

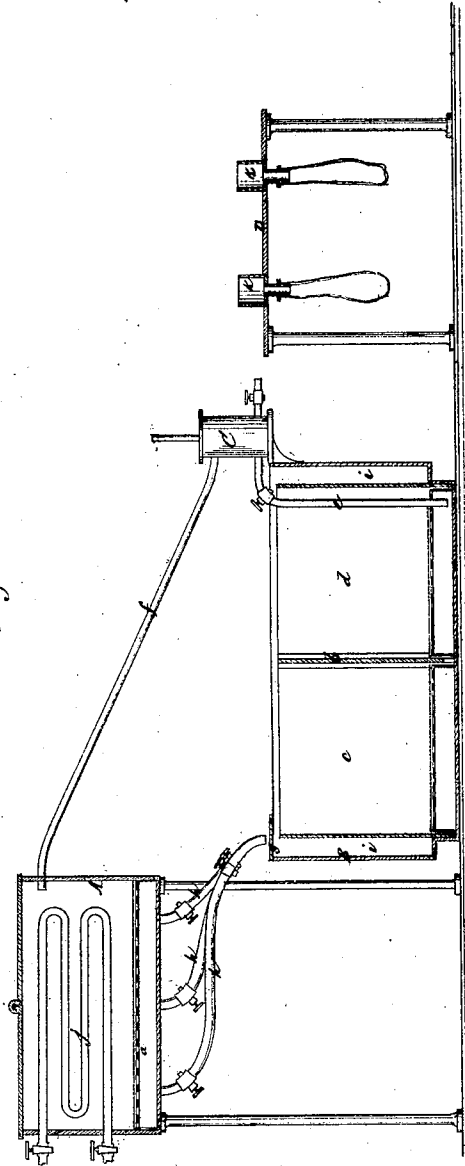
L. F. Robertson,

Tanning Appar.

No. 101661.

Patented Apr. 5. 1870.

Fig. 1.



Witnesses.  
 E. F. Kautschke  
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Inventor:  
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2. Sheets, Sheet 2.

Tanning Appar.

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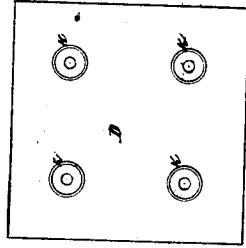
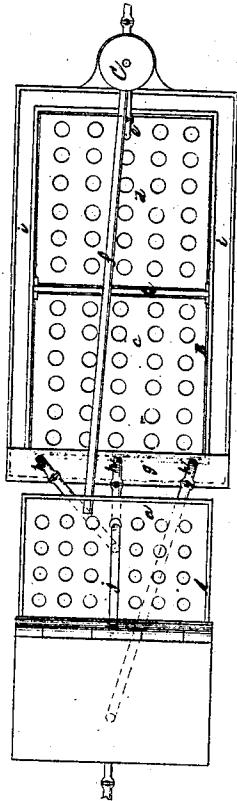


Fig. 2



Witnesses:  
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# United States Patent Office.

LOUIS T. ROBERTSON, OF NEW YORK, N. Y.

Letters Patent No. 101,661, dated April 5, 1870.

## IMPROVEMENT IN TANNING BY INFILTRATION.

The Schedule referred to in these Letters Patent and making part of the same

### To all whom it may concern:

Be it known that I, LOUIS T. ROBERTSON, of the city, county, and State of New York, have invented a new and Improved Tanning Apparatus; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a longitudinal vertical section of this invention.

Figure 2 is a plan or top view of the same.

Similar letters indicate corresponding parts.

This invention relates to a tanning apparatus, which consists essentially of a reservoir containing the tanning-liquor and a tanning-vat situated at a level below the reservoir, being provided with a series of flexible discharge-pipes, through which the tanning-liquor is let down into the hides or skins to be tanned, said hides or skins being made up in the form of bags capable of holding the tanning-liquor.

The tanning-vat is separated in two compartments, and the hides or skins are taken successively from one compartment, placed on a platform at the end of the vat, filled with tanning-liquor, tied up and thrown into the other compartment, where they are left until the liquor gradually discharges through their pores, the liquor being returned to the reservoir by means of the pump.

After the hides or skins are freed from the liquor, they are again charged with fresh liquor from the reservoir and thrown back into the first compartment of the vat, and this operation is repeated several times, until the tanning operation is completed. Both the reservoir and the vat are provided with false perforated bottoms covered with hair-cloth or other straining material, whereby the liquor in its passage through the apparatus is strained twice, and all the impurities which the same may take up while acting on the hides or skins are retained by the strainers, so that the liquor is not liable to spoil. The reservoir is provided with a coil through which cold water or cold air can be passed for the purpose of keeping the liquor cool and sweet without reducing its strength, and the tanning-vat is surrounded by a cold-water jacket for the same purpose.

