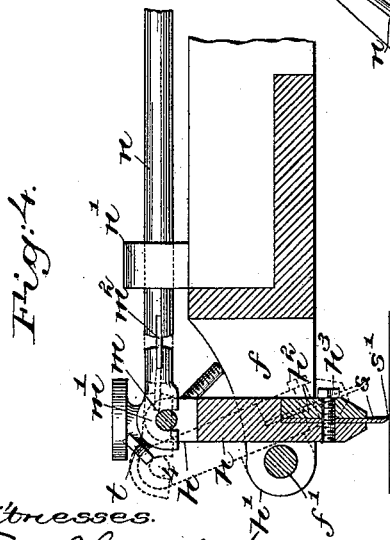
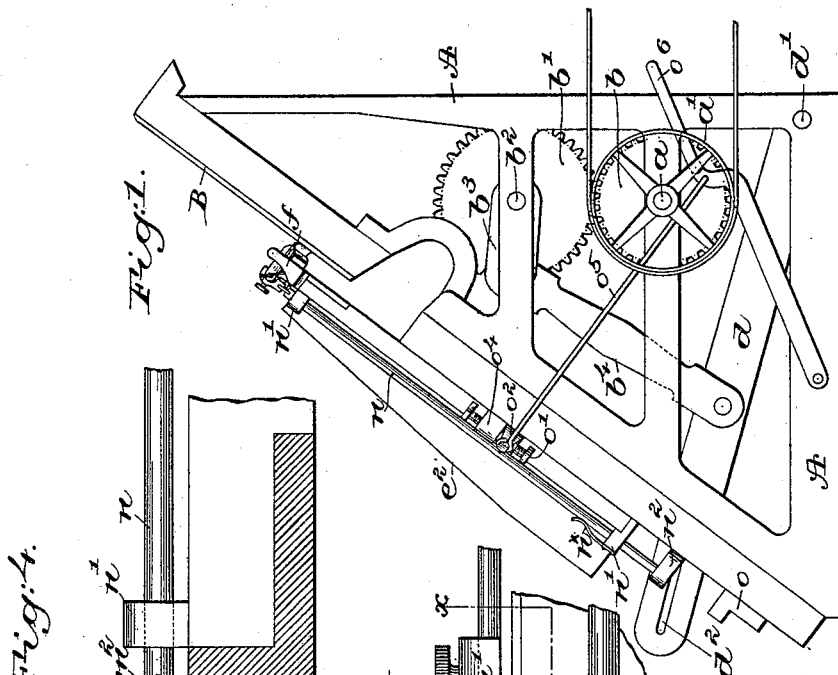
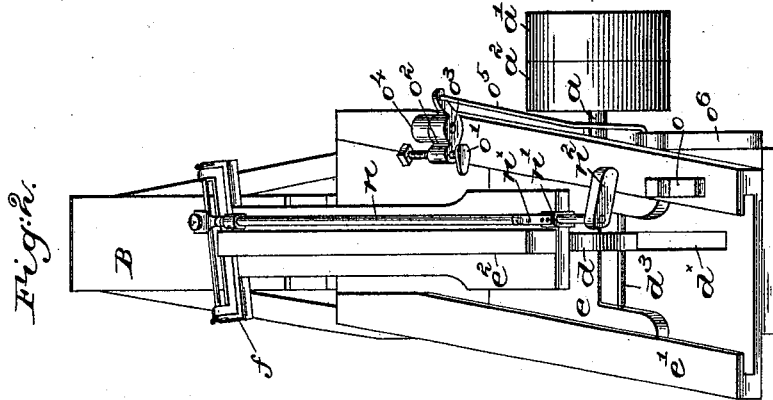


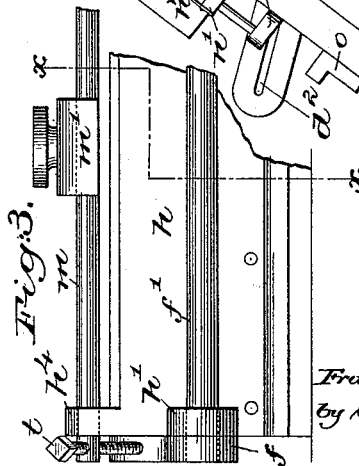
F. C. KIMBALL.  
MACHINE FOR SHAVING LEATHER.

