

UNITED STATES PATENT OFFICE.

CHARLES S. HULL AND PETER S. BURNS, OF BOSTON, MASSACHUSETTS.

BATING.

SPECIFICATION forming part of Letters Patent No. 452,271, dated May 12, 1891.

Application filed September 12, 1890. Serial No. 364,751. (No specimens.)

To all whom it may concern:

Be it known that we, CHARLES S. HULL and PETER S. BURNS, citizens of the United States, residing at Boston, in the county of Suffolk, State of Massachusetts, have invented certain new and useful Improvements in Methods of Bating, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to the treatment of skins and hides, and the novelty resides in the improved method hereinafter disclosed.

We employ in the treatment of hides or skins or parts thereof as a reagent for the 15 neutralization of the alkali employed as a depilatory (said reagent being commonly known as a "bate" or "drench") the sulphonic acids of naphthaline—namely, the alpha and beta mono and disulphonic acids of naphthaline, 20 known under the formulæ $C_{10}H_7HSO_3$ and $C_{10}H_6(HSO_3)_2$.

The skins or hides or parts thereof are immersed in a warm or cold solution of the acid of sufficient strength or of more than sufficient strength for the conversion of the alkali 25 existing in the hides or skins, or parts thereof, into its salts. The length of time the skins or hides are subjected to the action of the acid will vary with different kinds of skins.

30 It is desirable for best results to use the acids as pure as possible; but good results may be obtained even if the said acid contains some of the impurities incident to its manufacture, such as free sulphuric or muriatic acid and salts of both, together with 35 traces of the naphthaline sulphonic-acid salts or traces of metals arising from the apparatus in which the acid is made.

The naphthaline sulphonic acids are best 40 employed in a solution varying from two per cent. to five per cent. in strength, although it may be used very much weaker or stronger. If weaker, its action is much slower, and there is very little necessity for making it any 45 stronger, the object being to use an excess from two per cent. to four per cent. over the amount necessary to convert the alkali or alkaline salts used as a depilatory and con-

tained in the hides or skins at the time of treatment, with its or their naphthaline sulphonic-acid salts. A theoretical amount may, 50 however, be used, based on the amount of alkali actually contained in the skins; but more satisfactory results may be obtained by using an excess over the actual requirements. 55

The advantages resulting from the use of the naphthaline sulphonic acids may be briefly stated as follows: their marked antiseptic qualities which preserve the hide or skin and its parts from dissolution or loss during the 60 bating process; the avoidance of the introduction of bacteria into the tan solution or liquors which is attendant upon common methods and upon the use of acids which induce decomposition; their lack of action upon 65 the hide structure itself, except as a preservative; the extreme solubility of their salts; their lack of action with iron salts to produce a discoloration of the solution; by the complete removal of the alkali or alkaline 70 salts employed as a depilatory, its action upon the hide or skin fitting it for a rapid combination with the tanning agent, and effecting in the hide or skin the lightest color of which the hide or skin is capable of taking with the 75 tanning agent employed, and the production of the greatest weight of leather of which the hide or skin is capable through the avoidance of loss of gelatine.

What we claim as new is— 80

1. As a step in the art of bating skins and hides, the subjecting of the same to the action of the sulphonic acids of naphthaline, substantially as specified.

2. The improvement in the treatment of 85 skins and hides, which consists in converting the alkali of the skins or hides into its salts by the action of the sulphonic acids of naphthaline, as set forth.

In testimony whereof we affix our signatures 90 in presence of two witnesses.

CHARLES S. HULL.
PETER S. BURNS.

Witnesses:

ALBERT A. DAY,
WALTER S. FOX.