

No. 704,096.

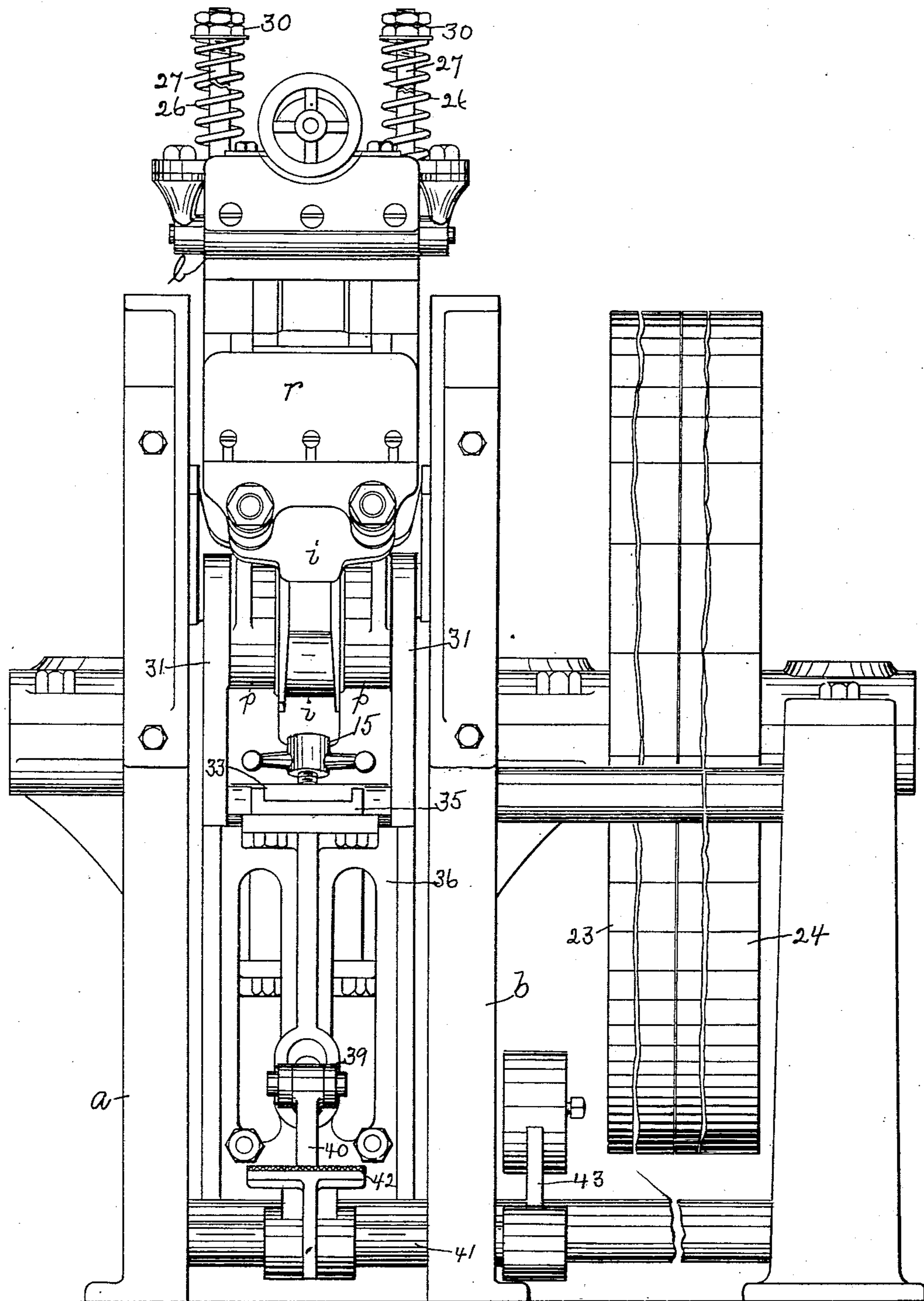
Patented July 8, 1902.

F. J. PERKINS.
STAKING MACHINE.

(Application filed Dec. 21, 1901.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses.
C. H. Gamett
J. Murphy.

Fig. 1.

Inventor
Franklin J. Perkins
by Jas. F. Churchill
att'y.

