

UNITED STATES PATENT OFFICE.

EMIL F. DIETERICH, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN PROCESSES OF DOUBLE TANNING.

Specification forming part of Letters Patent No. 150,405, dated May 5, 1874; application filed April 15, 1874.

To all whom it may concern:

Be it known that I, EMIL F. DIETERICH, of Philadelphia, Pennsylvania, have invented a Process of Double Tanning, of which the following is a specification:

The process of tanning does not consist of a chemical combination of fiber with tannic or gallic acid; but consists simply in preventing the fibers of the leather from drying together, and shrinking while they are gradually losing their moisture by precipitation of the tannin on and around the fiber.

The methods of preparing leather by means of metallic salts are known, and the so-called "alum-tanned" leather has greater softness and pliability than leather prepared with tannin; but this method has so far not proved efficient for the heavier kinds of leather, for the reason that the leather is injured by its necessarily long and repeated immersions in baths containing acids and alkalies.

My improvement tends to overcome the defects of both the processes above referred to; and it consists in a combination of said processes, in the manner hereinafter described, whereby I obtain a product having greater durability, softness, pliability, and imperviousness to water than is obtained by any other heretofore known process:

I take dry skins, tanned by any of the usual methods, and steep them in a bath which is formed of acetate of alumina in solution, obtained either by decomposing the sulphate of alumina with acetate of lime, or preferably by precipitating alum from its solution, and dissolving the resulting gelatinous precipitate in vinegar or crude acetic acid. To mollify the harshness and astringency of this bath, especially when newly made, I add of decoction of quillaya bark (*Quillaya Saponaria, of Chili*) sufficient to give the bath a soft and lathery feeling. The decoction of one pound of quillaya bark is sufficient for a bath of about two hundred gallons, although more may be advantageously employed. When the skins therein become thoroughly saturated they are withdrawn and dried. I now prepare a bath

of the decoction of quillaya bark and flax-seed to form a lathery oleaginous liquid. The decoction of from one pound to one and a half pound of flax-seed and one pound of the bark is sufficient for a bath of two hundred gallons. I then make a concentrated boiling solution of soda or potassa sufficient in quantity and strength to dissolve lard, lard-oil, neat's-foot oil, olive, or other fatty oil, which are added with brisk stirring in the proportion of from one-half ($\frac{1}{2}$) ounce to four (4) ounces per skin, (larger and heavier skins requiring a larger amount than smaller and lighter ones.) The thoroughly-diffused fatty compound, consisting now of the soluble oleite, stearite, or margarite, &c., of soda or potassa, is then dissolved with boiling water under continued stirring, until a thoroughly uniform and milk-like solution is obtained, which is then added to the oleaginous bath, and the skins are then immersed in the resulting mixture.

When a heavier body is desired, or the skins are of a very spongy nature, I add, from one-fourth ($\frac{1}{4}$) to one-half ($\frac{1}{2}$) ounce per skin, carrageen, (Irish moss,) isinglass, or glue in solution either to the oleaginous or to the alumina bath. When the oleaginous bath becomes exhausted the skins are withdrawn and dried, and they are then again immersed in the restrengthened alumina bath from eight to twelve hours, and they are then again withdrawn and allowed to attain a semi-dry state, when they are stuffed with dubbing, dried, and further manipulated and finished, in the usual manner.

Any good dubbing may be used for the stuffing, but I prefer to use the "water-repellent dubbing" described in the specification of another application filed by me of even date herewith.

I claim—

The process of treating hides and skins after they have been tanned, as herein described, for the purpose set forth.

E. F. DIETERICH.

Witnesses:

THOS. A. BURTT,
JNO. A. BELL.