(No Model.) 3 Sheets—Sheet 1.

G. W. BAKER.

LEATHER WORKING MACHINE.

No. 549,423. Patented Nov. 5, 1895.

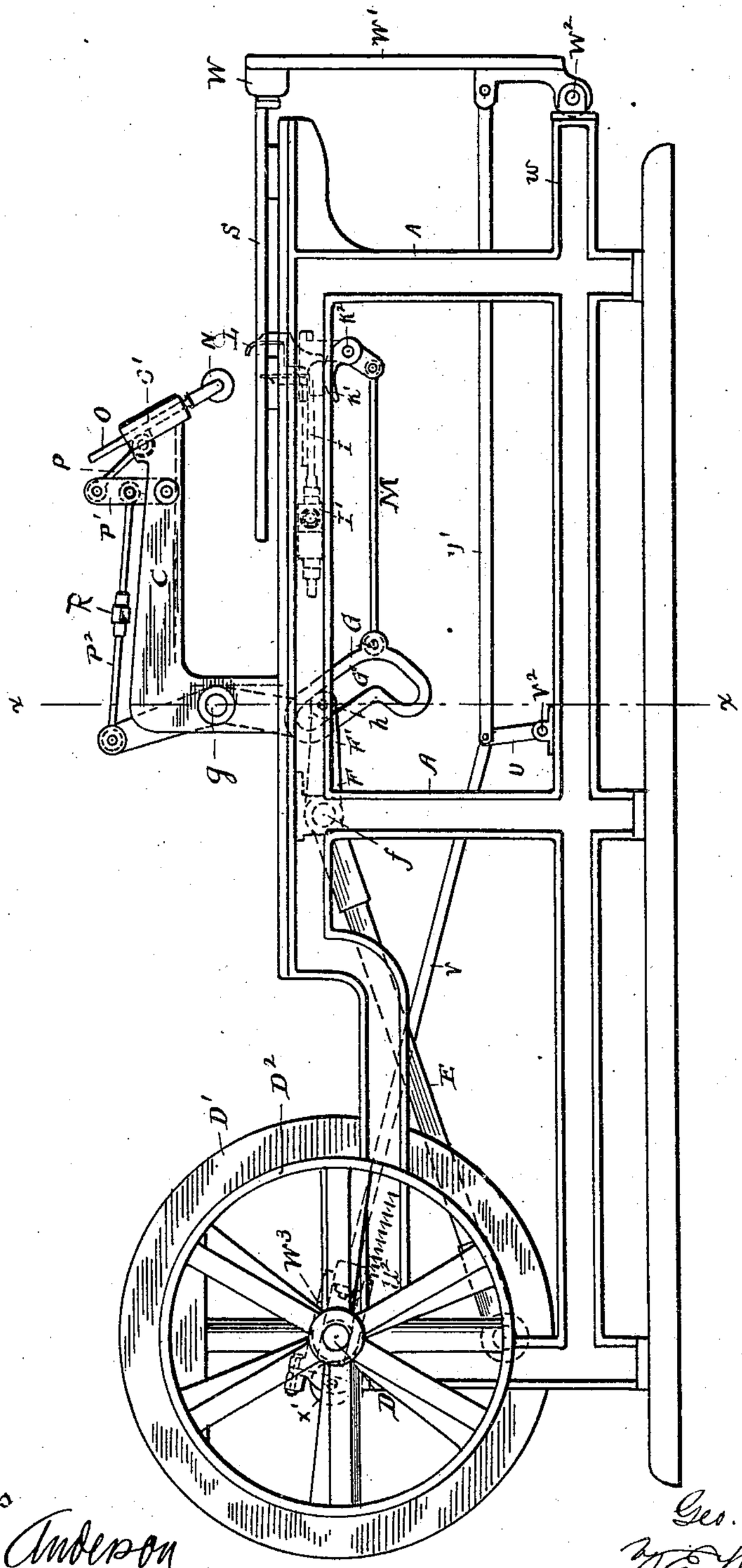

Fig. 1.

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Geo. M. Anderson
Philip B. Masi.

Inventor
Geo. W. Baker
by E. W. Anderson
his Attorney

(No Model.) 3 Sheets—Sheet 2.