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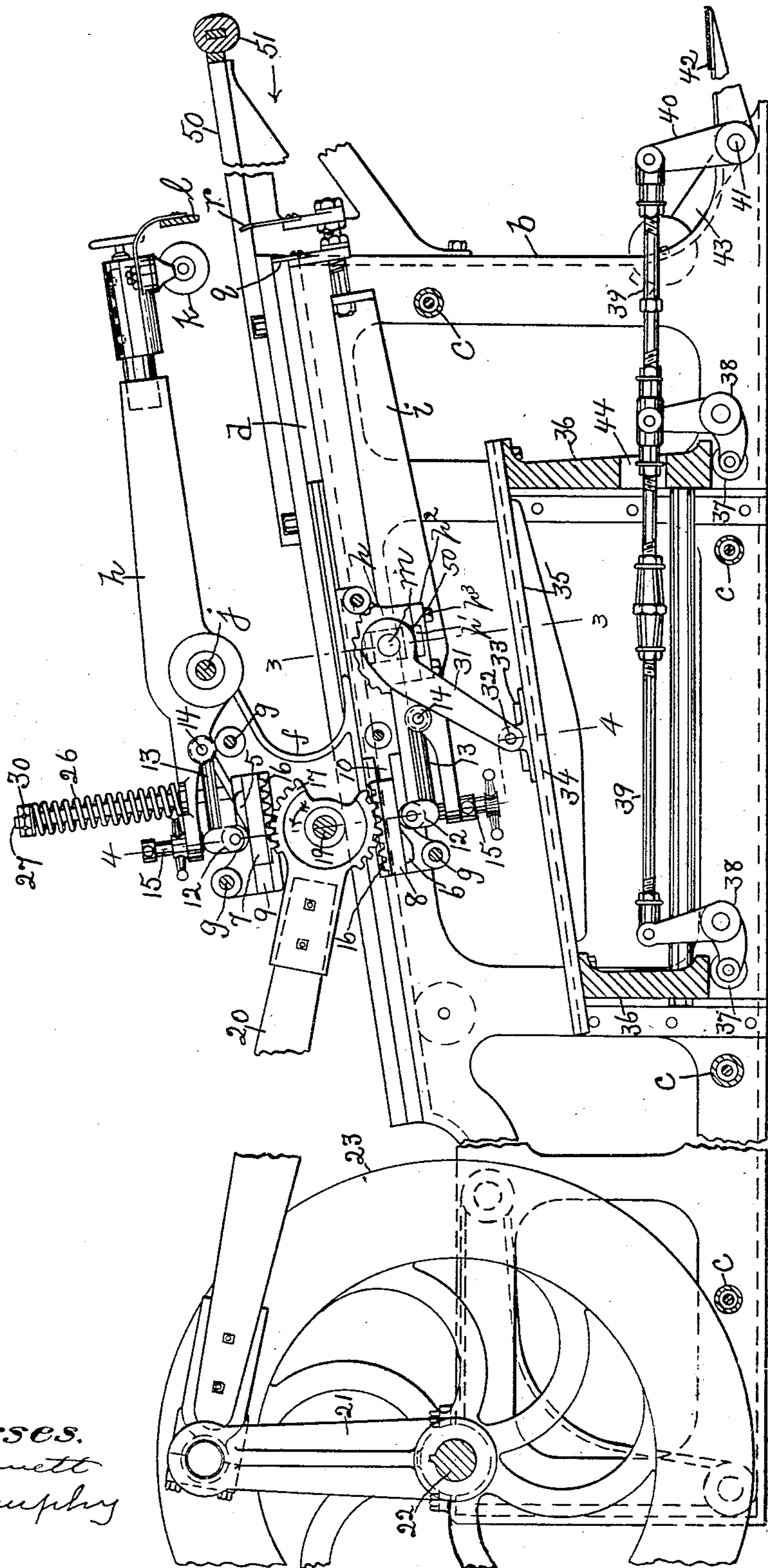


Fig. 2.

Witnesses.
C. H. Barnett
J. Murphy

Inventor.
Franklin J. Perkins
By
Geo. H. Schuchert
Atty.

No. 704,096.

