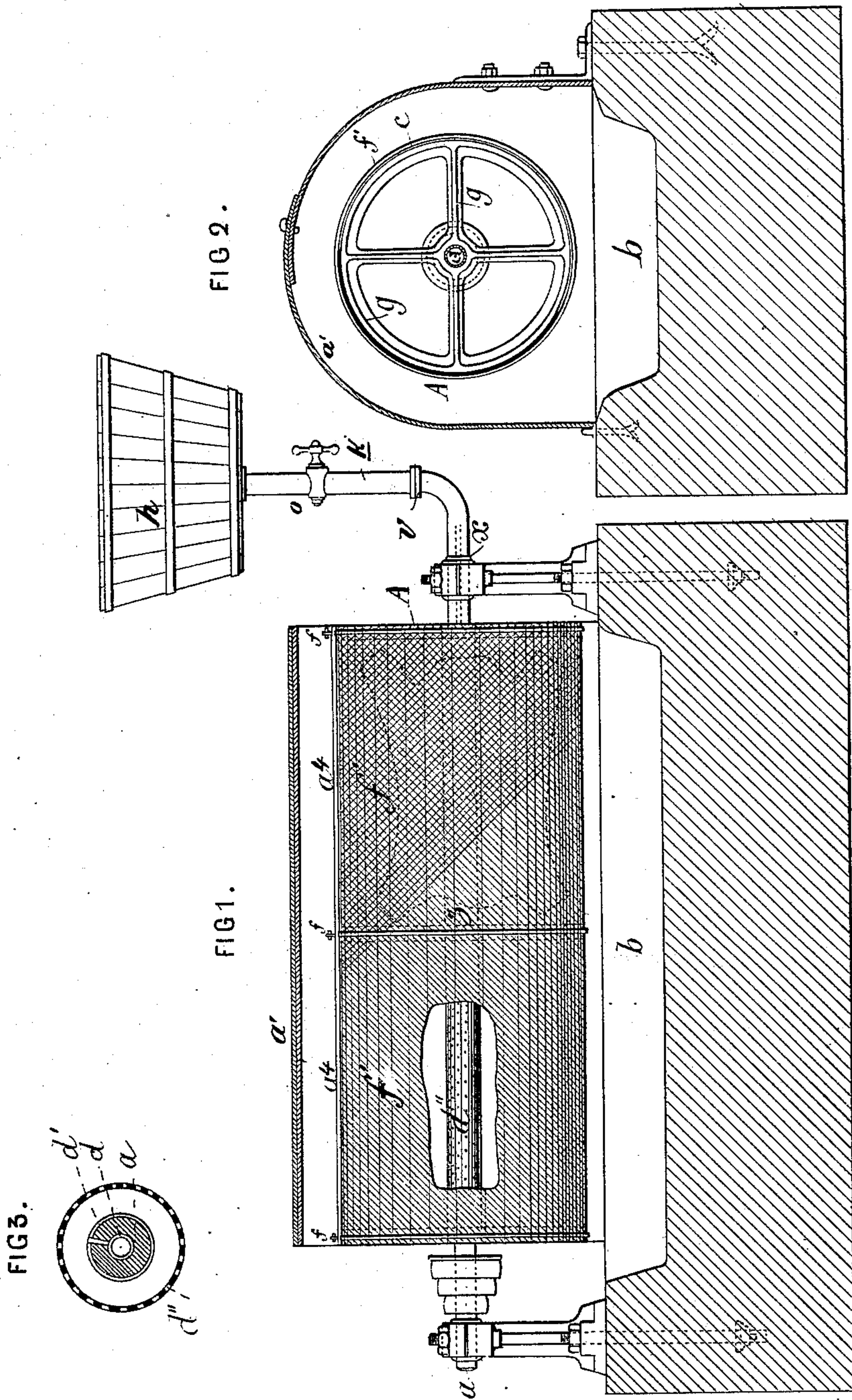


(No Model.)

E. DE SOLMINIHAC.
APPARATUS FOR TANNING HIDES.

No. 308,755.

Patented Dec. 2, 1884.



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UNITED STATES PATENT OFFICE.

EMILE DE SOLMINIHAC, OF LORIENT, FRANCE.

APPARATUS FOR TANNING HIDES.

SPECIFICATION forming part of Letters Patent No. 308,755, dated December 2, 1884.

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To all whom it may concern:

Be it known that I, EMILE DE SOLMINIHAC, of the city of Lorient, France, have invented new and useful Improved Apparatus for Use in Tanning Hides and Skins, of which the following is a full, clear, and exact description.

This invention relates to an improved apparatus for rapidly tanning hides and skins by utilizing centrifugal action for causing the penetration of the tanning material through the pores of the hide or skin.

The apparatus consists, essentially, of a horizontal or vertical skeleton drum or cylinder formed of wood bars or clothed with wire-gauze made of some metal which is not acted on by the tannin, upon the circumference of which the hides or skins are held and stretched either by means of another envelope of wire-cloth, and secured by clips, or the hide or skin may itself be secured to the drum by clips. A layer of felt is interposed between the drum and the hide or skin for the purpose of retaining as much as possible of the tannin-liquid in contact with the latter, and causing it to slowly penetrate by the continuous action of centrifugal force.

The invention is illustrated, by way of example, in the accompanying drawings, which represent a horizontal drum, Figure 1 being a sectional elevation showing the drum within its casing, with its driving-gear, and the preferred arrangement for supplying the tannin-liquid; Fig. 2, a cross-section of the drum and casing, and Fig. 3 a cross-section of the drum-shaft.

