# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN PROCESSES FOR REMOVING EXTRACTIVE MATTERS FROM TANNED LEATHER.

Specification forming part of Letters Patent No. **221,187**, dated November 4, 1879; application filed July 21, 1879.

*To all whom it may concern:*

Be it known that we, GEO. PLUMER and CHAS. P. KERANS, both of Peabody, Essex county, State of Massachusetts, have invented an Improved Process for Removing Extractive Matters from Tanned Leather, of which the following description is a specification.

This invention relates to a process of removing tannin and extractive matters from tanned leather in order to soften and uniformly cleanse the tanned leather preparatory to again retanning and giving to the same the desired color by subsequent operations.

Tanned leather, as now commonly made, when removed from the first tanning-solution, is very apt to be of uneven color by reason of the presence in the hide of too much lime or extractive or other objectionable matter added thereto in the tanning process, which matters, if not removed, make it quite difficult, if not impossible, to give to the leather by subsequent treatment a light or uniform color.

In this our invention leather tanned in any of the usual ways, as by the hemlock or oak tanned or other usual processes, is subjected to the action of a cleansing-bath, which thoroughly removes from the tanned hide the extractive and tanning substances, and grease or tannate of lime, and such other objectionable substances added to the hide during the liming, bating, and first tanning processes, especially all such matter as would tend to make the finished leather hard or brittle or uneven in color, or which would interfere with giving to the grain-face of the finished leather a light even color. This we accomplish in the following manner, viz: The tanned leather, say, twenty-five sides, containing from twenty to twenty-five feet each, are subjected in a mill to the action of diluted solution of borax for from ten to fifteen minutes, more or less. We take for the quantity of leather mentioned about six pounds of borax dissolved in about thirty gallons of water.

In practice we have obtained the best results by the use of what is commonly known as the "England wheel," it being a closed circular or box-like wheel of, say, about eight feet diameter by from two to three feet in width, it having a hollow journal for the entrance of a water or steam pipe, and a side door for the introduction and removal of the leather, the door being suitably packed to obviate leakage.

Having added the borax-water to the wheel, and having placed the tanned leather therein, the wheel is rotated at the rate, say, of about sixteen revolutions per minute for about fifteen minutes, more or less, or until the objectionable matters hereinbefore referred to are loosened, when a hose or other water-supply pipe is added to the hollow journal of the said wheel or mill to lead water into the wheel and in contact with the leather, so as to, by a continuous flow of water in and through the wheel and over the leather, wash out therefrom the borax and all the other objectionable matters loosened or started by the first milling operation in the borax-water. This treatment leaves the leather in proper and the best possible and most favorable condition to be retanned for all leather where softness and lightness of color are desired.

We have mentioned the use of a wheel-like mill having a horizontal axle; but it is obvious that any other usual or suitable mill capable of agitating the leather in this borax solution would answer all practical purposes.

We claim—

That improvement in the art or process of treating tanned leather preparatory to retanning the same which consists in subjecting the tanned leather to the action of a solution of borax and water, substantially as and for the the purpose herein set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

GEO. PLUMER.
CHARLES P. KERANS.

Witnesses:
G. W. GREGORY,
N. E. WHITNEY.