W. COUPE.

Machine for Boarding and Breaking Raw Hides.

No. 202,414. Patented April 16, 1878.

Fig. 1

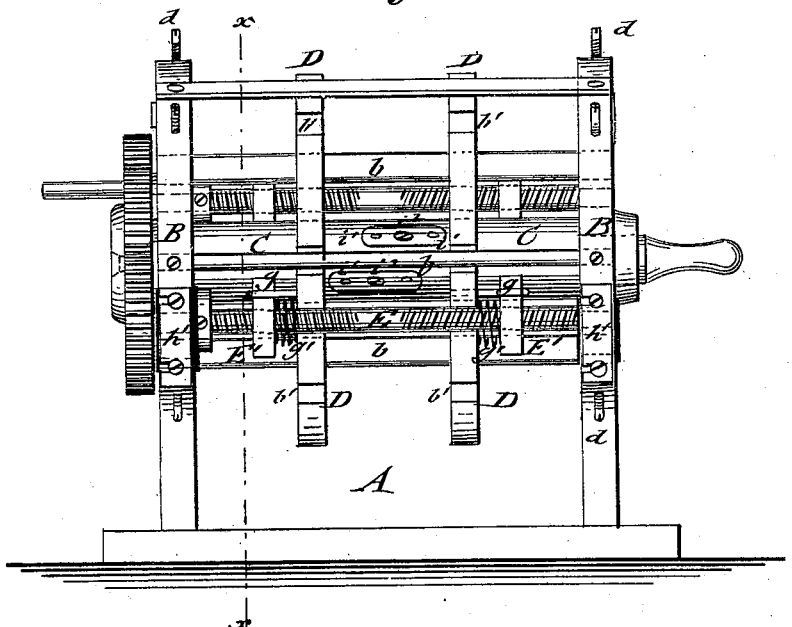
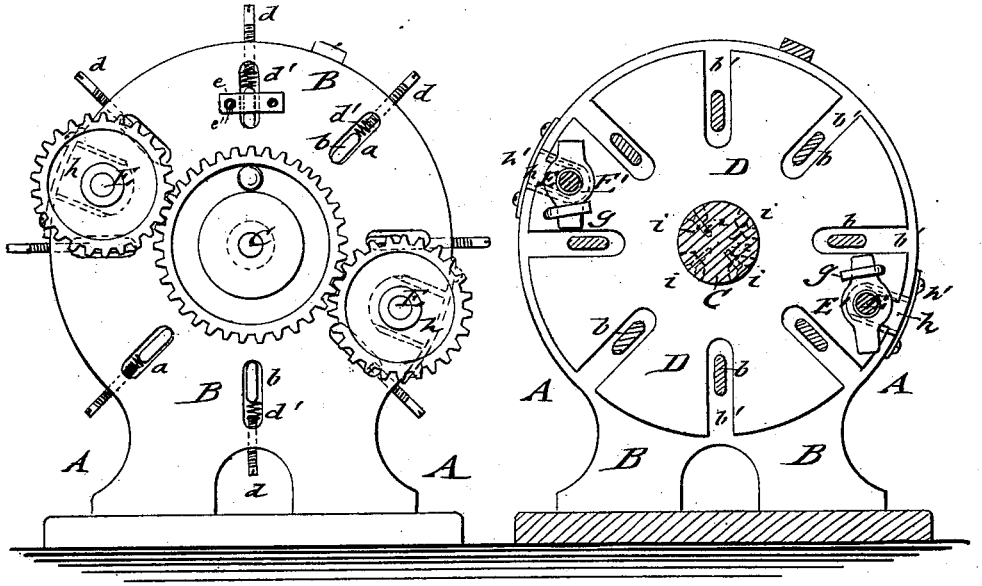


Fig. 2

Fig. 3



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IMPROVEMENT IN MACHINES FOR BOARDING AND BREAKING RAW HIDES.

Specification forming part of Letters Patent No. **202,414**, dated April 16, 1878; application filed March 22, 1878.

To all whom it may concern:

Be it known that I, WILLIAM COUPE, of South Attleborough, in the county of Bristol and State of Massachusetts, have invented a new and Improved Machine for Boarding or Breaking Raw Hides, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a side elevation of my improved machine for boarding or breaking raw hides; Fig. 2, an end view; and Fig. 3, a vertical transverse section of the same on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

This invention relates to such improvements in the machine for boarding or breaking raw hides for which Letters Patent have been granted to me heretofore, under date of January 22, 1878, and numbered 199,415, so that the hides may be still more effectively boarded or broken, the cribs in which the hides are worked being capable of exact adjustment to the number and size of the hides, so as to fully control the degree of boarding to which they are to be exposed.

