(No Model.) 2 Sheets—Sheet 1.

G. W. BAKER.

LEATHER WORKING MACHINE.

No. 549,424. Patented Nov. 5, 1895.

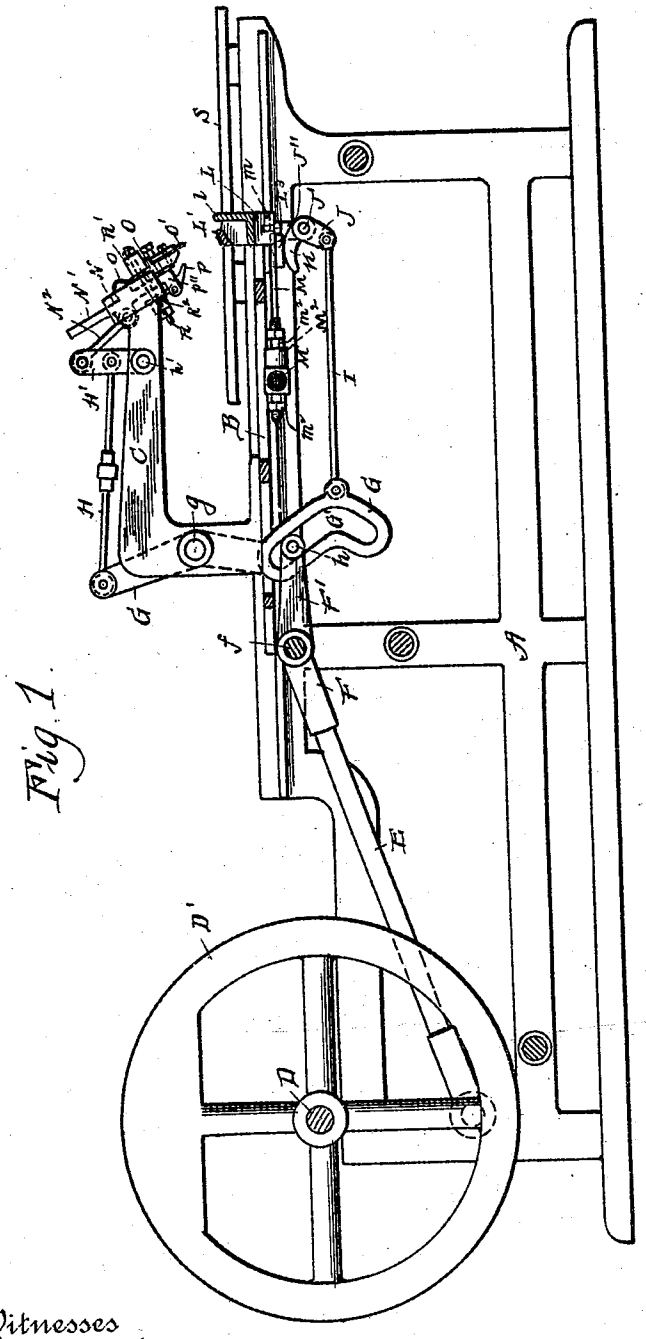

Fig. 1.

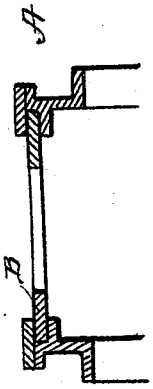

Fig. 6.

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(No Model.) 2 Sheets—Sheet 2.