The same letters of reference indicate the same parts in the several figures.

a is a tubular horizontal shaft mounted to rotate in bearings in standards firmly fixed in a foundation of masonry, formed with a catch-basin or trough, b . Upon said shaft is mounted a long cylinder or drum, A , constructed of two or more cast-iron spoked rings, g , which are either coppered or sheathed with sheet-copper or other metal to protect the iron from the tanning-liquor. The periphery c may either consist of wire-cloth made of copper or alloys of the same, or other metal not liable to be acted upon by the tannin; or it may be formed of open-work constructed of bars of wood, copper, or other metal or material

placed at suitable distances apart. The heads of the drum are furnished with holding-clamps f on their periphery for the attachment of the clips, by which the external envelope of wire-gauze, f' , for retaining the hide or skin in place, is held. The shaft a is made tubular from point x to the middle z of the drum, the bore being about half an inch in diameter and terminating in a radial hole at z . The tubular part of the shaft is lined with copper pipe d , (see Fig. 3,) about sixty thousandths of an inch in thickness, which is also provided with a copper union at the point x . The shaft a is also covered with a copper sheathing, d' , to protect the iron from contact with the tanning-liquor. The part of the shaft a contained within the drum is surrounded at a distance by a copper tube, d'' , perforated throughout its length, by means of which the tanning-liquor is projected and distributed by centrifugal action. The size of the perforations should be such that the quantity of liquor discharged will be less than that supplied by the tubular shaft. This external perforated tubular casing surrounding the shaft is soldered at each end to the rings g , and its internal diameter is such as to leave a space of from half to five-eighths of an inch between it and the shaft a .

h is a reservoir for the tanning-liquor, placed at a higher level than the drum, the liquor being supplied to the drum by a copper pipe, k , connecting with the hollow shaft at x , into which the liquor is discharged by a copper jet-nozzle on the end of said pipe, about which the shaft turns.

To prevent the vibration, which is almost inevitable, affecting the pipe k , and causing accidents, the copper pipe terminates at v , and is connected with the jet-nozzle by an india-rubber or other flexible pipe.

o is a cock on pipe k for regulating the quantity of liquor supplied to the apparatus.

A strainer made of copper wire-gauze is placed in the reservoir h to prevent any impurities which the tanning-liquor may contain from passing down and obstructing the perforations through which it is distributed.

The drum is inclosed in a casing of sheet-copper, a' , or it may be a wood framing covered with canvas, against which the tanning-

liquor is projected by the centrifugal action of the drum, and is collected in the trough *b*, whence it is returned to reservoir *h* by a pump.

The action of the apparatus is as follows:

5 The hides or skins to be tanned, being in a proper state of preparation, are spread upon the felt covering of the drum, and are covered with the wire-cloth *f'*, the two ends of which latter are secured by the clamping-bar
10 *a*⁴, which are secured by the bolts *f f*. The drum is then rotated at a high speed, and a tanning-liquor of suitable strength contained in the tank *h* is then supplied and projected through the orifices in the perforated tube
15 around the shaft against the felt, which absorbs it, the centrifugal force causing the liquor to pass through both the felt and the hides under treatment. After a certain time, depending on the speed of rotation of the drum,
20 the hides become completely saturated with the tanning-liquor, and the operation is terminated. A second layer of felt is placed between the skins or hides and the wire-gauze covering *f'*, for the purpose of preventing the
25 marks of the wire-gauze *f'* from showing on the skins, and for completely isolating the skins from the gauze *f'*, holding the skins on the drum.

30 In place of felt, any other analogous material may be used which absorbs and retains the tanning-liquid and isolates the skins from the perforated drum and the metal gauze.

I claim—

35 1. An apparatus for tanning hides, consisting, essentially, of a revoluble drum adapted by means, substantially as described, to have the hides secured to the circumference thereof, and a supply-pipe leading into the interior of said drum for conveying the tanning-liquid,
40 whereby when the drum is revolved the centrifugal force will cause the tanning-liquid

to pass into the pores of the hides, substantially as set forth.

2. The combination, in a tanning apparatus, with the revoluble drum having a perforated or intersticed covering and the perforated shaft on which the drum is mounted, of a fibrous covering over the perforated or intersticed drum, and means for securing the hides thereon, substantially as set forth, and
50 for the purpose described.

3. The combination, in a tanning apparatus, of the perforated shaft, rings *g*, perforated or intersticed covering *f'*, clamps *f*, and bar *a*⁴, substantially as set forth. 55

4. In an improved apparatus for the rapid tanning of hides and skins, the combination, with a perforated drum, of a layer of felt or analogous material placed on the drum below the skins or hides held on the drum, an additional layer of felt or analogous material placed on the hides or skins, and a layer of wire-cloth or metal gauze placed on the outer or latter layer of felt or analogous material, substantially as specified. 60 65

5. A centrifugal tanning apparatus consisting, essentially, of the base provided with a tank, *b*, a perforated shaft journaled in standards on the base, a revoluble perforated drum secured to said shaft, a tank, *h*, above the drum, connected to the perforated shaft, and the covering or casing *a'*, and means, substantially as described, for holding the hides, all combined and constructed substantially as set forth. 70 75

The foregoing specification of my improved apparatus for use in tanning hides and skins signed by me this 23d day of August, 1884.

EMILE DE SOLMINIHAC.

Witnesses:

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