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Patented Sept. 5, 1899.

C. E. PELLOW.
LEATHER DRESSING MACHINE.

(Application filed May 23, 1898.)

(No Model.)

2 Sheets—Sheet 1.

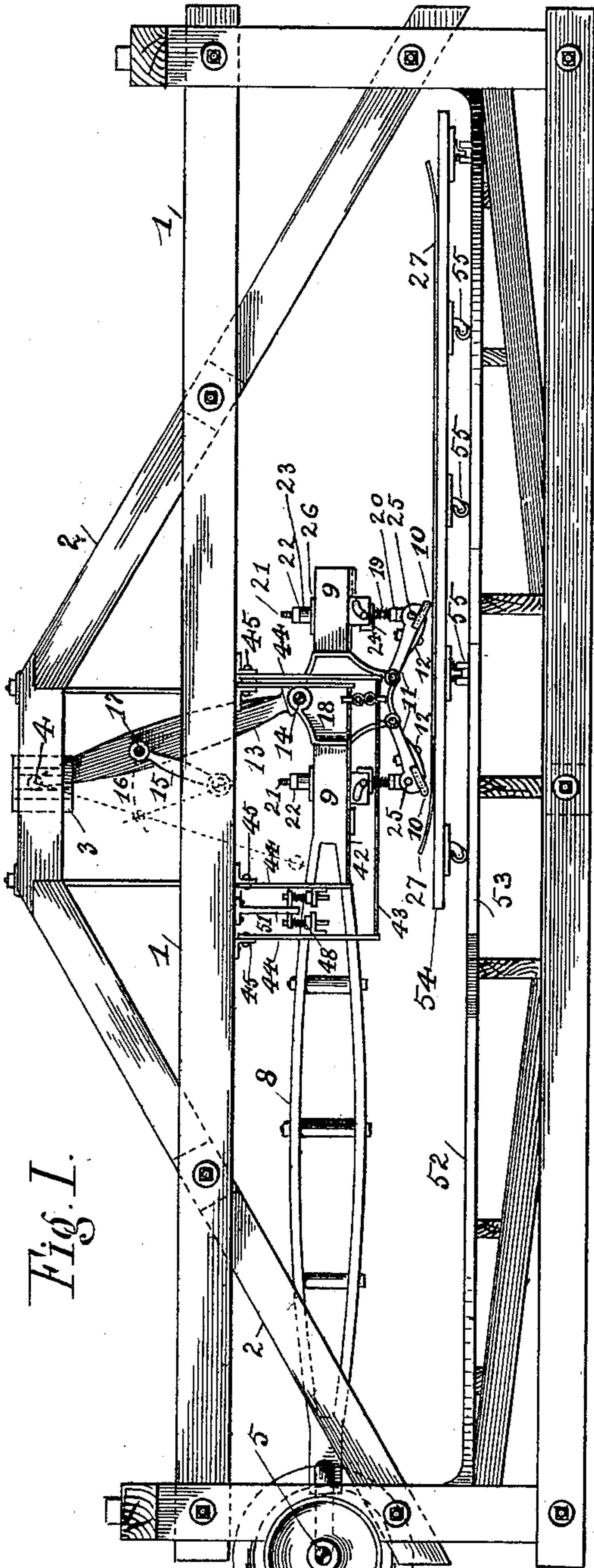


Fig. I.

