No. 673,082. Patented Apr. 30, 1901.

J. F. JONES & E. S. CLEGG.

TREATMENT OF HIDES OR SKINS.

(Application filed Dec. 5, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

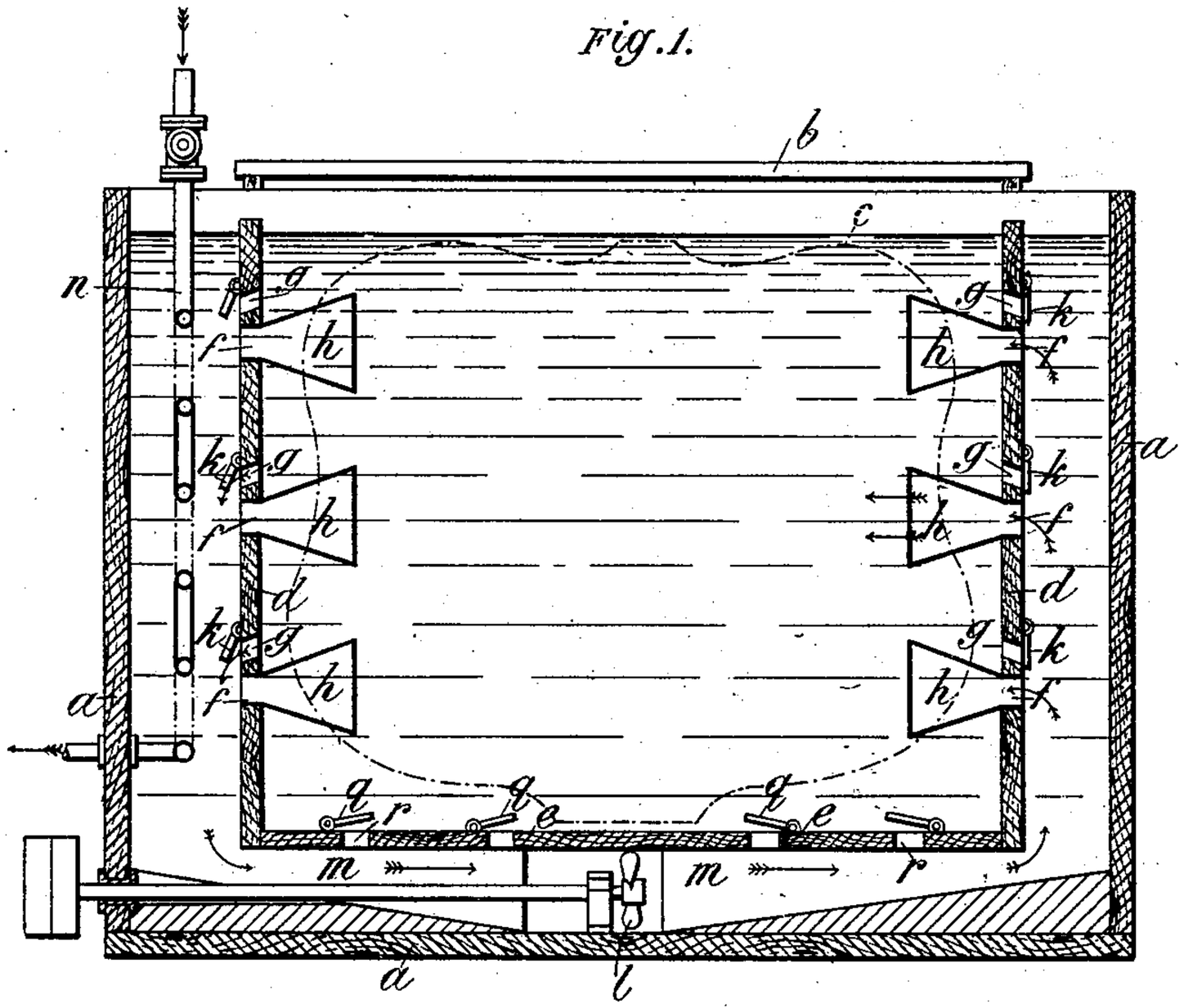
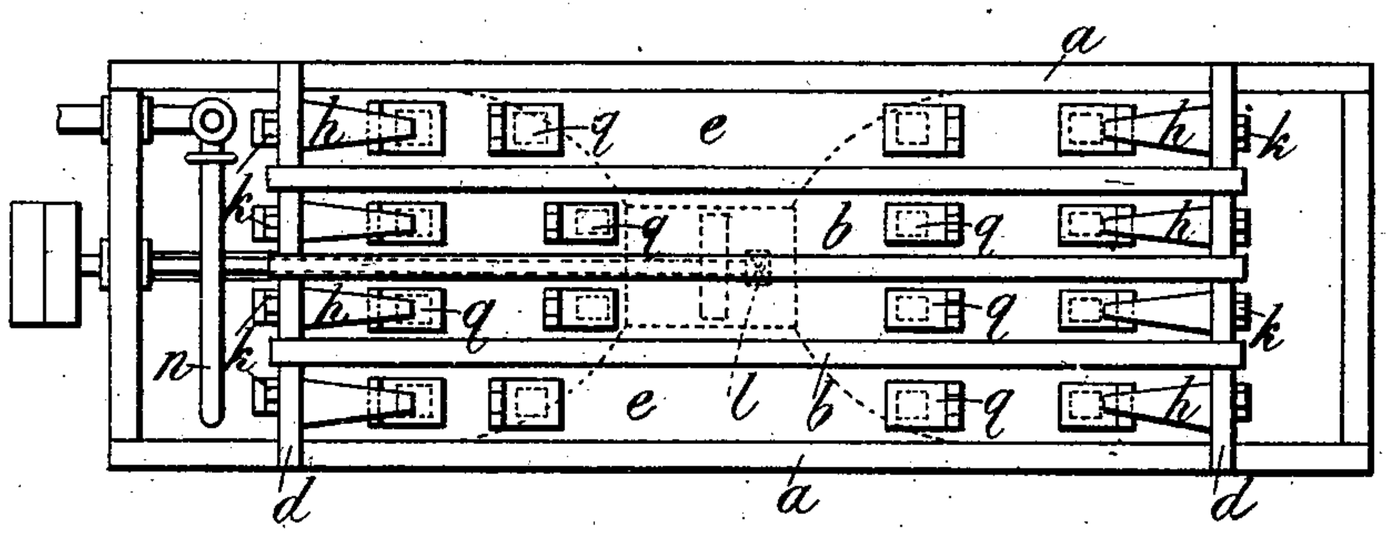


