

No. 656,064.

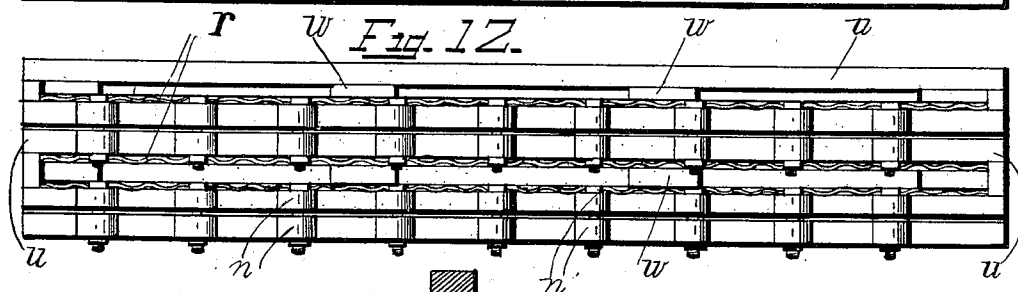
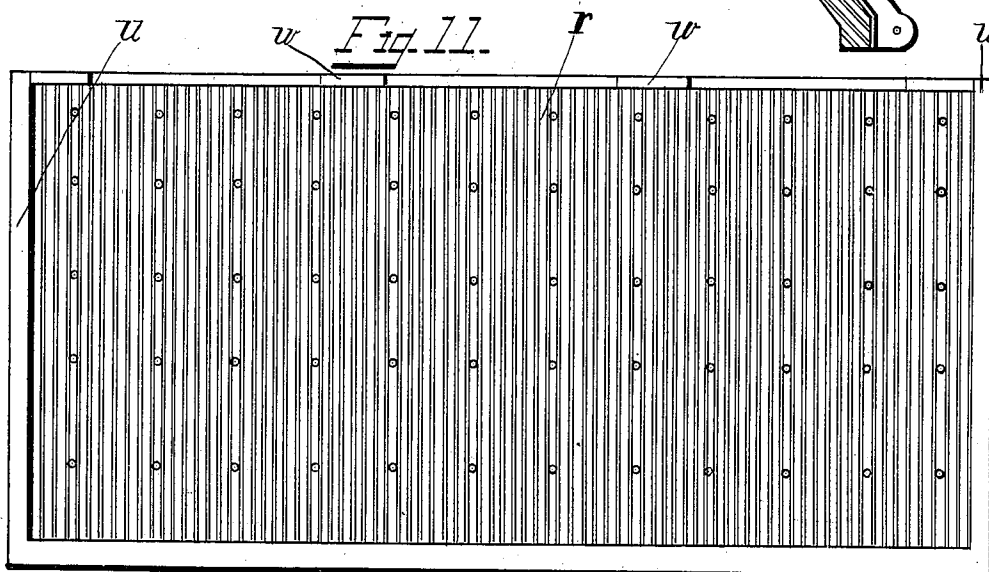
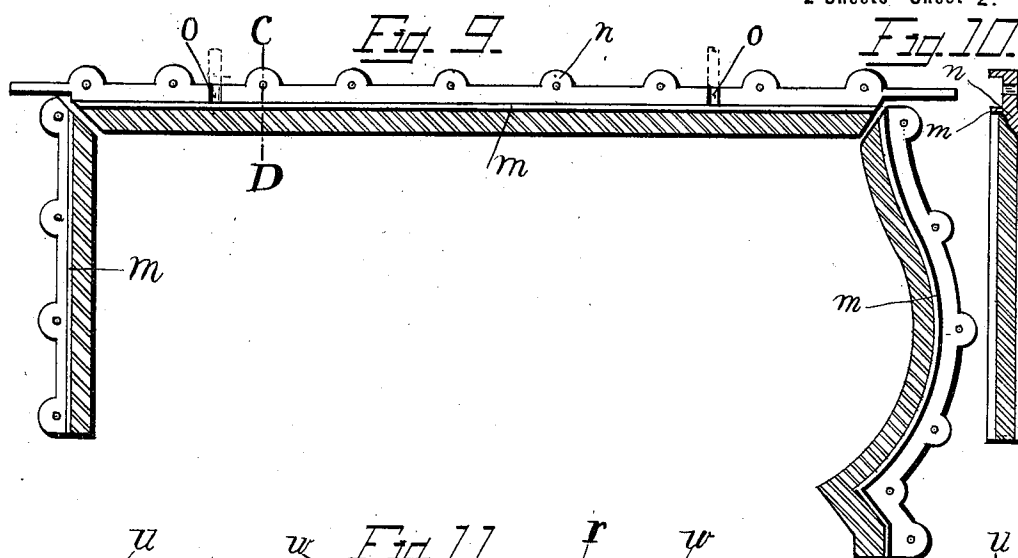
Patented Aug. 14, 1900.

