

# UNITED STATES PATENT OFFICE.

WILLI LISSAUER, OF BERLIN, GERMANY, ASSIGNOR TO LEONHARD FRIEDLÄNDER, OF SAME PLACE.

## PROCESS OF PREPARING HIDES FOR THE MANUFACTURE OF LEATHER.

SPECIFICATION forming part of Letters Patent No. 680,605, dated August 13, 1901.

Application filed June 10, 1899. Serial No. 720,070. (Specimens.)

*To all whom it may concern:*

Be it known that I, WILLI LISSAUER, a subject of the King of Prussia, German Emperor, residing at the city of Berlin, Germany, have  
5 invented a certain new and useful Process of Preparing Hides for the Manufacture of Leather, of which the following is a specification.

This invention has relation to a process of  
10 treating hides and skins after being prepared for tanning in the usual manner—*i. e.*, after liming, dehairing, swelling, &c.—and before the hides are subjected to the action of a tanning agent.

15 The invention has for its object to obtain a better grade of leather—that is to say, a leather that is more elastic or flexible and more durable—than that obtained by the usual processes of tanning.

20 It is well known that the corium of a hide or skin consists of a fibrous tissue permeated by a filamentous tissue composed chiefly of tubular filaments consisting, essentially, of elastin, which filamentous tissue imparts to  
25 the hide or skin its flexibility.

In the tanning of hides and skins by the processes now resorted to the filamentous tissue mentioned is permeated by the tannic acid and is rendered practically rigid, there-  
30 by impairing the elasticity and flexibility of the leather. On the other hand, the filamentous microscopic elastic tissue is, as is well known, composed of an albuminous substance free from sulfur, and when the leather  
35 is exposed to moisture the tannic acid of the tissue is dissolved out, and in drying again the leather becomes very hard and brittle. These phenomena are well known.

I have discovered that by subjecting the  
40 hides or skins to the action of a bisulfid solution of resin or of a solution of resin in a hydrocarbon, as of the group  $C_n H_{2n+2}$ , capable of dissolving the same, the solvent of the resin reacts chemically upon this albuminous tissue and prepares it for the recep-  
45 tion of the resin, which latter not only forms thereon a protective coating both against the action of tannic acid and the action of water, but penetrates into the filaments, thus act-  
50 ing as a preservative. This coating is imperceptible to the naked eye, and instead of

impairing the flexibility or elasticity of the elastic tissue it enhances the same, as has been fully proven by practice. Practice has also shown that the resinous solution does not  
55 affect the other tissues of the hide or skin and does not leave any deposits of resin thereon that are not removable or will not be removed by and during the operation of tanning—that is to say, that will not wash out  
60 during said operation.

By “resin” I mean not only the common resin obtained in the manufacture of turpentine, but also those organic compounds, as the turpenes, which possess the property of becom-  
65 ing resinified by oxidation in the air or under the influence of chemical reagents—*i. e.*, of being converted into substances very similar to the resins which occur in nature. These natural resins are solid, amorphous, and gen-  
70 erally vitreous brittle masses of conchoidal fracture, insoluble in water, but soluble in alcohol and other solvents, and are formed naturally and in abundance, partly as balsams, the latter being known as “resins of  
75 the balsam series,” and these also can be used in my process.

In carrying out my invention I therefore immerse the hides or skins in a solution of resin in bisulfid of carbon or of a hydrocar-  
80 bon capable of dissolving the resin, and as these solvents are very volatile this operation is of course carried out in a closed vessel or tank provided with racks upon which the  
85 hides or skins are hung, so as to have their whole surfaces exposed to the action of the solution. It will be obvious to the practical tanner that a specific solution of resin and a specific period of time during which the hides  
90 or skins are exposed to said solution could not be given so as to be applicable to all his purposes. I may state, however, that for the heavier hides, such as horse and bull hides, the solution should contain about thirty per-  
95 cent. of resin, and these hides should be exposed to the action of the solution for about thirty minutes only. The proportion of resin in the solution and the time of exposure of hides or skins of less weight than that of horse or bull hides will therefore be correspond-  
100 ingly reduced.

The solution is preferably used cold, and

after the hides or skins are taken therefrom the resin solvent is evaporated either in the open air or by means of heat.

Having thus described my invention, what  
5 I claim as new therein, and desire to secure by Letters Patent, is—

The method of treating hides and skins, previously prepared for tanning in the usual manner, which consists in immersing the same  
10 for a suitable length of time in a solution of

resin in bisulfid of carbon, or in a solution of resin in a hydrocarbon capable of dissolving the resin, for the purpose set forth.

In testimony that I claim the foregoing as my invention I have signed my name in pres- 15  
ence of two subscribing witnesses.

WILLI LISSAUER.

Witnesses:

SALLY FRIEDLAENDER,  
WOLDEMAR HAUPT.