

# UNITED STATES PATENT OFFICE.

FRANK WAYLAND, OF NEWTON, MASSACHUSETTS.

## PROCESS OF TREATING HIDES.

SPECIFICATION forming part of Letters Patent No. 638,369, dated December 5, 1899.

Application filed March 24, 1899. Serial No. 710,364. (No specimens.)

*To all whom it may concern:*

Be it known that I, FRANK WAYLAND, of Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Processes of Treating Hides, of which the following is a description sufficiently full, clear, and exact to enable those skilled in the art to which it appertains or with which it is most nearly connected to make and use the same.

My invention comprises a novel method or process of treating hides, and is characterized by splitting off one or more layers before subjecting the hide to the tanning process under such conditions that smooth, level layers of uniform texture and thickness are obtained without subjecting the hide to any processing that injures the stock or leaves the same irregular in thickness or texture.

Heretofore practical men have perceived that there might be a substantial advantage in splitting the hides before subjecting them to the tanning operation; but the attempts to do this have been unsuccessful from a practical standpoint and have therefore been abandoned, and it is to-day the practice among tanners to tan or partly tan the hide before splitting it. After a careful study of the whole problem I have found that one of the principal reasons for this want of success was the unevenness or irregularity in the thickness of the finished product. One of the principal causes of this unevenness was the fact that they dried or partly dried the hide by pressure or otherwise or resorted to some special processing in order to bring the hide to a state in which it could be conveniently handled during the operation of splitting. This drying or pressing or special processing not only leaves the hide in an unsuitable condition to get the best results in tanning, but it leaves the hide uneven in texture, some parts being harder or more compact than others. When subjected to the tan liquor, the hard spots swell out, thus causing unevenness or lack of uniformity in the thickness of the layers split off. Owing, therefore, to these and other objections the results obtained from the various experiments have been unsatisfactory, and practical men have come to consider it commercially impracticable to split the hide before it has been, at least,

partly tanned. I have found, however, that if I subject the hide to the action of suitable reagents, so as to bring it to a soft, "wet," and swollen condition throughout, and then, without any drying or other processing that hardens the hide, split off one or more level layers of uniform thickness while it is in that condition, I can tan the layers and secure most satisfactory results. These layers are not only free from the objectionable hard or thick spots, but make even a better quality of leather than is made from the hide under the present methods of treatment owing to the fact that the respective layers are thin and are subjected to an even and uniform action of the tan liquor on both sides, as will be understood by those skilled in the art. Moreover, I find that by the separation of the nerve or flesh layer from the outer or grain side I obtain a greater surface of tanned upper-leather, since, when the hide is tanned before splitting, this flesh layer prevents the outer side from stretching.

Sometimes, especially when treating the thinner hides, such as light veals and calf-skins, I have found it advantageous to first remove a very thin layer from the nerve or flesh side. This is of no use in the finished leather and if removed at this stage can be utilized for glue-stock, besides saving the tanning material which it absorbs under present methods.

In order to bring the hide to the wet and swollen condition that I have described above, it is not necessary to subject it to any special processing, as there are several stages in the present course of treatment in which it is in such a condition—such as, for example, immediately after the liming and unhairing, when it is swollen and saturated with the lime-water, or after the "bating" or "drenching." The important point is to bring it to the condition specified and to split it in that state. Hence care should be taken that it does not dry out, before being split, as the drying has an injurious effect, as explained above. Great pains should also be taken to take off level uniform layers free from ridges or unevenness, since such unevenness is fatal to success.

By my process I not only save in tanning material, time, and labor, but I make it pos-



sible to treat the various layers independently by whatever methods are best adapted to the particular needs or requirements of each layer. For example, while tanning the grain  
5 into various kinds of upper-leather I may tan the splits into various sorts of soft leather, such as chamois, belt-lacing, or the like. In fact, it will be understood that my method of treatment permits great variations in the fur-  
10 ther treatment of the hide in the tanning or other processing.

Owing to the fact that it is not practicable to split off level even layers from the hide while in this wet and swollen condition I have  
15 made certain improvements in splitting-machines by which I am able to do this satisfactorily, but such improvements are not herein disclosed or claimed.

Without attempting to point out all the  
20 variations in detail that may occur to practical men in the practice of my process or all the advantages of its use, what I regard and claim as my invention is—

1. The process of treating hides which con-  
25 sists in soaking the untanned hide in lime-water until it becomes wet and swollen throughout, then splitting one or more layers of even, uniform thickness from the hide while it is saturated and swollen with the  
30 lime-water, whereby the separated layers may

be subjected to suitable treatment in the further process of tanning, substantially as described.

2. The process of treating hides which consists in subjecting the untanned hide to the  
35 action of suitable reagents until it becomes wet and swollen throughout, then splitting off one or more layers of uniform thickness while it is in the wet and swollen condition, and thereafter tanning the layers, whereby  
40 leather free from substantial variations in thickness is produced.

3. The process of treating hides preparatory to converting them into leather which consists in soaking them with suitable re-  
45 agents until they become wet and swollen, then splitting them while in the wet and swollen condition without any intermediate processing or treatment that dries or hardens the hide, whereby layers substantially free  
50 from variations in thickness and hardness are obtained, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 23d day of  
55 March, A. D. 1899.

FRANK WAYLAND.

Witnesses:

GEO. N. GODDARD,  
ANNIE J. DAILEY.