

# UNITED STATES PATENT OFFICE.

WILLIAM COUPE, OF SOUTH ATTLEBOROUGH, MASSACHUSETTS.

## IMPROVEMENT IN PROCESSES FOR THE MANUFACTURE OF RAWHIDE.

Specification forming part of Letters Patent No. 182,106, dated September 12, 1876; application filed July 11, 1876.

*To all whom it may concern:*

Be it known that I, WILLIAM COUPE, of South Attleborough, in the county of Bristol and State of Massachusetts, have invented a new and Improved Process for the Manufacture of Rawhide Leather, of which the following is a specification:

This invention relates to that class of processes employed for treating rawhides, to soften and preserve them; and it consists of subjecting the hides to several baths having different properties, and to manipulations, hereinafter more fully described.

If the hides to be treated are dry, they are placed in a vat of soft water, where they are allowed to remain until they are well soaked. They are then taken out and well mull'd or softened and washed. They are then put into a weak solution of lime, and handled on alternate days until the hair begins to slip. When they are taken out the hair is removed, and they are well scudded and washed, and are placed in a vat of clean water to soak. After soaking, they are taken out and trimmed and shaved on the flesh side. At the same time they are cut down on the butts and necks, to make them uniform in thickness, and to save the glue-stock.

My object in using lime to remove the hair is, that it is safer, and cleanses and purifies the hide better than any other known agent, and enables me to produce a superior article of stock. The hides are now transferred to what I call the "drench," for the purpose of removing all the impurities from the hide, such as "scud," lime, and all other foreign matter that hides are likely to collect, and without the removal of which it is impossible to make a perfect article.

The drench is composed of one hundred pounds of dried blood, six pounds of ammonia, and four hundred gallons of water, and is raised to a blood-heat. The hides are allowed to remain in the drench for about two hours, or long enough to kill the lime, which will not exceed three hours. They are then removed from the drench and well worked on both sides, and are then placed in what I shall call a "sour," which consists of six pounds of sulphuric acid diluted with four hundred gallons of water. This quantity is

sufficient for fourteen hundred pounds of hides.

The sour bleaches and purifies the hides after coming from the drench. When removed from the sour they are well washed, and placed in a bath, consisting of a solution of carbolic acid in water, in the proportion of two pounds of crystals of carbolic acid to four hundred gallons of water. This prevents all further decomposition. After the hides have been agitated in this bath for about two hours, they may be taken out and dried. When they are about nine-tenths dry they are taken down and softened. If it is not convenient to soften them at this time they may be left to dry out entirely; but it is recommended that the softening be done at this stage of the process, as it saves considerable labor. The softening is effected as follows: When the hides are nearly dry I give them a light coating of "slush," consisting of tallow, sixteen parts; paraffine, two and one-half parts; bees-wax, one and one-half part. The ingredients are united while melted, and the slush applied to the hides while warm. The tallow keeps the hides pliable, the paraffine penetrates the hide quickly, and softens it, and also prevents vermin attacking it, and the bees-wax gives the leather a firm body, which it would not have without it. After the application of the slush I put the hides through a machine for stretching the fiber. After the fiber is stretched, as above described, the hide becomes somewhat soft; I then apply another coating of slush, and put them into a drum, which is air-tight, and provided with tubular shafts. The drum is about twelve feet in diameter, and four feet wide, having internally-projecting pins about six inches in length and two inches in diameter. A current of warm air is forced into the drum through one of the journals, and passes out through the other, so that the temperature inside the drum is under the control of the operator. This is a vital point in producing a good article of stock. On revolving the drum and passing the current of warm air through it, the hides, by constant contact with the pins inside the drum, soon become soft and pliable. After the hides have been treated in the drum for three hours, they are taken out and put on an ordinary "setting-machine,"

and set out. After setting, they may be shaved and coated lightly with lard-oil.

I am aware that it is not new to employ carbolic acid with alum or ammonia with blood for making bating compounds for hides and skins.

The ammonia which I employ is the common carbonate manufactured by chemists for the trade, and of the usual strength.

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

The improved process described, of submit-

ting the hides or skins from which the hair has been removed to a succession of baths, composed of the solution and in the order set forth, and, when partially dry, coating them with a mixture of tallow, bees-wax, and paraffine, and then submitting them to the action of a revolving drum or other suitable softening apparatus, all substantially as stated, for the purpose described.

WM. COUPE.

Witnesses:

WILLIAM P. SHAW,  
HENRY H. CLARK.