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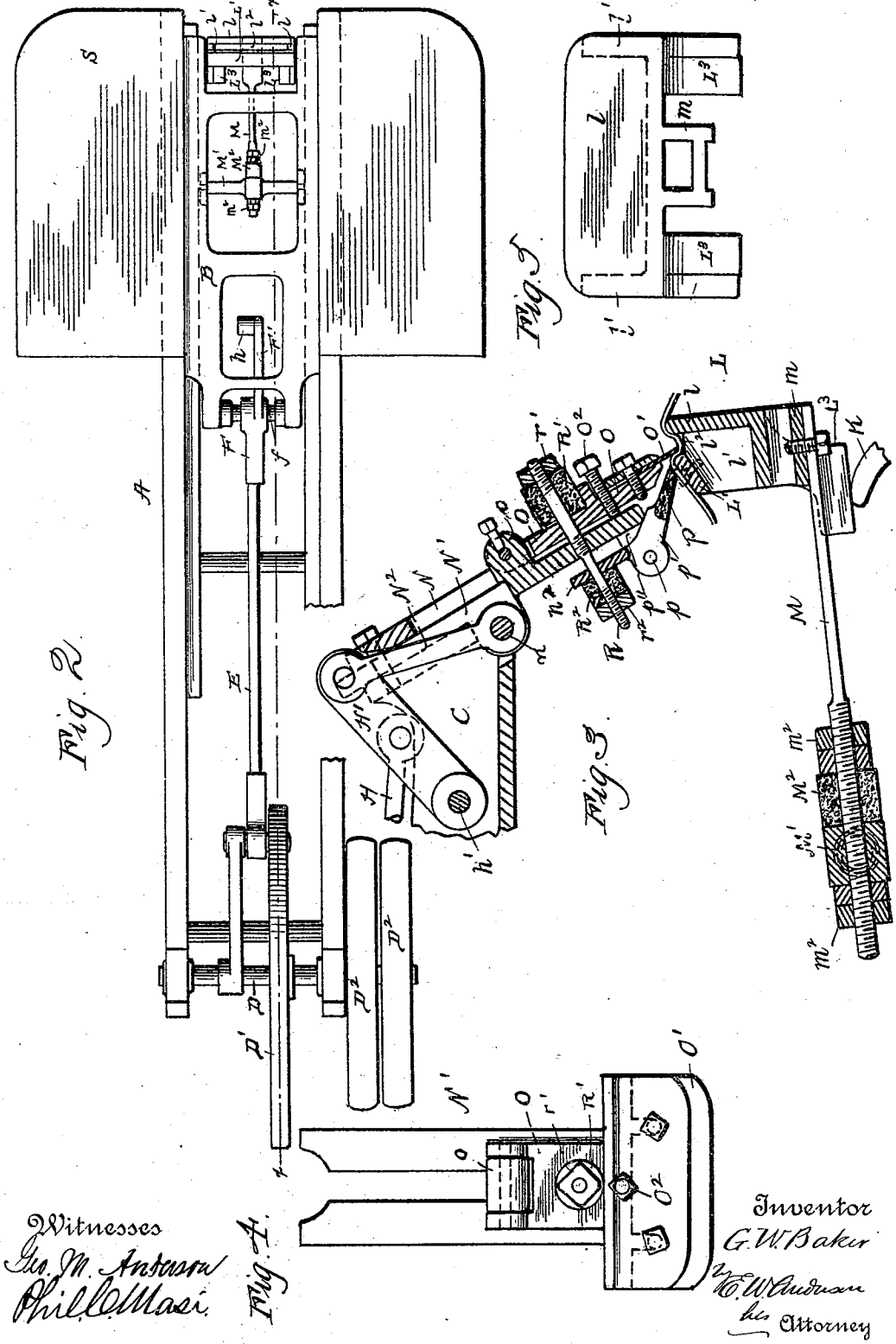

Fig. 2.

Fig. 3.

Fig. 4.

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UNITED STATES PATENT OFFICE.

GEORGE W. BAKER, OF WILMINGTON, DELAWARE.

LEATHER-WORKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 549,424, dated November 5, 1895.

Application filed August 3, 1895. Serial No. 558,088. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. BAKER, a citizen of the United States, and a resident of Wilmington, in the county of New Castle and State of Delaware, have invented certain new and useful Improvements in Leather-Working Machines; and I do 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 of reference marked thereon, which form a part of this specification.

Figure 1 is a vertical section of a machine embodying my invention, taken on line X X, Fig. 2, the parts being shown in the positions they occupy when the forward stroke is one-half completed. Fig. 2 is a plan view of the machine, the overhanging arm C being removed and the forward stroke of connecting-rod completed. Fig. 3 is a central vertical section through staking-tool and bearing L, which are shown as acting upon the leather, actuating parts also being shown, the toe K and overhanging arm C being broken away. Fig. 4 is a front view of the staking-tool plate and tool. Fig. 5 is a front view of the bearing L. Fig. 6 is a section through top portion of frame, showing slide-plate and guideways therefor.

This invention has relation to leather-working machines of the character described and claimed in my pending application, Serial No. 502,269, filed June 10, 1895. The machine disclosed in the said application is especially designed for that class of work known to the trade as staking on leather requiring a smooth, soft, and flattened grain, which is the reverse of what is wanted on glove-leather, where the grain is raised or swelled to little hills, resembling a pebble-grain; and the object of the present invention is to provide a machine of the same general character provided with tool devices more particularly designed for the class of work known as first staking, perching, and padding—in other words, stretching, shaping, and smoothing the grain to lessen the labor on leather where ironing is done in order to smooth it.

