A. Steers.

Tanning Apparatus.

No. 14,375. Patented Mar. 4, 1856.

Fig. 1.

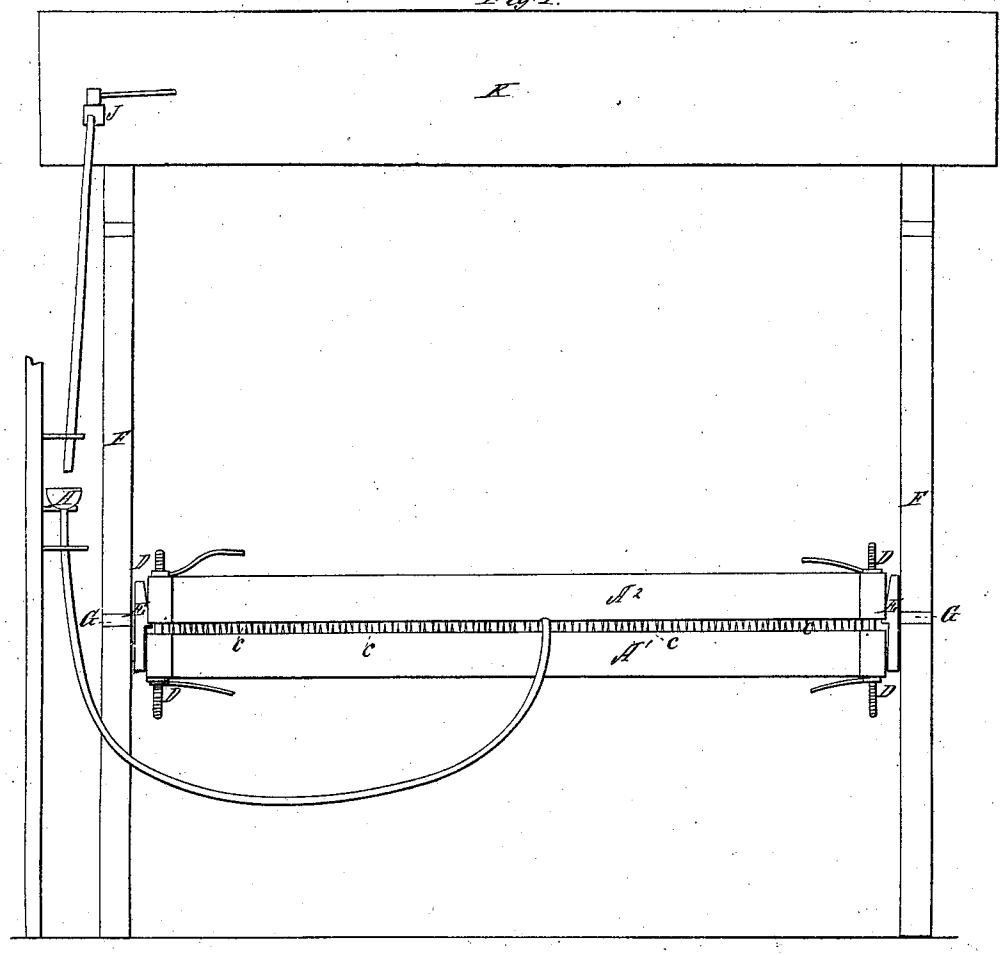


Fig. 2.

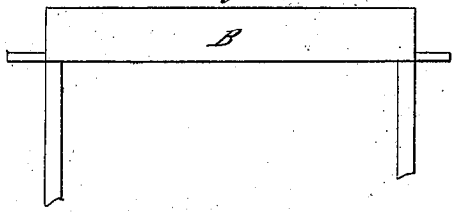


Fig. 3.

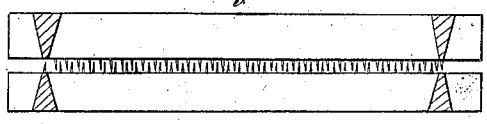


Fig. 5.

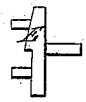


Fig. 6.



N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ABRAHAM STEERS, OF MEDINA, NEW YORK.

TANNING APPARATUS.

Specification of Letters Patent No. 14,375, dated March 4, 1856.

To all whom it may concern:

Be it known that I, ABRAHAM STEERS, of the village of Medina, in the county of Orleans and State of New York, have invented a new and Improved Arrangement for Tanning Leather; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The nature of my invention consists in the construction and use of a machine (made of any suitable material) by means of which, without sewing, I make a receptacle of hides or skins, obtain a perfect control over the pressure of liquor inside, a power of altering the amount on each part and of controlling a profuse perspiration whereby the heaviest sole leather may be tanned within a week.

To enable others skilled in the art to construct the means and use my invention and to elucidate the nature thereof I will proceed to describe the machine, its means of operation, and its contrast with the means already used.

