UNITED STATES PATENT OFFICE.

FRED E. BURLINGAME, OF CENTRAL FALLS, RHODE ISLAND, ASSIGNOR OF ONE-HALF TO FREDERICK E. SHAW, OF PROVIDENCE, RHODE ISLAND.

PROCESS OF CONVERTING HIDES INTO LEATHER.

SPECIFICATION forming part of Letters Patent No. 563,559, dated July 7, 1896.

Application filed April 20, 1896. Serial No. 588,372. (No specimens.)

To all whom it may concern:

Be it known that I, FRED ELISHA BURLINGAME, of Central Falls, in the county of Providence and State of Rhode Island, have invented an Improvement in Processes of Converting Hides into Leather; and I hereby declare that the following is a full, clear, and exact description of the same.

This invention has reference to the step in the process of converting hides into leather by which the gelatinous matter in the hide is made insoluble in water under the usual conditions in which leather is used; and it consists in subjecting the prepared hide to the action of a tanning liquid containing either the crude condensed product of the destructive distillation of woody fiber or the pyroligneous acid drawn off from the crude product of destructive distillation, combined with an agent such as chlorid of sodium or its equivalent, as will be more fully set forth hereinafter.

I find that alkalies and alkaline earths, the salts of the alkalies, and the salts of the alkaline earths produce, when mixed with the crude product of the destructive distillation of wood fiber, or with the crude pyroligneous acid, a tanning liquor having, practically, the same qualities as when mixed with salt.

In practice I prefer, for convenience and for economical reasons, the use of the crude pyroligneous acid of commerce, to which is added an equal quantity of water in which about ten per cent. of chlorid of sodium (common salt) has been dissolved.

The so-prepared tanning liquor is placed into a suitable vat or tank and the prepared hide is placed into the liquor until the liquor has sufficiently penetrated the hide. The hide is then withdrawn from the liquor and hung up to dry.

When partly dry, I immerse the hide in a saturated or nearly saturated solution of chlorid of sodium (common salt and water) and then wash in water, preferably running water.

The length of time during which the hide requires to be immersed in the tanning liquor depends on the thickness of the hide and the nature of the tanning required. For light hides, or heavier hides requiring to be only surface-tanned, less time is required than for thoroughly tanned thick hides.

In practice I find that one day or even less is sufficient for very light hides and that ten days is sufficient to produce heavy sole-leather.

The strength of the tanning liquor may be varied. The chlorid of sodium or its equivalent may be dissolved in the crude fluid product of the destructive distillation of woody fiber, or in the pyroligneous acid without the addition of water, and the strength may be reduced by the addition of water to any desired extent.

The time required for immersion of the hide in the solution of salt and water depends on the thickness of the hide. In practice I find that it may extend from one to ten hours, according to the thickness of the hide.

The so-converted hide (into leather) is finished in the usual manner used to finish different kinds of leather.

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

1. The process herein described for converting hides into leather, the same consisting in immersing the hide in a bath containing the liquid product of destructive distillation of wood and salt or its equivalent, partially drying the hide, then immersing the same in a bath of salt and water, washing and drying the leather, as described.

2. The step in the process of converting hides into leather, the same consisting in immersing the hide in a bath containing pyroligneous acid and salt, as described.

3. The step in the process of converting hides into leather, the same consisting in immersing the hide in a bath consisting approximately of one part pyroligneous acid, one part of water and common salt, as described.

I witness whereof I have hereunto set my hand.

FRED E. BURLINGAME.

Witnesses:
JOSEPH A. MILLER,
JOSEPH A. MILLER, Jr.