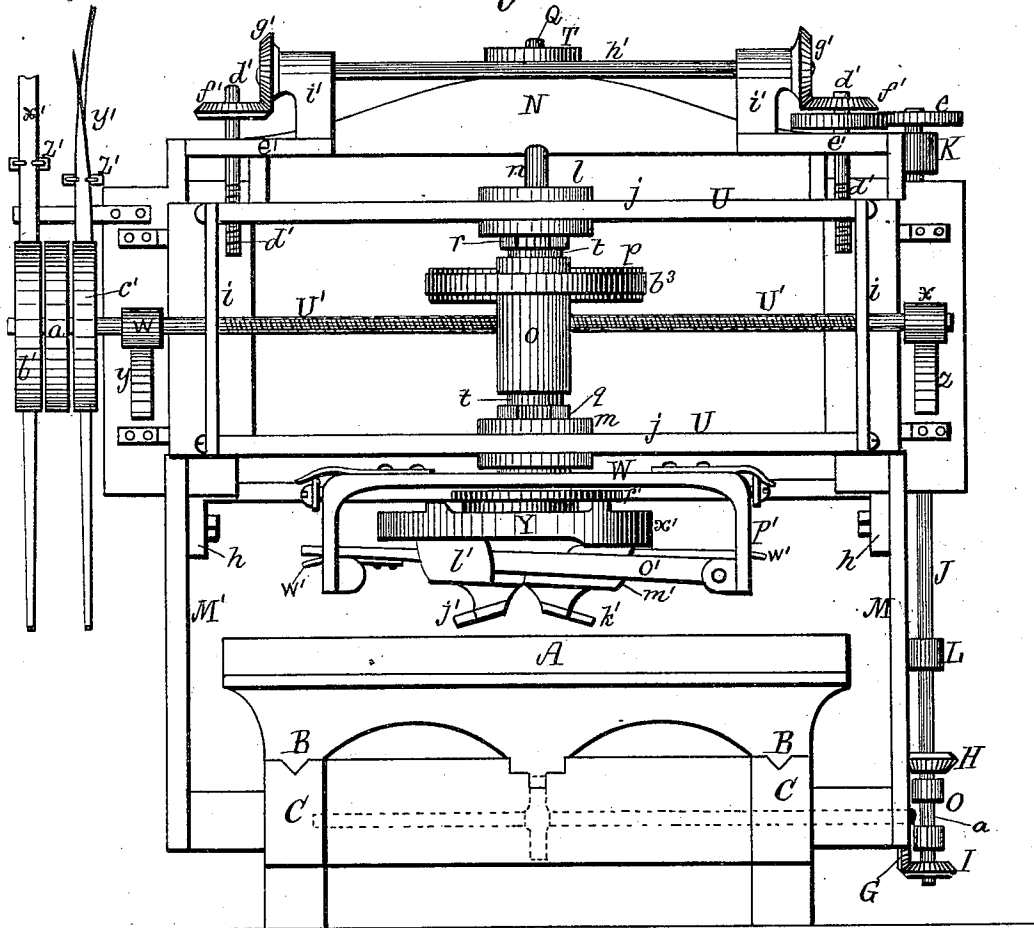
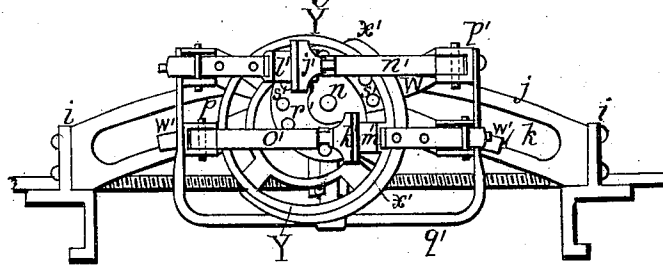