No. 490,443.

Patented Jan. 24, 1893.



Witnesses.  
Fred S. Gumbel  
Louis N. Gumbel



Inventor  
Frank C. Kimball  
by Lowry & Gregory  
attys.

(No Model.)

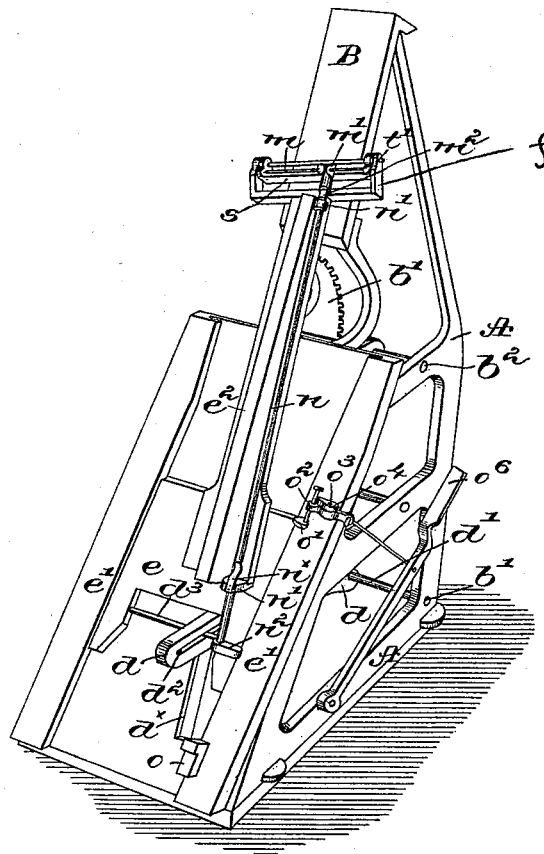
2 Sheets—Sheet 2.

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*Fig: 5.*



witnesses.

Louis N. Cowell  
Edward F. Allen.

Inventor,  
Frank C. Kimball.  
by Crosby & Gregory  
attys.

# UNITED STATES PATENT OFFICE.

FRANK C. KIMBALL, OF SALEM, MASSACHUSETTS.

## MACHINE FOR SHAVING LEATHER.

SPECIFICATION forming part of Letters Patent No. 490,443, dated January 24, 1893.

Application filed July 11, 1892. Serial No. 439,598. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK C. KIMBALL, of Salem, county of Essex, State of Massachusetts, have invented an Improvement in Machines for Shaving Leather, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to provide a machine by which to shave and thereby reduce the thickness of leather, hides, &c.

In accordance with this invention the leather to be shaved is placed upon a suitable beam or bed over which is moved in suitable manner an adjustable shaving blade or knife, the carrier for which moves in guideways which insure proper movement of the knife to leave the leather of uniform thickness when desired. The shaving knife is reciprocated in a line at an angle with the beam or bed, and suitable devices are provided by which to automatically throw the knife out of cutting position when desired.

Figure 1, represents in side elevation a machine embodying this invention. Fig. 2, a left-hand end view of the same. Fig. 3, a partial top face view of the knife and its carrier head; Fig. 4, a section of the same taken on the dotted line  $x-x$ , and Fig. 5, a perspective view of the machine shown in Figs. 1 and 2.

