

No. 691,075.

Patented Jan. 14, 1902.

A. RIGAUD.
APPARATUS FOR COLORING HIDES.

(Application filed Oct. 25, 1900.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 1.

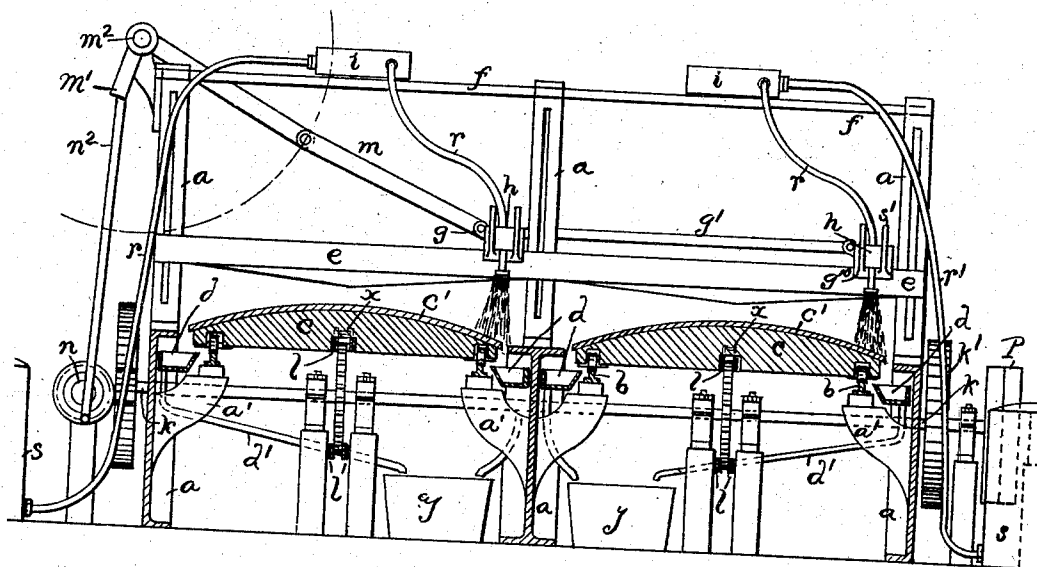
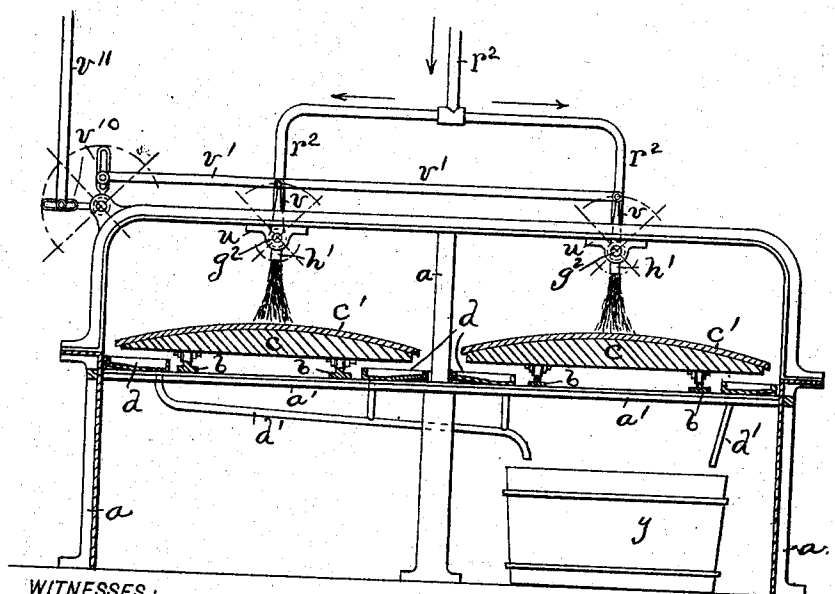


FIG 2



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2 Sheets—Sheet 2.

FIG. 3.