I am aware and have long experience in the tanning of goat skins and such skins by converting them into sewed bags to be filled and piled or floated with tanning liquor and that the leather so tanned is better by being so done quickly than the leather of the same skins, if tanned by the ordinary slow process of open tanning. Also that this principle has been attempted to be made available for the tanning of heavy sole leather, and that some of these attempts have been patented and that the failure of their practicably using it has arisen from their erroneous conception of the principles upon which it operates and through the cost attending their mode of its application. I have been long well satisfied both theroretically and practically.

Any hide or skin of which the epidermis is great in proportion to the thickness of the remainder, for instance, of goat skins the hairs enter through to the flesh and will therefore as a bag, tan quickly, in a ratio with the pressure of the liquor within because the more the skin is stretched the more open the pores become, to admit the passage of the liquors out, but as almost invariably the hairs of hides or skins enter through a comparatively small proportion of the hide's thickness, and the ramining thickness is composed of fibers lying over at the side of each other and that the passage of fluid is no longer accomplished through pores but through the interstices between fibers (of an elastic nature) the position these fibers are forced to assume on an enlargement of the hide by an increased pressure from within causes them to become more impervious in proportion to the increase of pressure, and hence came the failure of the attempts to tan on the principle for which patents have been granted. Another obstacle to the adaptation of the principle (upon which goat and sheep skins have been tanned for centuries) to the tanning of heavy hides by means of these patented attempts, is the expense of serving the increased ratio of which for a hide instead of skin, is so great, that it covers what may be considered a remunerating amount for tanning them.

A′ A^2 Figure 1 are two rectangular matched frames brought and kept together by a screw at each angle and with their meeting edges (as shown in Fig. 3) sharp and armed with teeth that lock.

B Fig. 2 is a table with which to fix the hides well extended between the frames, while the offal is being removed, and the frames screwed together having four projecting pegs at such an elevation, that when frame A′ Fig. 1 is placed around it with thick edge resting on said pegs the thin and toothed edge project as much over the table as will admit of the teeth entering the doubled hide in a level and extended position while the counter frame A^2 Fig. 1 is being placed downward, matched to A′ Fig. 1, both screwed together, and the axis blocks fixed in their places; C C C C, Fig. 1. The brass teeth as seen in the frames, screwed up, in their places resting on the pins of axis blocks E E Figs. 1 and 3 and without the hide, D D D D, Fig. 1, the four screws having threads and handled nuts at each end E E Fig. 1. Axis blocks with 2 pins on one face and one pin on opposite face see Fig. 3 the first mentioned 2 pins to enter suitable holes in the upper and lower frames A′ A^2 Fig. 1 (when frames are screwed together) said holes being at the center of the frames ends, and each of the other pins to enter a groove in each of the uprights F F Fig. 1 so that, when the axis blocks are attached and the joint frame placed in said uprights it is capable of being turned on the single pins of said axis blocks

and being held in any desirable position by a cord, by crutches underneath, or by pins in the uprights F F Fig. 1, the uprights with grooves G for the single pins of axis blocks to rest in by means of which the joint frame is pivoted; G G Fig. 1, grooves to receive the pins of axis blocks; H, Fig. 1, the funnel with elastic tube terminating at the other end with a screw pipe entering at suitable hollows =O= in the side of the frames and between the edges of the hides (doubled) and then screwed in, to make it water tight around the screw pipe when the liquor from the funnel can pass in and fill the receptacle to whatever level it stands in the funnel; J Fig. 1 faucet of reservoir K Fig. 1, by means of which the liquor is adjusted to pass through funnel H Fig. 1 into the hide at whatever rate the water exudes from the hide.

Take a hide cleansed in any of the usual modes for manufacturing sole leather and having placed the lower frame A′ Fig. 1 on the pins and around the table B Fig. 1 double the hide lengthwise on the frame, the back or fold crossing the length within the frame and the two bellies projecting at one side and over the frame then remove said bellies together with the part that projects with a knife and place on the counterpart or frame A^2 Fig. 1 and screw the frames together said screws keeping the teeth to their true position which will make the three open sides of the hide or butt as it thus stands (the other side being the doubled back of the hide) watertight, so that no liquor can come out except through the pores and interstices of the hide. The joint frame is then lifted off of the table and placed in the grooves G in which, and on the axis, provided by block E E Figs. 1 and 5 the butt or hide is pivoted to be placed and changed to any position that may be desirable and kept there by any expedient device while the liquor to make good what exudes from the hide is supplied from the reservoir K Fig. 1 through faucet J Fig. 1 and funnel and elastic tube H Fig. 1.

The room I operate in has a flagged inclined floor.

I claim—

The apparatus within described, or its equivalent, to charge the skins stretched on a frame, with a thin stratum of tan liquor constructed and operated, substantially, as described, and for the purposes essentially as specified.

ABRAHAM STEERS.

Witnesses:
J. D. Clark,
J. Van Deventer.