

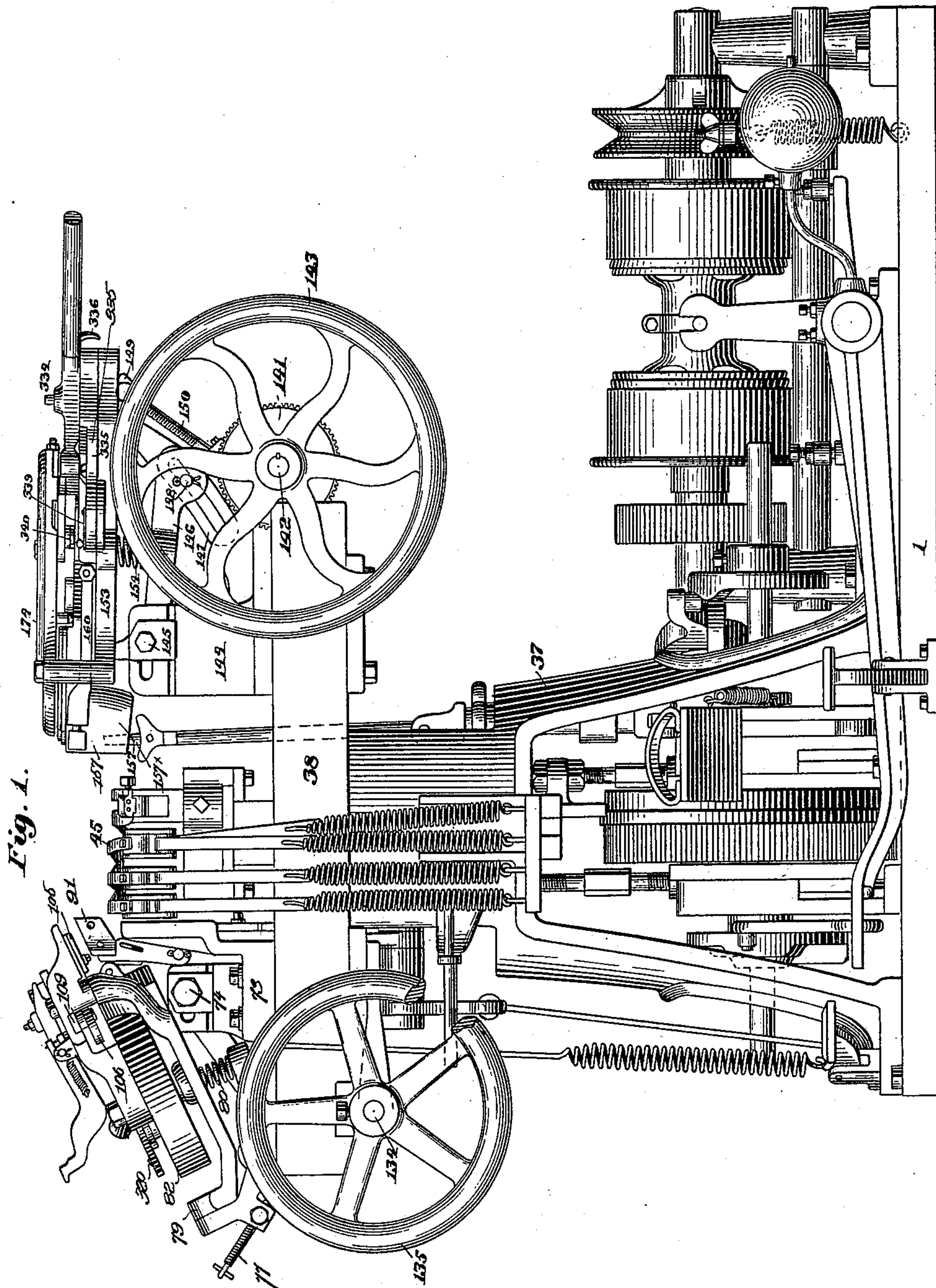
(No Model.)

9 Sheets—Sheet 1.

M. BROCK.
LASTING MACHINE.

No. 601,939.

Patented Apr. 5, 1898.



Witnesses:
Walter O. Lombard.
Fred S. Guinleaf.

Inventor:
Matthias Brock,
by Brock & Guinleaf.
Atlys.

(No Model.)

9 Sheets—Sheet 2.

M. BROCK.
LASTING MACHINE.

No. 601,939.

Patented Apr. 5, 1898.

