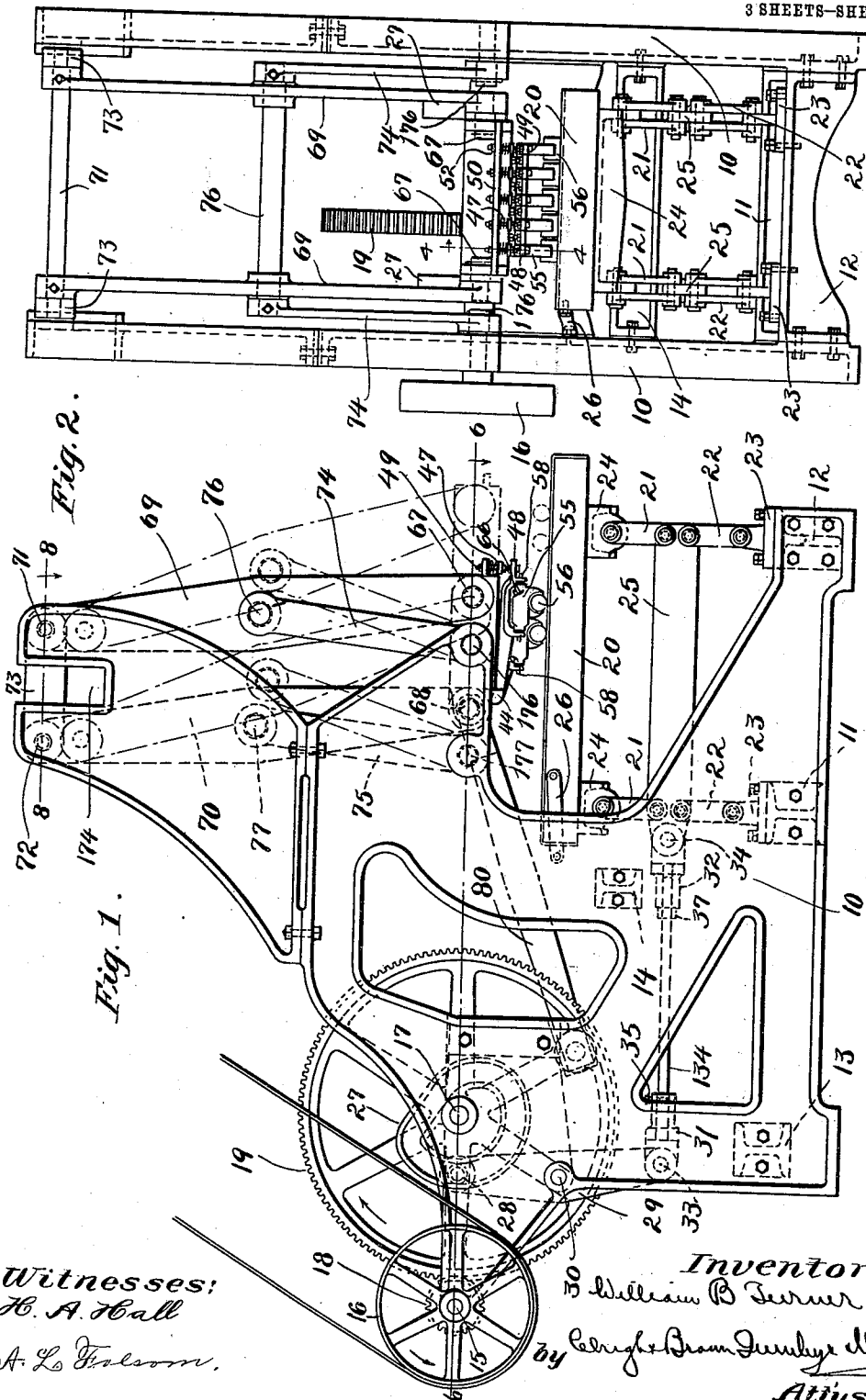


W. B. TURNER.
LEATHER GLAZING MACHINE.
APPLICATION FILED MAY 15, 1908.

1,007,160.

Patented Oct. 31, 1911.

3 SHEETS-SHEET 1.



Witnesses:
H. A. Hall
A. L. Folsom.