The invention consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claims.

Referring to the accompanying drawings, the letter A designates the frame of machine.

B is a horizontal reciprocating slide-plate, which moves in lateral guides in the open bed of the frame. C is an overhanging arm rigidly attached to the said plate.

D is the driving-shaft, which is journaled in a rearward extension of the frame, D′ the main wheel thereon, and D^2 a fast and loose driving-pulley therefor.

E is a connecting-rod from a crank-pin of the main wheel to the said slide-plate, the connection with said plate being through a rocker F, which is fulcrumed on a shaft or axis *f* at the rear portion of the plate, and to one arm of which rocker the connecting-rod is rigidly connected.

G designates a slotted cam-lever, which is fulcrumed on a stud *g* of the arm C, and whose cam-slot G′, which is below the fulcrum, is engaged by a roller *h*, which is journaled on a lateral stud of the forwardly and downwardly-extending arm F′ of the rocker F. The lower arm of said cam-slot is concentric with the axis *f*, so that the lever G, during the time the roller *h* is traversing this portion of the slot under the movement of the main wheel and connections, is held stationary. The upper arm of said cam is cut on a different radius and approaches more nearly to the axis *f*, and the roller *h* in ascending this portion of the slot rocks the said lever to throw its upper arm toward the main wheel. During the descending movement of the roller *h* the said lever is rocked oppositely or away from the main wheel.

Connected to the upper arm of the lever G is a rod H, whose opposite end is connected to the intermediate portion of a lever H′, which is fulcrumed at *h′* at its lower end to the arm C.

I is a connecting-rod from the cam portion of the lever G to an arm J of a shaft J′, which is journaled in bearings J″ on the under side of the slide-plate B near the forward end

thereof, said shaft carrying toes K, which actuate a bearing device L hereinafter to be described.

As thus far described, the machine is practically the same as that disclosed in the said application above referred to.

The device L, above referred to, which is for the purpose of forming a support or bearing for the leather under operation of the staking-tool, comprises a casting having at its forward upper portion a vertical flange l and lateral flanges l'. To these lateral flanges is secured a transverse plate L', over which the leather is smoothed and stretched and which is rearwardly inclined, and which is so placed as to leave a narrow transverse opening l^2 between its forward edge and the upper edge portion of the flange l. At the central portion of said casting, at its under side, is a seat m, to which is secured a bar M, which is carried by a transverse arm or shaft M', which is fulcrumed in bearings of the slide-plate B. To the front side of said shaft M' the bar M carries a rubber or other spring M^2, which is secured by jam-nuts m^2. The said casting L has secured to its under side blocks L^3, which are preferably of wood or some other non-metallic material, and which rest upon the toes K above referred to. The purpose of these non-metallic blocks is to deaden the sound of working and render the parts noiseless to a great extent. The casting L works through a cut-away portion of the slide-plate and is alternately raised and lowered by the action of the toes K through the action of the connecting-rod I and the cam-lever G.

At the forward end of the overhanging arm C is an oblique guideway N, in which is fitted to reciprocate a tool-arm N', which is actuated by means of a link N^2, which is connected to the said arm at n and to the upper end of the lever H before described. Pivoted to a lug o, which projects from the front face of the said tool-arm, is a tool-plate O, to which is secured the knife or tool O'.

O^2 is an adjusting-screw in the hinged tool-plate for the purpose of regulating the distance of the same from the tool-arm.

P is a presser-foot or pad, which is situated immediately behind the knife O' in oblique relation thereto. This foot or pad, which is of metal, hard rubber, or other suitable material, is carried by a plate p', which is fulcrumed at p between lugs p'', which project rearwardly from the lower portion of the tool-arm N'. The extension of said plate above this fulcrum has a lug n^2 at its upper end, which loosely engages a pin R, which is secured in and extends through the arm N' and also through the tool-plate O. R' R^2 are rubber or other springs which are seated upon the end portions of said pin and are secured by nuts r' r^2. The apertures in the plates O and P', through which this pin extends, are of slightly-larger diameter than the pin in order that the said plates with their springs may yield somewhat under the working of the knife and pad. The extent of such yielding movement is regulated by the adjustment of the said springs.

S is a slotted table which is supported upon the forward portion of the frame A.

