2 Sheets—Sheet 1.

I. WELLS.

Drench-Wheel for Hides and Skins.

No. 200,807. Patented Feb. 26, 1878.

Fig. 1.

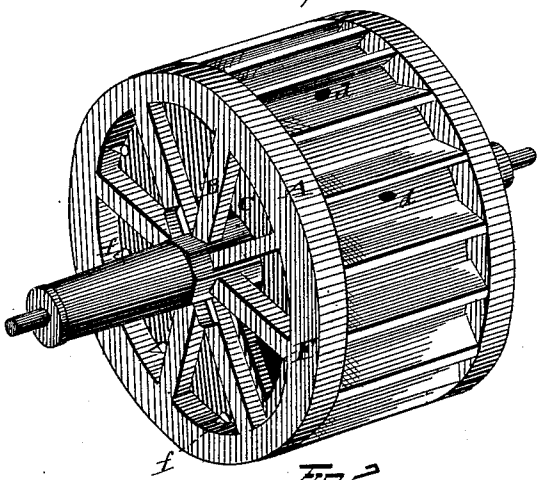
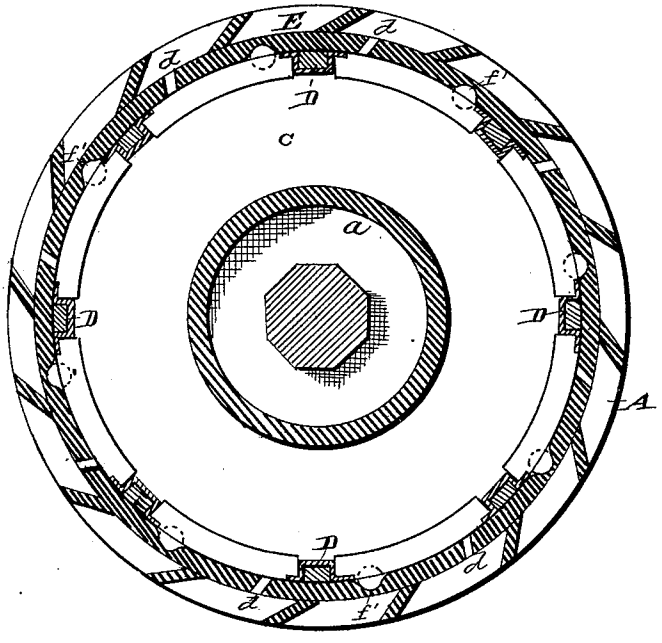


Fig. 2.



WITNESSES

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INVENTOR

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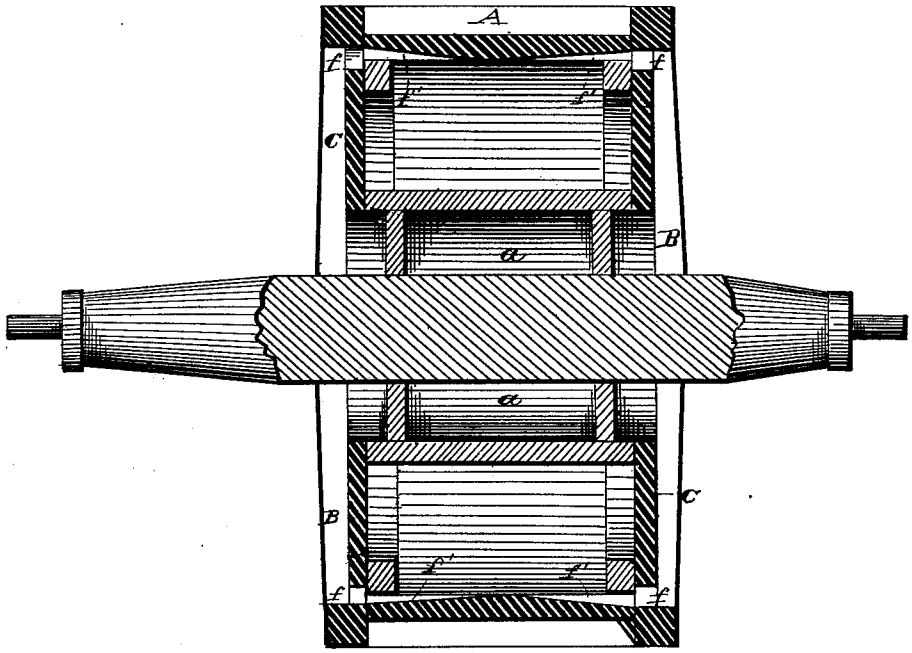
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Fig. 3.



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UNITED STATES PATENT OFFICE.