For the purpose of introducing into the hides or skins fresh tanning material, so as to increase the strength of the liquor, a table is provided, in the top of which is secured a series of funnels, so that a number of hides or skins (previously formed into bags) can be suspended from said funnels, and that the requisite amount of fresh tanning material can be introduced into each hide or skin previous to its being brought into the vat, where it is filled with liquor from the reservoir, as previously described.

### In the drawing—

The letter A designates a reservoir, which is placed at a certain elevation above the tanning-vat B, and provided with a false perforated bottom, *a*, covered with hair-cloth or other straining material capable of retaining the impurities which may become mixed with the tanning-liquor.

The tanning-vat B is divided by a vertical partition, *b*, in two compartments *c* *d*, each of which is provided with a perforated false bottom, covered with some straining material capable of retaining the impurities of the tanning-liquor, said false bottoms being so arranged that they can be removed for the purpose of cleaning.

The spaces below the false bottoms communicate, by means of a pipe, *e*, with a pump, B, from which extends a pipe, *f*, to the reservoir A, so that the liquor which collects in the spaces below the false bottoms of the vat can be pumped back into the reservoir. By these means the liquor is caused to discharge rapidly from the hides or skins, the hides or skins remain dry, and the same liquor is used over and over again, so that a great saving in tanning material is effected.

The hides or skins to be tanned are made up into bags capable of retaining the tanning-liquor, and one of these bags after the other, is taken up by the workman and placed on a platform, *g*, which rests on the edges of the vat, and which is intended to be loose, so that it can be conveniently shifted from one end of the vat to the other. While resting on the platform the hide is filled with tanning-liquor by means of a flexible pipe, *h*, which communicates with the space below the false bottom of the reservoir, and which is provided with suitable stop-cocks, so that the flow of the liquor can be regulated at pleasure. In practice the reservoir will be provided with two or more such flexible pipes, so that two or more hides or skins can be filled at the same time, the reservoir being situated at such an elevation that the hides or skins fill rapidly with liquor while they rest on the platform *g*, so that the workman is not compelled to support the entire weight of each hide or skin and of the liquor contained therein while it is being filled.

Each hide or skin, after having thus been filled, is tied up and thrown in the second compartment *d* of the tanning-vat, and, as the filled hides or skins accumulate in this compartment, the liquor is gradually forced out through the pores of the hides or skins, and caused to accumulate in the space below the perforated false bottom of the compartment *d*, whence it is pumped up into the reservoir.

After the hides or skins are completely freed from the liquor, (which will be the case in from two to four hours,) the platform *g* is placed on the end of the compartment *d*, the hides or skins are again filled with liquor and thrown into the compartment C and left

there until the liquor has discharged through their pores. The same operation of filling the hides or skins is repeated.

In practice the pump C communicates with two or more tanning-vats, so that, while the liquor discharges through the hides or skins in one vat, the workmen can go on and fill the hides or skins in the next vat, and thus no time is lost.

The tanning-vat B is surrounded by a jacket, *i*, through which a current of cold water or cold air is passed, so that the tanning liquor is kept cool and sweet without decreasing its strength, which can not be accomplished when the liquor is cooled by junks of ice thrown into it, and, furthermore, the cost of the ice can be saved if cold water or cold air is on hand. By these means the liquor, which in summer time is liable to become sour and useless, is kept sweet and no loss of liquor is incurred, and, furthermore, the danger of spoiling the leather by sour liquor is avoided.

The reservoir A may be surrounded by a similar jacket, or the liquor in the reservoir may be cooled by means of a coil, *j*, through which cold water or cold air is passed.

When the liquor in the reservoir is weak, a suitable quantity of fresh tanning material (such as sumac or bark) may be introduced into each hide or skin. This operation is facilitated by means of a table, D, in the top of which is secured a series of funnels, K, so that the hides or skins can be conveniently suspended from their spouts, and that said hides and skins can be readily filled with the requisite quantity of tanning material. To facilitate the operation of suspend-

ing the hides from the funnels, the spouts may be provided with suitable hooks to support said hides or skins.

After the hides or skins have been thus supplied with fresh tanning material, they are introduced into the vat and filled with liquor, as above described.

What I claim as new, and desire to secure by Letters Patent, is—

1. The reservoir A, placed at an elevation above the tanning-vat B, and provided with flexible pipes, in combination with a movable platform resting on the tanning-vat, and with a tanning-vat divided in two compartments, substantially in the manner herein shown and described.

2. The combination of the tanning-vat B with its false and perforated bottom, reservoir A, and pump C, substantially as described.

3. The false perforated bottoms covered with hair-cloth or other straining material in the reservoir A and vat B, in combination with a pump, C, substantially as described.

4. The water-jacket *i* surrounding the tanning-vat B or the reservoir A, either or both, substantially as and for the purpose set forth.

5. The coil *j* in the reservoir containing the tanning liquor, substantially as and for the purpose described.

This specification signed by me this 11th day of March, 1870.

LOUIS T. ROBERTSON.

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.