C. J. GLASEL.

TANNING APPARATUS.

APPLICATION FILED JULY 19, 1917.

1,310,749.

Patented July 22, 1919.

3 SHEETS—SHEET 1.

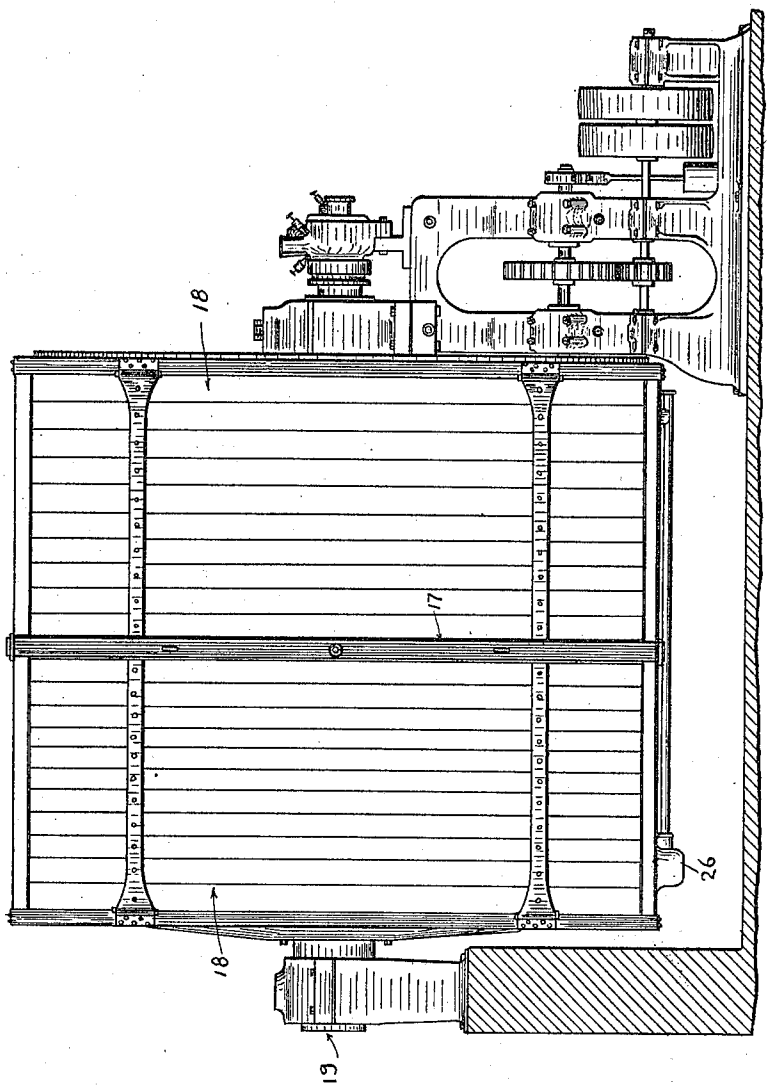

Fig. 1.

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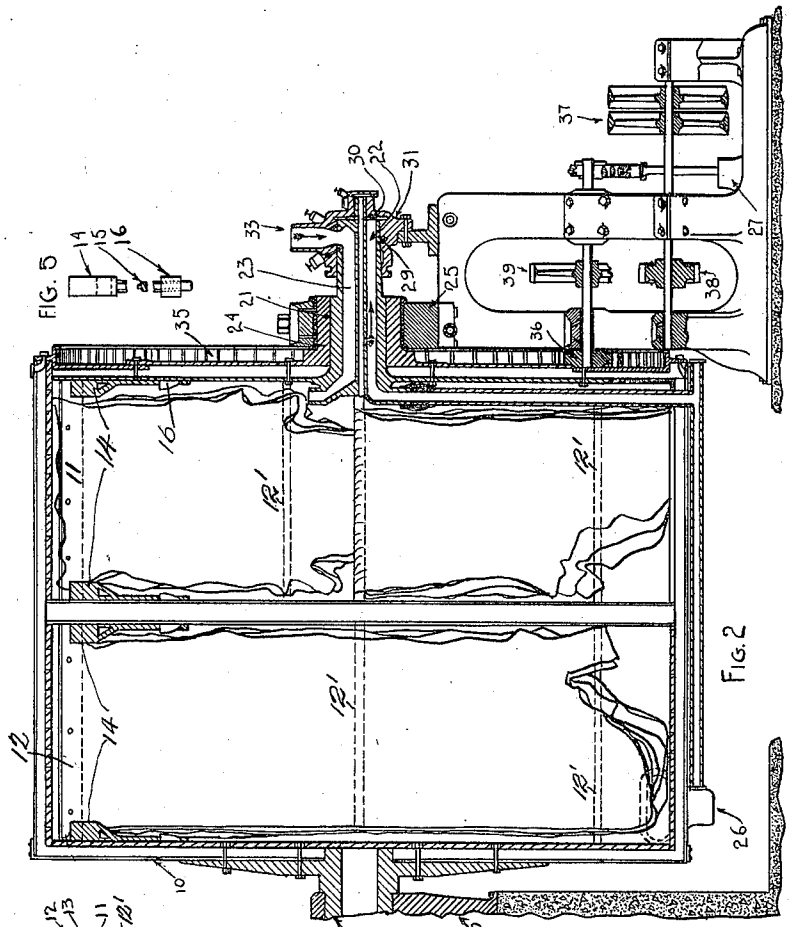