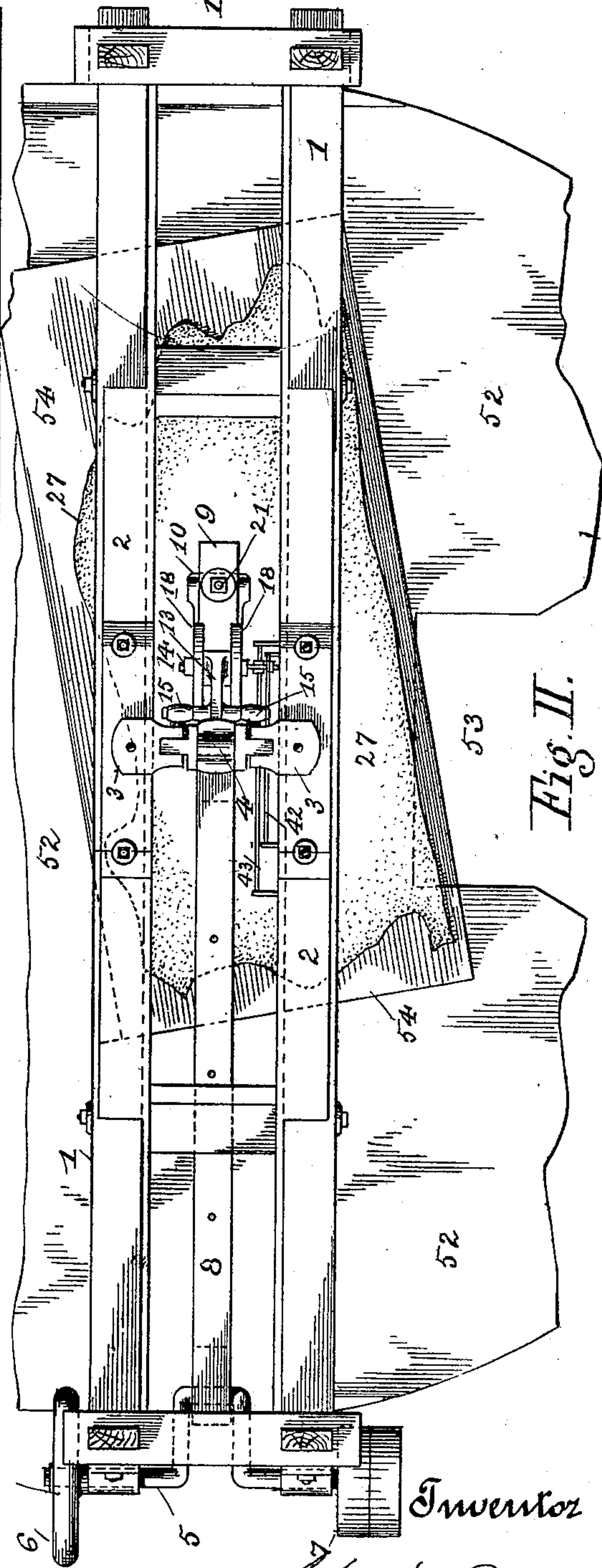


Fig. II.

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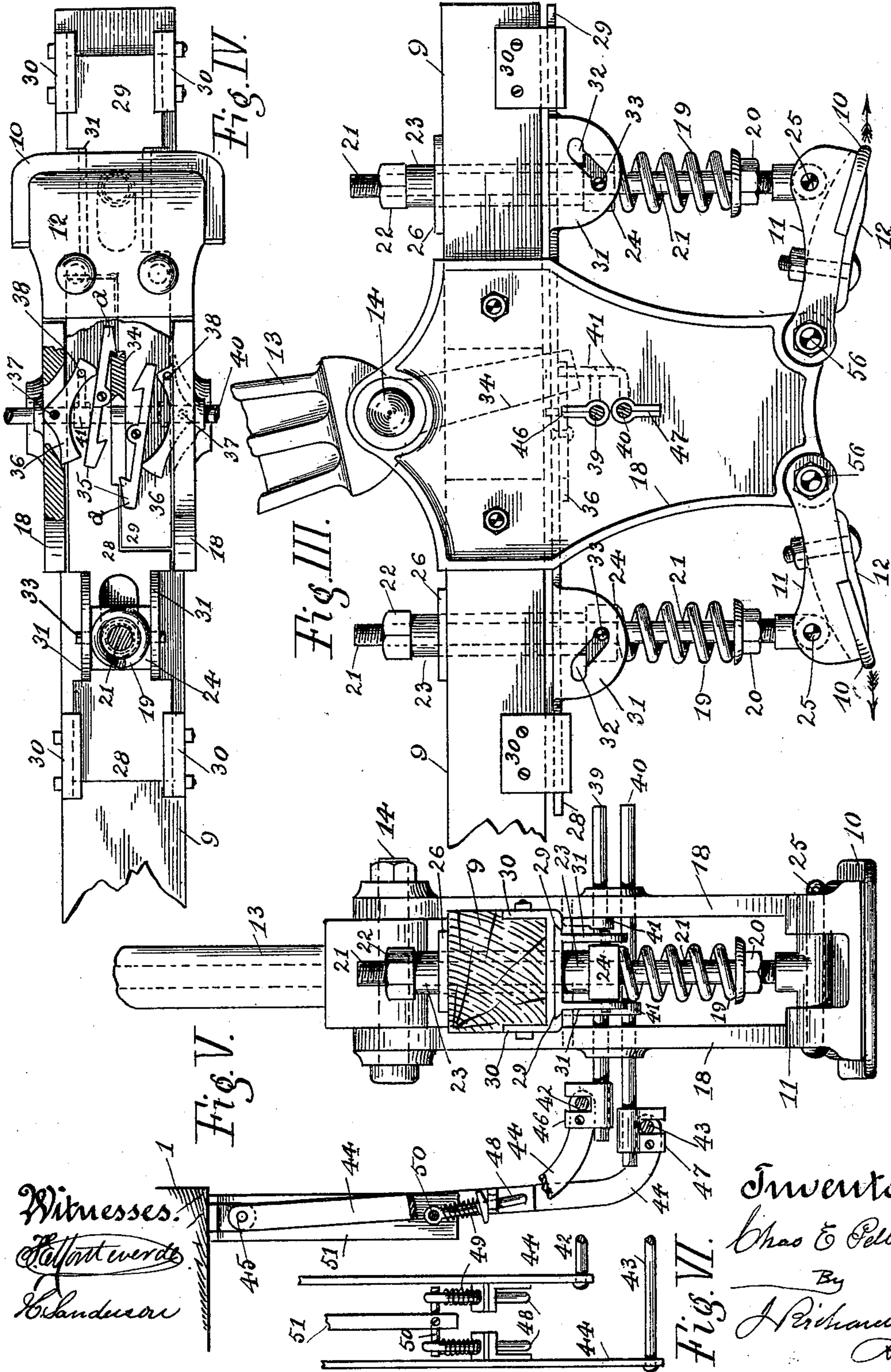
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

