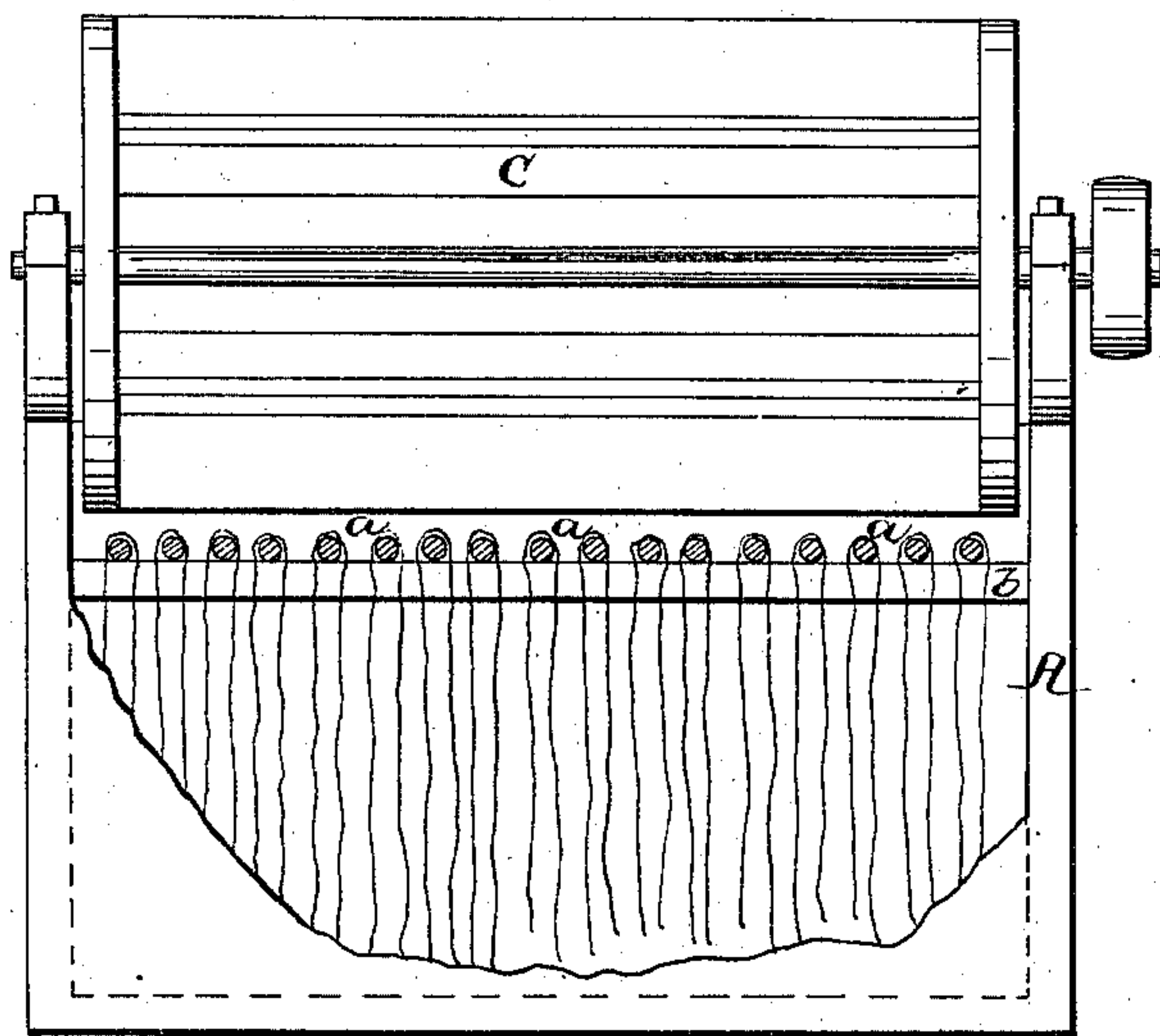
