

(No Model.)

G. S. TUNSTEAD.
TANNING APPARATUS.

No. 408,395.

Patented Aug. 6, 1889.

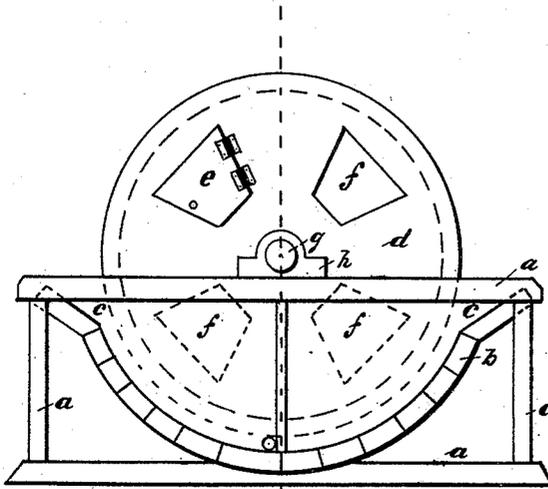


Fig. 1.

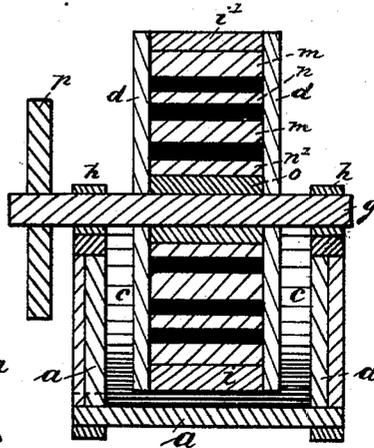


Fig. 2.

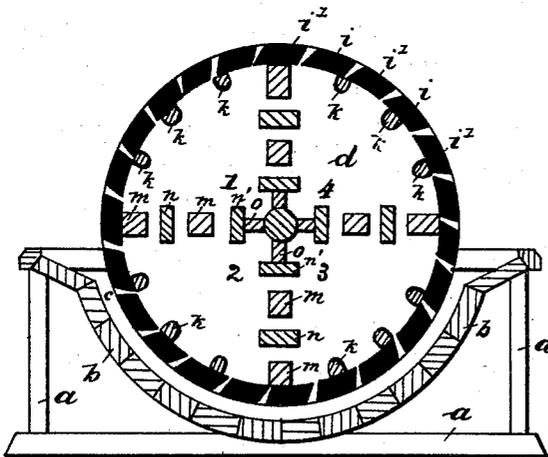


Fig. 3.

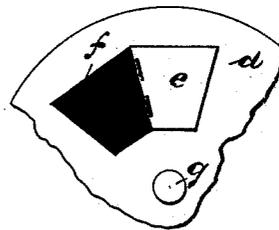


Fig. 4.

Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE S. TUNSTEAD, OF NEWARK, NEW JERSEY.

TANNING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 408,395, dated August 6, 1889.

Application filed September 26, 1888. Serial No. 286,416. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. TUNSTEAD, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Tanning Apparatus; 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

15 The object of my invention is to facilitate the process of tanning skins and hides, to improve the quality of the leather as to strength and durability, and lessen the cost of manufacture.

20 The invention consists in the improved process of tanning herein described and in the improved tanning-machine, and in the combinations and arrangements of parts substantially as will be hereinafter set forth, and finally embodied in the clauses of the claim.

25 Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several figures, Figure 1 is a side elevation of a tanning-machine embodying my improvements. Fig. 2 is a transverse section through line *x*, Fig. 1. Fig. 3 is a longitudinal section through the center of the machine, and Fig. 4 is an elevation showing one of the doors of the tanning-drum open.

In said drawings, *a* indicates the frame on which the machine rests.

b is the bottom of a tank for holding the tanning-liquid.

40 *c* is a liquor-tank.

d is a drum for holding the skins and hides to be tanned, divided into sections by rods and bars.