CHARLES E. PELLOW, OF ALAMEDA, CALIFORNIA.

LEATHER-DRESSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 632,364, dated September 5, 1899.

Application filed May 23, 1898. Serial No. 681,523. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. PELLOW, a citizen of Canada, residing at Alameda, county of Alameda, and State of California, have invented certain new and useful Improvements in Leather Scouring and Setting Machines; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to leather currying and to certain improvements in machines for scouring and setting leather by rubbing action applied in a novel and efficient manner. My improvements consist in an improved means of attaining a rectilinear movement of the double-acting rubbing implements by radial devices and without the use of slides; in employing the angular movement of the reciprocating connecting-rod to produce the required oscillation and alternate action of the rubbing implements which are mounted directly thereon; in the application of pressing-springs directly over and opposite the rubbing implements, thus relieving the strain upon the operative parts; in devices for releasing the pressure on the rubbing implements by the driving power, requiring only engagement by an attendant; in devices to adjust and regulate the amount of pressure applied on the rubbing-surfaces, also their vertical adjustment for various thicknesses of leather; in the application of antifriction rollers or casters to the bottom of the movable table on which the leather is supported, and also in other features hereinafter fully explained in connection with the drawings, and set forth in the claims at the end of this specification.

The objects of my invention are to secure a more perfect and efficient action of machines for scouring and setting leather, to dispense with slides for the reciprocating parts and various operative details that render such machines perishable and liable to derangement, to avoid weight in the reciprocating parts of the machine, and to attain a higher rate of reciprocating motion and a simple and easy means of adjustment both of the implements and material operated upon.

To these ends I make provisions as shown

in the drawings, forming a part of this specification, in which—

Figure I is a side elevation of a machine for scouring and setting leather constructed according to my invention. Fig. II is a plan view of the same machine. Fig. III is an enlarged side view of the head or main operating part in which the rubbing implements are mounted. Fig. IV is a bottom view of Fig. III, partially in section. Fig. V is an end view of Fig. III with the engaging and disengaging devices for the rubbing implements. Fig. VI is a view in the opposite plane of some of the details in Fig. V.

Similar letters and numerals of reference indicate corresponding parts.

In the operation of scouring and setting machines the implements, commonly of hard stone, are given a reciprocating motion, also a movement to and from the leather, so that they will act alternately and oppositely from each other, rubbing right and left away from the center, while the table on which the leather is placed is adjusted by hand, so that the various portions of its surface will receive in different directions the required amount of rubbing, or "scouring" and "setting," as it is usually called. These rubbing implements have hitherto been guided by rectilinear slides and operated by a crank and connecting-rod. In my invention these slides are dispensed with and the implements are attached directly to the connecting-rod, extended for that purpose, and the rectilinear movement is obtained by radial links and a movable fulcrum that compensates the arcs described by the connections.