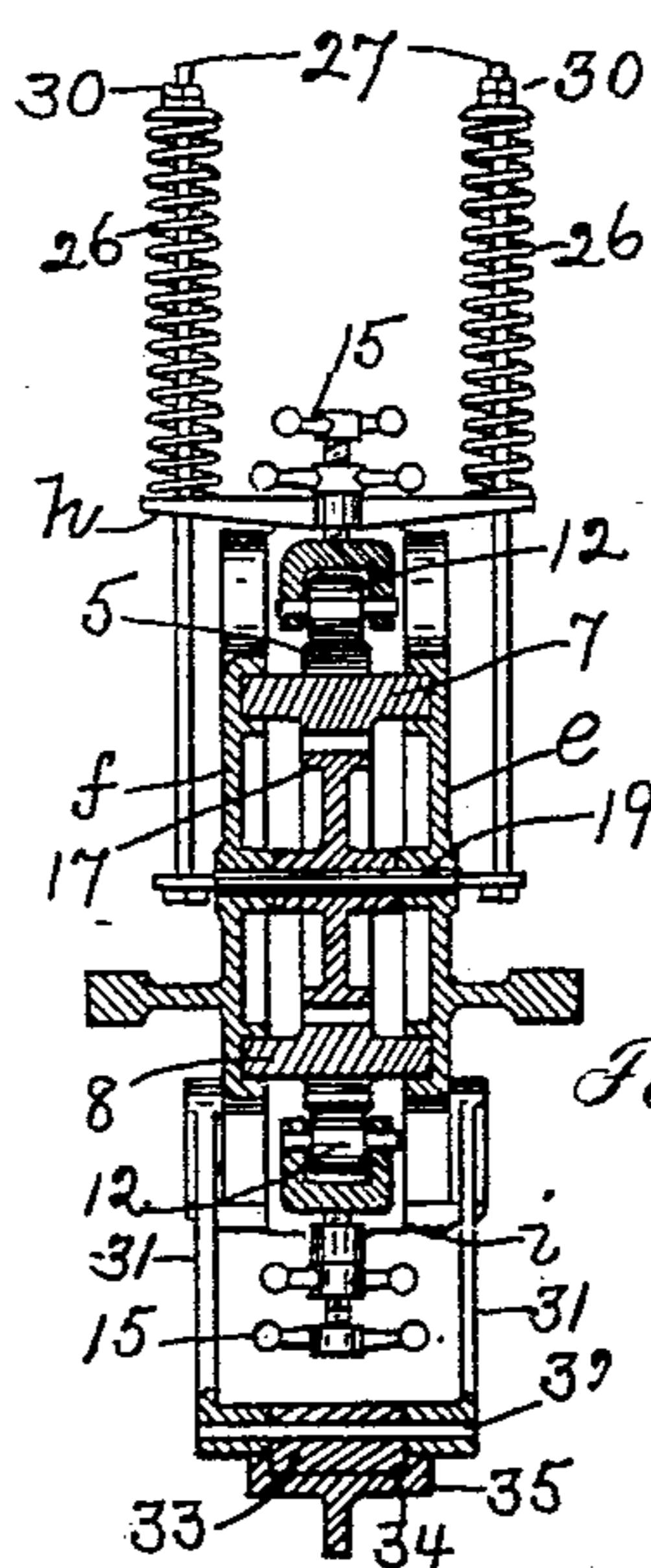
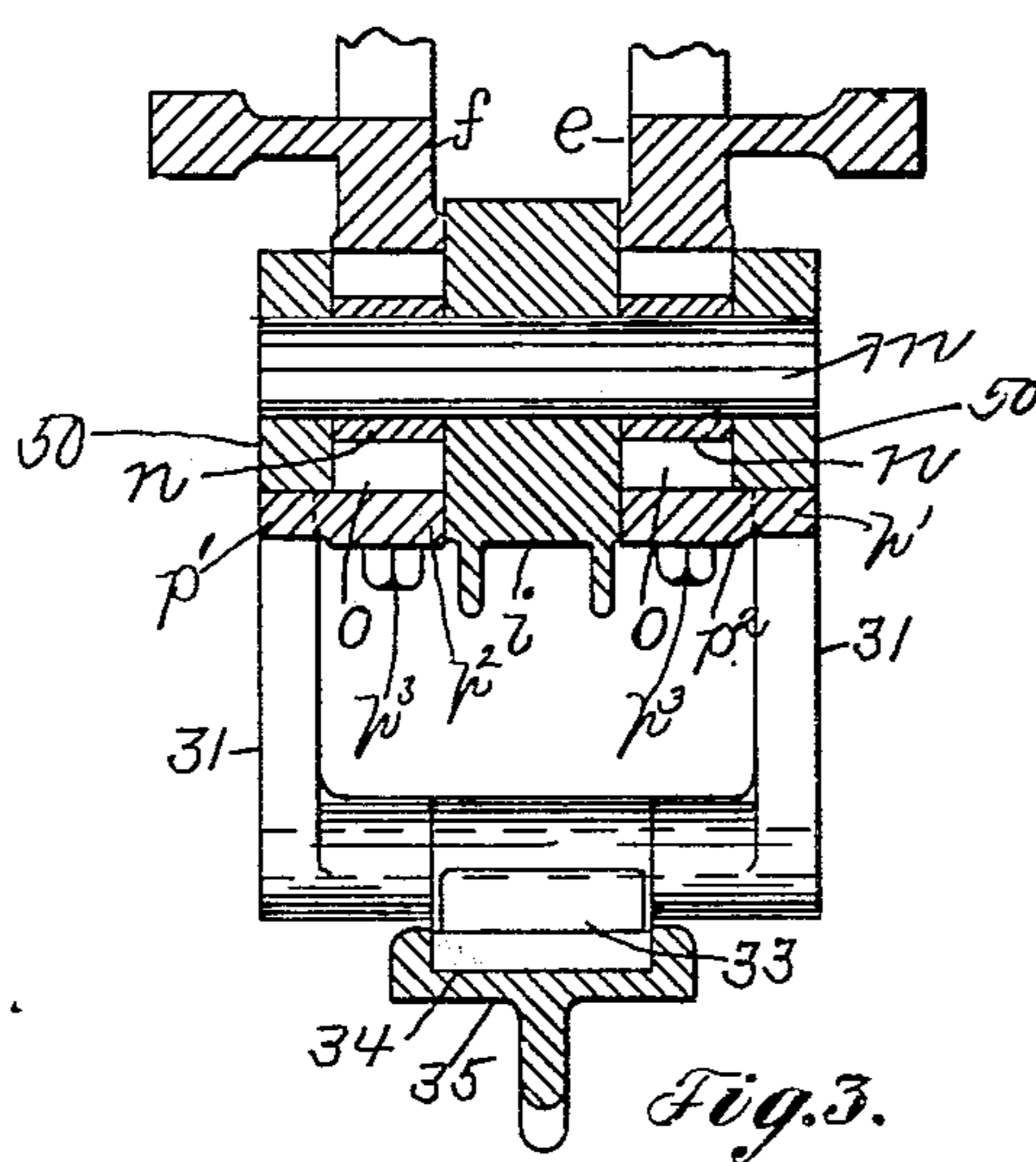
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3 Sheets—Sheet 3.