In operation the skin of leather is placed upon this table between the tool O' and the pad P on the upper side and the casting L on the under side, and is held against the front edge of the table by the operator or by means of a suitable clamp. (Not shown.) Suitable clamps for the purpose are described and shown in former patents granted to me, also in the application above referred to. Under the action of the connecting-rod, the cam-lever, and the parts actuated thereby the slide-plate B, the arm C, the tool O, and the casting L move forward together and the said tool is raised from the work, while the casting is depressed. Upon the commencement of the return movement, however, said plates come together upon the work, which is pressed by the tool into the slot l^2 of the casting, and is also caught between the pad and the plate L'. The parts remain in this position during this entire movement. Upon the commencement of the next forward movement the tool and casting again recede from each other, and the operator is permitted to shift the leather to obtain a fresh purchase for the next stroke. The pressure-foot or pad performs several different purposes. In the first place it is intended to give a yielding pressure to the leather in advance of the knife or tool. Without it the leather would simply pull under the knife and would not be stretched. In the second place, being made with a smooth surface, it helps to smooth or pad the leather when worked with the grain side up, and when worked with the graid side down the smooth corners of the throat-plate or bar act in the same manner and reduce the amount of ironing for that purpose. It also keeps the leather even and smooth in advance of the knife or tool.

It will be observed that the machine as above described is free from gears and springs (except the small ones in connection with the staking devices) and lost motion, being extremely simple, strong, durable, and noiseless in its action. It is designed to work equally well on tight, heavy, and medium stock, and especially on the kind where the grain is to be made smooth, and where heated flat-irons are used to lay the grain.

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

1. In a leather working machine, the combination of a horizontally reciprocating slide plate, an overhanging arm secured thereto, a tool arm arranged to reciprocate in a guide way of the overhanging arm, a tool plate pivotally secured to said tool arm, means for

holding said arm in working position, a tool carried by said plate, and means for reciprocating said slide plate and tool arm, substantially as specified.

2. In a leather working machine, the combination of a horizontally reciprocating slide plate, an overhanging arm secured thereto, a tool arm arranged to reciprocate in a guide way of the overhanging arm, a tool plate pivotally secured to said tool arm, a pad or pressure foot whose support is also pivotally attached to said arm, means for holding said arm and pressure foot in working position and means for reciprocating said slide plate and tool arm, substantially as specified.

3. In a leather working machine, the combination of a horizontally reciprocating slide plate, an arm secured thereto, a tool arm arranged to reciprocate in a guide way of said arm, a tool plate pivotally secured to said tool arm, the tool, a pad or pressure foot pivotally secured to said tool arm, means for holding said tool arm and pressure foot in working position, a vertically movable supporting device below said tool and pad which supports the leather, means for actuating said tool arm and support to cause them to simultaneously approach and recede from each other, and means for reciprocating said slide plate, substantially as specified.

4. In a leather working machine, the combination of the main wheel, the horizontally reciprocating slide plate, the connecting rod, the slotted cam lever, the overhanging arm secured to said slide plate, the tool arm arranged to reciprocate in a guide way of said arm, the tool plate, pivotally secured to said tool arm, the tool, the pressure foot or pad, which is also hinged to said tool arm, means for holding said tool arm and pressure foot in working position, the vertically movable support L below said tool and pressure foot or pad, and means actuated by said slotted cam lever for causing said support and tool arm to simultaneously approach and recede from each other, substantially as specified.

5. In a leather working machine, the reciprocating tool arm, the tool plate hinged or pivoted thereto, the pressure foot or pad also pivotally connected to said arm, the pin secured in said arm and passing loosely through the tool plate and through the part which carries said foot or pad, and the springs and adjusting nuts on said pin, substantially as specified.

6. In a leather working machine, the vertically movable casting L, having the vertical flange *l*, and transverse plate L′ to the rear of said flange and separated therefrom by a slot, in combination with a tool adapted to press the leather into said slot, a pad adapted to hold the leather to said plate L′, and means for operating said tool and pad and the said casting to cause them to simultaneously approach and recede from each other, substantially as specified.

7. In a leather working machine, the combination with a horizontally reciprocating slotted slide plate, of the arm or shaft M′ fulcrumed thereto, the bar M carried by said arm or shaft, the casting L attached to said bar M and having the flange *l*, the plate L′, and the non-metallic blocks L^3, the spring M^2 on the bar M, and means for intermittently raising said bar and casting, substantially as specified.

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

GEORGE W. BAKER.

Witnesses:

MAURICE P. SATTERTHWAITE,

HENRY F. BIGLEY.