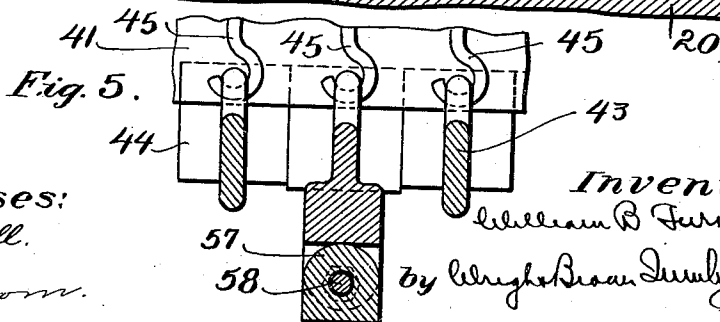
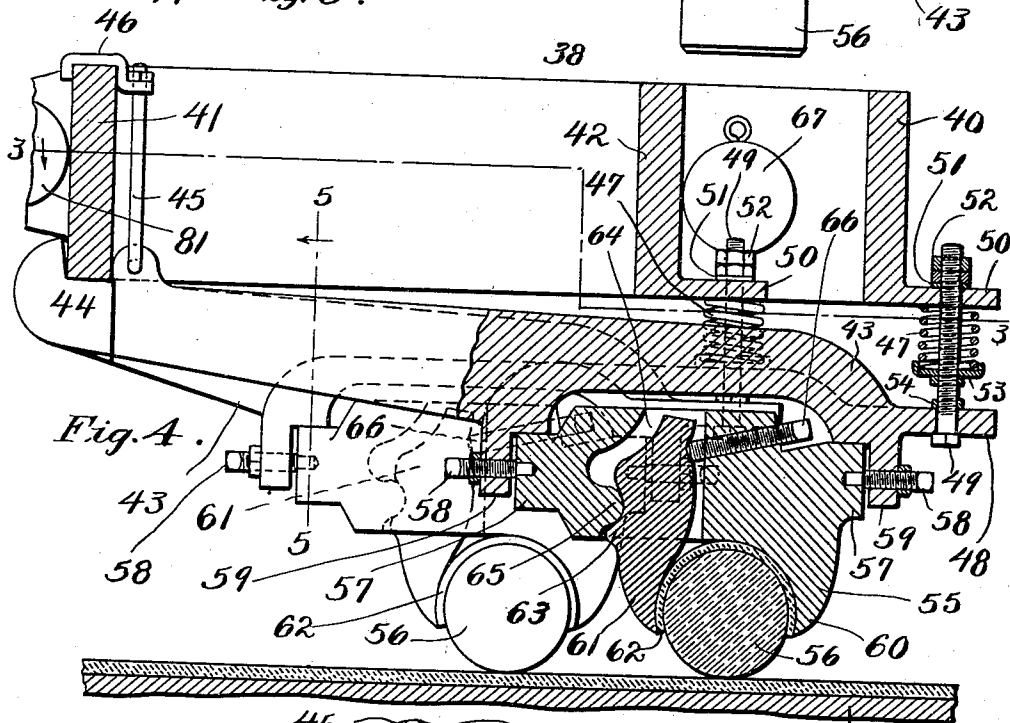
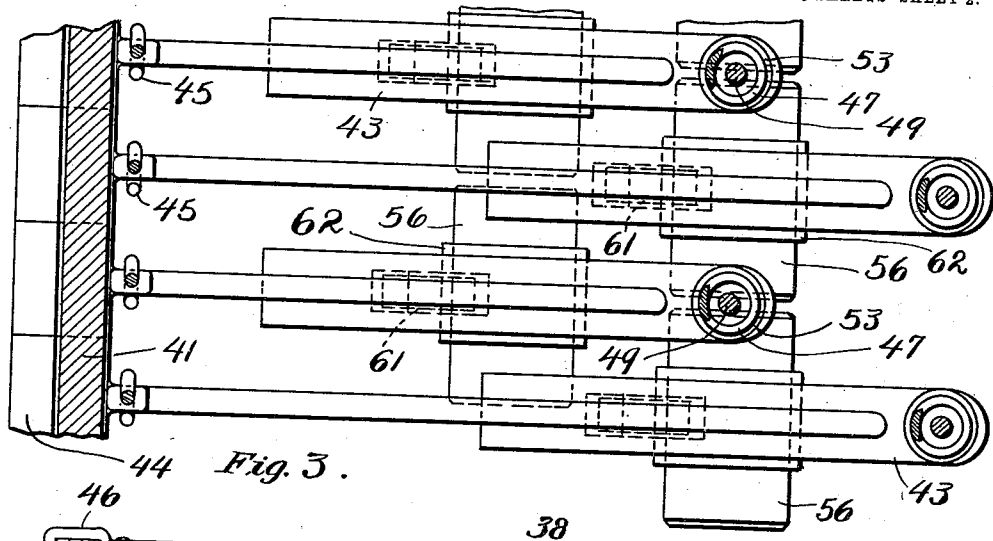
Inventor
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3 SHEETS-SHEET 2.