Witnesses.

C. H. Sammett

J. Murphy

Inventor:
Franklin J. Perkins
by Jas. H. Churchill
att'y.

UNITED STATES PATENT OFFICE.

FRANKLIN J. PERKINS, OF WOBURN, MASSACHUSETTS, ASSIGNOR TO
VAUGHN MACHINE COMPANY, OF BOSTON, MASSACHUSETTS, A
CORPORATION OF WEST VIRGINIA.

STAKING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 704,096, dated July 8, 1902.

Application filed December 21, 1901. Serial No. 86,752. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN J. PERKINS, a citizen of the United States, residing in Woburn, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Staking-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to a machine for treating or working hides, skins, and leather, and is herein shown as embodied in a machine for staking or softening leather.

The invention has for its object to provide a simple and efficient machine for the purpose specified and one in which the pressure of the operating-tools upon the work may be accurately adjusted to obtain a most efficient staking effect upon the work. These and other features of this invention will be pointed out in the claims at the end of this specification.

Figure 1 is a front elevation of a machine embodying this invention, the table for supporting the skin being omitted; Fig. 2, a partial section and side elevation of the machine shown in Fig. 1, looking toward the right, with a side frame of the machine removed and with other parts broken away; Fig. 3, a sectional detail, on an enlarged scale, taken on the line 3 3, Fig. 2; and Fig. 4, a sectional detail on the line 4 4, Fig. 2.

The framework of the machine herein shown comprises, essentially, two side frames or upright *a b*, connected together by suitable tie-bars *c* and each provided on its inner side with a slot or guideway *d*, in which slides a cross-head (see Fig. 4) composed of two side plates or frames *e f*, connected together by suitable tie-bars *g* (see Fig. 2) and provided with projections or ribs 60, which enter the guideways *d*.