W. GOODMAN.
Leather Dressing Machine.
No. 240,997. *Fig. 1.* Patented May 3, 1881.

*Fig. 3.*

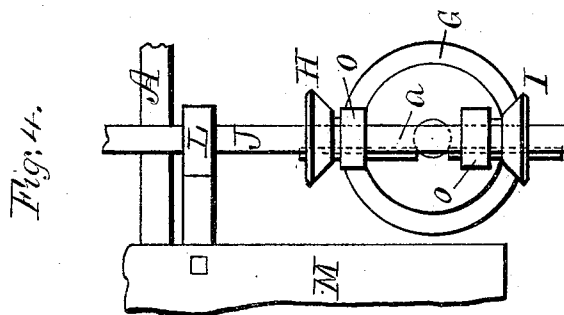
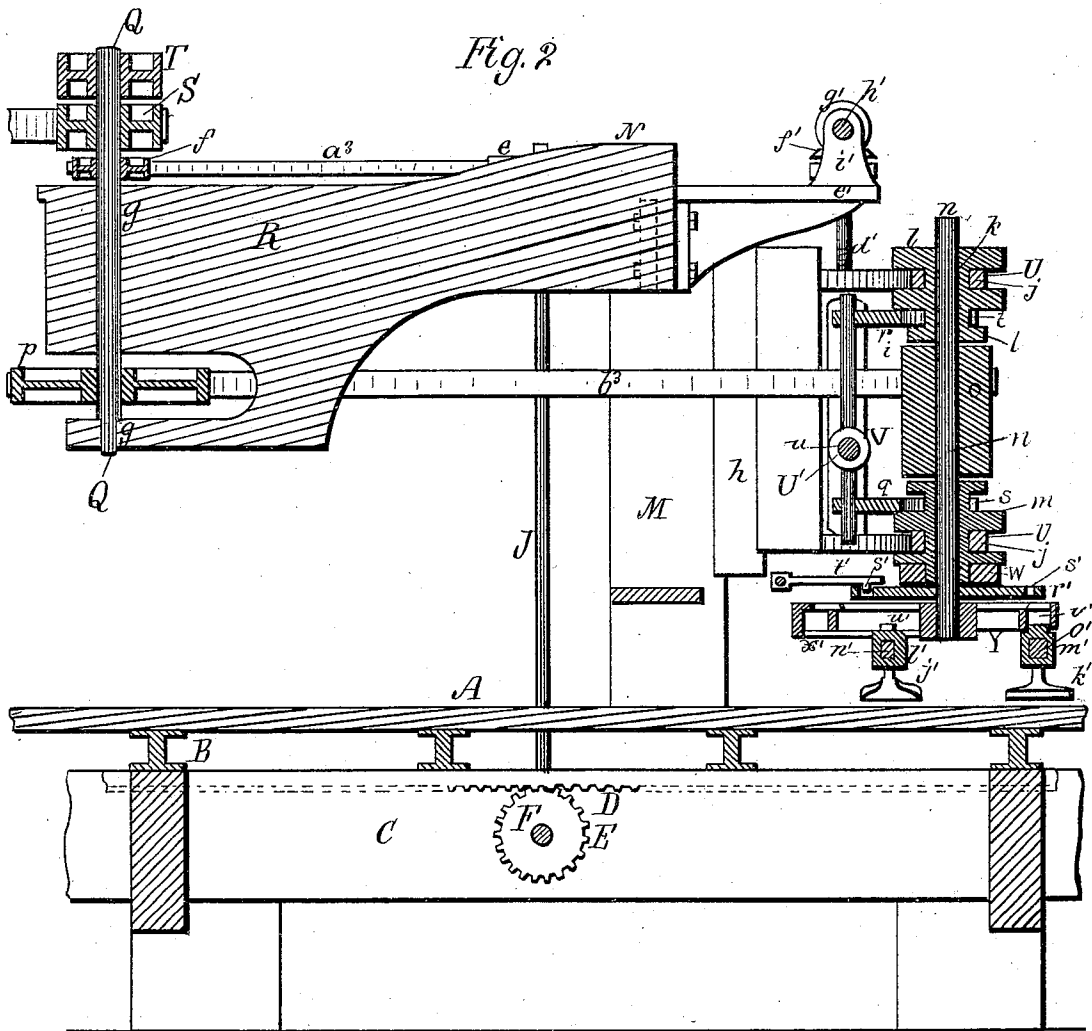
Witnesses.
Wm. T. Andrews
R. S. Simpson.

Inventor.
William Goodman.

(Model.)

3 Sheets—Sheet 2.

W. GOODMAN.
Leather Dressing Machine.
No. 240,997. Patented May 3, 1881.



Witnesses.
F. S. Simpson.
Wm. T. Andrews

Inventor.
William Goodman.

(Model.)