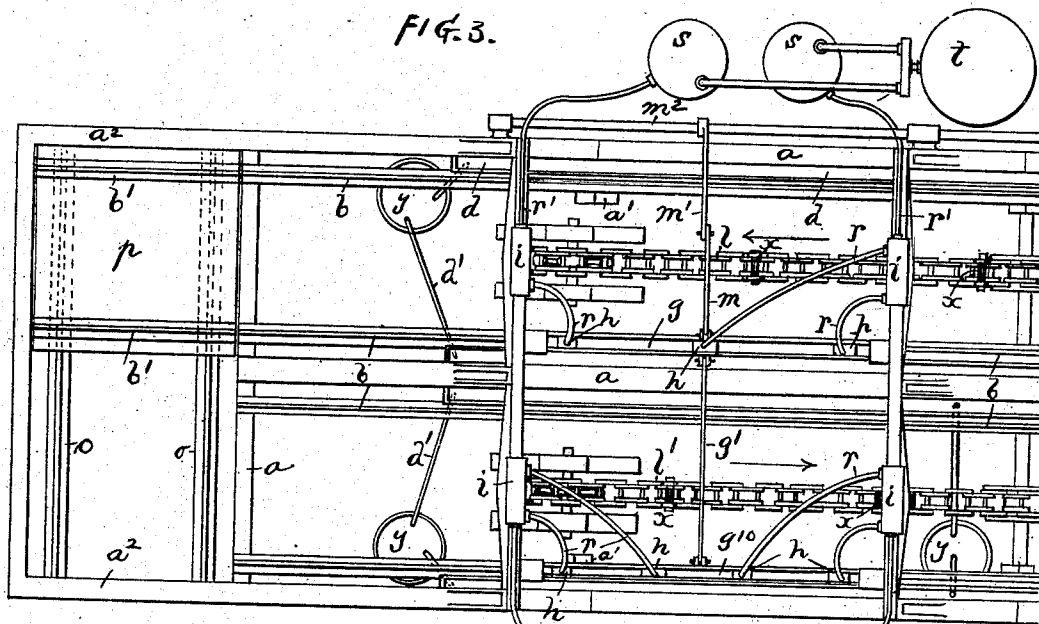
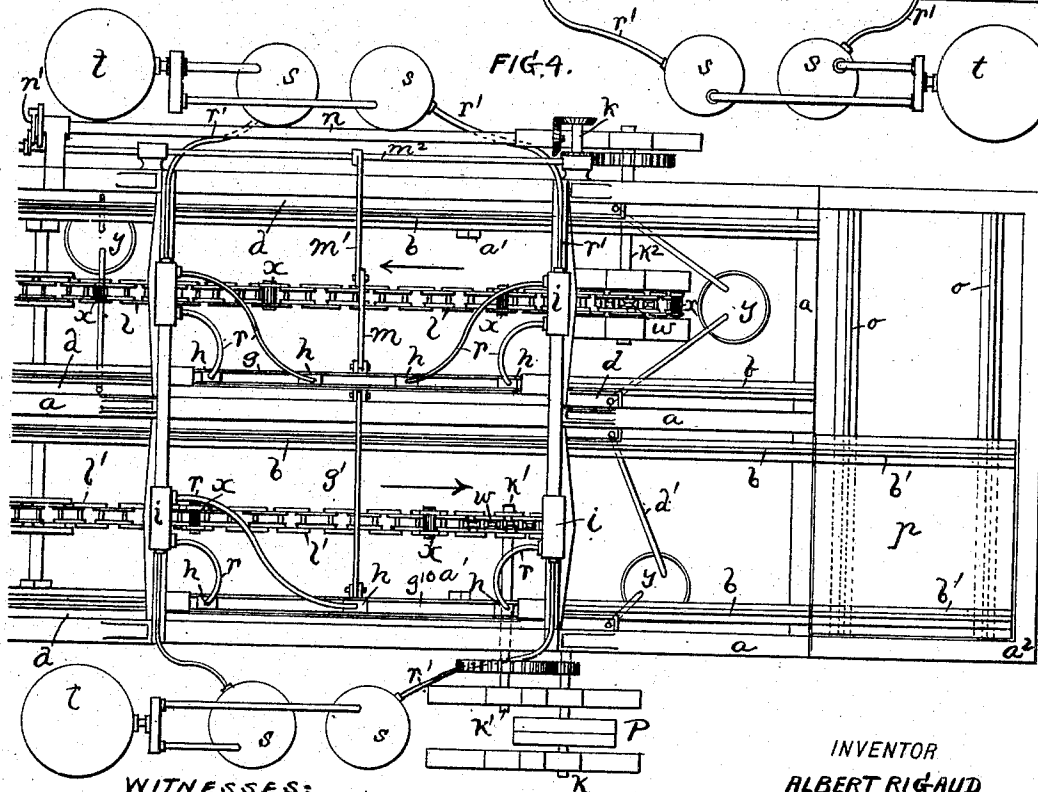