A. E. VIDAL.
TANNING APPARATUS.

(Application filed Feb. 17, 1900.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses Fig. 13.
Clarence A. Patterson
John Chalmers Wilson

Inventor
A. E. Vidal
By W. H. Fisher & Fisher
Attorneys

UNITED STATES PATENT OFFICE.

ADOLPH EDWARD VIDAL, OF LONDON, ENGLAND.

TANNING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 656,064, dated August 14, 1900.

Application filed February 17, 1900. Serial No. 5,648. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH EDWARD VIDAL, a subject of the Queen of Great Britain and Ireland, residing at 20 Central Hill, Norwood, London, England, have invented an Improvement in Apparatus for Tanning Hides and Skins, (for which I have made application for Letters Patent in Great Britain, No. 25,188, dated November 29, 1898; No. 9,114, dated May 1, 1899; No. 10,385, dated May 17, 1899, and No. 11,314, dated May 31, 1899,) of which the following is a specification.

My present invention relates to improvements in mechanical methods of tanning, more particularly to frames or gripping devices between which the hides are gripped, in order that the tan liquor may be introduced into the space between a folded hide or between hides, so that it may percolate through the pores of the hide, and thus expedite the process of tanning.

With frames as hitherto constructed for the above purpose various disadvantages have been encountered, the chief one being that owing to the frames being made with strips, between which the hides were gripped, forming a rectangle; (or when the hide was doubled three sides of a rectangle,) a considerable portion of the hide at the tail end had to be cut off or left to remain outside of the frame, thus reducing the size and weight of the tanned butt. Again, it was either necessary to have the frames of various sizes, so as to accommodate different-sized hides or butts, or to make the frames of a comparatively small size, which caused considerable waste when a large butt was tanned. Another defect was that the hide being unsupported in close proximity to the gripping-strips tended to stretch and lose its shape around the edges.

To obviate the above-mentioned defects is the purpose of my present invention.

In order to more fully describe my said invention, reference will be first had to the accompanying drawings, in which—

Figure 1 shows an elevation of one of the frames which I propose to employ. Fig. 2 shows an end view of same. Fig. 3 represents a transverse section on the line 1 2 of Fig. 1. Fig. 4 is a similar section of two frames clamped together containing a hide

or skin. Fig. 5 is an edge view. Figs. 6 and 7 represent longitudinal sections on the line A B, the latter view showing two frames containing a hide clamped together. Fig. 8 is a detail view of the means of clamping two frames together. Fig. 9 shows another form of the gripping-pieces. Fig. 10 is a transverse section of Fig. 9. Fig. 11 represents a section showing the grooved and perforated back-board. Fig. 12 shows a method of clamping together a series of frames; and Fig. 13 is an enlarged sectional view on the line C D of Fig. 9, showing the gripping edges in detail.

Referring first to the form of my invention shown in Figs. 1 to 8, in these views *f* represents the back-boards, which are here shown as being grooved. The purpose of these back-boards is to prevent the sagging of the hides while being tanned, thereby preserving the shape of the hide throughout the tanning operation. Surrounding these back-boards are the cross-pieces *e*, running transversely of the frame. Upon three sides of the said frame beveled strips *c* are provided, these strips being also grooved. Surrounding the outer edge and projecting above the said grooved strips *c* are the gripping-pieces *b*, which are preferably made of brass or other acid-resisting material. *h* represents lugs at one end of the frame, through which bolts *g* are adapted to pass when the frame is secured together. *i* represents holes through the gripping-pieces on one side of the frame, through which the pipes *k* are adapted to pass, for supplying liquor to the inside of the hide when the latter is in position in the frame.

The frames above described are made in pairs in such a manner that when they are superposed the gripping-pieces coincide with each other.

The method of using the above-described frames is as follows: The hides having been prepared in the usual way for the process of tanning, the butt is cut out and folded in half lengthwise. Its edges are then gripped between a pair of frames, so that the pipes *k* enter between the folded butt. Tan liquor is supplied to one of the pipes *k* from any suitable source of supply that is capable of maintaining a uniform flow, so that the pres-

sure may be constant throughout the tanning operation. I prefer that the pressure shall be slight, as excessive pressure has been found in practice to produce bad leather. On com-
 5 mencing the operation the air-tube is opened and liquor is allowed to enter the bag formed by the folded butt until it is entirely filled, when the air-tube is closed and the lateral pressure causes the liquor to percolate
 10 through the pores of the hide. I prefer to immerse the frames in tan liquor during the process of tanning. In this case the back-boards *f* should be perforated, as shown in Fig. 11. Care should be taken that the in-
 15 ternal pressure is always in excess of the external pressure, so that liquor will percolate through the pores of the hide from the inside.

In order to make the frames suitable for various-sized butts, I may make either or both
 20 of their ends adjustable, such a form being shown in Figs. 9 to 13, and will be hereinafter referred to.

It has been found preferable to corrugate the surfaces of the beveled portions of the
 25 pieces *c* or in some cases I may fasten thin corrugated brass or other metal not attacked by tannic acid upon bevels with smooth surfaces. These back-boards *f* may be formed of wood, metal, or other suitable material,
 30 grooved or corrugated.