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3 SHEETS-SHEET 3.

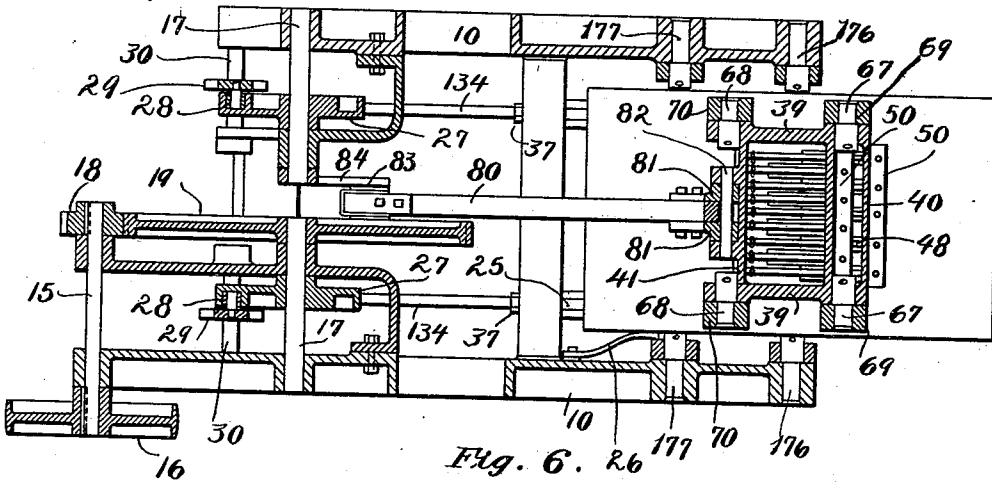


Fig. 6.

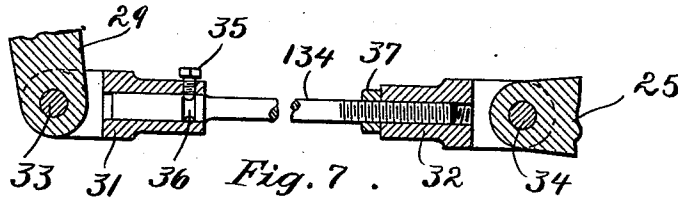


Fig. 7.

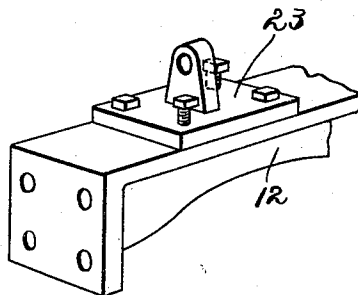


Fig. 9.

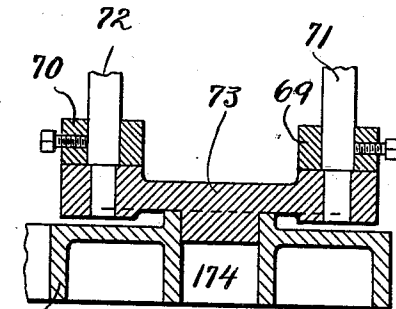


Fig. 8.

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UNITED STATES PATENT OFFICE.

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LEATHER-GLAZING MACHINE.

1,007,160.

Specification of Letters Patent.

Patented Oct. 31, 1911.

Application filed May 15, 1908. Serial No. 433,051.

