2 Sheets--Sheet 1.

JABEZ HODSKINSON.

Improvement in Machines for Whitening and Shaving Skins and Leather.

No. 115,473. Patented May 30, 1871.

Fig. 1.

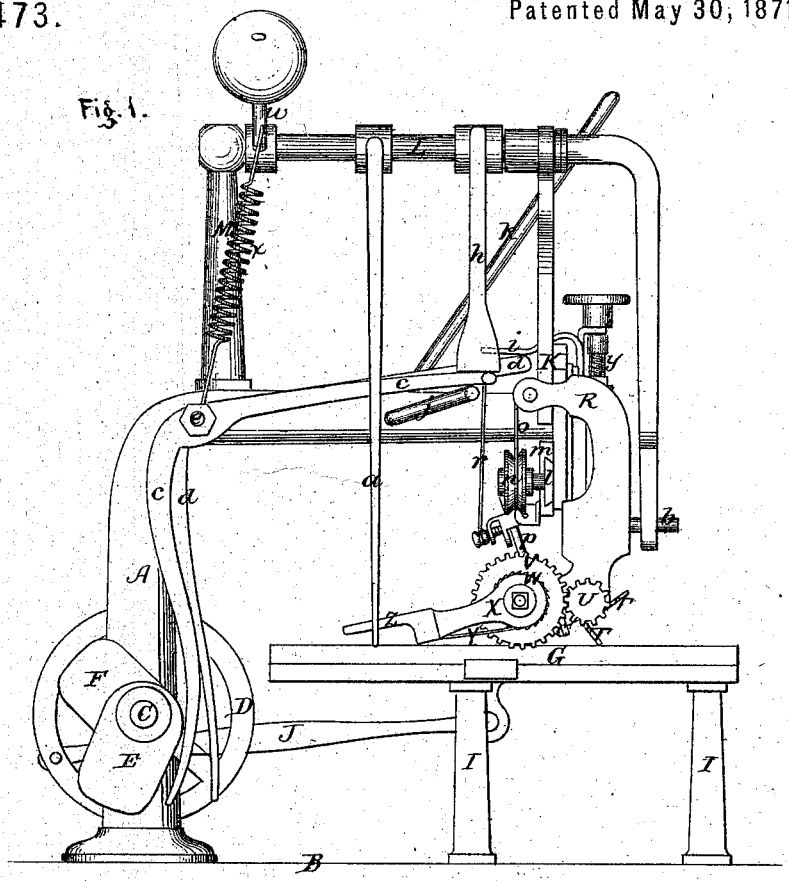


Fig. 3.

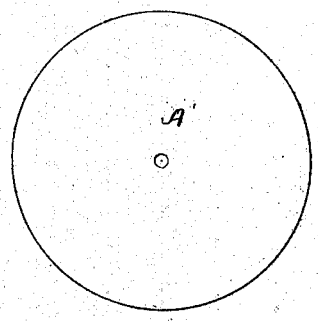
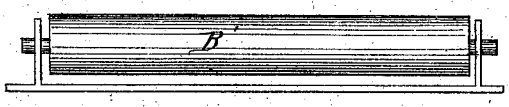


Fig. 4.



Witnesses.

F. McSmith.

P. Ward

Inventor.

Jabez Hodskinson.

by Carroll D. Wright & Edmonds

Attys.

A.M. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

2 Sheets--Sheet 2.

JABEZ HODSKINSON.

Improvement in Machines for Whitening and Shaving Skins and Leather.

No. 115,473. Patented May 30, 1871.

Fig. 7.