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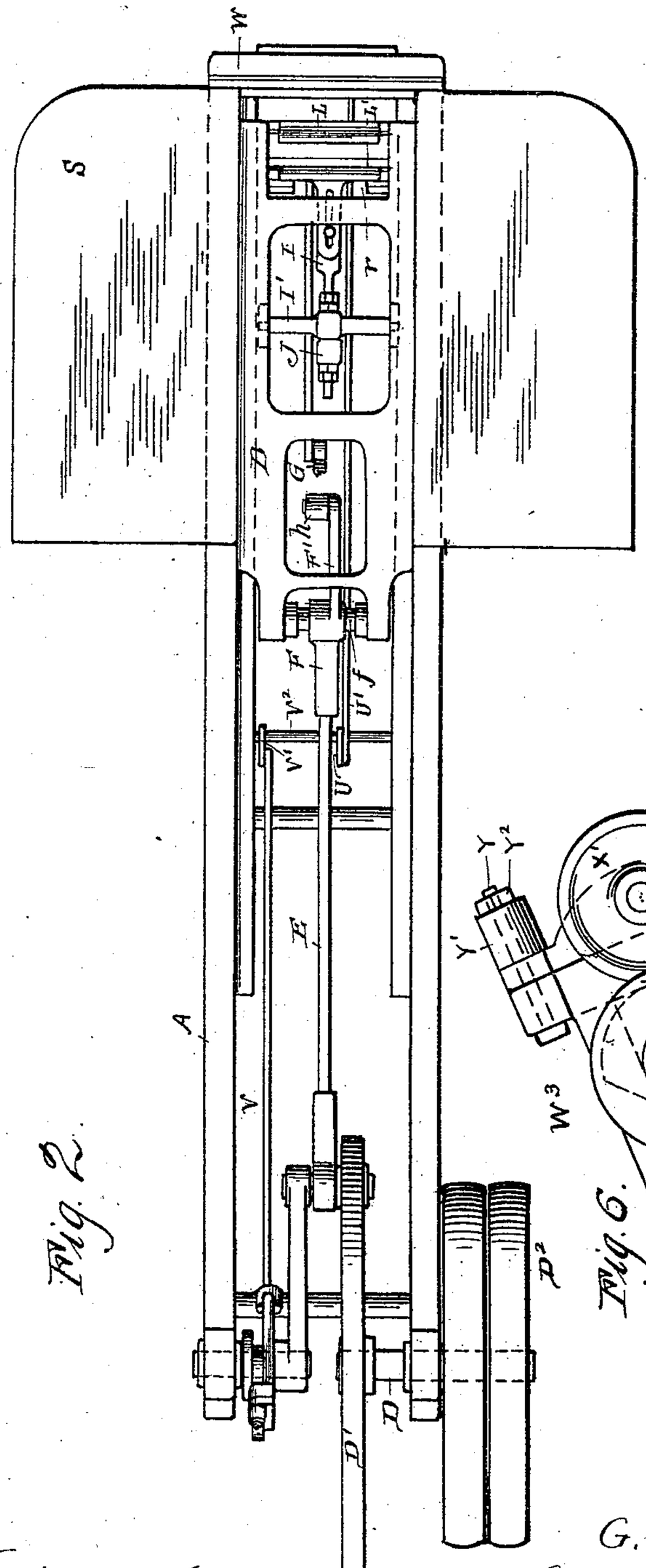

Fig. 2.

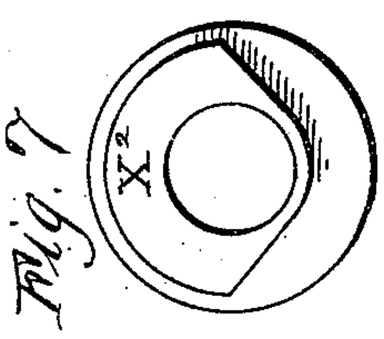

Fig. 7.