Fig. 2.



Witnesses.
Jno. T. Cross
J. Henderson.

Inventors.
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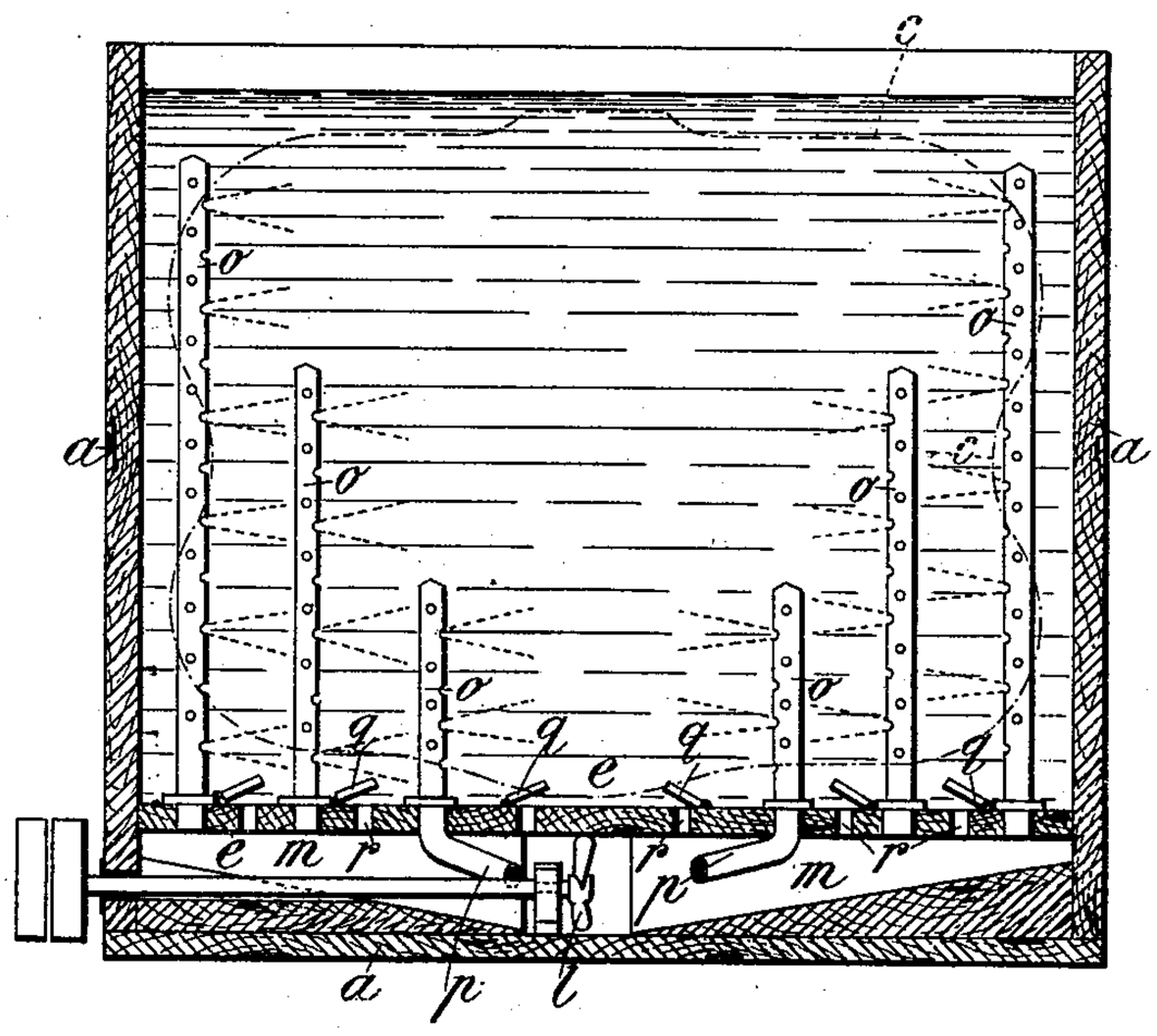
Fig. 3.