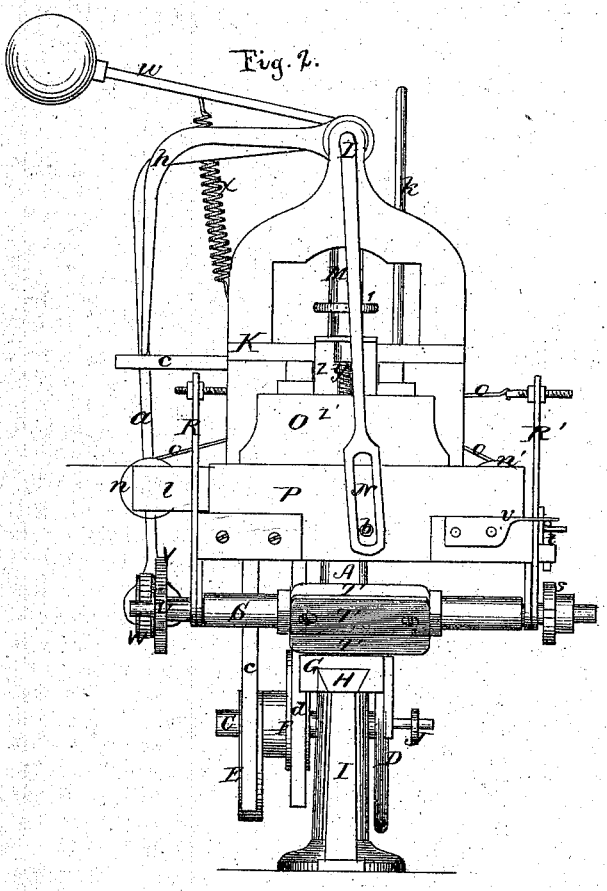


Fig. 5.

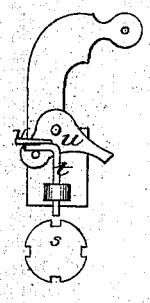


Fig. 6.

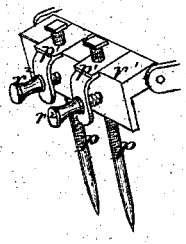
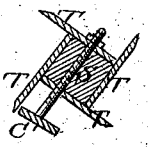


Fig. 4.



Witnesses.

F. Hofmann,

Peter Ward

Inventor,

Jabez Hodskinson.

by Carroll D. Wright & Brown

Attys.

AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS.)

UNITED STATES PATENT OFFICE.

JABEZ HODSKINSON, OF SALEM, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR WHITENING AND SHAVING SKINS AND LEATHER.

Specification forming part of Letters Patent No. 115,473, dated May 30, 1871.

I, JABEZ HODSKINSON, of Salem, in the county of Essex and State of Massachusetts, have invented certain Improvements in Machines for Whitening and Shaving Skins and Leather, of which the following is a specification:

Figure 1 is a side elevation of my invention; Fig. 2 is a front elevation; Figs. 3 and 4 are views of modifications; and Figs. 5, 6, and 7, views of parts in detail.

The object of this invention is to produce a machine for whitening and shaving leather, skins, &c., which will readily adapt itself to inequalities in thickness of the leather and perform its work efficiently; and it consists, mainly, of a longitudinally-reciprocating table, on which the leather is placed, said table being operated by a connecting-rod from the drive-wheel; and of a transversely-reciprocating series of knives or cutters, working over said table in such manner as to cause said cutters to take a diagonal course over the leather on the table, from end to end of the same, yet moving at right angles with it, said cutters being operated by a series of bell-crank levers and a rocking-shaft actuated by cams on the same driving-shaft that operates the table. Also of a peculiar lever arrangement, whereby the bell-crank levers operating the reciprocating shaft are disconnected from the driving-cams. It also consists of certain other details of construction which, with the method of operation, will be more fully described hereinafter.