The cross-head referred to constitutes a support for pivoted tool-carrying arms or levers *h i*, which will be hereinafter referred to as the upper and lower levers. The upper lever *h* is pivotally mounted at *j* in the side frames *e f* of the cross-head above the framework of the machine and carries at its

front end one or more tools, herein shown as two in number and consisting of a roll *k* and blade or piece *l*. The lower lever *i* is mounted on a pivot or shaft *m*, (see Figs. 2 and 3,) supported in boxes *n*, which are vertically movable in slots or openings *o* in depending portions or housings *p* of the frames *e f*, comprising the cross-head. The purpose of the vertically-movable boxes *n* will be hereinafter explained.

The lower lever *i* carries at its front end one or more tools, herein shown as two in number and consisting of two blades *q r*, which cooperate with the roll to engage the skin to be worked in a manner usual to machines of this class. The upper and lower tool-carrying levers are moved on their pivots, so as to engage the work when the said levers are at or near the end of their bodily movement toward the front of the machine, by suitable cams 5 6, carried by reciprocating plates or bars 7 8, which, as herein shown, slide in guideways or slots 9 10 in the side frames of the cross-head, the said cams cooperating, as herein shown, with rollers 12, carried by rods or arms 13, pivoted to the tool-carrying levers, as at 14, and having their free ends engaged by adjusting-screws 15. The sliding cam plates or bars 7 8 are provided, as shown, with rack-teeth 16, which are engaged by a gear 17, interposed between said cam plates or bars and mounted on a pivot pin or shaft 19, supported by the side frames of the cross-head. The gear 17 is oscillated on its pivot or shaft 19 by a connecting-rod 20, pivotally attached to a crank 21 on a shaft 22, supported in bearings at the rear of the machine and provided with the usual fast and loose pulleys 23 24.

It will be observed that the cams 5 6 are located on opposite sides of a vertical line through the center of the gear 17, so that the rotary movement of the gear in one direction, indicated by arrow thereon, (see Fig. 2,) will move the cams toward the vertical line referred to and into engagement with the rollers 12, so as to turn the tool-carrying levers *h i* on their pivots and move their long arms or front ends toward each other, and thus cause the tools carried by the said levers to

engage the work, which is forced by the roller *k* between the blades *q r*. This engagement of the operating-tools with the work takes place at or about the end of the forward movement of the cross-head or frame supporting said levers, which movement is effected by the crank 21, connecting-rod 20, and cross-head *e f*. On the backward movement of the cross-head the leather is staked or operated upon by the staking-tools, which remain in their operative position until at or near the end of the backward stroke of the cross-head, whereupon the gear is oscillated in the opposite direction, and the cam plates or bars are moved away from each other, thereby permitting the upper lever to be turned on its pivot, so as to move its front end upward by suitable springs, (shown as spiral springs 26,) which encircle upright rods 27, attached to the side frames *e f* of the cross-head, the said springs bearing against the short arm of the upper lever *h* and against adjusting-nuts 30 on the said rods. The tension of the springs may be regulated by the adjusting-nuts 30.

The lower lever *i* is moved downward by gravity, as herein shown. The cams 5 6, as herein shown, are provided on their faces which engage the rolls 12 with a flat portion (see Fig. 2) which permits the tool-carrying jaws to remain stationary in their working position while the cam-plates are being moved as the gear 17 is oscillated to effect the movement of the cross-head toward the rear of the machine.

The position of the lower lever *i* may be accurately adjusted with relation to the upper lever while the machine is in operation by means of levers or arms 31, (see Figs. 2 and 3), mounted on the ends of the pivot *m* for the lower lever and provided with cam-shaped hubs 50, which engage the upper surface of laterally-projecting lugs *p'* on a tie-bar *p''*, secured to the bottom of the housing *p*, as by bolts *p'''*, so as to close the slots *o*, in which the boxes *n* are vertically movable by the cam-hub 50 when the lower end of the arms 31 are raised. The arms 31 are pivotally connected at their lower ends, as at 32, to a block 33, which slides in a guideway 34, indicated by dotted lines, Fig. 2, in an inclined table or support 35, substantially parallel with the path of movement of the cross-head, and provided with suitable legs 36, which rest on rollers 37, carried by the free end of bell-crank levers 38, joined by a connecting-rod 39, which is pivotally connected to a crank 40 on a rock-shaft 41, having attached to it a foot-treadle 42 and a counterweighted arm 43.