Referring to the drawings, the frame A is of suitable shape and construction to sustain the various parts, it having bearings for the driving shaft  $a$ , fitted with the usual fast and loose pulleys  $a'$ ,  $a''$ , driven by a belt in usual manner. A gear wheel  $b$  on the driving shaft  $a$ , Fig. 1 is in mesh with and drives a gear wheel  $b'$  on a crank shaft  $b''$  also journaled in the frame, the crank  $b'''$  formed in said shaft being connected by a connecting rod  $b^4$  with and to vibrate the lever  $d$  pivoted at  $d'$  in the frame and extending through a slot  $d''$  in the front of the frame, the slot acting to guide the lever in its movements. The lever  $d$  at its free end is provided with a slot  $d^3$  through which is extended a horizontal rod  $d^4$  on the carriage  $e$  fitted to be reciprocated in suitable guideways  $e'$  on the frame, said guideways being so located or positioned that the line of reciprocation of the carriage is at an angle or oblique with relation to the bed B.

The knife-carrying arm  $e^2$  projecting upwardly from the carriage as shown, has secured to its upper end a yoke  $f$ , between the arms of which is supported a pivot rod  $f'$  on which is pivoted the shaving head  $h$ , the pivot rod referred to passing through ears  $h'$  formed at the opposite ends upon the face side of the head.

The shaving knife  $s$  having an angular cutting edge  $s'$ , is held firmly in position between the clamping plate  $h^2$  and the head  $h$  by means of screws  $h^3$ . As the carriage  $e$  is reciprocated diagonally with relation to the bed, it follows that the knife carried by the carriage has two movements, viz;—one lengthwise the bed and the other crosswise the bed, so that while the knife is drawn broadside down the bed to cut or shave a wide surface of the leather, it is at the same time moved laterally to one side owing to the diagonal line of reciprocation, so that it is given a sort of snide or sliding cutting movement which permits the knife to cut the leather instead of scrape it.

The head  $h$  has two upwardly extended ears  $h^4$  through which is passed a rod  $m$  which is engaged by the hook  $m'$  flexibly connected by means of a spring plate  $m^2$  with the end of a slide rod  $n$  mounted to slide longitudinally in the lugs  $n'$  on the arm  $e^2$  of the carriage. The slide rod  $n$  at its lower end is provided with a foot  $n^2$  which upon the downward movement of the carriage  $e$ , strikes a fixed abutment  $o$ , which causes the rod to be moved longitudinally in its bearings and tip the head into its dotted position Fig. 4, carrying the cutting edge of the knife up from the bed B and out of action. Upon the upward or return movement of the carriage  $e$  the foot  $n^2$  strikes the abutment  $o'$  which slides the rod  $n$  to return the head  $h$  and knife  $s$  to their full line position Fig. 4. The abutment  $o'$  is shown as a screw threaded in the inner end of a lever  $o^2$  pivoted at  $o^3$  to a lug  $o^4$  on the frame, the outer end of the lever being engaged by a rod  $o^5$  leading to a treadle  $o^6$ , depression of which by the foot, turns the lever on its pivot to carry the abutment  $o'$  to one side of the path of movement of the foot  $n^2$  for a purpose to be described. Screws  $t$  passed through the opposite ends of the rod  $m$  limit the return movement of the head  $h$  by contact with the arms of the yoke  $f$ , ad-

justment of the screws serving to regulate the distance of the knife from the bed B, and consequently the depth of the cut.

The operation of the machine is as follows, viz;—the skin or piece of leather to be shaved or thinned is placed upon the bed or beam B and the machine started in any usual manner, when the knife *s*, reciprocated by the carriage *e*, will at each diagonal or oblique downward stroke or movement make a cut of a depth determined by the adjustment of the screws *t* and thereby thin the leather, the knife during the upward or return movement being turned into its dotted or inoperative position by the abutment *o*, which may if desired be made adjustable. If, while the skin is upon the bed and the machine is in motion, it is desired to prevent the knife from making a cut, the operator, by depressing the treadle *o'*, turns the abutment *o'* out of the path of movement of the foot *n'* so that the knife will be reciprocated while in its dotted position Fig. 2, out of action. The knife is preferably held in its carrier or head diagonally with relation to the length of the bed B, as shown, in order that it may cut better and easier, and the line of reciprocation is at an angle with the bed, as shown, to permit the knife during the operation of the machine to cut the leather without bulging the same. The spring plate *m'* permits the hook *m'* to be thrown back to disengage it from the rod *m* on the head when it is necessary to revolve the head on its pivot rod to bring the knife edge on top or into a position where it may be steeled or sharpened in usual manner.