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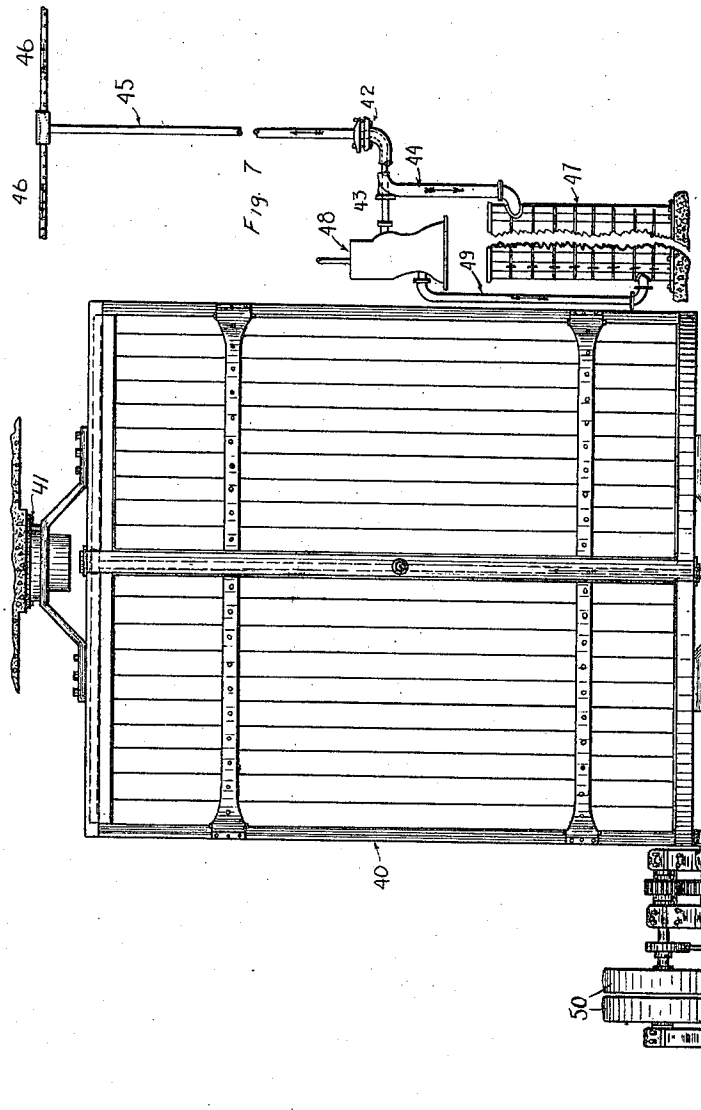

Fig. 7

Fig. 6.

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UNITED STATES PATENT OFFICE.

CHARLES JOHN GLASEL, OF NEW YORK, N. Y., ASSIGNOR TO MAURICE WOLFERT, OF NEW YORK, N. Y.

TANNING APPARATUS.

1,310,749. Specification of Letters Patent. Patented July 22, 1919.

Application filed July 19, 1917. Serial No. 181,558.

To all whom it may concern:

Be it known that I, CHARLES JOHN GLASEL, citizen of the United States, and resident of New York city, in the county of New York and State of New York, have invented certain new and useful Tanning Apparatus, of which the following is a specification.

This invention relates to tanning, and more especially to a method and apparatus for depilating, tanning and otherwise treating hides or skins in whole or in part with circulating fluids containing chemicals, extracts, gases or electric current and at suitable temperature.

