No. 40,079. PATENTED SEPT. 22, 1863.

G. HUTTELMAIER.

MACHINE FOR OILING TANNERS' LEATHER.

Fig. 1.

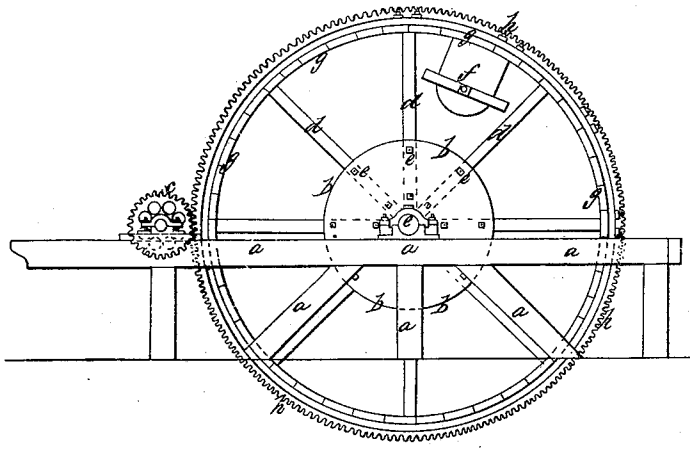


Fig. 2.

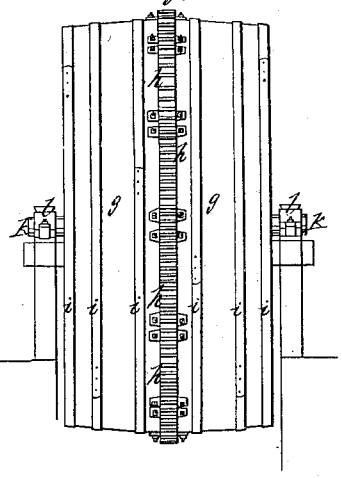


Fig. 3.

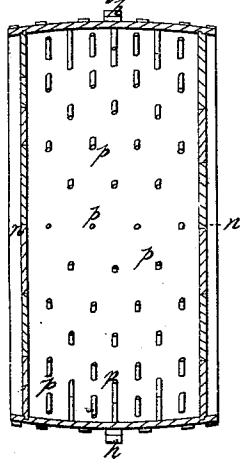
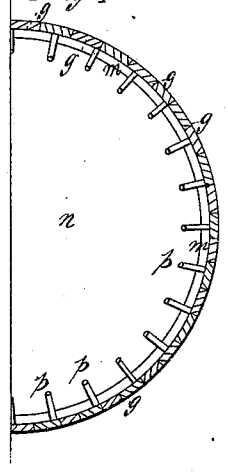


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE HUTTELMAIER, OF ALLEGHENY, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND HENRY P. MUELLER.

IMPROVED MACHINE FOR OILING TANNERS' LEATHER.

Specification forming part of Letters Patent No. **40,079**, dated September 22, 1863.

To all whom it may concern:

Be it known that I, GEORGE HUTTELMAIER, of the city of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in the Process of Greasing Tanned Hides; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the annexed drawings, forming part of this specification, representing the apparatus which I employ in the practical application of my invention.

My improvement is designed to facilitate the operation of greasing hides after they are tanned, by securing the impregnation of the leather with tallow more thoroughly and rapidly than by other processes heretofore known or used.

In the process of greasing tanned leather it is required that the tallow should penetrate it thoroughly, and in order to effect this I find it very desirable to expose the leather to a moist heat, sufficient to open the pores of the skin, and keep the tallow melted during the whole process, and at the same time to apply friction to the leather so as to rub the grease well in. Where this operation is carried on by hand, as is usual, it is obviously impossible to secure all these conditions, as the heat required is too great, and even if the tallow be melted and sufficiently heated when first applied it soon becomes cool when exposed to the external air.

My invention then consists in applying the tallow to tanned hides in a suitable close vessel, which is previously heated by steam, and which will retain sufficient heat during the continuation of the process, and simultaneously applying to the leather a constant friction to rub in the melted grease.

To effect this object I make use of an apparatus of my invention, which I will proceed to describe.