Referring to the drawings, the main frame 1 is rectangular in contour, provided with an arched member 2, that supports the guides 3 for the movable fulcrum 4, and also forms diagonal braces for the main frame. A crank-shaft 5 is placed at one end of the machine, provided with a fly-wheel 6 and driving-pulley 7. The connecting-rod 8 is made integral with an extension 9, hereinafter called a "beam," on which is supported the devices to support and apply the rubbing implements 10, the latter secured to pivoted plates 11 by the clamps or jaws 12, as shown in Figs. III and IV. The connecting-rod 8 is suspended

in the center of the extension 9 by a pendulous main link 13, pivoted at the bottom 14 to the plates 18 and beam 9 and at the top to the sliding fulcrum 4, the weight of this link 5 and of the beam 9 being supported by the links 15, as seen in Figs. I and II. These links 15 describe an arc 16, the radius of which being approximately half the distance between the points 14 and 17, produces a modified and nearly rectilinear movement at the 10 point 14 and of the beam 9, except as to the angular movement of the latter produced by the connecting-rod 8, the top fulcrum 4 of the links 13 sliding vertically a distance equal to the versed sine of one-half the arc 16. The 15 component of these movements at the point of action when the implements 10 bear upon the leather is in effect a curved line at the entrance and producing a nearly or complete 20 rectilinear movement throughout the central and working portion of the stroke, modified, of course, by the position of the fulcrum 4. By this construction I avoid the use of horizontal guides or slides, that are objectionable because of wear, care, and friction.

Referring next to the rubbing implements 10 and the devices for supporting, presenting, and releasing them, the hinged plates 11 are pivoted to the central main member, 30 formed of two metal plates 18, attached one on each side of the beam 9. The plates 11 are forced downward by the springs 19, the strain of which is regulated by the screw-nuts 20 on the stems 21. These stems 21 are provided at the top with screw-nuts 22 and shells 35 23, that form struts or distance-pieces between the nuts 22 and the collars 24, fitting loosely on the stems 21, which, with the shells 23, slide loosely through the beam 9, thus regulating the vertical range each way of the 40 stem 21 and of the implements 10, as will be presently explained. The stems 21, being pivoted at 25 to the swinging plates 11, the angular or oscillating motion of the beam 9 causes the plates 26 to come in contact with the nuts 22, and thus raise the plates 11 and the implements 10 alternately clear of the leather 27, so that they will act only in one direction, as indicated by arrows in Fig. III. As, 50 however, the implements 10 have to be raised and held above their working position while the machine is in motion, I employ devices for this purpose consisting of the two sliding members 28 29, supported in the brackets 30 55 and provided at the sides with angular flanges 31, that have diagonal slots 32, into which fit pins 33, that are inserted in the collars 24 on the stems 21. By moving either of the members 28 or 29 inward or toward the center the 60 pins 33 follow the slots 32 and raise the stems 21 accordingly, holding one or both of the implements 10 clear of the work when the leather is to be removed or changed or for any reason that requires cessation of the machine's 65 operation. To perform this last-named function of moving the members 28 29, I form an

extension 34 on the pendulous main link 13, as shown in section at Fig. IV and indicated by dotted lines in Fig. III. On the bottom 70 of and attached to the sliding members 28 29 I place double pawls or hooks 35, that can be engaged by the extension 34 of the link 13, as seen in Fig. IV, thus positively moving the members 28 29 to the right or left, as the 75 engagement of the pawl-hooks 35 will determine. To operate these pawl-hooks 35, there is provided two oscillating wards or followers 36, pivoted at 37, the ends of which press inward and against the ends of the pawl-hooks 35, so as to move the members 28 29 forward 80 or back, as the implements 10 are to be raised or lowered. To operate the wards 36, there are provided two sliding rods 39 and 40, and on these bent studs 41, that engage the wards 36 at 38, so that by sliding these rods 39 and 85 40 either way the hooks on the pawl 35 are engaged accordingly. To operate the sliding rods 39 and 40, which engage, respectively, the wards 36, that operate the pawls 35, that move the members 28 and 29, there are set 90 parallel with the movement of the machine rods 42 and 43, supported by links 44, attached to the main frame at 45. The rods 42 and 43 slide in adjustable jaws 46 and 47, so that the rods 39 or 40 can be moved either way 95 across the machine by an operator pressing or pulling the rods 42 43 laterally outward or inward while the machine is in motion.

To hold the rods 42 and 43 when placed in their inward or outward positions and to prevent their gravity from moving the rods 39 100 and 40 and releasing the pawl-hooks 35, I provide oscillating spring-keepers 48, pivoted at 50 to a stationary standard 51, on each side of said standard, having springs 49, which bear 105 against an abutment on links 44, and thereby hold them in their forward positions during the time the pawl-hooks 35 are engaged.

The mechanism heretofore described for moving the members 28 and 29 and raising 110 or lowering the implements 10 admits of various modifications. I have described a method that operates well in practice, reserving to myself the privilege of modifying these devices to produce a like result without departing from the essential and more important 115 features of my invention.