Witnesses.
J. Henderson.
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Inventors,
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by Howard Ellis,
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UNITED STATES PATENT OFFICE.

JOHN FREDERICK JONES, OF WANDSWORTH, AND EDWARD SEYMOUR CLEGG, OF SOUTH KENSINGTON, ENGLAND.

TREATMENT OF HIDES OR SKINS.

SPECIFICATION forming part of Letters Patent No. 673,082, dated April 30, 1901.

Application filed December 5, 1900. Serial No. 38,732. (No specimens.)

To all whom it may concern:

Be it known that we, JOHN FREDERICK JONES, engineer, residing at 59 Haldon road, Wandsworth, in the county of Surrey, and EDWARD SEYMOUR CLEGG, tanner, residing at 35 Drayton Gardens South, South Kensington, in the county of Middlesex, England, subjects of the Queen of Great Britain, have invented certain new and useful Improvements in the Treatment of Hides or Skins, of which the following is a specification.

This invention relates to a method of treating hides and skins.

The chief object of our invention is to treat a large number of skins by a thorough and efficient method and in much less time than has heretofore been required, while the liability of the skins coming in contact with each other is avoided.

According to our invention we suspend the hides or skins in the liquid with which they are to be treated and project said liquid against the adjacent surfaces of contiguous hides, so that the liquid flows in a constant stream over the whole surfaces of the hides under treatment.

In order that our invention may be clearly understood and readily carried into effect, we will proceed to describe the same more fully, with reference to the accompanying drawings. It is to be understood that these drawings are, by way of example, only illustrating means whereby our method may be carried into practice.

Figure 1 is a sectional elevation, and Fig. 2 a plan, of the apparatus. Fig. 3 is a view similar to Fig. 1, showing a modified form of the apparatus.

Referring first to Figs. 1 and 2, *a* is a pit or tank constructed of suitable material. Near each end of the pit we arrange a partition *d*, inclosing, with the false bottom *e*, a space within which the hides *c* are placed. The hides are suspended from a frame *b*, disposed over the pit. In the said partitions we provide two sets of apertures *f* and *g*. The apertures *f* are provided with funnels *h*, having elongated flattened mouths, tubes, or other conduits for spreading the liquid forced therethrough. The apertures *g* are provided with valves by which the passage of liquid from the outside to the inside of the partitions through such apertures may be prevented. In the space between the false bottom *e* and the actual bottom of the pit we form a channel *m*, in which we arrange a screw-propeller *l*, or a pump, paddle, or other means for compelling the liquid to pass through said channel in one or the other direction. It will be observed that this channel is reduced in depth while being increased in width (as indicated by the dotted lines in Fig. 2) toward its ends, so as to distribute the liquid uniformly along the width of the channels or passages formed between the partitions *d* and the ends of the pit. Apertures *r* are formed in the false bottom *e*, affording communication between the channel *m* and the receptacle for the hides. These apertures are provided with valves *q*. *n* is a heating or cooling coil for maintaining the liquid at any required temperature. The pit is adapted to be filled with liquid up to such a height as to completely submerge the hides suspended therein. The actuation of the propeller will then produce a circulation of the liquid, causing it to pass through the channel *m*—say from left to right—as indicated by the arrows in Fig. 1. The valves *k* will automatically close over the apertures *g* in the partition at the right-hand end of the pit and the liquid will be forced through the aperture *f* and funnels *h* of such partition. By this means the liquid is projected between the hides in such manner as not only to be distributed over the whole surface thereof, but also to maintain such hides in position and prevent their coming together or adhering at portions of their surfaces, and thereby hindering the action of the liquid upon such portions. The liquid will also pass up through the apertures *r*, and thus serve to prevent the accumulation of sediment or layers of the liquid having increased density at the bottom of the receptacle. The liquid will not readily pass through the funnels in the opposite direction, and consequently the valves over the apertures *g* in the partition at the left-hand end of the tank are automatically opened by the liquid, as shown in Fig. 1, the liquid flowing through said apertures and being again drawn through the channel *m* by the propeller *l*.