In the drawings accompanying this specification, Figure 1 is an end view or elevation of my apparatus. Fig. 2 is a side view. Fig. 3 is a section through the center of my apparatus in the plane of its axis, showing the construction of the interior. Fig. 4 is a transverse section of one-half of my apparatus at right angles to its axis.

In the several figures like letters of reference designate similar parts.

My apparatus consists of a large cylindrical wooden vessel, which should not be less than ten feet in diameter and of any convenient length, although its dimensions may be varied to suit any desired capacity. This vessel may be conveniently made like a barrel, the circumference being constructed of wooden staves *g g*, about one and a half inches in thickness. These staves are bound together by strong iron bands or hoops, *i i*, surrounding the vessel at suitable distances apart. The heads or end pieces, *n*, of the vessel are also made of wood, and are supported by a circular iron plate, *b*, in the center of each end piece, to which are fastened arms *d d*, which radiate from the central plates, *b*. The arms are fastened to the central iron plate by screws *e e*, and the end pieces are likewise bolted or otherwise fastened to the arms *d d*. In one of the end pieces is a door, *f*, through which the tallow and leather are inserted in the cylinder. From the center of each of the circular iron plates *b* projects a journal, *k*, on which the cylinder revolves, in suitable bearings, *l*, which are supported by the frame-work *a a*, sustaining the entire cylinder. Around the outside of the cylinder, at any convenient point, is a band or hoop, *h*, furnished with cog-teeth which gear into a pinion, *c*, to which motion is communicated from the steam-engine or other prime motor. Inside of the cylinder the staves composing its periphery are studded with a number of pins, *p p*, projecting therefrom, and pointing toward the center of the cylinder. These pins should be about two inches in length and may be fastened to circular ribs *m*, attached to the staves *g g*.

The apparatus thus described may be varied in size, shape, or construction, so that the designed effect is produced, as hereinafter set forth.

Before inserting the tallow and tanned hides into the cylinder, it is previously heated by injecting steam for a sufficient length of time to make the staves and ends of the cylinder so hot as to be perceptibly felt from the outside, and so as to secure a temperature in the cylinder, after the steam is allowed to escape, of about 180° Fahrenheit. The injection of steam is then discontinued and any condensed water is allowed to escape at the door *f* or other aperture for that purpose. The tallow,

previously melted by a gentle heat, is then poured into the heated cylinder, and the tanned hides, in a half-dry state, are inserted, and the door is securely closed. The proper quantity of tallow will vary according to the quantity and kind of leather to be greased, but one hundred pounds of calf-skins will require about ten pounds of tallow. The revolution of the cylinder is then commenced and continued for two or three hours, (more or less,) according to the quality and quantity of leather inserted therein, care being taken not to fill the cylinder so full of hides as to interfere with a constant and violent motion of the leather, which, being carried round by the pins *p p*, should be able to fall from the top of the cylinder onto the points of the pins at the bottom. By the moist heat contained in the cylinder the pores of the leather are kept open, and the tallow is kept so hot as to enter it readily, while the continual rubbing of the hides on the pins causes their complete saturation with grease. Thus, by means of the combined high heat and constant friction, a result is attained far superior to that which is accomplished by any degree of heat and rubbing which is attainable when the hides are greased by hand or in vessels not so heated.

My process, just described, produces a very durable, solid, and yet pliable and elastic leather, superior in these respects to that made by the ordinary way.

Care should be taken that the hides are of a uniform degree of moisture, commonly called "half-dry," before they are inserted into the cylinder. If too dry in spots they should be wet in those places before they are put in, otherwise the greasing will not be uniform.

Leather greased by the process described may be finished in the usual manner.

Having thus described my improved process for greasing tanned hides, what I claim as my invention, and desire to secure by Letters Patent; is—

The process of subjecting tanned hides to friction in a close heated cylinder or other vessel, so constructed as to retain its heat for a considerable time, and containing melted grease, for the purpose of greasing them, substantially as hereinbefore described.

In testimony whereof the said GEORGE HUTTELMAIER has hereunto set his hand in presence of us.

GEO. HUTTELMAIER.

Witnesses:

I. MASLIN COOPER,

JOHN C. ATTERBURY.