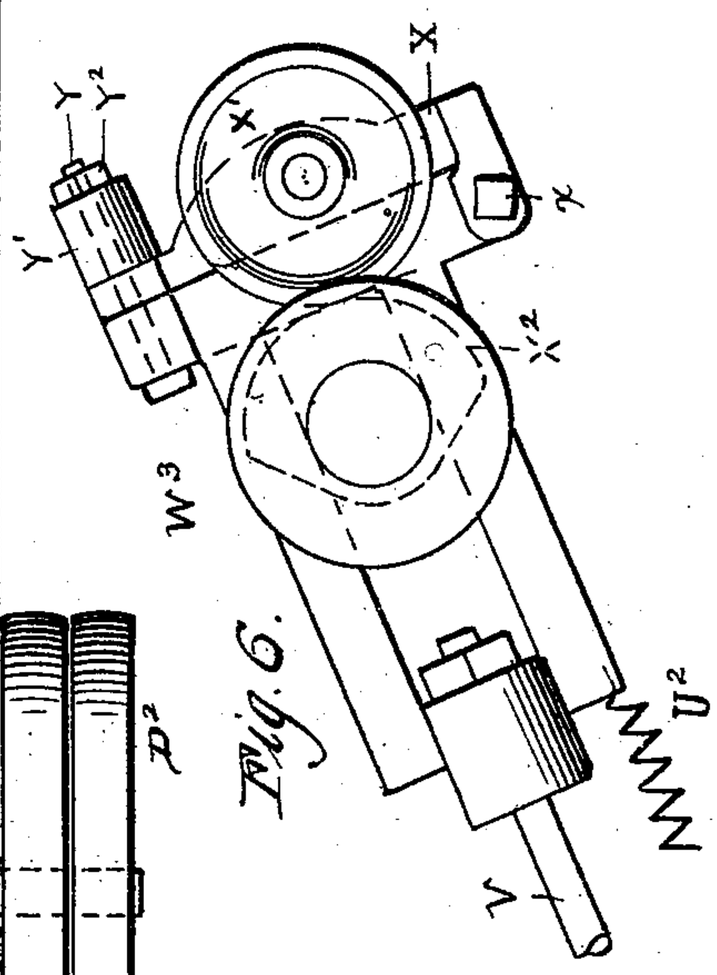

Fig. 6.

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(No Model.)

3 Sheets—Sheet 3.

G. W. BAKER.

LEATHER WORKING MACHINE.

No. 549,423. Patented Nov. 5, 1895.