The invention consists of a crib with fixed or permanent heads and sliding and recessed false heads, that are adjusted by means of right and left hand screw-bolts and traversing nuts, and of radially-adjustable cross-bars.

It consists, further, of the combination of these hide-confining parts with a central revolving shaft, having concaved recesses at the middle portion, but at varying relative positions to the heads, and of spurred clamping-dogs, fitting the recesses and secured by fastening-screws.

Referring to the drawings, A represents a crib, that is made of stationary or fixed heads B, of disk shape, supported on suitable standards. The stationary heads are provided, at some distance from the centers of the upper disk-shaped portions, with short radial guide-slots *a*, of which the slots of one head are closed, so as to form sockets, while the slots of the other are open, for removing or inserting the cross-bars *b*, that extend from head to head, being adjusted nearer to or farther from the center by radial set-screws *d*, and cushioned by spiral springs *d'*. The heads are stiffened at the top by connecting rods or bars of suitable strength to prevent any springing or spreading of the heads. The cross-bars *b* are retained, when inserted into the guide-slots and socket-recesses of the heads, by means of pivot-plates *e*, locking over buttons *e'*, so as to prevent the playing out of the cross-bars during the working of the machine.

The crib is provided with a center shaft, C, that revolves in center bearings of the permanent heads B, and is alternately turned by suitable gearing and reversing mechanism, first in one, then in opposite, direction. On the shaft C are arranged, between the stationary heads B, two false heads, D, that are provided with radial recesses *b'* for the cross-bars *b*, the recesses extending from the circumference toward the center.

The false heads D are laterally adjusted on the center shaft C by means of two right and left hand screw-bolts, E, of which one is arranged at each side of the crib, and by traversing nuts E', that are engaged by elbows or hook-bars *g* of the false heads. Between the false heads and the traversing nuts are interposed spiral cushioning-springs *g'*, by which the rigid bearing of the false heads on the hides mounted on the center shaft is diminished, and thereby a certain degree of yielding imparted to the same. The cross-bars are cushioned by their spiral springs for the same purpose.

The ends of the right and left hand screw-bolts E are connected at one side by gear-wheels with an intermeshing center crank-wheel, that turns loosely on the center shaft, so as to produce the simultaneous adjustment of the traversing screw-nuts and false heads either toward each other or from each other, according as the hides are to be confined into narrower compass before breaking them or for removing them after the breaking operation is completed. The right and left hand screw-bolts E turn in detachable journal-boxes *h*, that are set into recesses of the stationary heads, and firmly retained therein by pivoted and locking cross-straps *h'*, the boxes and screw-bolts being removed from the heads when the hides are applied to or taken off from the center shaft.

The hides are firmly clamped at one end to the middle portion of the shaft C by means of

detachable dogs or clamp-sections *i*, that fit into concaved recesses of the shaft and hold the hides firmly by means of spurs i^1 and clamp-screws i^2. The recesses are not all placed around the center portion of the shaft, but so that one recess is nearer to one of the stationary heads, the other nearer to the opposite one, and so on alternately, so as not to weaken the shaft at the middle portion, give a better hold for the clamping-screws, and distribute the hides over the entire lateral surface of the middle portion of the shaft. When the hides are thus attached to and wound on the shaft the false heads are moved up, so as to confine the hides laterally to the required degree, and then the cross-bars inserted into the stationary and false heads. The pressure of the gradually-tightened cross-bars and of the false heads produces the tight lapping of the hides around the shaft. The machine is then set in motion—first in one, then in reverse direction—and thereby the hides broken or boarded in uniform manner all through. The even distribution of the hides around the shaft by the clamping-dogs, in connection with the yielding action of the false heads and cross-bars, requires less power for working the machine than where the hides are all attached to and bulging at one point of the shaft, and broken up by a rigid crib or cage.

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

1. A machine for boarding or breaking raw hides, consisting of stationary outer heads, with radially-adjustable connecting cross-bars, inner adjustable and spring-cushioned false heads, and a central revolving shaft, with clamping devices for attaching the hides, substantially as and for the purpose set forth.

2. The combination, with the revolving center shaft and stationary outer heads, having radially-adjustable cross-bars, of recessed and spring-cushioned false heads, adjusted simultaneously by right and left hand screw-bolts and traversing-nuts, substantially as specified.

3. The combination of the stationary outer heads, having detachable journal-boxes and retaining devices, and of the adjustable inner false heads, having hook arms, with right and left hand screw-bolts and traversing screw-nuts, to allow removing and replacing of bolts and nuts for attaching or detaching hides, substantially as set forth.

4. The combination of the central revolving shaft, having concaved recesses in the middle portion, said recesses being placed alternately nearer to one or to the opposite head, with clamping dogs or sections, having retaining-spurs and fastening-screws, substantially as shown and described.

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