The front leg of the table 35 is provided with a slot or opening 44 for the passage of the connecting-rod 39. It will thus be seen that when the foot-treadle is depressed the table is elevated by means of the bell-crank levers acting on the legs 36 and that the elevation of the table moves upward the arms 31 and the pivot *m* for the lever *i*, the boxes

n for the latter sliding in the slots *o* in the depending portion or housings *p* of the cross-head. This upward movement of the pivot *m* transfers the fulcrum of the lower lever for the time being to the roll 12 in engagement with the cam bar or plate 8, thus causing the free or tool-carrying end of the lever to be moved upward into closer relation to the tool-carrying end of the upper lever.

The machine may and preferably will be provided at its front end with a table 50, which is suitably attached to the side frames of the machine and is provided, as shown, with a breast pad or beam 51. This table is omitted from Fig. 2 for sake of clearness.

The operation of the machine may be briefly described as follows: On the reciprocation of the cross-head toward the front of the machine the levers *h i* remain open or in substantially the position shown in Fig. 2 until at or about the end of said forward movement, whereupon the said levers are turned on their pivots, so as to engage the tools with the work by the cams 5 6. During the backward stroke of the cross-head the working tools are held in engagement with the skin by the flat portion of the cams 5 6. At or about the end of the backward stroke of the cross-head the cams are moved out of engagement with the rollers 12, and the levers *h i* are turned on their pivots so as to disengage the operating-tools from the work, leaving the latter free to be shifted on the table by the operator.

I claim—

1. In a machine of the class described, in combination, a reciprocating cross-head or support, upper and lower tool-carrying levers pivoted thereto, sliding cam plates or bars provided with cams which coöperate with said levers to turn the same on their pivots, guides in said cross-head for said sliding cam plates, means intermediate of said cam plates or bars for moving the same in opposite directions to each other and into and out of operative relation with said levers, and means for reciprocating said cross-head or support.

2. In a machine of the class described, in combination, a reciprocating cross-head or support, upper and lower tool-carrying levers pivoted thereto, cam plates or bars provided with cams which coöperate with said levers to turn the same on their pivots, rack-bars attached to said cam plates or bars, a gear in mesh with said rack-bars, and means for oscillating said gear, substantially as described.

3. In a machine of the class described, in combination, a reciprocating cross-head, a pivoted lever carried by the cross-head, sliding boxes movable in said cross-head in a direction transversely of the length of said lever and in which the pivot for said lever is mounted, and means for moving said sliding boxes, substantially as described.

4. In a machine of the class described, in combination, a reciprocating cross-head, a

pivoted lever carried by the cross-head, sliding boxes movable in said cross-head and in which the pivot for said lever is mounted, means for moving said sliding boxes, a vertically-movable table, means supported by said table for sustaining said sliding boxes in their adjusted position, and means for raising and lowering said table, substantially as described.

10 5. In a machine of the class described, in combination, a reciprocating cross-head, a pivoted lever carried by said cross-head, sliding boxes movable in said cross-head and supporting the pivot for said lever, a vertically-movable table, means supported by said table for sustaining said pivoted lever, a foot-treadle, and bell-crank levers supporting said table and operatively connected with said foot-treadle to be turned thereby to raise said table, substantially as and for the purpose specified.

20 6. In a machine of the class described, in combination, a reciprocating cross-head or frame, upper and lower tool-carrying levers pivoted thereto, independent cams for operating said levers bodily movable in opposite directions to each other, guides on the cross-head for said bodily-movable cams, and means for moving said cams, substantially as described.

7. In a machine of the class described, in combination, a reciprocating cross-head or frame, upper and lower tool-carrying levers pivoted thereto, arms pivoted to said levers, independent cams movable in opposite directions to each other, guides on the cross-head for said bodily-movable cams, means to adjust said arms with relation to said cams, and means for moving said cams in opposite directions, substantially as described.

40 8. In a machine of the class described, in combination, a reciprocating cross-head comprising side frames or uprights provided with guideways, upper and lower tool-carrying levers pivotally connected to said cross-head to move therewith, reciprocating cam plates or bars movable in said guideways, cams on said plates or bars cooperating with said levers and oppositely arranged, means for simultaneously moving said cam plates or bars in opposite directions to each other, and means for reciprocating said cross-head, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANKLIN J. PERKINS.

Witnesses:

LOUIS E. SMITH,
PORTER D. BROWN.