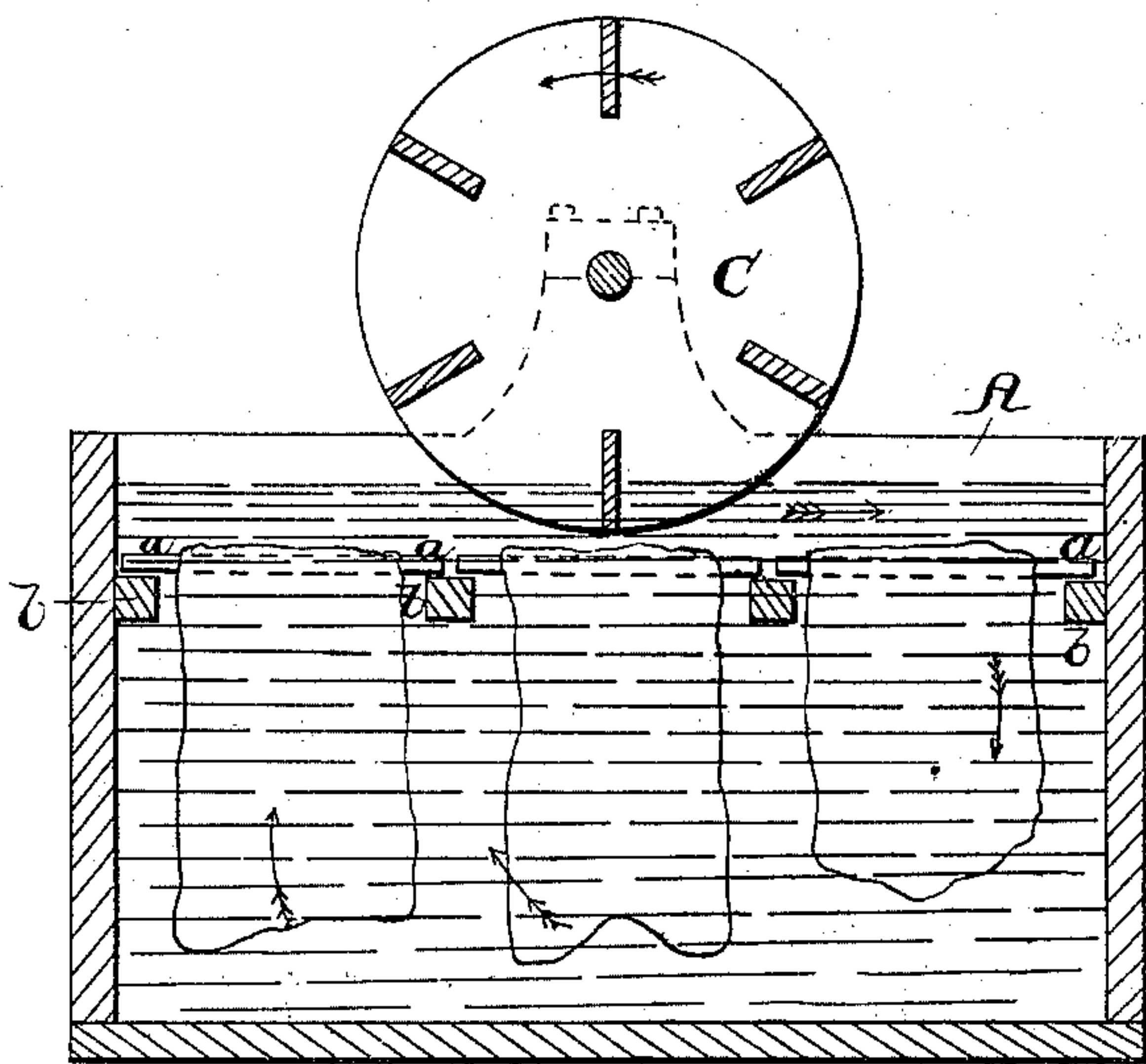