A spring *n'* or other friction device may and preferably is employed to retard the longitudinal movements of the slide rod *n* and to retain the rod in any position into which it is moved by the abutments.

This invention is not limited to the particular construction herein shown, and which is employed simply to illustrate the invention, for the construction and arrangement of the operating parts may be varied without departing from the scope of the invention as claimed.

I claim—

1. In a machine for shaving leather, a bed upon which the leather may be placed, combined with a reciprocating knife, the line of reciprocation of which is diagonal with relation to the bed, whereby the knife is given a movement both lengthwise and crosswise the bed, substantially as and for the purposes specified.

2. In a machine for shaving leather, a bed upon which the leather may be placed, combined with a knife set diagonally with relation to the length of the bed, and means to reciprocate it in a line diagonal with relation to the length of the bed, to operate, substantially as described.

3. In a machine for shaving leather, a bed for the leather, combined with a reciprocating carriage, fixed guides therefor, a knife-

carrying head positively connected with and carried by said carriage, and a knife rigidly attached thereto and thereby movable always in a line parallel with the guides, means to automatically throw the knife out of cutting position during one part of each reciprocation and into cutting position during the other part of each reciprocation, and an adjustable stop to limit the movement of the head when the knife is moved into its cutting position to insure accuracy of cut, substantially as described.

4. In a machine for cutting leather, a bed for the leather, combined with a reciprocating carriage, a knife-carrying head positively attached to and movable therewith in a line parallel with the guides, means to automatically move the knife into and out of cutting position, and devices under the control of the operator to positively maintain the knife in its inoperative position in its fixed guides, substantially as described.

5. In a machine for shaving leather, a bed for the leather, a reciprocating carriage and fixed guides therefor, combined with a knife-carrying head pivoted to said carriage, and a knife thereon, and means to automatically turn the knife-carrying head and knife on its pivot out of cutting position during one part of each reciprocation, substantially as described.

6. In a machine for shaving leather, a bed, a reciprocating carriage and fixed guides therefor, combined with a shaving head pivotally carried by and movable with said carriage in a line parallel with the guides, fixed abutments on the frame, and mechanism on the reciprocating carriage actuated by the fixed abutments to turn the shaving head on its pivots into operative and inoperative position, substantially as and for the purposes specified.

7. In a machine for shaving leather, a bed, a reciprocating carriage and fixed guides therefor, combined with a shaving head pivotally carried by and movable with said carriage in a direction parallel with the said guides, a slide-rod connected to and reciprocated with said head, and fixed abutments to cause longitudinal movement of the slide-rod with relation to the carriage on which it is mounted, to thereby act upon and tip the head on its pivots, substantially as described.

8. In a machine for shaving leather, a bed, a reciprocating carriage and fixed guides therefor, combined with a shaving head pivotally carried by and movable with said carriage in a direction parallel to the guides, a slide-rod on the reciprocating carriage connected with the said head, and fixed abutments to act upon and cause longitudinal movement of the slide-rod, to thereby tip the head on its pivots in the carriage, and a friction device for said slide-rod, substantially as described.

9. In a machine for shaving leather, a bed, and fixed guides, combined with a carriage,

and means to reciprocate the same in said guides, the yoke *f* carried by said carriage, the head *h* pivoted therein, the shaving knife *s* carried by said head, adjusting screws *t* for  
5 the head and knife, the slide-rod *n* and abutments on the frame to move the same, all to operate substantially as described.

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

FRANK C. KIMBALL.

Witnesses:

FREDERICK L. EMERY,  
EMMA J. BENNETT.