To support the leather being treated, I provide a large stationary table 52, having a recess at 53, where an operator may stand. On 120 the top of this main table 52 there is placed a smaller movable table 54, provided with ball-bearing casters 55, so as to permit a free and easy movement of the table 54 and the leather 27 thereon to receive the section of 125 the implements 10 in any direction. By attaching the swivel-casters 55 to the bottom of the movable table 54 it will be seen that their number and the area to be provided for are much less than if these casters were mounted 130 on the main table 52 and stationary. By this construction the plane of guidance is re-

5 moved from the upper to the lower or main table, and the former can be of any required thickness to prevent it from warping, the casters and not its bottom surface forming the movable plane for this table 54.

10 The main table 52 besides maintaining a true plane of movement for the movable table 54 serves the further purpose of protecting the machine-frame and the floor beneath from water and slime that can be collected and carried off by the usual devices employed in such cases, and the machine can for that reason be operated on upper floors of a building.

15 In operating the machine the crank-shaft 5 is set in motion and the rods 42 and 43 are drawn outward to engage the ends *a a* of the pawls 35 with the lever extension 34 of the main link 13, raising in the manner before described the stems 21, swing-plates 11, and 20 implements 10. A side of leather 27 is then laid on the movable table 54, the rods 42 and 43 are pressed inward, and the other ends of the pawl-hooks 35 engage, moving the members 28 and 29 outward from the center, permitting the implements 10 to bear upon the 25 leather 27 outward from the center and alternately as the angle motion of the connecting-rod 8 determines.

30 If the pressure is not sufficient or is too great, the nut 20 is turned to compress or extend the springs 19 accordingly. These springs 19 being placed directly over the stones or rubbing implements 10, there is no strain upon the pivots 56 and the tension or 35 compression required is readily adjusted.

By this construction it may be seen that the reciprocating elements or parts of the machine are greatly reduced in weight and that the reciprocating motion and consequent amount of 40 work done in a given time is increased in proportion; also, that the various strains, jar, and concussion are reduced correspondingly.

Having thus explained the nature and objects of my invention, what I claim as novel, 45 and desire to secure by Letters Patent, is—

1. In a leather scouring and setting machine, in combination, a main frame, a crank-shaft and connecting-rod, a beam extension, a pair of rubbing implements pivotally suspended from said beam extension, link 13 50 pivoted to said beam extension, having movable fulcrum 4, and link 15, pivoted to the main frame and to link 13, said link 15 being of a length between its pivots one-half the dis-

55 tance between the pivots of the link 13, whereby approximately rectilinear motion is imparted to the beam extension, substantially as specified.

2. In a leather scouring and setting machine, in combination, a main frame, a crank-shaft and connecting-rod, a beam extension, a pair of rubbing implements pivotally suspended from said beam extension by means of side plates 18 and hinged plates 11, means for alternately raising and depressing said 60 rubbing implements, pivoted stems 21, springs 19, shells 23, and adjusting-nuts 22, substantially as specified.

3. In a leather scouring and setting machine, in combination, a main frame, a crank-shaft and connecting-rod, a beam extension, a pair of rubbing implements pivotally suspended from said beam extension, means for depressing said rubbing implements on the working stroke each way, pivoted link 13, extension-lever 34, and sliding members 28, 29, 75 slotted as at 32 for raising the rubbing implements clear of the leather operated upon, substantially as specified.

4. The combination of beam extension 9, pivoted link 13, extension-lever 34, pawls 35, sliding plates 28, 29, slotted as at 32, stems 21, pivoted to hinged plates 11, and pins 33, whereby said hinged plates are lifted and depressed on the alternate strokes of the said 80 beam extension, substantially as specified.

5. The combination of beam extension 9, pivoted link 13, extension-lever 34, pawls 35, sliding plates 28, 29, hinged plates 11, means whereby said sliding plates raise and depress 85 said plates alternately, oscillating wards 36, sliding rods 39, 40, rods 42, 43, and links 44, substantially as specified.

6. The combination of beam extension 9, pivoted link 13, extension-lever 34, pawls 35, sliding plates 28, 29, slotted as at 32, pivoted stems 21, pins 33, hinged plates 11, oscillating wards 36, sliding rods 39, 40, rods 42, 43, links 44, and spring-keepers 48, substantially as 90 specified.

These features I believe to be novel and useful and ask that Letters Patent be granted therefor.

CHARLES E. PELLOW.

Witnesses:

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