially-prepared tanning extract and also a quantity of commercial lactic acid, and then subjecting the hides to the action of the liquor thus prepared.

6. The process herein described, of plumping
75 and tanning hides, which consists in subjecting said hides to the action of a solution made by leaching natural tan-bark in water, adding to the fluid thus produced a quantity of commercial tanning extract commensurate
80 with the weakness of said fluid, and finally adding commercial lactic acid in an arbitrary proportion commensurate with the weight of said hides.

7. The process herein described, of plumping
85 and tanning hides, which consists in subjecting said hides first to weak and then to progressively-stronger solutions, containing both a commercial tanning extract and an extract of natural bark, and also containing
90 commercial lactic acid.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SIGMOND SAXE.

Witnesses:

WALTON HARRISON,
EVERARD B. MARSHALL.