In the drawing, A represents a bent standard rising from the bed-plate B, and bent at right angles about midway, as shown in Fig. 1. In the lower portion of the standard A is journaled the driving-shaft C, which is provided on one side of said standard with the drive-wheel D, and on the opposite side with the cams E F. G represents a reciprocating table, the lower side of which is provided with a beveled rabbet, which works on a correspondingly-shaped track, H, which latter is rigidly supported by pillars I I. The table G is operated by a rod, J, which connects the same to the wheel D. The end of standard A is provided with a stationary cross-head, K, which projects above the same, as shown, and forms one of the bearings of the rocking-shaft L, the other bearing of the same being in the pillar M, which rises from the standard A near its bent portion. The shaft L is bent downward at right angles beyond the head K, and is provided with a slot, N, in its lower end. O represents a cross-head which slides vertically in ways attached to the stationary cross-head K over the table G. On the lower portion of the cross-head O, in suitable ways, is located a second cross-head, P, which slides transversely in the head O. The cross-head P is provided at its ends with ears R R′ which project above and below the same. In the lower portions of ears R is journaled a shaft, S, which projects beyond said ears at both ends. T T, &c., represent knives or cutters attached to the central portion of shaft S in such manner that each cutter projects from the same at a tangent, said cutters being all arranged at right angles. On one end of the shaft S is a pinion, U, which meshes with a cog, V, which latter is located on a shaft journaled in a projection of the ear R of sliding head P. W represents a ratchet located beside cog V on the same shaft. The ratchet W is provided with a casing, X, to which is attached a spring-pawl, Y, which engages with the under side of said ratchet. Z represents a finger projecting from casing X, which finger enters and rests in a slot in the lower end of the bent arm *a*. This latter is rigidly attached to the rocking-shaft L. *b* represents a pin which projects from the center of sliding cross-head P and enters the slot N in the lower end of rocking-shaft L, thereby connecting said shaft with the head P. *c d* represent bell-crank levers, which are pivoted on a shaft, *e*, which projects from the standard A. The lower ends of levers *c d* bear against cams E F, which are located on the driving-shaft C and actuate said levers. The opposite ends of levers *c d* are bent at right angles, the former outward and the latter inward, the bent end of lever *c* bearing against the lower end of bent arm *h*, which is rigidly attached to the rocking-shaft L, while the bent end of lever *d* engages with a lug, *i*, which projects inward from the sliding cross-head O. *j* represents a lever pivoted in the horizontal portion of standard A, which lever is bent twice at right angles on one side of said standard, said bent portion projecting under the ends of levers *c d*, and, when raised by its handle *k*, swings the

levers *c d* out of connection with the cams E F. *l* represents a way or track with beveled edges, rigidly attached to the stationary cross-head K, upon which track is rabbeted a sliding plate, *m*. The ends of track *l* project beyond cross-head K, and are provided with pulleys *n n'*, over which pass cords or bands *o o*, one of which extends from plate *m* around pulley *n*, and thence to the ear R' of sliding cross-head P, to which it is attached, while the other extends from plate *m*, around pulley *n'*, to ear R of cross-head P. *p p* represent steel rods pivoted between lugs projecting from sliding plate *m*. The rods *p* project downward and come in contact with the knives at certain stages of the operation, and are connected to the end of bell-crank lever *d* by rod or wire *r*. *s* represents a disk at the end of shaft S, opposite pulley U, which disk is provided with notches or depressions, with which a dog or catch, *t*, may be engaged in such manner as to prevent the rotation of shaft S, if desired. The dog *t* is held above the disk *s* by a pivoted lever or plate, *u*, which is provided with a projecting pin, upon which the dog *t* bears, and is raised or lowered by means of said lever *u*, said dog or catch being prevented from coming out of its socket by a spring projection, *v*. *w* represents a weighted arm rigidly attached to rock-shaft L, and connected, by the spiral spring *x*, with the shaft *e*. The arm *w* tends to keep all the parts in working positions, and effects a direct and positive action. The sliding cross-head O is constructed in two portions, one of which is rabbeted and slides on vertical ways on the other, thus giving a secondary vertical motion to a portion. The object of this secondary motion is to adjust the cutters on shaft S vertically, and to regulate the distance between said cutters and the table G, which is accomplished by means of a vertical screw, *y*, which is journaled in the portion *z* of the cross-head O, and enters the other portion *z'*. C' represents a plate or guard of metal, which is attached to shaft S by bolts, and projects from the same nearly at right angles with one of the cutters T, and can be adjusted by the bolts to project more or less from said shaft.

Operation.