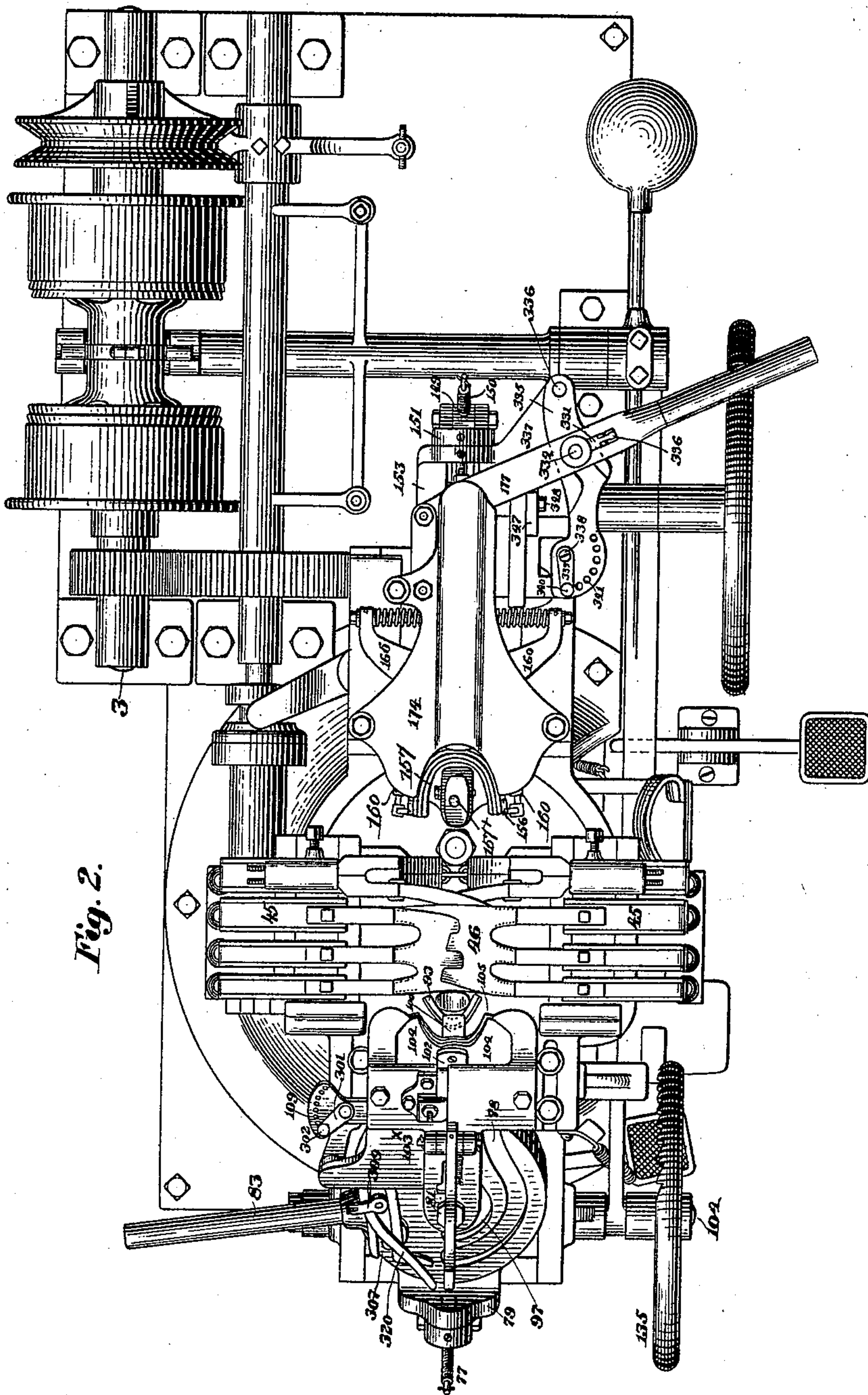


Fig. 2.

Witnesses:

Walter E. Lombard.
Fred L. Grunhof.

Inventor:

Matthias Brock,
by Crosby & Gregory,
Attys

(No Model.)