3 Sheets—Sheet 3.

W. GOODMAN.
Leather Dressing Machine.
No. 240,997. Patented May 3, 1881.

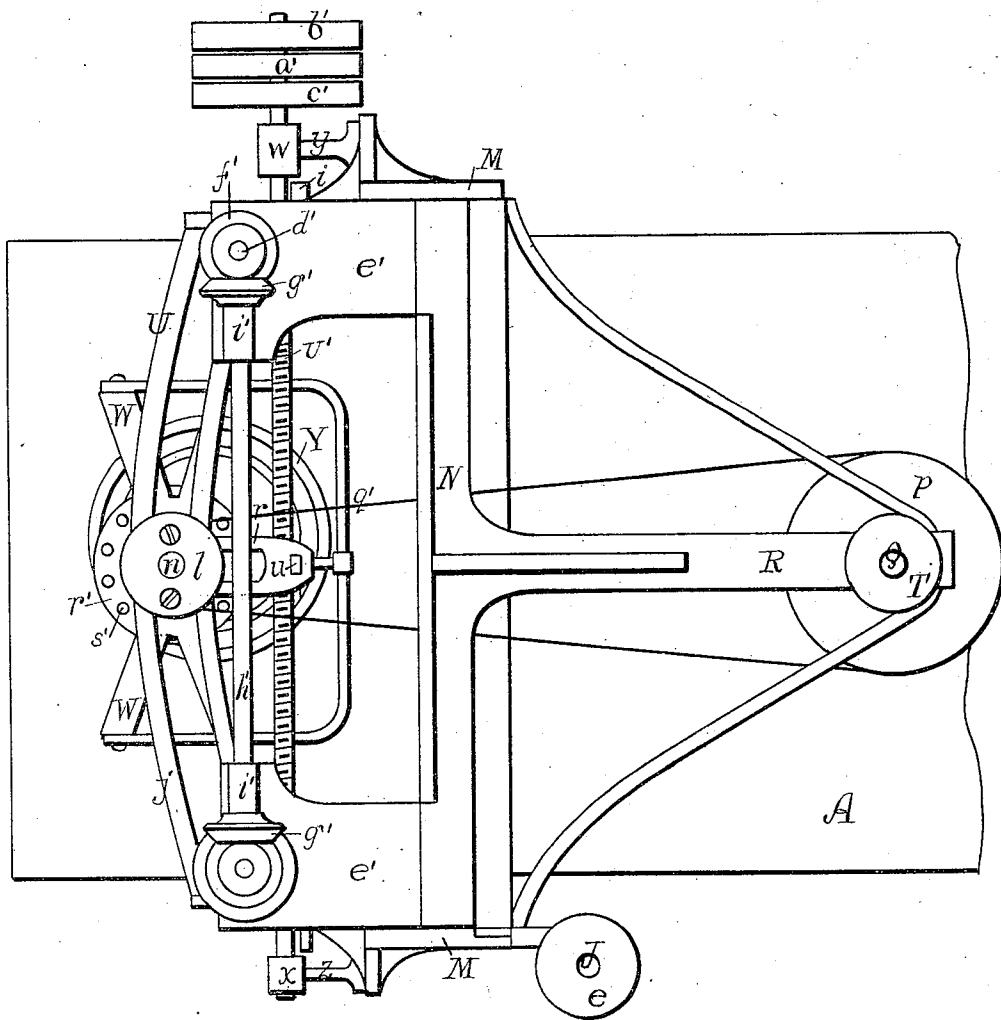


Fig. 5.

Witnesses.
Wm. T. Andrews.
F. S. Simpson.

Inventor.
William Goodman.

UNITED STATES PATENT OFFICE.

WILLIAM GOODMAN, OF BOSTON, MASSACHUSETTS.

LEATHER-DRESSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 240,997, dated May 3, 1881.

Application filed December 9, 1880. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM GOODMAN, a subject of the Kingdom of Great Britain, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Leather-Dressing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

The drawings accompanying this specification represent, in Figure 1, a front elevation of a machine embodying my invention; Fig. 2, a vertical central longitudinal section; Fig. 3, plan of movable carriage from beneath; Fig. 4, elevation of mechanism for moving table. Fig. 5 is a plan.

In these drawings the movable table for supporting the skins while the latter are being operated upon is shown at A as a flat horizontal tablet erected upon rails or fins B B, which rest and slide upon or within the upper edges of horizontal parallel beams C C, erected upon the floor of the apartment containing the machine, these beams constituting ways or guides to direct the reciprocating sliding movements of the table.