The object of the invention is the treating of the hides and skins in quantities and arranging them in rows so that when their position is changed they will be found in piles and layers and retaining between them separately a supply of the tanning fluid but so secured that the said solution may be drained or shaken out and the hide stretched to exude the same when the container is turned to the proper position. At the same time the weakened tanning extracts which drain into the lower end of the container may be replenished with proper chemicals or removed and new liquids substituted and the hides again treated by the rotation of the container and submersion of said hides. If found desirable a continuous current of the tanning solution may be circulated through the container and about the hides and as the container is rotated they are stretched and relaxed opening and closing their pores to strain the structure of the hide by their weight and absorbing and expelling the solution to thoroughly subject the entire hide to the influence of the tanning liquid, or other treatment administered.

When the container leaves its horizontal and submerging position the hides are so banked and superimposed upon each other that their weight immediately tends to squeeze the solution from the lower layers and when the operation of soaking the hides is completed, the liquid may be drawn out of the container and the latter alternately turned from one side to the other before it is finally set up in its original position to remove the hides after they separate by their vertical arrangement and finally stretch and drain.

The whole operation is conducted in a water tight container where the hides may be inclosed and the thorough treatment may continue as long as may be desired to effect the results as it is evident that different grades and thicknesses of leather require more or less treatment. The submersion of the hides or their release from the liquid to stretch and drain them may also be easily determined and regulated by the following method and apparatus which is more fully detailed hereinafter, set forth in the claims, and illustrated in the accompanying drawings wherein—

Figure 1 is an elevation of the apparatus,

Fig. 2 is a vertical sectional view through the same,

Fig. 3 is an end elevation of one of the supports partly broken off,

Fig. 4 is a detail of a hide carrying bar,

Fig. 5 is a detail of the slide for the bar,

Fig. 6 is an elevation of a modified form of receptacle,

Fig. 7 is a plan view of the pump and circulating system used in the modified form of apparatus shown in Fig. 5, and

Fig. 8 is a plan view of a second hide carrying bar.

While it has been the practice heretofore to stretch the hides from the ends or corners in tanning apparatus the present invention provides for the hanging of the hide from one edge at the top of the receptacle 10 in case that a large and whole hide is treated or in case that small hides are being treated, they are hung from the top and middle of the receptacle as shown in Fig. 2. This receptacle is shown as rectangular or box like in form although any other suitable shape, as that of a cylinder may, of course, be used.

The edge of the hide is clamped on the bar 11 by a companion bar 12 after being hung on the pins 13 and the compound bar is carried at each end by a block 14 having a stem 15 which plays through a bracket 16 so that after the receptacle has completed a revolution and the bars are at the end of the receptacle the hides suddenly drop the limit of the slide 15 and the superfluous tanning solution is shaken loose.

In the modified form of bar shown in Fig. 8 neither of the bars 12′ is provided with pins but the hide is clamped between them to avoid injury.

The receptacle is provided with a parti-

tion 17 dividing it into two compartments and each compartment is closed by a water tight door 18. At one side the receptacle has a pivot 19 journaled in a standard 20 while the other side has a pivot 21 with passages 22 and 23 and surrounded by a sleeve 24 secured to the side of the receptacle and carrying the weight of the tank in the bearing 25.

The passage 23 terminates within the receptacle and carries the tanning extracts to the same while the passage 22 communicates with an outlet 26 that drains the tank through the medium of a pump 27 and suitable pipe and the liquid is thus circulated through certain grooves 29 and 30 in the journal box 31 mounted on the stand 32 and carrying the inlet and outlet connections 33 and 34.

At the latter side of the receptacle is the internal gear wheel 35 rotated by the pinion 36 which is driven by the pulleys 37 through the gearing 38 and 39.

The hide carrying bar shown in Fig. 8 has dowel pins at its ends to prevent the two parts from sliding past each other and the two sections are reduced or cut-away to receive the hide and clamp it so that it may be hung without injuring it with perforations.

When it is desired to operate the apparatus it may be turned to a horizontal position and the hides strung on the bars 11 until they completely fill the receptacle or until the desired number are deposited. In one form of the device constructed by me about 150 hides are deposited therein.

A small amount of tanning fluid, from 75 to 125 gallons for the apparatus just referred to as containing 150 hides, is then introduced through the opening 33 and passage 23 and the receptacle rotated until the hides by their movements thoroughly absorb the liquid or become impregnated with it. When the hide drops by gravity to its vertical position its pores are opened and the liquid drains therefrom after being subjected to the chemicals in the said solution and the pores are again ready to be filled with the tanning mixture when submerged in the same at the bottom of the tank.

At times the solution may be withdrawn while the apparatus is in motion and a new and stronger preparation supplied while the rotation proceeds.

