

UNITED STATES PATENT OFFICE.

BONA ALLEN AND BONA ALLEN, JR., OF BUFORD, GEORGIA.

PROCESS OF TANNING.

SPECIFICATION forming part of Letters Patent No. 689,773, dated December 24, 1901.

Application filed April 6, 1901. Serial No. 54,743. (No specimens.)

To all whom it may concern:

Be it known that we, BONA ALLEN and BONA ALLEN, Jr., citizens of the United States, residing at Buford, in the county of Gwinnett and State of Georgia, have invented certain new and useful Improvements in Processes of Tanning; and we 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.

Our invention relates to an improvement in the art of tanning.

The object of our invention is to produce leather of a high grade in a very short time and by very simple means, doing away by our process with much of the apparatus now in use in tanneries.

With this object in view our invention consists in the process hereinafter described and claimed.

Broadly considered, our invention involves the addition of solid quebracho or any other tanning extract in a solid form in which the hides are placed in a comparatively weak tanning liquor. It is well understood in the art of tanning that the best results are obtained by submitting the hides or skins first to the action of a comparatively weak liquor, then to the action of a stronger liquor, and finally to the action of a very strong tanning liquor. All this is done automatically by our process. The hides or skins after being taken from the vats are placed in a drum, which may be of any desired size, kind, and shape. Into this drum comparatively weak tanning liquor is placed, and then a suitable quantity of solid quebracho or any other desired solid tanning extract is placed, the amount of extract added being proportioned to raise the tanning liquor in the drum to the desired strength after all the solid extract has been dissolved. The drum is then revolved in the usual way, the solid extract begins to dissolve, and the tanning liquor is gradually and automatically strengthened, the result being that small thin hides may be completely and thoroughly tanned in from ten to twelve hours and larger thicker hides from twenty-four to thirty-six hours, these thicker hides producing sole-leather or harness-leather.

Our process covers the use either of warm tanning liquor or cool tanning liquor at the start. Of course the tumbling action will gradually warm the liquor, and in some instances we find that a beneficial result is obtained by warming the liquor in the very beginning of the process. In winter, for example, the drum may be warmed by the introduction of hot air or steam through the hollow axle of the drum, and in summer it may be cooled in a similar manner by the introduction of cold air through said hollow axle. These, however, are minor details of our process, the essential feature thereof being the introduction of solid tanning extract of any kind into a drum containing the hides and a comparatively weak tanning liquor. This extract may be introduced into the drum in any desired way. If the drum is divided into compartments, of course a suitable amount of solid extract should be put into each compartment, or, if desired, one end of the drum may be cut off by a perforated partition to form a separate chamber into which the solid extract may be placed.

By the use of the term "comparatively weak liquor" in this description we do not mean to limit ourselves to liquor of any particular strength. We simply mean that we may use tanning liquor of any desired strength at the start; but the essential feature of our process is that the strength of the said tanning liquor is gradually and automatically increased from the start to the finish by the tumbling action, except for the fact that some of the active principle of the liquor is absorbed by the hides or skins, so that as a matter of fact the liquor at the end of the operation may perhaps be weaker than it was in the beginning, owing to the absorption by the hides or skins of the tannin.

If the quantity of hides or skins put into the drum be comparatively small, the liquor at the end of the operation will be stronger. If, on the other hand, the quantity of hides or skins in the drum is slightly in excess of what it ought to be, the liquor at the end of the operation may be somewhat weaker than it was at the beginning. If it were not for this absorption, the tanning liquor would steadily increase in strength from the beginning to the end of the tumbling operation.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent of the United States, is—

1. The process of tanning which consists in
5 placing hides or skins and a solid tanning extract, soluble with difficulty, in a comparatively weak tanning liquor, and allowing them to remain there until the tanning operation is completed, whereby the solution of
10 the solid extract and the tanning of the hides or skins take place simultaneously.

2. The process of tanning which consists in
15 placing hides or skins and a solid tanning extract, soluble with difficulty, in a comparatively weak tanning liquor, and subjecting

the same to agitation until the tanning operation is completed.

3. The process of tanning which consists in placing hides or skins and a solid extract of quebracho, soluble with difficulty, in a drum 20 in a comparatively weak tanning liquor, and revolving said drum until the operation of tanning is completed.

In testimony whereof we affix our signatures in presence of two witnesses.

BONA ALLEN.

BONA ALLEN, JR.

Witnesses:

H. W. CHRISTIAN,

E. L. LOCKHART.