

UNITED STATES PATENT OFFICE.

JAMES FOLEY, OF MONTREAL, QUEBEC, CANADA.

SOFTENING, PLUMPING, AND DEPILATING HIDES AND SKINS.

SPECIFICATION forming part of Letters Patent No. 226,447, dated April 13, 1880.

Application filed October 30, 1879.

To all whom it may concern:

Be it known that I, JAMES FOLEY, of Montreal, Province of Quebec, Dominion of Canada, have invented certain new and useful Improvements in Treating Hides and Skins Previous to Tanning; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to removing the hair and epidermis from hides and skins of every description and however cured, softening dried and cured hides and skins, and separating the wool and hair from skins in their natural state.

There are many methods of removing hair from hides and skins, the oldest of which, and that most extensively followed, consists in the application of a solution of lime; but this method is not free from important objections. Owing to the energetic action which free lime exerts on animal tissues, a considerable portion of the gelatinous tissue of the hide is disintegrated and decomposed during the liming process, being removed from the hide in the form of soluble gelatine, or else so altered as to be rendered incapable of combining with tannin, thereby incurring a serious loss in the weight of leather that should be produced and in its quality.

For unhairing or removing the hair and epidermis from hides and skins I use, instead of lime, but in a somewhat similar manner, solutions of sulphide of barium of varying strengths, prepared by dissolving in water solid sulphide of barium, produced by heating finely-ground sulphate of baryta mixed with carbonaceous substances to about a white heat in a reverberatory furnace or other suitable appliance.

In treating green slaughter hides and skins to remove the hair and epidermis, I first wash them to remove the blood and dirt, and then immerse them in a strong solution of sulphide of barium, about 15° Baumé, for about three to six hours. They are then withdrawn, again washed, and taken to the beam-house, to be treated in the usual manner.

In the treatment of salted or cured hides and skins for the removal of the hair and epidermis, I first immerse them about ten to

twelve hours in an old or partially-spent solution of sulphide of barium, for the purpose of cleansing them and destroying the effect of the salt or substance with which they were cured, and afterward immerse them in a solution of sulphide of barium of about 6° to 8° Baumé for about ten hours, when they are ready for the usual treatment in the beam-house.

In the treatment of dried or flint hides and skins, it is necessary, before the hair and epidermis can be removed, to soften them, and this I do by soaking them about twenty-four hours in a solution of sulphide of barium that has already been used for unhairing, or in a weak fresh solution of about 3° Baumé.

After the dried hides and skins are thoroughly softened in all their parts, in the manner above set forth, I immerse them, for the purpose of removing the hair and epidermis, in a solution of sulphide of barium of about 5° Baumé for about six hours, and then pass them on to the beam-house.

In the treatment of skins for the removal of wool and hair, I apply on the flesh side of the skins, by any suitable means, a concentrated solution of sulphide of barium mixed with any inert substance to the consistency of a thin paste. The solution applied in this manner penetrates the skin, loosens the roots of the wool or hair, and allows it to be removed uninjured and in its natural condition.

My invention has a great many advantages over the present liming process and all processes now in use for removing hair from hides and skins and softening them, and among others the following: No part of the gelatinous tissue, grain, or substance of the hide is removed or disturbed. Hides and skins are left in their natural state and suppleness. At least twenty-five per cent. greater weight of leather can be obtained from hides treated by my invention than by any other process. The hair is removed in one-twentieth part of the time usually employed, thus effecting a great saving in time, labor, and expense. Hides and skins treated by my invention and intended for upper-leather do not require to go through the operation of "bating" or "puring," which effects another saving in time and expense.

I am aware that a number of patents have

been obtained for sulphide or sulphuret of calcium for the purpose of depilating hides and skins.

5 Sulphide of calcium has been tried by tanners, both in Europe and America, and abandoned, owing to its cost, the increased expenditure for labor attending its application, and its injurious action upon the hides. It dissolves and removes a portion of the fibrous
10 tissue—a very formidable objection to its use.

In my experience I have found that sulphur combined with lime simply renders the lime more soluble, allowing it (the lime) to act quicker; but in this state the lime also penetrates the hide, and, notwithstanding repeated
15 washings, remains in the hide and forms, with the tannin, an almost insoluble tannate, which deprives the hides of their suppleness and renders them dry and brittle.

My application for a patent is based upon an entirely different product from those set forth in the British Patents Nos. 1,906 of 1855, 36 of 1853, and 12,618 of 1849.

I claim—

The herein-described process of softening, 25 plumping, and depilating hides and skins, which consists in subjecting them to the action of sulphide of barium in solution.

In testimony that I claim the foregoing I have hereunto set my hand this 23d day of 30 October, 1879.

JAMES FOLEY.

Witnesses:

E. A. LEDGARD,
WM. F. LIGHTHALL.