

UNITED STATES PATENT OFFICE.

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PROCESS OF TREATING HIDES.

No. 798,070.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANCIS J. OAKES, a citizen of the United States, and a resident of the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Processes of Treating Hides, of which the following is a specification.

My present invention relates more particularly to the preparation of skins designed to produce such final leather products as are designated as "glazed." In such skins it is essential that the "grain" of the surface shall be as "low" and smooth as possible in order to insure the desired finish and appearance and also that the fibers shall be left in an open condition in order to secure the best results from the mineral tannage to which they are usually subjected.

The object of my invention is to produce a process more economical and certain than those previously practiced and which with less injury to and consumption of the hide substance generally than heretofore will nevertheless insure the desired surface, at the same time remove cementing material, so as to leave the fibers in the required open condition, and also assist by removal of undesired lime or calcium compounds.

I attain these objects by my novel process, which is addressed to the hides after application thereto of the well-known dehairing or depilating processes, which leave in the skins an undesired percentage of caustic lime.

My said process consists, generally speaking, in subjecting the hides or skins after dehairing, as aforesaid, to the action of an aqueous bath containing sulfur and an albuminoid, thus dispensing with the excremental ingredients heretofore relied on for the purposes mentioned. By "albuminoids" in this connection I mean to refer to those organic bodies as a class which are characterized as containing nitrogen and phosphorus, being bodies more or less indiscriminately designated as "albuminous substances" or "proteids" or "nitrogenous matter," examples of which are, for instance, casein, blood albumin, animal tissue, fish, &c.

My said process is preferably practiced as follows, for instance, viz: Into a volume of water sufficient to insure convenient handling of the hides—say in the proportion of about three pounds of water to one pound of the moist hides—I preliminarily introduce sulfur and an albuminoid, preferably casein, in the

proportion of, say, about five per centum of each, computed on the weight of said hides. The bath thus prepared is allowed to stand at a temperature of about 100° Fahrenheit sufficiently long—say several days or until decomposition and consequent putrefaction is established of the casein—and this may be hastened, if desired, by introducing a small quantity of already decaying albuminous matter—as, for instance, putrid cheese. When the said putrefaction is observed to be well under way, the hides or skins as they come from the said dehairing process are introduced into the bath, the temperature of which is maintained at 100° Fahrenheit during the period of immersion. The hides are left to soak in the bath until the required surface of grain has been attained, when their fibers will also be found to be in the desired open condition and substantially relieved of the undesired calcium compounds.

It will be understood that my said bath once instituted may be thereafter continuously utilized upon successive charges of hides, it being only necessary to maintain therein substantially the aforesaid required proportions of sulfur and albuminoid by adding fresh charges of those agents as they become exhausted. I have found, for instance, that with each charge of hides an addition of one per cent. of sulfur and two per cent. of casein computed on the weight of the hides is sufficient to maintain the efficiency of the bath, and after the decomposition has become well established subsequent additions of putrid cheese may be dispensed with. It will also be understood that other albuminoids may be substituted for casein with substantially the same results.

The time required for the best results from my said bath will obviously vary somewhat, according to the particular nature and size of the hides or skins treated, but may be said to be approximately the same as in the case of previous processes involving baths containing dog-dung and other excrementitious agents.

By my process, as described, I am enabled advantageously to dispense with all such excrementitious agents hitherto employed to secure the desired results.

While the reactions occurring in my bath involve also putrefactive action, the improved and distinctive results attained thereby seem to justify the conclusion that the character and action of the bacteria present differ from those produced by and relied upon in excrementitious processes, being manifestly more

benign relatively to the gelatin of the hides and more certain and uniform in their action upon the cementing materials of the fibers, including particularly those required to be
5 reduced in order to present the aforesaid required low and smooth grain at the surface. In other words, injurious and undesired types of bacteria hitherto present in excrementitious processes are avoided by my
10 invention. Comparative tests have demonstrated that the sulfur plays an essential and important part in securing the results attained by my process as aforesaid and also reduces the otherwise undesirably alkaline character
15 of the bath without hindering the required putrefaction or decomposition.

It seems that the putrefaction described develops in the bath an undesirable ammoniacal condition, the intensity of which is reduced
20 by the presence of the sulfur, which tends to formation of sulfids of a weakly alkaline and comparatively benign nature for the purposes in hand, the beneficial results secured by my process being substantially due to the
25 action of the sulfur upon the ammonia produced by the putrefactive decomposition of the albuminoid employed.

The hides or skins when withdrawn from my said bath will usually appear still slightly

alkaline in reaction, in which case if intended 30
for subsequent chromium or other mineral tannage they should be subjected to one of the usual pickling processes, the object of which is, as well known, to remove there-
from the last remaining traces of calcium 35
compounds, or if vegetable tannage is to be applied then in that case the hides should be "drenched," and thus in either case brought to the requisite acid condition.

Having thus described my invention, what 40
I claim as new, and desire to secure by Letters Patent, is the following, viz:

1. The process of treating hides which consists in soaking them in a bath containing, besides said hides, putrefying albuminous mat- 45
ter and sulfur.

2. The process of treating hides which consists in soaking them in a bath containing, besides said hides, a substantial amount of a putrefying albuminous matter, say five per cen- 50
tum of the weight of the hides and a substantial amount of sulfur, say likewise five per centum of the weight of the hides.

FRANCIS J. OAKES.

Witnesses:

WALTER D. EDWARDS,
ALLEN ROGERS.