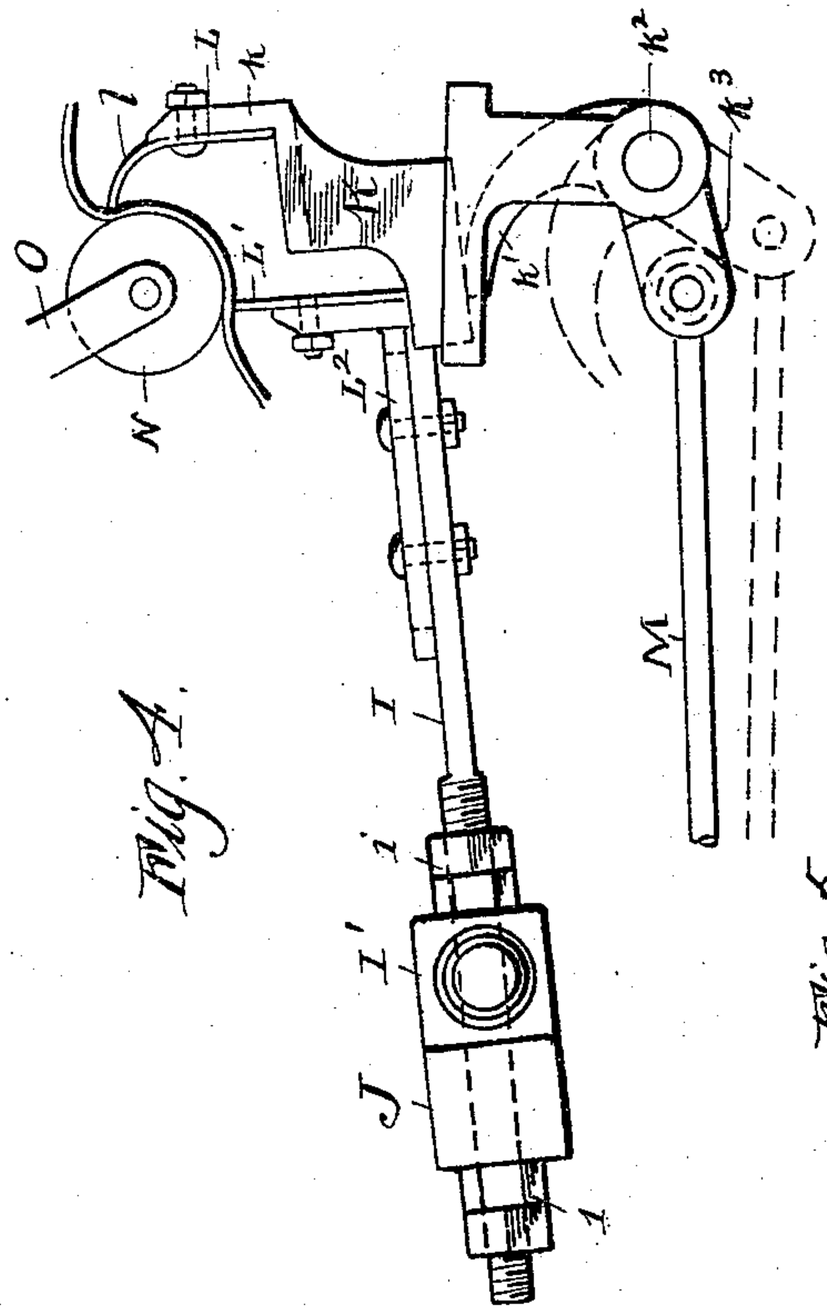

Fig. 4.