FIG. 4.



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR COLORING HIDES.

SPECIFICATION forming part of Letters Patent No. 691,075, dated January 14, 1902.

Application filed October 25, 1900. Serial No. 34,393. (No model.)

To all whom it may concern:

Be it known that I, ALBERT RIGAUD, a citizen of the Republic of France, and a resident of St. Junien, (Haute-Vienne,) France, have invented Improvements in Machines for Mechanically Dyeing Hides, Leather, and other Like Articles, of which the following is a specification.

This invention relates to a machine for dyeing leather, hides, and like materials, and has for its objects to prevent the waste of the mordant, dyestuff, or fixing materials used for this purpose, to effect a more regular application of the dyeing materials to the hides, to insure good dyeing results without depending upon skilled labor, and also to provide means for successively applying mordant, dyestuff, and fixing material to the continuously-moving hides.

In the accompanying drawings, Figure 1 is an end view, partly in section, of the apparatus. Fig. 2 is a view showing a modified spraying device. Fig. 3 is a plan view of half the apparatus of Fig. 1, and Fig. 4 is a similar view of the remaining half.

a is the main frame of the machine.

a' represents supporting pieces or arms for the rails *b*, on which the hide-supporting carriage *c* is adapted to run. The top *c'* of the carriage is preferably of polished glass, enameled sheet metal, ebonite, or the like.

To complete the dyeing in one travel of the platform without an unduly long frame and to have the platforms near the starting-point at the completion of the operation, I make my frame half the necessary length, but with two sets of rails, and cause the platform to travel first up one side and then onto a transfer-table *p*, having rails *b'* coinciding with the rails *b* of the frame and itself adapted to be moved at right angles to the frame by means of suitable wheels secured thereto and adapted to travel on the rails *o*. This table *p* in its second position will have its rails in line with the rails of a return side of the frame, whereby it will become possible to return the carriage to the starting-point upon the completion of the operation hereinafter described. The starting end can with advantage have a similar transfer-table and rails. To the frame and beneath the outer edges of the platform

I secure gutters *d*, having drain-pipes *d'*, leading to any suitable receptacle *y*.

The platforms are advanced along the rails *b* by the following means: A driving-pulley *P* is mounted on a shaft *k*, extending from one side of the apparatus to the other. Counter-shafts *k² k'*, suitably geared to the driving-shaft, but revolving oppositely to each other, have mounted thereon chain-wheels *w*, by which endless chains *l l'* are adapted to be operated in the directions of the arrows in Figs. 3 and 4. At suitable intervals along these chains there are secured projections *x*, adapted to project a distance above the chain and to come into contact with such platforms *c* as may be at that time on the rails, and thus cause them to be traversed until they have been passed out of the path of these projections *x*, as will be readily understood.

