J. G. Curtis,

Operating Ride Mills.

No. 109393. Patented Nov. 22. 1870.

Fig: 1.

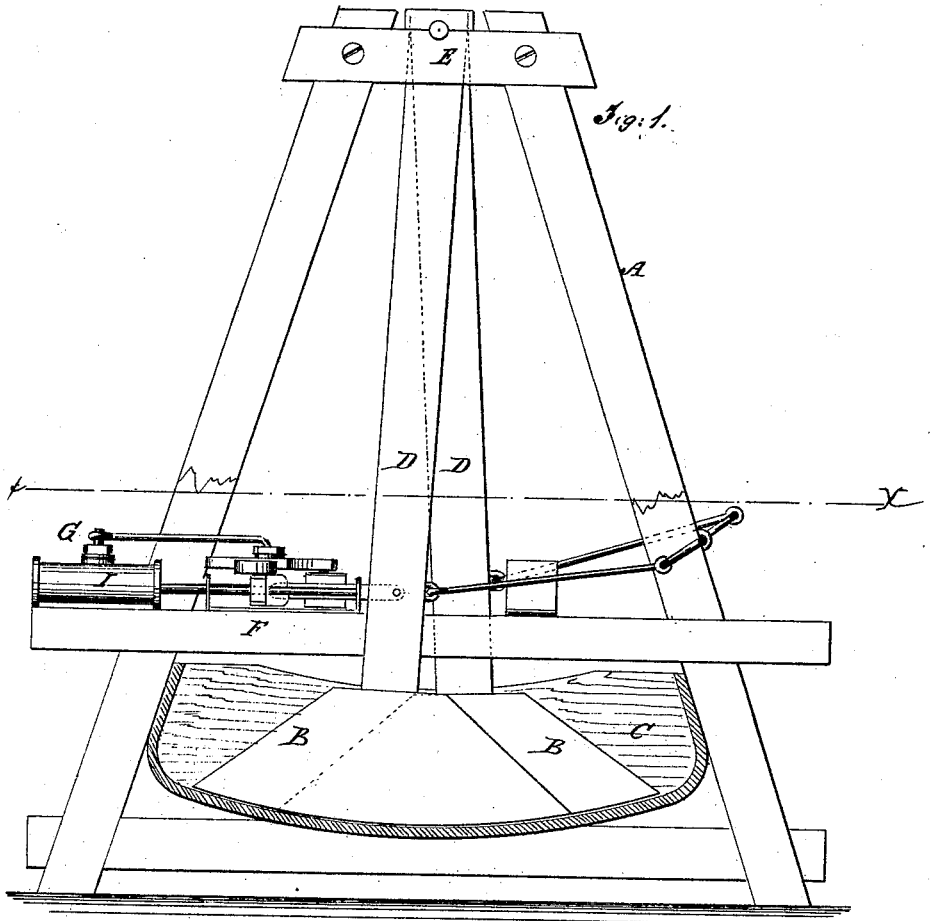
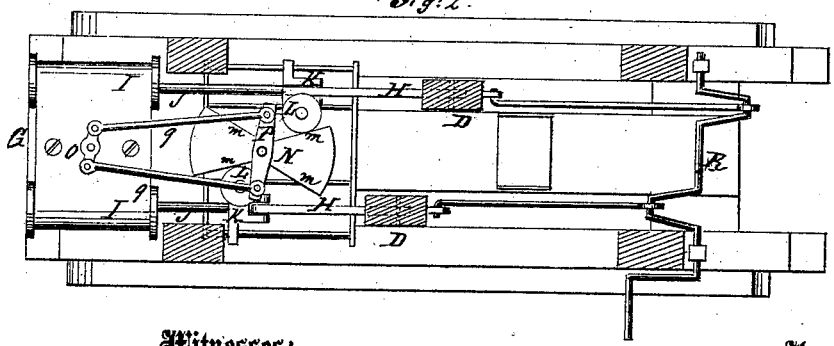


Fig: 2.



Witnesses:

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JOHN G. CURTIS, OF EMPORIUM, PENNSYLVANIA.

Letters Patent No. 109,393, dated November 22, 1870.

IMPROVEMENT IN OPERATING HIDE-MILLS.

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, JOHN G. CURTIS, of Emporium, in the county of Cameron and State of Pennsylvania, have invented a new and useful Improvement in Operating Hide-Mills; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

This invention relates to a new and useful improvement in mode of operating mills for softening or "milling" hides in the process of tanning leather; and

It consists in combining a steam-engine with the mill, so that the mill may be operated independently of any other machinery.

In the accompanying drawing—

Figure 1 represents a sectional elevation of a hide-mill with an engine arranged according to my invention.

Figure 2 is a horizontal section, looking from the line *x x* of fig. 1.

Similar letters of reference indicate corresponding parts.

A is the frame of the mill, which is used for milling or softening the leather.

B B are the milling-blocks, which are given an alternate reciprocating motion in the tub C.

The blocks are attached to the hanging bars D D, which are supported by the rod E, the construction and general operations being nearly the same as the mills for fulling cloth.

Upon the horizontal timbers F, I arrange a double steam-engine, G, the pitmen of which, H H, are connected with the bars D D.

I I are the cylinders, and

J J, the piston-rods.

K K are the cross-heads.

L L are rolls upon the cross-heads, which act upon the inclined edges *m m* of the plate N, and thereby shift the engine-valves.

O is a bar on the stem of the valve. The valve is of the oscillating plug variety.

P is a bar attached to the plate N. This bar is vibrated by the action of the rolls against the edges *m* of the plate N.

q q are rods which connect the two bars O and P.

As the engine acts alternately, it will be seen that the plate N and the two bars O P will be vibrated, and the valve rolled or oscillated at each stroke of the engine.

The double crank-shaft R, with its crank, forms no part of the engine, it being attached merely to show the motions of the engine and mill by hand.

By this arrangement the hide-mill can be operated independently of any other machinery which, in the process of tanning leather, is an object of great importance to the tanner, as there are no belts to keep up, and no shafting or gearing, and the mill can be run at any desired speed.

Having thus described my invention,

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

The milling-blocks B B, attached to pivoted pendent bars D D, combined, as described, with double steam pitmen H H, jointed to the latter, as and for the purpose described.

JOHN G. CURTIS.

Witnesses:

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