

UNITED STATES PATENT OFFICE

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TREATMENT OF ANIMAL FIBERS

No Drawing.

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This invention relates to the treatment of animal fibers, such as tanned or untanned hides, scraps and cuttings therefrom, and has for one of its objects the provision of a method whereby a product resembling leather in appearance, texture and flexibility may be made from such materials.

I am aware that it has been suggested prior to this invention to treat the materials above mentioned so as to convert the same into a useful product, but the present invention differs from such processes in the various features hereinafter pointed out.

In the treatment of animal fibers, in accordance with the present invention, I first produce a fairly thin flowing slurry of the fibers in aqueous suspension. If the material being treated should be scraps and cuttings from tanned hides I prefer next to detain the fibres by the addition to the slurry of any suitable detanning agent, well known to those skilled in this art. If untanned hides, scraps and cuttings therefrom are being treated, however, this detanning step is of course not necessary. I next add to the slurry a by-product, specifically lignin, resulting from the digestion of cellulose fibers either by an acid bath or an alkaline bath. This material is added primarily as a binder, but I find the same also functions very satisfactorily as a tanning agent. The amount of this material added to the slurry may vary, depending upon the results desired, and by way of example I may state eight pounds of lignin to one hundred pounds of dry fibers has been found satisfactory.

I find that by adding this by-product to a slurry of the fibers the lignin is thoroughly dispersed and disseminated throughout the mass and is precipitated upon the fibers. A tanning agent is also added to the slurry if found necessary, but by reason of the tanning characteristics of the lignin, it will be appreciated the quantity of additional tanning agent necessary is materially reduced.

Should it be desired to increase the strength of the finished product I may add a binding material such as latex, casein or other binder to the slurry, the rubber in the latex being precipitated upon the fibres.

Finally the liquids of the slurry are abstracted in any suitable manner, as by flowing the slurry upon a screen while agitating the screen if necessary and while subjecting the mass to suction or to pressure. After the liquids are abstracted the resulting mass, composed of the tanned animal fibers in felted relation and additionally bound by the lignin, is passed between suitable rollers to be compressed to the desired degree.

During the working of the process, it is to be understood soaps and greases and other materials commonly employed in treating leather may be used as desired. I have deemed it unnecessary, however, to go into these refinements, my invention as above described comprehending in its broad aspects the employment of a by-product of the digestion of cellulose fibers as a binder and as a tanning agent in the treatment of animal fibers.

As above mentioned latex may be employed in addition to the by-product, when deemed necessary or desirable. I have found, however, that the use of lignin alone is entirely satisfactory, and reduces the expense incident to the production of my product, inasmuch as the lignin, being a by-product, can be purchased at the minimum of expense.

I find that my finished product is exceedingly flexible, and resembles natural leather in appearance and texture, and is adapted for many uses as a substitute for natural leather.

What I claim is:—

1. The process which comprises adding a by-product resulting from the digestion of cellulose fibers to a slurry comprising animal fibers in aqueous suspension.
2. The process which comprises adding lignin to a slurry comprising animal skin fibers in aqueous suspension.
3. The process which comprises the addition of a by-product resulting from the digestion of cellulose fibers to a slurry comprising animal skin fibers in aqueous suspension, and then abstracting the liquids of the slurry to produce a mass of tanned animal fibers held to each other in part by the said by-product.
4. The process which comprises the addi-

tion of lignin and a latex to an aqueous suspension of animal skin fibers.

5 5. The process which comprises adding lignin and a tanning agent to an aqueous suspension of animal fibers, and then abstracting the liquids of the slurry.

6. In the treatment of tanned animal skin fibers, the process which comprises producing a slurry composed of the fibers in aqueous suspension, detanning the fibers while in the slurry, adding lignin to the slurry, and then abstracting the liquids of the slurry, to produce a mass composed of tanned fibers held to each other in part by the lignin.

15 7. An article of manufacture comprising animal fibers and a binder of lignin.

8. An article of manufacture comprising lignin-tanned animal fibers held to each other in part by lignin as a binder.

20 9. An article of manufacture comprising animal fibers disposed in felted relation, said fibers being tanned in part and additionally held to each other by lignin.

This specification signed this 3rd day of 25 July, 1929.

ALFRED MacKAY.

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