45 *e e* are doors hinged to the sides of openings *f* in the drums, one of these openings being shown with the door open, as in Fig. 4, and closed, as in Fig. 1.

g is a revolving shaft to which the drum is attached, and runs in bearings *h* on the frame *a*.

50 *i i* are strips connecting the sides of the drum at their outer periphery, and of a form

to leave angular openings *i' i'*, Fig. 3, through which the tanning-liquor can enter the drum as it passes through the tank.

k k are lugs or bars on the inside periphery 55 of the drum, and extending from side to side, and having their corners or edges beveled, as shown in Fig. 3.

m m are a series of square rods or bars extending through the drum on lines at right 60 angles to each other, with their corners or edges slightly rounded, so as not to injure the skins or hides.

n n are oblong bars or rods placed alternately to said bars *m*, with their corners or 65 edges similarly rounded, and are arranged with their longest surface in the manner shown in Fig. 3. These bars *n* are of different size and shape from the bars *m*, so as to present an irregular surface for the skin to 70 pitch upon as the drum revolves. Between these bars *m m* and *n n* are spaces through which the tanning-liquid can readily flow from one section of the drum to the other when it is revolved. The bars *n'* are secured 75 to lugs *o* on shaft *g*. *p* is a driving-pulley on said shaft *g*.

In operation the tank is filled with the tanning-liquid. The skins or hides to be tanned are then placed, by means of the openings, in 80 the sections of the drum, the skins being placed in each of the sections 1, 2, 3, and 4, and the doors tightly closed. The hide in section 1, Fig. 3, will rest on the bars forming the horizontal division in the drum. As the 85 drum revolves in the direction of the arrow, the hide in section 1 will pitch over the edges of the bars *m* and *n* toward the outside edge of the drum, and will then pitch over the lugs or bars *k k*, toward the bottom of the drum. 90 As the machine continues to revolve it will then be pitched backward along the bars *k k*, and when it has reached the bars *m* and *n*, forming the other wall of the section, the hide will then, as the drum continues to revolve, 95 be taken up by the bars *m* and *n*, and pitch down over said bars to the center of said drum, thence the hide will pitch over the bars *m* and *n* toward the outside edge of the drum, when it will pitch along the bars *k k*, until it 100 falls back on the bars *m n* in the position it started. It will thus be seen that each skin

is continually pitched backward and forward upon the bars, and during one-half of the revolution of the drum is continually in contact with the tanning-liquid. This continual
 5 pitching and tumbling over the slats softens and thoroughly works the hide, opens its pores and forces in the tanning-liquor, which, as the hide passes out of the tank, is being
 10 driven out by the same process until, by the revolution of the drum, the hide has again reached the tank. This operation is repeated until the hides are sufficiently tanned. The spaces between the bars should not be large
 15 enough to allow the hide to slip through.

The revolution of the drum in the tank keeps the tanning-liquor continually agitated and mixed, and consequently of even strength, and is uniformly distributed through the
 20 drum.

Having thus described the invention, what I claim as new is—

1. In a tanning apparatus, a hollow rotating drum with obliquely-perforated covering, and having longitudinally-extending slats *k*
 25 secured to its inner periphery, said drum be-

ing also divided into two or more sections by means of bars *m* and *n*, forming perforated partitions with uneven surfaces, each section being provided with a door in the side, as described, and for the purposes set forth. 30

2. In a tanning apparatus, the combination, with a base and a driving-shaft running in bearings on said base, of a tank adapted to receive the tanning-liquid, and a hollow drum
 35 secured to said driving-shaft having an obliquely-perforated covering, and longitudinally-extending slats *k*, secured to its inner periphery, said drum being also divided into two or more sections by means of bars *m* and
 40 *n*, forming perforated partitions with uneven surfaces, each section being provided with a door in the side, all as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 13th day of August, 1888.

GEORGE S. TUNSTEAD.

Witnesses:

E. L. SHERMAN,
 J. S. MCCORY.