To all whom it may concern:

Be it known that I, WILLIAM B. TURNER, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Leather-Glazing Machines, of which the following is a specification.

This invention has relation to those leather finishing machines which are known as "glazing machines" by which the surface of the leather is smoothed, stretched and polished.

The object of the invention is to provide a machine by which the operation of glazing may be so expedited, that a greater number of dozens of skins may be glazed by an operator than has hitherto been possible. To this end I employ a plurality of agates or glasses, so that a single stroke of the operating head will treat a broad stripe on the skin, and consequently a single stroke of the head will accomplish as much work as a number of strokes of a head which is equipped with a single agate or glass. These agates or glasses are preferably arranged in two rows with the agates of one row breaking joint with those in the other, so that there is no portion of the stripe untreated. Furthermore, the agates are all mounted so as to be capable of independent movement, whereby each may accommodate itself independently of the others to that part of the skin which is being engaged by it. The illustrated embodiment of the invention is provided with an independent holder for each agate, and each holder is mounted upon the head in such manner that it may swing about two centers, there being a spring or equivalent means for pressing the holder toward the skin.

A work table having a plane surface is utilized for supporting the skin undergoing the glazing operation, and as the head is provided with two rows of agates, it is necessary that the agates travel, during the finishing stroke, in a plane, without a variation in the pressure of the agates against the skins, except as may be occasioned by a varying thickness of the skin itself. To this end, I have devised a novel mechanism for mounting and guiding the head. The head itself may take any desired form of support for the holders, and the mechanism

referred to comprises at each side of the head, a pair of parallel links which are fulcrumed upon fixed pivots, a pair of parallel links pivoted to the head and to the first mentioned links, and a slide to which the second pair of links is pivoted and which is movable at a right angle to the work support or table. Any suitable means may be employed to reciprocate the head, the link and slide mechanism just described, causing the head to move in a plane parallel to the surface of the table or work support without varying the pressure of the agates upon the skin.

The table and the head are caused, by any convenient means to approach each other at or near the forward stroke of the head and to separate at or near the completion of the rearward stroke thereof. This is accomplished by vertically reciprocating either the head or the table as may prove most convenient.

In addition to the features of the invention thus briefly pointed out, the invention comprehends other features of construction and arrangement which are illustrated upon the accompanying drawings, described in the following specification and particularized in the appended claims.

Of the accompanying drawings, Figure 1 represents a side elevation of a glazing machine embodying the invention. Fig. 2 represents a front end elevation thereof. Fig. 3 represents a section on the line 3—3 of Fig. 4. Fig. 4 represents the head and the members carried thereby in section. Fig. 5 represents a section on line 5—5 of Fig. 4. Fig. 6 represents a section on line 6—6 of Fig. 1. Fig. 7 illustrates the connection between the table and the lever which raises and lowers it. Fig. 8 represents a section on line 8—8 of Fig. 1. Fig. 9 represents in perspective view, a portion of one of the cross bars to which the table supporting links are attached.

Referring to the said drawings, a machine is there illustrated as embodying the invention, which comprises a frame consisting of standards 10 connected by suitable cross braces 11, 12, 13 and 14. Journaled in the standards is a prime power shaft 15 equipped with the usual pulley 16, by which movement is imparted to it. From this power shaft motion is transmitted to an

operating shaft 17 journaled in bearings in the standards through the medium of a pinion 18 and a large gear 19. From the shaft 17 power is transmitted to the movable elements of the machine.

The table or work support is indicated at 20. Its upper plane surface is adapted to receive and support a skin which is to be glazed. In the illustrated embodiment of the invention, this table is reciprocated vertically, and to that end it is supported upon four pairs of links 21 22. The links 22 are pivoted at their lower ends to brackets 23 on the cross bars 11 and 12, and the upper ends of the links 21 are pivoted to lugs on the cross bars 24 24 secured to the under side of the table or support 20. The links 21 22 are also pivoted to longitudinally arranged bars 25 which are reciprocated longitudinally of the machine so that the links 21 22 will act as toggles to raise and lower the table 20. To prevent the table from moving longitudinally, there is a link 26 pivoted both to it and to one of the standards, as shown in Figs. 1 and 2.