In the modification shown in Fig. 3 the partitions *d* and their apertures are dispensed with,

and instead thereof we employ vertically-arranged tubes or headers *o*, forming passages for the liquid, which tubes may conveniently be of circular or oval shape in cross-section. These tubes are closed or partially closed at the top and are perforated at the sides or surfaces adjacent to the hides, some or all of the apertures being preferably so arranged as to direct the liquid delivered therefrom toward the center of the pit. The apertures are also arranged to spread the liquid, so as to direct it to all parts of the hides. In order that the shortest of the tubes *o* that are toward the side of the tank may receive a stream of liquid equal to that received by the other tubes, we may provide the lower end of such tubes with an extension *p*, bent and directed toward the cylindrical part of the channel in which the propeller *l* works. It will be readily understood that when the propeller is actuated the liquid will be caused to flow past the same and rise in the tubes *o* at one end or side of the pit, from which tubes it will be projected through the apertures therein onto the surface of the hides. After traversing such surfaces the liquid will enter the tubes *o* at the opposite end of the pit and be again drawn through the channel *m* by the propeller. It will also be seen that in the apparatus shown the direction of the circulation of the liquid can be reversed by merely reversing the direction of rotation of the propeller.

It is obvious that instead of causing the liquid to flow over the surfaces of the hides in the horizontal direction we may so arrange the apparatus as to cause the liquid to flow vertically or at any inclination over such surfaces, either upward or downward. The circulation may sometimes be effected partly by gravity, there being a reservoir above the pit to which liquid is pumped from a channel or hollow at the bottom of the pit, the said reservoir communicating with spreading channels, troughs, or funnels arranged above at the side or end of or between the hides.

We are aware that in some methods of treating hides and skins the tanning or other liquid is agitated to expedite the process by bringing fresh portions of the liquid into contact with the surface of the hides. Such agitation, however, is not, or is only partially, effective, because the liquid is only distributed and is not circulated and distributed through conduits, as by our improved method. Moreover, such methods possess the great disadvantage that they displace the hides and are liable to bring them into contact with each other, so that they adhere over portions of their surfaces and render the treatment defective. Our method obviates this disadvantage.

What we desire to claim and secure by Letters Patent is—

1. The method of treating hides and skins consisting of suspending the same in the liquid with which they are to be treated, dividing the said liquid into a number of currents, directing the said currents between each pair of hides so that it will be projected in equal and even manner against the entire surface of the adjacent sides of said hides, and agitating said liquor so as to keep the currents in continuous circulation, for the purpose described.

2. The method of treating hides and skins consisting in suspending the same in the liquid with which they are to be treated, agitating said liquid in such a manner as to cause a continuous circulation, dividing the said liquid into a number of currents, directing the said currents between each pair of suspended hides so that it will flow in an even and equal stream against the whole surfaces of the adjacent sides of said hides, and directing additional currents transversely through the liquid for preventing an accumulation of sediment of increased density in the lower part of the receptacle.

3. The method of treating hides and skins consisting of suspending the same in the liquid with which they are to be treated, causing the liquid to keep up a continuous circulation, dividing the said liquid into a number of currents, directing a series of the said currents between each pair of suspended hides so that the liquid will flow in an equal and even stream against the whole surface of the adjacent sides of said hides, and then reversing the course of said currents so that they will flow in an opposite direction, thus insuring a thorough immersion and equal tanning of every part.

4. The method of treating hides and skins consisting of suspending them in the tanning liquid, agitating the said liquid so as to cause a continuous circulation in one direction, dividing the said liquid into a series of currents, directing the said currents between each pair of suspended hides in such a manner that the liquid will flow against the whole surface of said hides with equal pressure on both sides of the same, directing additional currents through the liquid transversely to the first named for maintaining an equal density to the tanning liquid, and thereafter reversing the course of the currents so that they will flow against the entire surfaces of the hides in a reverse direction, for the purpose described.

In testimony whereof we have hereunto set our hands, in presence of two subscribing witnesses, this 16th day of November, 1900.

JOHN FREDERICK JONES.
EDWARD SEYMOUR CLEGG.

Witnesses to the signature of the said John Frederick Jones:
W. MAY,
W. H. LINNELL.
Witnesses to the signature of the said Edward Seymour Clegg:
WM. J. DOW,
THOS. S. WARD.