To effect the requisite reciprocating movement of the table in a horizontal plane to and fro of the ways, I add to the under side of such table, and centrally and longitudinally thereof, a toothed rack, D, and meshing with this rack I employ a driving-gear, E, which I affix to a horizontal shaft, F, disposed below the table at right angles to its path of movement and mounted in suitable bearings in the beams C C before named, this shaft F being, in turn, rotated by a bevel-gear, G, affixed to one end of it outside of the adjacent beam C.

Operating with the gear G, I employ two cone-shaped bevel-gears, H I, of equal size and capacity, such gears loosely encompassing the lower end of a vertical shaft, J, which is supported in brackets K L, affixed to the upper and lower parts, respectively, of one of two upright posts or columns, M or M', which are

erected upon the beams C C, and constitute the support of the superstructure of the machine, the upper ends of these posts being bridged by a beam, N. The gears H I are, as stated, loose upon the shaft J, and are both connected with an intermediate hub, O, in such manner as to be raised and lowered by it; and this hub is peripherally grooved, as shown at a, to receive the furcated end of a shipper-bar, which is pivoted to the outer face of the adjacent column M. Each gear H or I has a spline to operate with a corresponding groove upon the shaft, and by raising the hub O by means of the shipper-bar one or the other of the gears is thrown into engagement with gear G, and the latter rotated in one or the other direction to impart, by means of the spur-gear E and rack D, corresponding traverse of the table upon its ways. This shaft J is, in turn, rotated by a band, a', traveling about a pulley, e, affixed to its upper end, and a fast pulley, f, affixed to the upper end of a second and short vertical shaft, Q, supported in bearings or boxes g g in the rear and free end of a horizontal beam or goose-neck, R, extending rearward from the bridge-beam N before mentioned and centrally over the table A, the upper extremity of said shaft Q being furnished with a fast pulley, S, which is the driving-pulley, and a loose pulley, T. We have thus seen how the table A is caused to move backward and forward in order to present the entire length of the skins upon it to the action of the scouring or beaming tools; and in practice I propose to add to two diagonally-opposite corners of such table, steps upon which workmen may stand and travel with the table, in order the more readily to apply and remove the hides or sides of leather.

The mechanism for treating the hides or leather is composed as follows:

To the upper front part of the columns M M' I add vertical ways or guides h h, and sliding upon these guides in a vertical plane at right angles to the path of movement of the table A, I employ a horizontal carriage, U, which is the support of the tool carrier or stock, this carriage in the present instance being composed of side housings, i i, and parallel horizontal bars j j, each bar j being slotted, as shown at k, to

receive and guide a tubular hub, *l* or *m*, these hubs being grooved peripherally to embrace opposite sides of the bars. A vertical shaft, *n*, extends through the bores of the hubs *l m*, and
 5 intermediate between such hubs I affix to this shaft a pulley, *o*, about which and a pulley, *p*, affixed to the shaft *Q*, a belt, *b³*, travels and puts the shaft *n* in rotation.

To enable the shaft *n* and the dressing-tools
 10 carried by it (to be hereinafter explained) to be moved transversely of the table, in order to enable such tools to operate upon the entire width of the skins upon such table, I employ a traveler, *V*, which has furcated arms *q r* to embrace grooves *s t* in the hubs, and the body
 15 of this traveler is tubular and screw-threaded, as shown at *u*, to receive a horizontal screw-threaded rod or shaft, *v'*, which is disposed in rear of the shaft *n* and is journaled in boxes
 20 *w x*, secured to the ends of horizontal brackets *y z*, extending forward from the column *M M'*, one end of such screw-threaded shaft carrying a fast pulley, *a'*, by which it is rotated, and upon each side of such pulley a loose pulley,
 25 *b' or c'*.

To operate with the pulleys *a' b' c'*, I employ two belts, *x' y'*, one of which is crossed, such belts passing about suitable fast pulleys upon a counter-shaft, and each being governed by
 30 a shipper-bar, *z'*, in such manner that either may be run upon the central fast pulley, *a'*, and hence, by rotating the shaft *v'* in one or the other direction, impart corresponding lateral movements to the dressing-tools bodily over
 35 the skins upon the table.