In the modified construction shown in Figs. 6 and 7 the tank 40 is mounted on a vertical axis with upper and lower bearings 41 and 42, the latter supporting the tank, and having the inlet 43 and outlet 44, the former connecting with the vertical pipe 45 having spray pipes 46 at its upper end while the outlet drains into a tank 47 containing the tanning solution.

A pump 48 draws the liquid from the tank 47 through the pipe 49 and forces it up the pipe 45 while the pulleys 50 which operate the pump also turn the pinion 51 gearing with teeth on the lower side of the receptacle to rotate the same.

Doors are provided for the tank 40 and rotating connections carried by the bearing 42 for the inlet and outlet.

What I claim is:

1. In a tanning apparatus, the combination with a rectangular watertight tank mounted on bearings to rotate on a horizontal axis, of sectional sliding rods for hanging the hides, means for rotating the tank, and means for circulating the liquid for tanning from the outside and through the tank while it is rotating.

2. In a tanning apparatus, the combination with a rectangular tank of watertight construction, of trunnions forming a horizontal axis for the tank, bearings for the trunnions, sectional hanging bars for the hides, pins in the bars, means for rotating the tank, and means for filling the tank when closed with liquid for tanning and circulating the same through one of the bearings and its trunnion.

3. In a tanning apparatus comprising a rotatable water tight receptacle, a hide carrying bar consisting of a plurality of members adapted to grasp the hide between them and slidable members adapted to receive each end of said bar.

4. In a tanning apparatus comprising a rotatable water tight receptacle, a sectional hide carrying bar supports in which the ends of the bar are secured, each of which support consists of a block having a stem slidable in brackets attached to the side walls of the receptacle.

5. In a tanning apparatus, the combination of a rotatable water tight receptacle, a bar consisting of a plurality of recessed members and whose ends are secured in the side walls of the receptacle, the recessed members being so secured to one another that the recesses constitute an opening adapted to guide a movably supported and suspended hide hung therethrough.

6. In a tanning apparatus, the combination with a water tight receptacle, of a sectional bar attached at one side thereof and adapted to secure one edge of the hide, and an apertured guide member fixedly secured to the walls of the receptacle at a distance from said attached bar, the said aperture being adapted to allow the hide to freely move and slide therein.

7. In a tanning apparatus, the combination of a slidable supporting hide carrying bar with a fixed apertured hide guiding bar spaced apart therefrom.

8. In a rotatable tanning vat, a block having a stem and a bracket rigidly attached to a wall of the vat through which

said stem is adapted to slide longitudinally, said block being adapted to support one end of a hide carrying bar.

9. The herein described process of treating hides which comprises securing one end thereof to a movable member arranged at one side of a rotatable receptacle adapted to contain a liquid, rotating the receptacle, and subjecting the hide to recurring sudden shocks by the fall of the said movable member through a limited distance when said member is elevated to its highest position during the rotation of the receptacle.

10. The herein described process of treating hides which consists in securing one end of each of a plurality of hides to separate movable supporting members arranged at one end of a rotatable hide receptacle, supporting the hide at another point between spaced apart guiding members adapted to allow the hide to freely move therebetween, rotating the receptacle, subjecting the hides to the action of suitable media while they are undergoing the various tensions, shocks, pressures, flexures and frictions resulting from said relations.

11. The herein described process of treating hides which consists of repeatedly covering the surfaces of the same with a suitable liquid and alternately freeing their surfaces from the said liquid while suspended in a receptacle, the liquid being circulated over the hides and in and out of said receptacle until practically exhausted.

12. The process of treating hides which comprises securing them in a rotatable receptacle, rotating the said receptacle and therein subjecting the hides to the action of a suitable medium and also to recurring tensions, shocks, pressures, flexions and frictions which result from the rotation of the receptacle and their method of being secured therein.

13. The herein described process of treating hides consisting of securing one side of the same in a receptacle by a cross bar whose ends are adapted to slide to and from the center of the receptacle, filling the latter with a tanning medium to cover the hides, and rotating the receptacle to cause the bar with the hide to shift its position.

14. The herein described process of treating hides for tanning and consisting of immersing the hides in a tanning solution within a vat and securing one edge of each hide in a clamping bar whose ends are adapted to slide lengthwise in the sides of the vat as it revolves, and rotating the vat to cause the hides to undergo tensions, shocks, pressures, flexures and frictions.

Signed at New York city, in the county of New York, and State of New York, this 18th day of July, A. D. 1917.

CHARLES JOHN GLASEL.

Witnesses:
FRANCIS REGEN,
JOSEPH F. MCQUADE.