The shaft 17 is provided with two path cams 27 27 with which are operatively engaged rollers 28 on levers 29 fulcrumed on studs 30 projecting inwardly from the standards, as illustrated in Figs. 1 and 6. The lower ends of the levers are connected to the bars 25 by the connections of which one is illustrated in Fig. 7. This connection consists of two sleeves 31 32 which are connected by pintles 33 34 with the lever 29 and the bar 25 respectively. A connecting rod 34 is inserted in the sleeve 31 and is held against axial movement by a screw pin 35 projecting into a groove 36. The other end of the rod 34 is threaded and is screwed into a threaded aperture in the sleeve 32, and is also provided with a lock nut 37. This form of connection permits of an independent adjustment of each of the bars 25 relatively to its operating lever 29, so that the table may be properly leveled.

It will be observed from Fig. 2, that the table is relatively wide and is in fact much wider than the tables that have heretofore been made in glazing machines. This is done in order that I may utilize a plurality of agates or glasses as previously stated. These agates or glasses are supported independently of each other upon a head which is indicated at 38. In plan view, this head is substantially rectangular, and is provided with two side walls 39, a front wall 40, and a rear wall 41. Near the front wall, there is a second wall 42 which connects the side walls as illustrated in Figs. 4 and 6. To this head are connected a series of supports 43. Said supports have hooked rear ends 44 which engage the rear wall of the head, said supports being hung by hooks 45 from clips 46 resting on the upper edge of the

wall 41, so that the front end of the supports may oscillate vertically. The supports are of different lengths as shown in Figs. 3 and 4, and they are arranged in alternation so that each alternate support projects beyond the two adjacent ones. Between the front end of each support and the head, there is arranged a compression spring as at 47. It will be observed that each of the supports has a lug 48 through which is loosely passed a bolt 49, the latter projecting through an aperture in a web 50 projecting forwardly from the front wall 40 of the intermediate wall 42 of the head. On the upwardly projecting end of each bolt are a washer 51 and lock nuts 52. The spring 47 is arranged between the web 50 and an adjustable collar or spring seat 53 on the bolt. The lug 48 on each holder is clamped between the head of the bolt and the nut 54. With this construction, it will be seen that each support is pivoted at its rear end so that it may be removed independently of all the others, and also that the tension, which is exerted upon its front end, may be varied also independently of the others. Swiveled in each support there is a holder 55 for an agate or glass 56. Each holder has trunnions 57 at its front and rear ends into which project screw pins 58 58 passed through downwardly depending lugs 59 on the support. These screw pins are in alignment and are arranged longitudinally of each support so that the agate or glass carried by the holder, is capable of practically universal movement, that is to say, it may oscillate about the axis of movement of the support, and also about the axis of movement of the holder. Each holder is provided with two clamping members 60 61, the former constituting an integral part of the holder, and the latter being removable. These clamps form a semicylindrical seat or socket for the agate, and in the seat thus formed by them, is placed a cushion or shoe 62 of suitable material to prevent injury to the agate. The holder has an aperture extending from top to bottom as indicated at 64 to receive the clamping member 61, and in one wall of this aperture, there is a curved convex rib 65 which fits a complementary groove or socket 63 in the clamping member 61 so that the clamp may be swung about the rib as a fulcrum. A set screw 66 is passed through the holder so that its end bears against the upper end of the clamp 61, whereby its lower operative end may be caused to cooperate with the fixed member 60 in securely clamping and holding the glass or agate. Upon reference to Fig. 3, it will be observed that each support and the holder carried thereby, is relatively narrow and that the agate clamped in the holder projects laterally of both sides thereof.

By forming the holders of two different

lengths, the agates are arranged in two transverse rows as shown in Fig. 3, those in one row breaking joint with those in the other row. In the front row, I may employ a sufficient number of agates to glaze a broad stripe on the skin. I have illustrated five of these agates, but it will be understood that I may employ a smaller or a greater number. By employing two rows of agates, the skin is subjected to a double glazing during each reciprocation of the head, and at the same time I prevent portions of the skin from being left untreated. I consider it highly desirable to so mount the agates that each is capable of universal movement so that it may accommodate itself to the surface of the skin, and to any inequalities therein. It is not essential that the agates of each row should be in exact alinement although this disposition of the agates is convenient. Since I employ agates, one of which is in front of the other, it is necessary that the head should be arranged in parallelism with the table, and that this relation should not be disturbed during the reciprocation of the head. To this end, I have provided a novel parallel link mechanism for supporting and guiding the head.