To raise and lower the carriage *U* and the dressing-tools with respect to the table, or the same and the skins being operated thereupon, in order not only to elevate the tools sufficiently
 40 above the table to permit of application and removal of such skins to the latter, but to regulate the degree of pressure with which such tools shall act upon the skins, I employ at each rear corner of the said carriage *U* a vertical
 45 screw-threaded rod, *d'*, (one being right and the other left threaded,) which at its lower end screws through the upper part of such carriage, and at its upper part is guided in a shelf-bracket, *e'*, extending horizontally from the
 50 upper part of each column *M M'*, while at its extreme upper end each rod *d'* carries a beveled gear, *f'*, which is engaged and driven by a similar gear, *g'*, the gear *g'* being secured to opposite ends of a horizontal shaft, *h'*, which
 55 is journaled in boxes *i' i'*, erected upon the brackets *e' e'*, before named. The shaft *h'* is to be rotated by the hand of one of the attendants of the machine, and to this end a second and vertical shaft is to be added to the side of
 60 one of the columns *M* and carry at its lower end a crank, and at its upper end is to be geared in a suitable manner to one of the gears *g'* by an intermediate shaft and gears, so that by turning the crank in one or the other direction
 65 the carriage and dressing-tools are raised or lowered.

The manner of mounting and operating the dressing-tools is as follows: These tools are shown at *j' k'* as secured each to the lower part
 70 of a stock, *l' or m'*, which embraces and slides upon a horizontal bar, *n' or o'*, these bars being pivoted at diagonally-opposite ends to the pendent ears *p' p'* of a carrier, *W*, composed of a horizontal yoke-shaped frame, which at
 75 its center incloses and loosely rotates upon the lower part of the hub *m*, before named, the purpose in mounting the tool-carrier *W* loosely upon such shaft being to enable it to be changed in position radially about such shaft to adjust
 80 the direction of the stroke of the tools upon the skin, in order that all portions of the latter may be effectually treated or the work carried on from the center of the skin outward in all directions, if desirable; and the said carrier is
 85 to be provided with a hand-rail, *q'*, by which its changes in position may be readily effected.

To lock the carrier in any given position, and thereby relieve the attendant of the labor of holding it by manual force, I affix to the extreme lower end of the tubular hub *m* a circular
 90 horizontal disk, *r'*, pierced with a concentric range of holes, *s' s'*, &c., and operating with these holes I employ a spring-latch, *t'*, secured to the hand-rail, and provided at its inner end with a pendent stud to enter any one
 95 of the holes.

The bars *n' o'* constitute the slides or ways upon which the dressing-tools effect their traverses; and as it is necessary or desirable not
 100 only that each tool shall in its retreat movement be automatically lifted off the skin, but that the tools shall exert their active stroke upon the skin simultaneously in opposite directions, I proceed as follows: The two tools
 105 are inclined in opposite directions, as shown in the drawings, and each stock has a spur, *u'*, erected upon it, which enters an annular groove, *v'*, made in the under side of a horizontal disk or hub, *Y*, secured to the lower extremity of the shaft *n*, below the pierced disk
 110 *r'*, before named, this disk *Y* and its groove *v'* being disposed eccentrically with respect to the axis of said shaft *n*, in order that it may, with each revolution, effect a traverse of each tool-stock and tool upon its supporting-bar,
 115 the two tools being arranged diagonally opposite each other with respect to the longest plane of the carrier *W*, in order that while the eccentric groove is driving one tool in one direction it shall drive the other in an opposite
 120 direction.

To raise each tool from above the skin as it effects its retreat or inoperative traverse, I support the free end of each bar *n' o'* upon a
 125 spring, *w'*, which is secured to it and rests upon a ledge secured to the lower end of the adjacent ear, *p'*, and I fashion the lower edge or margin of the disk *Y* into an annular cam, *x'*, the form of this cam and its disposition with respect to the bars *n' o'* and tool-stock *l' m'*
 130 being such that as each tool-stock effects its outward or effective stroke the swell of the

cam wipes against and lowers the free ends of the bars and crowds the tools upon the skin, while as the tools effect their inward or inoperative movement the shortest portion of the cam wipes upon the bars and permits their springs to elevate them and the tools and raise the latter above the skins.