*I. C. England,*  
*Tanning Leather,*  
*Nº 21,126. Patented Aug. 10, 1858.*

*Fig; 1.*



*Fig; 2.*





# UNITED STATES PATENT OFFICE.

LEWIS C. ENGLAND, OF OWEGO, NEW YORK.

## APPARATUS FOR TANNING HIDES.

Specification of Letters Patent No. 21,126, dated August 10, 1858.

*To all whom it may concern:*

Be it known that I, LEWIS C. ENGLAND, of Owego, county of Tioga, and State of New York, have invented certain new and  
5 useful Improvements in the Art of Tanning; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being made to the annexed drawing, making a part of this specification, which is fully described herein,  
10 and similar letters indicate similar parts throughout.

My invention has for its object the production of a better quality of leather than  
15 can be made even by the old plan of "packing with bark," in which a term of years was necessary to effect the proper tanning of the hides, while it also accomplishes this in a shorter time than has been done by any  
20 of the improved processes which have that saving of time particularly in view.

In order that my improvement may be properly understood a short résumé of the effects produced by different processes will  
25 be required. The time for a due tanning has been of late years greatly shortened by the practice of keeping both the hides and the liquor constantly in motion, whereby in a general way fresh particles of liquor are  
30 brought into contact with the hide at all parts, in a manner well known. The same result has been effected also by hanging the skins on frames which have been by powerful machinery either alternately lifted out  
35 of and into the liquor or kept rocking in it. This motion of the hides, particularly during the latter stages of the process, results in a displacing of the parts, causing what is termed by tanners, "a roughing of the  
40 grain," and producing thereby an inferior article, since, for almost all purposes, and especially for sole-leather, harness, belting &c., that leather is most valuable which has a uniformly smooth surface. To some little  
45 extent this occurs in the old method of "packing," since in that the packs have to be handled at long intervals in order to strengthen the liquor and to put on fresh bark.

50 The method which I have devised for obvi-

ating this difficulty, and, at the same time availing myself of the well known advantages of moving the mass, consists in suspending the hides in the vat, at the commencement of the process, in such way that  
55 they shall be free to shrink, and keeping them so suspended without disturbance until sufficiently tanned, the different liquors required being supplied one after the other, and each liquor being kept at all times in  
60 circulation among the hides.

Many plans can be devised for carrying out my method successfully, but that which in practice I prefer is as follows: I employ a vat, as A, which is large enough to contain  
65 two, three, or more rows of hides, each of which rows is composed of a number of single hides or skins hung upon short beams, as shown at (a) in the end view Figure I, and the side view Fig. II. These beams rest at  
70 their ends upon timbers (b) which extend from side to side of the vat, and so far above the bottom of it that the ends of the skins may hang down freely, as shown. Above the beams a paddle wheel (c) is hung upon  
75 suitable bearings on the side of the vat, the axis of the said paddle being in a direction at a right angle to the direction of the beams on which the hides are hung, and the lower part of the paddle wheel being just so far  
80 above the hides that it will revolve freely without touching them. The shaft of the paddle wheel has upon one end a pulley to receive a belt from the driving shaft. If  
85 now the vat be filled with the appropriate tanning liquor and the paddle wheel put in revolution, the action of the buckets will be to drive the surface liquor backward and cause thereby a circulating current, as shown  
90 by the arrows in Fig. II, the speed given to the wheel (c) being only such as will create said currents, and for which a very low rate will suffice. A number of such vats are arranged together in order that a liquor which  
95 has been exhausted in one may be drawn off into a newer "pack," and its place be supplied by a stronger liquor. In doing this the hides are not disturbed, and if this drawing off and replacing are constantly going on, it  
100 would of itself afford the desired circula-

tion, but the hides are often required to remain in one liquor for several days at a time, and during this, some independent method of causing a motion of the liquor is  
5 necessary.

I claim as of my invention—

The herein described improvement in the art of tanning—that is to say, causing the liquors to circulate among hides which are

kept in fixed positions, for the purposes and 10 substantially in the manner set forth.

In testimony whereof I have hereunto subscribed my name.

LEWIS C. ENGLAND.

Witnesses:

J. P. PIRSSON,  
S. H. MAYNARD.