Referring now to the form shown in Figs. 9 to 13, in these views is shown another form of frame which is so constructed that the parts thereof (shown separately in Fig. 9) may
 35 be set together so as to suit the requirements of any-sized hide, this gripping-frame being secured in the backing *u* and then submerged in the vat, tanning liquor being also supplied to the inside of the hide, as in the first-men-
 40 tioned instance. *m m* show the gripping-pieces for gripping a folded hide or butt, these gripping-pieces being composed of three separate portions, each provided with means for securing the same in any desired position.
 45 It will be seen that the gripping-piece for the tail is shaped to the contour of the tail end of the butt when folded. These gripping-pieces may be made of metal, wood, glass, or any other suitable material. The inner sur-
 50 faces of the gripping-pieces *m* are beveled and grooved so as to allow the liquor to percolate through the portions of the hide or butt coming in contact with these surfaces. *n* shows lugs formed on the pieces *m m*, pro-
 55 vided with holes for bolting the two sets of gripping-pieces together when the folded hide or butt is between them. *o* shows semicircular depressions in the pieces *m*, so placed that when the two pieces *m* are superposed
 60 with the hide or butt between them a pipe may be passed through so as to come in between the folded butt or hide, a similar pipe being provided for the other hole for the exit of air. *r* shows back-boards, which may be
 65 similar to those described in connection with Figs. 1 to 8, but are preferably both grooved

and perforated to allow free access of tan-
 ning liquor to both sides of the hide. In
 using this apparatus the hide is first pre-
 70 pared in the ordinary way for tanning, the offal is cut off, and the remaining butt is folded over lengthwise. The edges are then gripped between the pieces *m m*. This is effected by
 75 placing the pieces in position, one set under the folded butt and the other set over it, so that the edges are gripped between the grip-
 ping-pieces *m m*, which are then bolted to-
 gether tightly. The whole is then suspended in a tank or pit between two of the grooved
 80 boards *r*, as shown in Fig. 9. A pipe is then passed through the hole *o* and is connected with the suitable source of supply and the op-
 eration is the same as in the preceding case.

In Fig. 11 the boards *r* are perforated as well
 as grooved, so that when the tank or pit *u* is
 85 supplied with tan liquor this liquor will come in contact with the outside of the folded hide. The internal pressure should be in excess of the pressure exerted upon the hide from the
 90 liquor in the tank, as in preceding instance. The boards *r* are held in position by blocks
 95 *w* in such a way that the grooved surfaces may come next to the butts. The liquor which percolates through passes down the grooves and out through the perforations.

During the process of tanning the butts
 should be taken out in order to examine them
 and clean out any refuse that may have ac-
 cumulated. Hides by this process may be
 100 tanned in from two to four weeks, according to their thickness.

Although I have stated that the hides or
 butts are doubled over lengthwise, it is obvi-
 ous that two open hides or butts may be super-
 105 posed and gripped between suitably-shaped frames or gripping-pieces; but I prefer to double the hides or butts, so as to economize space and facilitate handling.

Having thus described my invention, what
 I claim, and desire to secure by Letters Pat-
 110 ent of the United States, is—

1. In an apparatus for tanning, a rectangu-
 lar gripping-frame, one side of said frame
 being provided with a gripping edge adapted
 115 to conform to the shape of the tail end of the hide, substantially as described.

2. In an apparatus for tanning, a rectangu-
 lar gripping-frame composed of parts which
 may be adjusted relatively to each other, one
 120 side of said frame being provided with a grip-
 ping edge adapted to conform to the shape of the tail end of a hide, substantially as de-
 scribed.

3. In an apparatus for tanning, the combi-
 nation of a gripping-frame, rectangular in its
 125 general outline, but having one end shaped to conform to the shape of the tail end of the hide, and a backing for said frame, substan-
 tially as described.

4. In an apparatus for tanning, the combi-
 130 nation of a gripping-frame, rectangular in its general outline, but having one end shaped

to conform to the shape of the tail end of a hide, and a grooved or corrugated backing for said frame, substantially as described.

5 5. In an apparatus for tanning, the combination with a gripping-frame, of perforated back-boards for said gripping-frame, substantially as described.

10 6. In an apparatus for tanning, the combination with a gripping-frame, of grooved and perforated back-boards for said gripping-frame, substantially as described.

7. In an apparatus for tanning, the combination of a detachable and adjustable grip-

ping-frame, one of the parts of said frame being shaped to conform to the shape of the tail 15 end of a hide, substantially as described.

8. In an apparatus for tanning, the combination of a detachable and adjustable gripping-frame, one of the parts of said frame being shaped to conform to the shape of the tail 20 end of a hide, and a backing for said gripping-frame, substantially as described.

ADOLPH EDWARD VIDAL.

Witnesses:

J. M. LANDON,

WALTER EVERETT.