In operating with this machine an attendant stands upon the steps of the table and travels with the latter, as before explained, and a third attendant manipulates the hand-rail *q'* and the crank-shaft, which raises and lowers the tool-carriage *U*, while a fourth controls the shippers, which throw the gears *H I* into and out of action. Piles of skins to be treated are to be located at points contiguous to the extremes of movements of the table, and in beginning two skins are laid upon the table lengthwise of the latter. The driving-pulley *p* is now put in revolution, and the dressing-tools caused to move backward and forward, as explained, and the carriage *U* is next lowered until the tools come in contact with the skin. The table is now, by means of the shipper, moved forward or backward, as the case may be, to the extent requisite to go over the skins from end to end as often or as long as occasion may require, while at the same time the carrier *W*, by means of its hand-rail, is changed in position axially upon the hub *m* as often or as long as may be necessary to act in any given direction upon the skin radially of such hub, while finally the shipper *z'* is to be operated at such times as it is desirable to move the tools bodily across the skins to act upon the entire width of the same. As one skin is finished the table is run to the extreme of its movement corresponding to this skin, and such skin is removed by the attendant at this end of the table and a fresh one substituted, while as the opposite skin is finished the same operations take place.

By causing the table to move to and fro of the machine to act upon the skins lengthwise of them, as explained, I obtain great strength of parts, as the dressing-tools and their operative mechanism are always in the same position with respect to the table, and may be supported in a very firm and unyielding manner as compared with instances in which they traverse a long arm unsupported at one end and operating with a long stationary table.

I consider my invention to embrace, among other features, the combination of the skin-supporting table with the tool supporting and operating mechanism when such table is adapted to move to and fro in suitable guides in a path at right angles to the direction of movement of the tool-supporting carriage.

I also consider another feature of my invention to consist in a rotary disk having an annular groove arranged eccentrically to the axis of rotation of the disk, and operating upon the tool-stocks to effect reciprocating traverses of the same upon suitable bars arranged below the disk.

In lieu of raising the free ends of the bars *o o'* by springs, as stated, the lower end of the shaft *n* may be lengthened, and a circular disk secured to it having a swell or cam grade on its upper surface, to wipe against the under side of the said bars and effect their elevation; and I propose adding to this rotary disk a wire brush adapted at each revolution of said disk to wipe against or across the dressing-tools, in order not only to remove from the latter any filth or foreign matter which might otherwise adhere to them, but prevent the skin which is being acted upon from adhering to the tool or its stock, as is now frequently the case, by being caught between said tool and stock.

I claim—

1. In machines for scouring hides, dressing leather, &c., the combination, with a horizontal skin-supporting table adapted to move in a path practically at right angles to the direction of movement of the tool-carrier and tools, and with the dressing-tools mounted upon and traversing horizontal bars, of a rotary disk or head having an annular channel arranged eccentrically with respect to the axis of rotation of the disk, and operating upon the tool-stocks to drive the tools in reciprocating paths of movement upon their supports, substantially as explained.

2. The rotary disk containing a channel eccentric with its axis of rotation to effect the reciprocating movements of the dressing-tools in straight parallel paths upon their supports, and a cam-ledge operating with a spring or its equivalent and adapted to raise and lower the tool-supports with respect to the table, substantially as herein described.

3. In combination with the vertically-adjustable carriage, a tool-supporting carrier carrying the dressing-tools, which are mounted upon parallel horizontal bars and operated by an eccentric groove and cam-ledge, as explained, and adapted to be turned with the tools and their immediate operative mechanism horizontally upon the axis of the support of such carrier, substantially as hereinbefore set forth.

4. The combination, with the vertically-adjustable carriage, of the tool-carrier, the eccentrically-grooved disk or head, the tool-stock, and the horizontal parallel bars, which constitute the ways or guides of the tools, substantially as explained.

5. In combination with the tool-carrier and the pierced stop plate or disk or its equivalent, a hand-rail carrying a spring-latch or other means of locking the tool-carrier in position with respect to the carriage which supports the carrier and the skin-supporting table, substantially as explained.

6. The combination, with the yoke-shaped tool-carrier, of the two horizontal bars constituting ways or guides for the tool-stocks, and pivoted at opposite ends to such carrier, substantially as set forth.

7. The combination, with the supporting-car-

rier, of the twin bars supporting the tool-stocks, the tool-stocks being adapted to traverse such bars, and the disk or head, with its eccentric-ally-arranged groove, serving to effect the
5 traverses of the tools, substantially as explained.

8. The screw-shaft operating with the vertically-adjustable carriage and the tool-carrier to effect the traverses of the latter upon the car-

riage, substantially as herein set forth and described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM GOODMAN.

Witnesses :

H. E. LODGE,
S. L. CLARK.