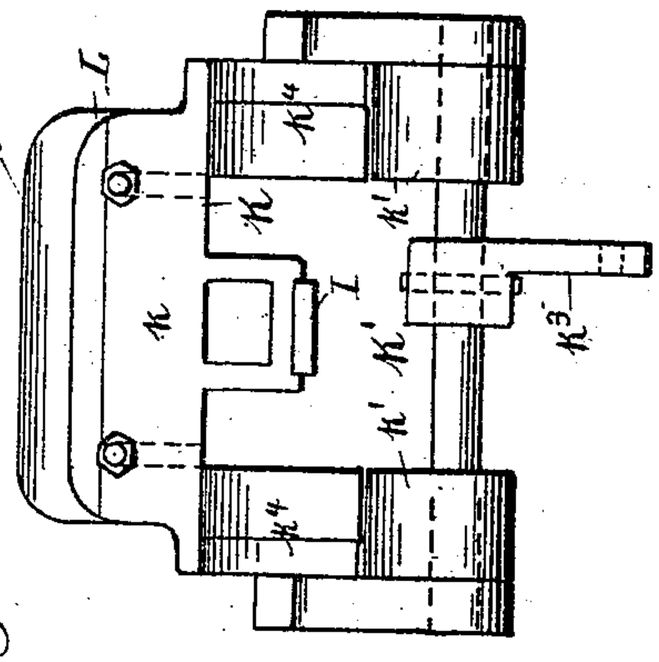

Fig. 5

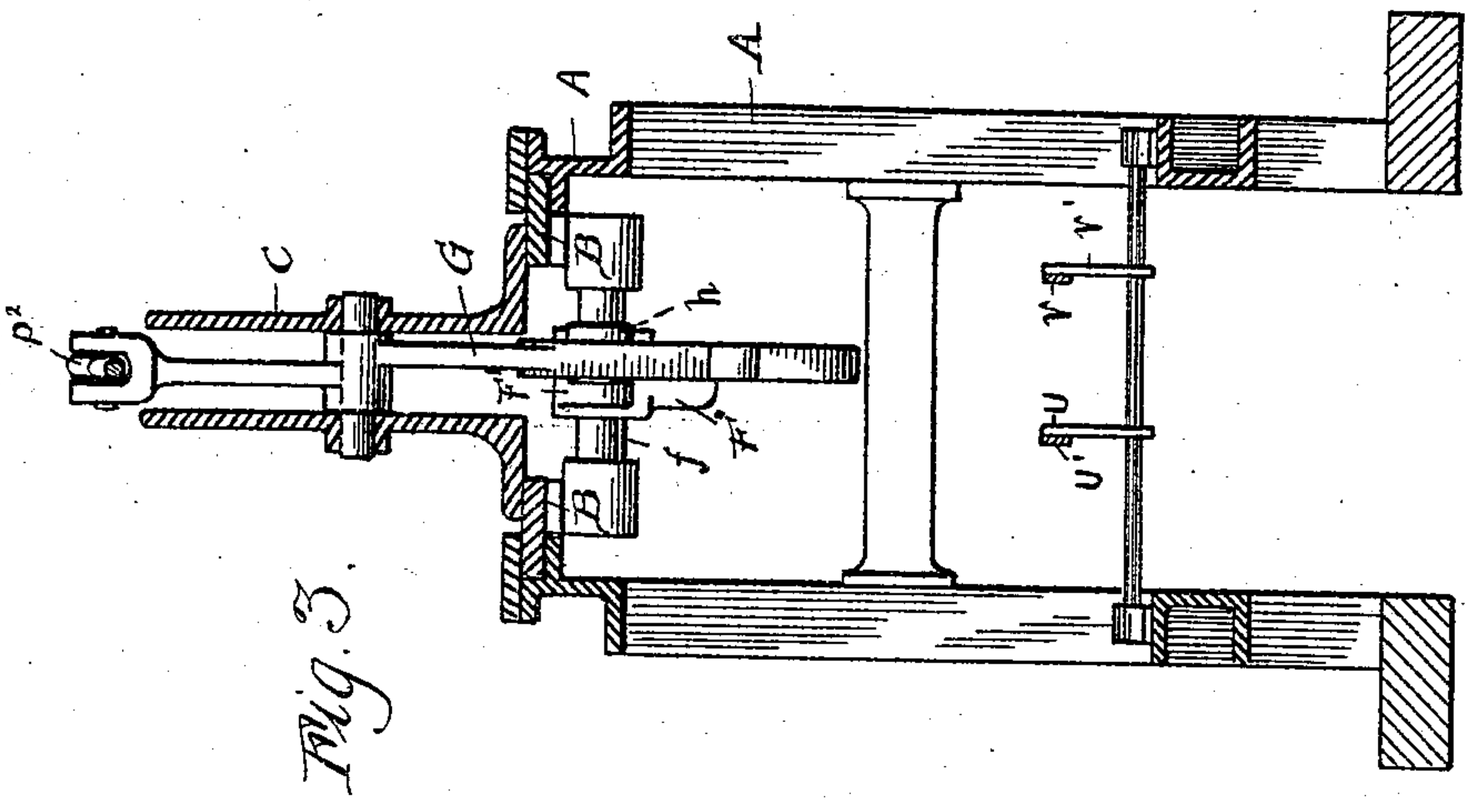

Fig. 3.

Witnesses
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Philip C. Masi.

Inventor
Geo. W. Baker
by E. W. Anderson
his Attorney

UNITED STATES PATENT OFFICE.

GEORGE W. BAKER, OF WILMINGTON, DELAWARE.

LEATHER-WORKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 549,423, dated November 5, 1895.

Application filed June 10, 1895. Serial No. 552,269. (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 side elevation of machine. Fig. 2 is a plan view of same with the overhanging arm C and its attachments removed and the plate B shown at the farthest limit of its movement. Fig. 3 is a section on line X X, Fig. 1, parts in distance omitted. Fig. 4 is a side view of staking-tool and carrier with parts in raised position in engagement with pressure-roller acting upon leather, the lowered position or rocking toes indicated in dotted lines. Fig. 5 is a front view of staking-tool and carrier lowered. Fig. 6 is a side view of cam and yoke devices. Fig. 7 is a detail view of cam.

This invention has relation to certain new and useful improvements in leather-working machines, the object being to simplify the construction and mechanical action thereof, and to provide a machine of greater efficiency and durability than those of the same class heretofore in use; also to make a very rigid machine by securing the overhanging arm to slide-plate, and by the knives being secured to a casting which rests on toes in a journaled shaft, as more fully hereinafter described, which is an important improvement over the machines constructed with open arms.