Referring to Figs. 1, 2, 6 and 8, it will be seen that projecting laterally from the head on each side are two pins or studs 67 68 as best illustrated in Fig. 6. Pivoted to said pins or studs are links 69 and 70 which extend upwardly therefrom, and are pivoted by studs 71 72 to slides 73 which are movable in vertical guides 174 formed in the side standards. The pins or studs 71 72 take the form of rods which extend entirely across the machine as shown in Fig. 2. Pivoted to the links 69 and 70, at a point exactly midway between the axes of the studs 67 and 71, or 68 and 72, are parallel links 74 75. This pivotal connection is made in each case by a rod or shaft which projects through corresponding links 69 69 and 70 70, as indicated at 76 77 in Figs. 1 and 2. The lower ends of the links 74 75 are fulcrumed upon fixed studs 176 177 which project inwardly from the side standards. The distance between the axes of the pivots 67 and 76, 76 and 176, and 76 and 71 is exactly the same, and the same is true as to the pivots for the links 75 and 70. The distance between the studs 71 and 72 on the slide is equal to the distance between the studs 176 and 177 on the head, and between the studs 67 68 on the frame, the studs 71 and 176 and the studs 72 and 177 being in lines perpendicular to the surface of the table or work support, the guideways 174 being also in lines perpendicular to the surface of the table. In consequence of this construction and arrangement it will be seen that the heads are through the medium of the links, supported upon the studs 176 and 177, and that, when

the head is reciprocated, it will travel in a plane parallel to the surface of the table or work support.

Any convenient mechanism may be utilized for imparting a reciprocatory movement to the head. I have shown a mechanism which serves its purpose, it consisting of a pitman 80 having attached to its front end, lugs 81, 81 which are pivoted upon a pintle 82 passed through the lugs on the rear wall of the head. The rear end of the pitman is attached to a crank 83 secured on the shaft 17 which is split as shown in Fig. 6. As a matter of precise description, the crank 83 projects laterally from the large gear 19, and is connected with the other section of the shaft opposite to that to which the gear is secured, by means of an arm 84.

I have previously stated that it is substantially immaterial whether the table be moved relatively to the agate carrying head or whether the latter be moved toward and from the table. As an illustration of this, I call attention to the fact that the links 21 and 22, which support the table, might be connected, without much change except as to their location and length, to the studs 176 and 177, in which event, the guideways 174 will be made longer and the table would be mounted rigidly upon the frame. If this were done, the agate carrying head would not only be reciprocated longitudinally of the table, but would be moved up and down relatively to it.

The advantage of the machine embodying the invention which I have hereinbefore set forth, will be apparent at once to persons skilled in the art. Heretofore the glazing of each skin required the expenditure of considerable time even with the glass moving at high speed. With my machine, I am enabled to drive the head at a lower speed and at the same time to secure an output which is very much greater than has ever been before possible.

Having thus explained the nature of my invention and described a way of constructing and using the same, although without attempting to set forth all of the forms in which it may be made or all of the modes of its use, what I claim is:—

1. A leather working machine comprising a movable head, a plurality of working tools mounted on the head, a flat work support, and parallel compounded links supporting said head so as to guide the head in a rectilinear path.

2. A leather working machine comprising a movable head, a plurality of working tools mounted on the head, a flat work support, and compounded oscillatory members supporting said head so as to guide the head in a rectilinear path.

3. A leather working machine comprising a flat work support, a movable head, a plu-

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ality of working tools mounted on the head, means for reciprocating the head, and compounded oscillatory links supporting the head so as to guide it in a rectilinear path.

5 4. A leather working machine comprising a flat work support, a working tool, compounded oscillatory links supporting said

tool so as to guide it in a rectilinear path, and means for oscillating said links. 10

In testimony whereof I have affixed my signature, in presence of two witnesses.

WILLIAM B. TURNER.

Witnesses:

MARCUS B. MAY,

P. W. PEZZETTI.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."