When the machine is adjusted for operation the table G is drawn toward the wheel D to its utmost extent, and the cutters T are in their natural position above the same, projecting somewhat to the right. The leather or skin to be operated on is secured to the table G, one of the cutters T bearing on the same, as shown in Fig. 1. Motion being applied to the wheel D, the carriage G is moved along the track H away from the wheel G, and at the same time the cam E forces the lower end of the lever *c* inward, thereby giving an upward motion to the upper end of the same, which motion is imparted through the bent arm *h*, to the rock-shaft L, the bent end of which oscillates to the left, thereby moving the sliding cross-head P across the table G during its passage along the track, the two motions, viz., the transverse motion of cross-head P and the longitudinal motion of carriage G, producing, in effect, a diagonal motion of the cutters across the leather, by means of which the leather is reduced to the desired degree of thickness.

When the table G has completed its outward course and commences to return, the cam F engages with the lever *d* and moves the lower end thereof inward, consequently raising the other end, which, bearing against the lug *i*, raises the sliding cross-head O, and with it the transverse cross-head P, and the shaft S with its cutters T, thereby clearing the same from the leather and allowing it to pass freely under said cutters. At the same time that the cutters are elevated the cam E releases the lever *c*, and the weighted arm *w* swings the rocking shaft L back to its former position, thus causing the cross-head P to slide back until the cutters project over the right side of table G, as before. The cam F now releases lever *d*, and the cross-head O, with its attachments, falls to its former position, leaving the cutters T bearing upon the leather for another operation.

The operation of the shaft L, as above described, operates the ratchet W, through the bent arm *a*, by raising and lowering the finger Z in such manner as to cause said ratchet to partially revolve the cog-wheel V, which turns the pinion U and causes the shaft S to make a quarter revolution at every stroke of the carriage, thus presenting a different cutting-edge at each operation.

If desired, however, the dog or catch *t* may be engaged with the disk *s*, as above described, thereby restraining the shaft S from revolving, and causing the same cutter to perform the successive operations.

When one of the cutters is operating on the surface of the leather, and the cross-head P is being drawn from right to left across the table G, the steel rods P and sliding plate *m* are drawn in the opposite direction by the cord-and-pulley arrangement above described; and the rods *p*, bearing against the edge of one of the knives T, act as sharpeners, and also to clear away the debris which accumulates; but when the cutting operation is performed and the parts resume their original position, the rods *p* are swung outward, clear of the cutters T, by the raising of the lever *d*, being attached to the same by rod or wire *r*, and the plate *m* is drawn backward to the left while the cross-head P is being drawn to the right; and when the cam F releases lever *d* the rods *p* swing downward and come in contact with one of the knives T just before the next cutting operation.

Although the primary function of my invention is the whitening or shaving of dry tanned leather, yet it can be used with equal facility for shaving wet and flabby skins, or for shaving the hair from hides, in which cases it is necessary to remove the longitudinal table G

and substitute the circular table A′, which turns on a pivot in its center for shaving wet hides, and the roller B′ for removing hair from wet hides, said table and roller being revolved under the cutters by hand or other power.

In the shaving of wet skins the guard C′, which is located at the back of one of the cutters T, prevents such cutter from entering the stock too deeply. Each of the cutters may be provided with a guard, C′, which can be adjusted at will, and effectually regulates the operation of said cutters.

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

1. The longitudinally-reciprocating table G, in combination with the vertically-reciprocating cross-head O, with its attachments, substantially as described.

2. The sliding cross-head O, provided with the transverse cross-head P and its connections, as and for the purpose set forth.

3. The sliding plate *m*, with its pivoted rods *p p*, connected to cross-head P by cords *o o*, and to lever *d* by rod *r*, in combination with the track *l* and pulleys *n n′*, substantially as described.

4. The bell-crank levers *c d*, in combination with cams E F, operating the rocking-shaft L and cross-heads O P, all arranged and operating substantially as described.

5. The bent lever *j* for shipping or disconnecting levers *c d* from cams E F, substantially as described.

6. The shaft S, provided with cutters T and revolved by cogs U V and ratchet W, substantially as described.

7. The disk *s*, provided with depressions with which the dog *t* engages to hold the shaft S, substantially as described.

8. The circular table A′ and roller B′, in combination with cutters T, for treating skins when in a damp condition, substantially as described.

9. The adjustable guard C′, in combination with the cutters T, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JABEZ HODSKINSON.

Witnesses:
HENRY M. MEEK,
CHARLES F. BROWN.