With this object in view 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 the machine; B, the horizontal reciprocating bed or slide-plate, which moves in lateral guides in the open bed of the frame, and to which is rigidly attached an overhanging arm C.

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

E is a connecting-rod from a crank-pin of the main wheel to the slide-plate B, the connection with said plate being made 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 slot is cut on a different radius and is concentric 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 the said lever is rocked oppositely or away from the main wheel.

I designates the staking-tool carrier, which consists of a bar whose rear portion extends through a transverse bar I′, which has a rocking support on the slide-plate. To the rear of said rocking-bar the bar I is provided with a rubber or other spring J, which receives the strain of the tool in working. *i* are jam-nuts, by means of which the tension of said spring may be regulated according to the thickness of leather being worked. Secured to the forward end portion of said rod or bar I is a casting K, having a vertical flange *k*, to which is adjustably secured an edgewise-disposed staking knife or tool L, having a rearwardly-turned working edge *l*. L′ is a second knife, which is secured to a plate L^2, which is adjustably secured to the bar in order that it may be moved toward and away from the knife L and into proper relation thereto and to the pressure device, hereinafter to be described, according to the thickness and condition of the leather being worked. The construction and arrangement

of these parts will be more clearly understood by reference to Fig. 4. These knives are especially designed to open the grain, as when done by hand, and in the manner known in the trade as "knee-staked." Other styles of knives may, however, be employed.

The plate K rests upon toes k' k' of a rocker K', which is fulcrumed at k' in bearings of the bed-plate, and has an arm k^3, to which is attached a link or connecting-rod from the cam-lever G. The lugs k^4 of the casting K, which contact with the said toes, are preferably provided with blocks of wood or other suitable non-metallic material, in order to lessen the noise of the machine in running.

N designates a pressure-roller, of rubber or other suitable material, which is carried by and journaled in a sliding arm or head O, which moves in a downward and forwardly-inclined guideway O' at the forward end of the arm C. Attached to the arm O is a link P, which is connected to the upper portion of a vertical arm or lever P' fulcrumed at its lower end portion in the arm C. Connecting the intermediate portion of this arm or lever P' with the upper end portion of the cam-lever G is a link P^2. This link is formed in two sections, which are united by a right and left threaded nut or coupling R, by means of which the length of the link can be changed for the purpose of adjusting said roller relatively to the staking-knives. This roller, when in working position, is immediately over and between the two knives, (the slide-plate being cut away at r,) as best seen in Fig. 4. This figure shows, also, the position of the leather as it is acted upon by the said knives and roller.

The arm C is cored out, as indicated, to receive the parts described in connection therewith.

S designates a longitudinally-slotted work-table, which is supported upon the forward portion of the frame.

The operation is as follows: The skin of leather being laid upon the table is held against the forward end thereof by the operator or by means of a suitable clamp, such as shown. During the forward movement of the slide and of the staking-tool and pressure roller, which move in unison with the slide, being carried away thereby, the roller h is traversing the upper arm of the cam-slot and the pressure-roller is held in its raised position, gradually descending, however, as the roller h moves down the said slot and the slide comes to the limit of its forward movement. When this limit is reached, the said roller is at the center of the said slot and as the stroke is reversed the roller closes down firmly upon the leather, in which position it remains during the next half-revolution of the main wheel and the complete return movement of the slide-plate. At the same time the knives, which have been in lowered position, are now, by means of the rocker K, its toes k' k', and the connecting-rod M, raised into working position. The leather is therefore staked during this entire movement. As the slide and its adjuncts again move forward, the pressure-roller rises and the knives drop, remaining in these positions sufficiently long to enable the operator to shift the skin of leather to obtain a fresh purchase for the next stroke.

