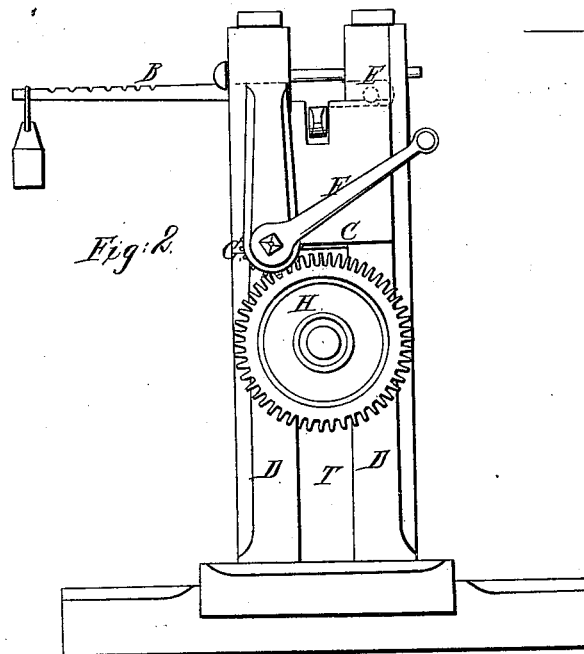
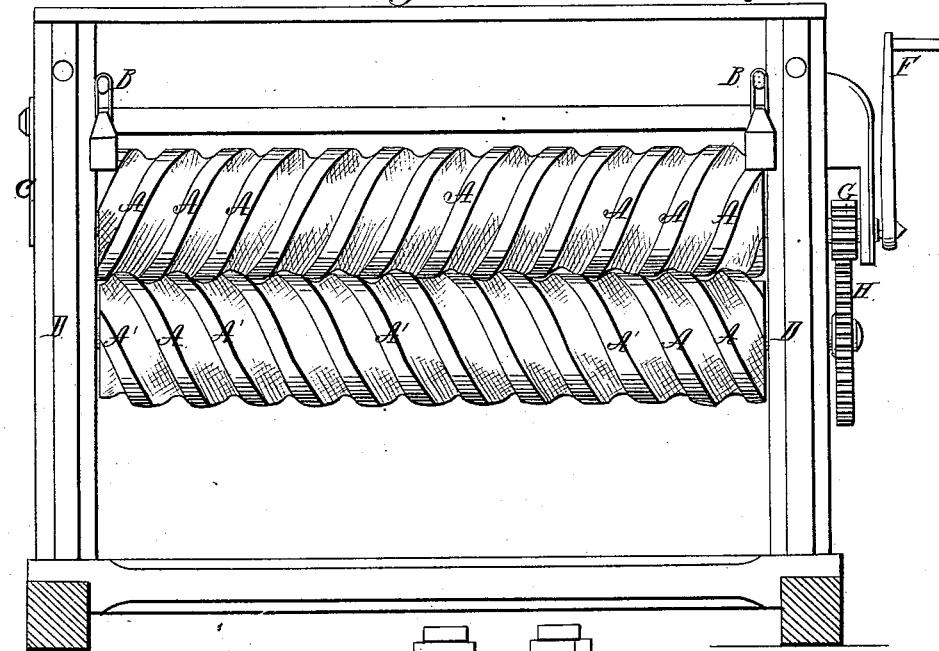


*I. S. Hershey*

*Preparing Hides.*

*N<sup>o</sup> 6710.*

*Fig. 1. Patented Sep. 11, 1849.*



# UNITED STATES PATENT OFFICE.

ISAAC S. HERSHEY, OF HAGERSTOWN, MARYLAND.

## MACHINE FOR BREAKING HIDES.

Specification of Letters Patent No. 6,710, dated September 11, 1849.

*To all whom it may concern:*

Be it known that I, ISAAC S. HERSHEY, of Hagerstown, Washington county, and State of Maryland, have invented a new and useful Machine for Breaking or Softening Hides, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a front elevation of the machine. Fig. 2, is an end elevation of ditto.

Similar letters in the several figures refer to like parts.

Heretofore the tanner has broken hides upon a convex beam with a concave knife which was found to be a very laborious mode of performing the operation and unless he exerted his full strength and gave the knife a peculiar oblique movement upon the hides they would not be thoroughly broken and softened. Sometimes the tanner has used two fluted and ribbed rollers—the ribs and grooves running from one end of the roller to the other parallel to the axis and matching with each other—the hides being introduced between them from a table placed in front. This mode did not answer for want of something to give the oblique blow and scraping action on the hides before mentioned.

Experiencing in my tannery the want of some machine that would effectually break and soften the hides, I turned my attention to the inventing of a machine that would, in its operation, produce an effect on the hides approximating to that produced by hand with the common beam knife: The result has been the production of the machine here presented for Letters Patent; which consists of one, two or three or more helical ribs A A A running to the right around the upper cylinder and similarly formed helical ribs or threads A' A' A', running to the left over the surface of the lower cylinder—the said helical ribs working together, or into each other, in the manner of a right and left screw for the purpose of crushing, breaking or softening the hides introduced between them by a revolving endless apron—or by a horizontal table, or by hand, or by stringing a number together and passing their ends between the breakers and tying them together in the form of an endless string of hides,—the machine being placed over the pool, or soak; or the hides may be

introduced to the breakers in any convenient way. The machine being then put in motion by any adequate power applied to the axis of one of the rollers so as to cause it to revolve, the hides will be drawn through and between the helical breakers which will act upon them in a manner to produce the desired result—the upper breakers being turned by the friction of the hides resting upon the lower breakers in passing through. The hides are pressed successively between the breakers till every part of their surfaces have been sufficiently broken and softened. The hides are then drawn through between the breakers and others introduced in their stead and treated in the same manner. The hides in passing through the machine will move in a straight line parallel to its ends and at right angles with the axes of the breakers, while the helical right and left breakers will strike and scrape the hides obliquely and produce an effect on them very much like that accomplished by the common beam knife on a beam, and which is so very laborious to perform.

Should the weight of the upper revolving breaker not be sufficient it must be weighted by applying weight to levers B resting on the sliding boxes C, into which the gudgeons of the cylinder are inserted which slide up and down in grooves in the pillars D containing the breakers in the manner of a common rolling mill for rolling out bars of iron—the fulcrum of the levers being bolts E inserted into the pillars D.

A very simple and effective mode of operating the machine is by means of a crank F on the axle of a pinion G matching with a cog wheel H on the axle of one of the cylinders—the axle of the pinion turning in suitable boxes in one of the pillars D.

The breakers may be supported in any suitably constructed frame of proper strength instead of the aforesaid pillars.

The helical breakers may be of any required size and twist that will produce the desired result in the most effective manner—and may be made of wood or iron, hollow or solid, flanged and screwed to the rollers or secured in any convenient way.

I do not claim breaking and softening hides by passing them between two revolving fluted rollers having straight parallel ribs over their surfaces, but

What I do claim as my invention and desire to secure by Letters Patent is—

The before described combination of right and left revolving helical breakers constructed and operated substantially as above  
5 set forth, for breaking, or softening hides.

In testimony whereof I have hereunto

signed my name before two subscribing witnesses this 4th day of Jany. 1849.

ISAAC S. HERSHEY.

Witnesses:

WM. P. ELLIOT,

LUND WASHINGTON, Sr.