ISAAC WELLS, OF EAST HAMPTON, CONNECTICUT, ASSIGNOR OF ONE-HALF HIS RIGHT TO JAMES F. POST, OF WILMINGTON, NORTH CAROLINA, AND DAVID D. BARBER, OF SUMTER COUNTY, SOUTH CAROLINA.

IMPROVEMENT IN DRENCH-WHEELS FOR HIDES AND SKINS.

Specification forming part of Letters Patent No. **200,807**, dated February 26, 1878; application filed February 1, 1878.

To all whom it may concern:

Be it known that I, ISAAC WELLS, of East Hampton, in the county of Middlesex and State of Connecticut, have invented certain new and useful Improvements in Drench-Wheels; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in that class of wheels called "drench-wheels" by tanners, and which are used to extract the lime from hides after the latter are unhaired.

In the drawings, Figure 1 is a view, in perspective, of a wheel made according to my invention. Fig. 2 is a vertical sectional side view, and Fig. 3 is a vertical sectional view in a plane passing through the axle.

The wheel A is suitably mounted upon a supporting-shaft, made with the drum *a* formed thereon within the wheel, and having its radial side arms B provided with close-bodied siding C, secured to their inner sides. This side body-framing of the wheels serves to give a plane or smooth surface to the two vertical sides of the wheel, and thus provides surfaces against which the hides may come in rolling contact without injury therefrom. If these radial supporting-arms were exposed on the interior sides of the wheel, the revolution of the latter would tend to scratch or injure the hides, and especially so if any of them might be presented with their full face against the wheel's side. In addition to this, such interior lateral projections of the arms would serve to prevent a free and unimpeded action of the hides in their rolling process, and would not admit the entire mass or collection of them to be moved together evenly and with equal progress.

In order to prevent the hides from slipping, the interior periphery of the wheel is provided with transverse copper-covered cleats D, which engage with the collective mass of the hides, and cause the same to be suitably revolved with the wheel.

I am aware that it is not, broadly, new with me to use transverse cleats for this purpose; but the same, as formerly made, have been subjected to the disadvantage of rapidly wearing away in the use of the wheel; and as they should be always of approximately the same depth, their renewal, in view of the peculiar construction of the wheel, is objectionable. The action of the water upon them, in connection with the heavy wear to which they are subjected, causes a wooden cleat to become spongy, splintered, and to present a rough or friction surface.

In order to control the quantity of water with which the hides are treated, I provide holes or openings *d* in the periphery E of the wheel at intervals of every two or three buckets, or even at intervals of a greater number of buckets. I prefer these entrance-openings for the inflow of water to be made in zigzag line about the periphery of the wheel, since, by thus making them out of line with one another, both sides of a rolling hide are sprinkled. To provide for the escape of the water thus introduced into the wheel, and to permit it to carry off, in solution, the lime from the hides, the discharge-openings *f* are made, one on each side of the wheel, adjacent to the respective copper-covered cleats. These discharges are formed just in advance of each of the said cleats, in the line of direction of the wheel's revolution, and each opposite pair of them connect with a gutter-way or channel, *f'*, which latter extends transversely across the inner periphery of the wheel, and is formed with a double incline—that is, from the center of each of these channels an incline is formed, leading to its respective side discharge, and by means of the same the wash-solution may be passed off and out through the sides of the wheel.

A further advantage which arises from having these discharge-openings in the side is, that their discharge can be readily observed, as the slow revolution of the wheel brings each of them, in turn, into the lowest horizontal plane of the wheel; and instead of the wash-water passing downward through openings which might be made in the buckets or periphery of the wheel, in which case it could not be well observed, it is caused to pass out of the

sides, and thus the state of treatment of the hides can be readily known by the color and condition of this water-discharge.

A suitable opening, F, is formed in the side of the wheels, to admit of the introduction and withdrawal of the hides.

I am aware that it is not new with me to construct a drench-wheel the inner vertical sides of which are plane surfaces; and I am also aware of the construction of the wheel shown in Letters Patent granted to Josiah Bonney on the 24th day of May, 1834.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A drench-wheel having inner vertical plane sides, and copper-covered transverse cleats formed on its interior periphery, the same being provided with the described water inlet and discharge openings, the latter connecting with channel-ways formed on the interior of the periphery adjacent to each of the transverse cleats, substantially as set forth.

2. A drench-wheel consisting in the combination, with siding C formed on the interior side of supporting-arms B, and provided with discharge-openings *f*, of the periphery E, formed with the double inclined channels *f'* on its inner side, and provided with the water-inlet openings *d*, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 31st day of January, 1878.

ISAAC WELLS.

Witnesses:
A. W. BRIGHT,
THOS. B. HALL.