W designates a clamp, which is preferably employed for the purpose of holding the work. Said clamp is carried by an arm W', which is fastened at its lower end to a rock-shaft W^2, journaled in the extension w of the frame. On the driving-shaft of the machine is placed a yoke W^3, which is free to slide on said shaft. To an arm X, which is pivoted to said yoke at x, and held in proper relation thereto by a bolt y, spring y', and nut y^2, is a roller X, which is in contact with a cam X^2 on the said driving-shaft. V is a connecting-rod from the yoke W^3 to an arm V' of a rock-shaft V^2, supported in bearings in the base of the frame. From an arm U of this shaft V^2 is a connection U' to the arm W'. U^2 is a spring connected to said yoke and to the frame. The action of the cam through these connecting devices causes the clamp to open and close at the proper time upon the work. By disconnecting the rod U' from the arm W' the clamp may be thrown out of operation when desired.

It will be seen that the above-described machine has a simple positive action of a character which will be readily appreciated by a mechanic, doing away entirely with gear-wheels, springs, and other objectionable parts, and reducing the wear and tear to a minimum.

The clamp and clamp-operating devices herein shown and described are described and claimed in my pending application, Serial No. 547,243, filed April 26, 1895.

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 with the reciprocating slide plate, its tool carrier and tool, and the overhanging arm, secured to said plate, of the pressure roller, a slide arm carrying said roller and moving in guides of said overhanging arm, a main wheel, a connecting rod from said wheel to the slide plate, a cam lever operated by said connecting rod, and means operated by said cam lever for actuating the tool carrier and the pressure roller, substantially as specified.

2. In a machine for working leather, the combination with the reciprocating and rocking staking tool carrier and staking tool, the reciprocating slide which carries said tool, the overhanging arm carried by said slide and the pressure roller arranged to reciprocate in guides of the said arm of the main wheel, the connecting rod therefrom to said slide, the slotted cam lever engaged by a roller journaled to an extension of the connecting rod, a rocker device for supporting the tool carrier and tool and for raising it into operative

relation, and a connecting rod from said cam lever to an arm of said rocker, substantially as specified.

3. In a machine for working leather, the combination of the reciprocating slide plate, the staking tool carried thereby, the overhanging arm attached to said plate and having an inclined guide way at its forward end, the reciprocating pressure roller arm working in said guide way, the roller carried by said reciprocating arm, the slotted cam lever fulcrumed to said overhanging arm, the main wheel, the connecting rod, the rocker fulcrumed to said slide and to one arm of which the connecting rod is rigidly secured, the roller journaled to the opposite arm of said rocker and engaging said cam slot, a connection between said cam lever and the pressure roller carrying arm whereby the latter is reciprocated, and means operated by said cam lever for raising and lowering the knife simultaneously with the movements of the pressure roller carrying arm, substantially as specified.

4. In a machine for working leather, the combination of the reciprocating slide plate, the overhanging arm carried by the said plate, the pressure roller having a carrier fitted to reciprocate in a guide of the said arm, the rocking tool carrier on the said plate, the tool, the rockers on which the said carrier rests, a cam arm carried by the said overhanging arm, means for actuating said cam arm, and connections between the said cam arm and the roller and between said arm and the tool carrier whereby said roller and tool-carrier are caused to move toward and away from each other in unison and means for reciprocating the said slide plate, substantially as specified.

5. In a machine for working leather, the reciprocating slide plate, the rocking tool carrier and tool carried thereby, the overhanging arm secured to said plate, the pressure roller above said tool, the slide arm carrying said roller and working in a guideway on said arm, the vertical lever fulcrumed in said arm, the link connecting said lever with the said slide arm, the slotted cam lever fulcrumed in said overhanging arm, an adjustable connection between said cam lever and the vertical lever, means connected to and operated by the said cam lever for raising the tool to its work, and means for vibrating said cam lever and for reciprocating said slide plate, together with a work holding clamp, substantially as specified.

6. In a machine for working leather, the combination of the reciprocating slide plate, having the overhanging arm, the pressure roll arranged to reciprocate in guides of said arm, the transverse rocking bar having bearings on the said plate, the tool carrying bar connected to the rocking bar, the spring therefor, the tool holding casting attached to said bar, the staking tools or knives attached to said casting, the rockers upon which the said casting rests, said rockers being connected to reciprocate in unison with the said casting and means for vibrating the said rockers as the said slide plate is reciprocated, substantially as specified.

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

GEORGE W. BAKER.

Witnesses:
MAURICE P. SATTERTHWAITE,
WILLIAM L. MARTIN.