To the frame *a*, above the path of travel of the platforms *c*, I secure transverse beams *e*. These beams act as guides for holders *g*, adapted to carry the tanks *h* and to be reciprocated by the following mechanisms: A shaft *n*, at right angles to the shaft *k* and geared thereto by bevel-gears, is, by a crank *n'* and connecting-rod *n²*, adapted to operate a bell-crank lever *m'*, mounted in a suitable bearing at *m²*, and to reciprocate the same upon the revolution of the shaft *n*. To the other end of the bell-crank lever *m'* is pivoted a rod *m*, the other end of which is pivotally connected to the holder *g*. In my two-track apparatus a second holder *g¹⁰* over the return-track is fastened to the first holder by a horizontal rod *g'*. By this means a continuous to-and-fro movement is imparted to the holders. I may have any number of such holders. In the apparatus of Figs. 3 and 4 I have shown four sets of two operated by individual bell-cranks and connecting-rods. The holders *g* are adapted to accommodate a number of tanks *h*, each of which may be simply a rectangular box having an inlet and piping *r* and an outlet provided with a sprinkler *S*. Any number of these tanks may be provided to a holder, and they may be adjustable in such holder in the direction of its length sliding between the side pieces *s'*.

In Fig. 2 I have shown a modified form of sprinkling device. It consists of a feed-pipe

r^2 , fed by gravity or otherwise and leading to a swiveling sprinkler h' , suitably mounted on the frame through a support u and a hollow shaft g^2 . A lever v is secured to the shaft, and by means of a connecting-rod v' and a bell-crank lever v^{10} and rod v^{11} the sprinkler h' can be oscillated to direct its spray first to one side of the platform and then to the other.

In the arrangement shown in Figs. 1 and 3 I prefer to secure to the top of the frame distributing-tanks i , to which the pipings r are secured. To these distributing-tanks I lead a pipe r' from the bottom of separate containers s with size, dye, or the like contained therein. A tank t is provided with air under pressure, which is conveyed to the top of the containers, and thereby forces the liquid out of them to the distributing-tanks i .

When treating the hides with different liquids, as in carrying out different steps of a process, each gutter, with its corresponding tanks, piping, and container, may be separate from the others, thereby insuring a separation of the various elements. One air-tank only, however, is required.

In operation the hides are stretched on the platform, the chains are set in motion, and the platform is pushed into position so as to be engaged by the projections x of the chain, by which it is set in motion in the direction of the arrow on the upper half of Fig. 4. Liquid in the first container s is forced to the distributing-tank i and the first two tanks h , while liquid from the second container s is forced to the third and fourth receptacles in the reciprocating holder g , thus spraying the hides on the platform as they pass beneath. This operation is repeated at the other end of the machine, Fig. 3, with duplicate apparatus, forcing another liquid for a second step of a leather-treating process, for instance. The platform is then advanced to the transfer-table and returns through a similar gauntlet of sprayers adapted to spray a third or even a fourth liquid of a process for treating leather. The excess of each different liquor

is taken from the gutters to separate receptacles y and returned for reuse.

I claim as my invention—

1. A machine for dyeing hides and the like, comprising a frame, a movable platform thereon, spraying devices above the platform but not in contact therewith and means for causing the spray to travel from side to side of the movable platform, substantially as described.

2. A machine for dyeing hides or the like, comprising a frame, a movable platform therefor, to which the hides are secured, spraying devices above but not in contact with the hides and means for reciprocating said spraying devices from side to side of the platform, substantially as described.

3. A machine for dyeing hides, or the like, comprising a frame, a movable platform therefor, a holder g above the platform, means to reciprocate it from side to side above the platform, and spraying devices in the holder adjustable therein, substantially as described.

4. A machine for dyeing hides or the like, comprising a frame, and movable platforms therefor, in combination with sets of spraying devices over the platforms, a separate container for each set of spraying devices, separate gutters and tanks therefor under each set whereby on placing different liquids in the separate containers and traversing the platforms the successive steps of a process may be carried out as described.

5. A machine for dyeing hides, or the like, comprising a frame, a longitudinally-movable platform thereon, said platform being higher above its center line than at the sides, and gutters secured to the frame beneath the sides in combination with spraying means above the platform, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALBERT RIGAUD.

Witnesses:

GABRIEL GROSDEVCOU,
JOSEPH ARTHUR ALAUDRY.