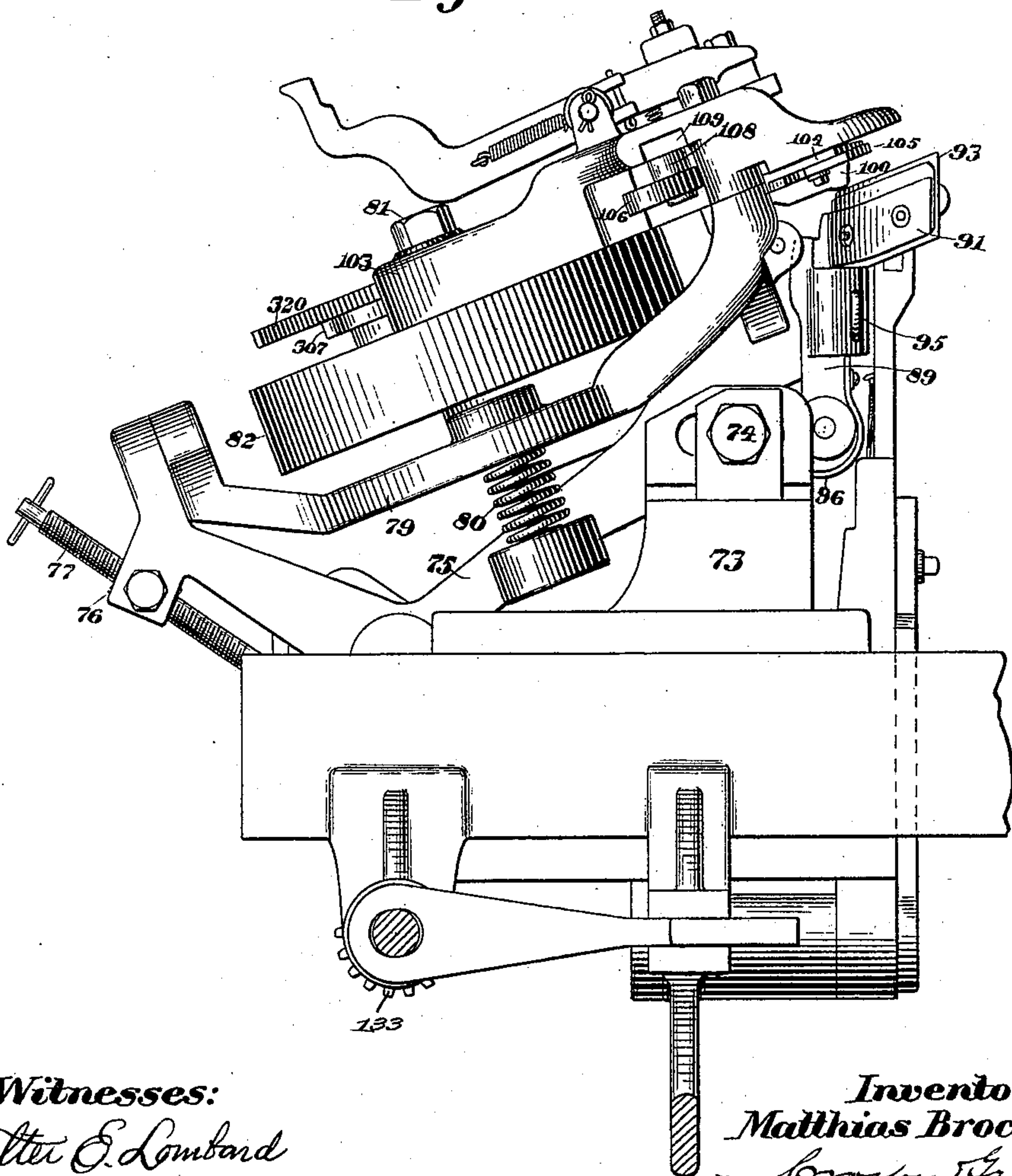
9 Sheets—Sheet 3.

M. BROCK.
LASTING MACHINE.

No. 601,939.

Patented Apr. 5, 1898.

Fig. 3.



Witnesses:
Walter E. Lombard
Fred S. Grunhof.

Inventor:
Matthias Brock,
by Crosby Gregory.
Attys.

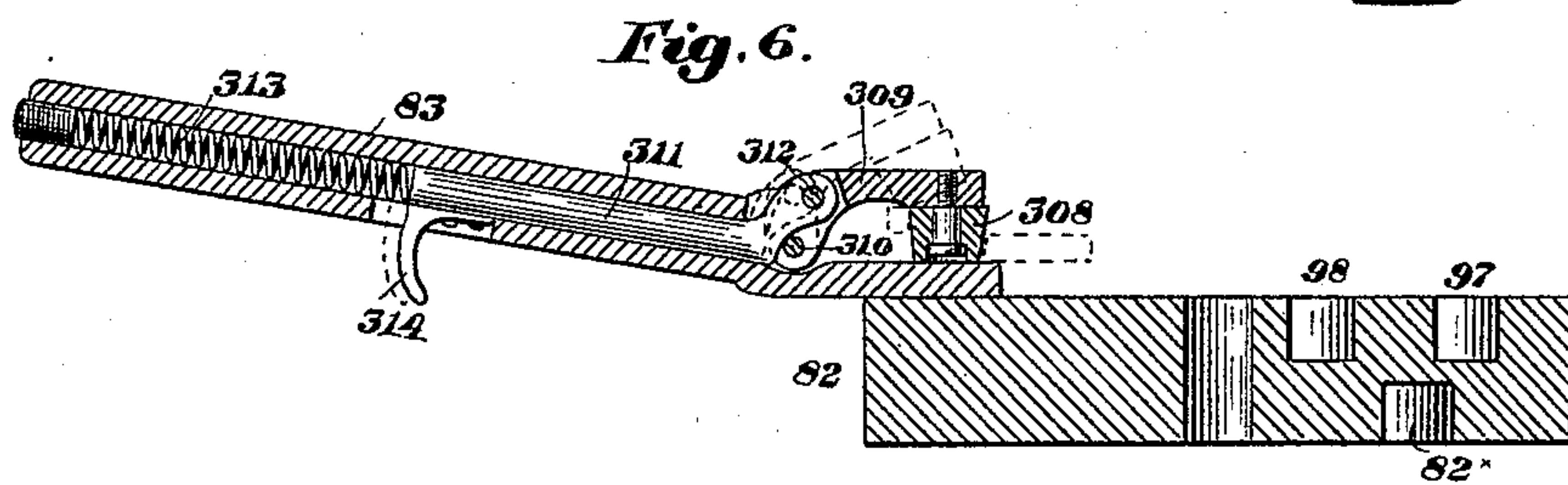
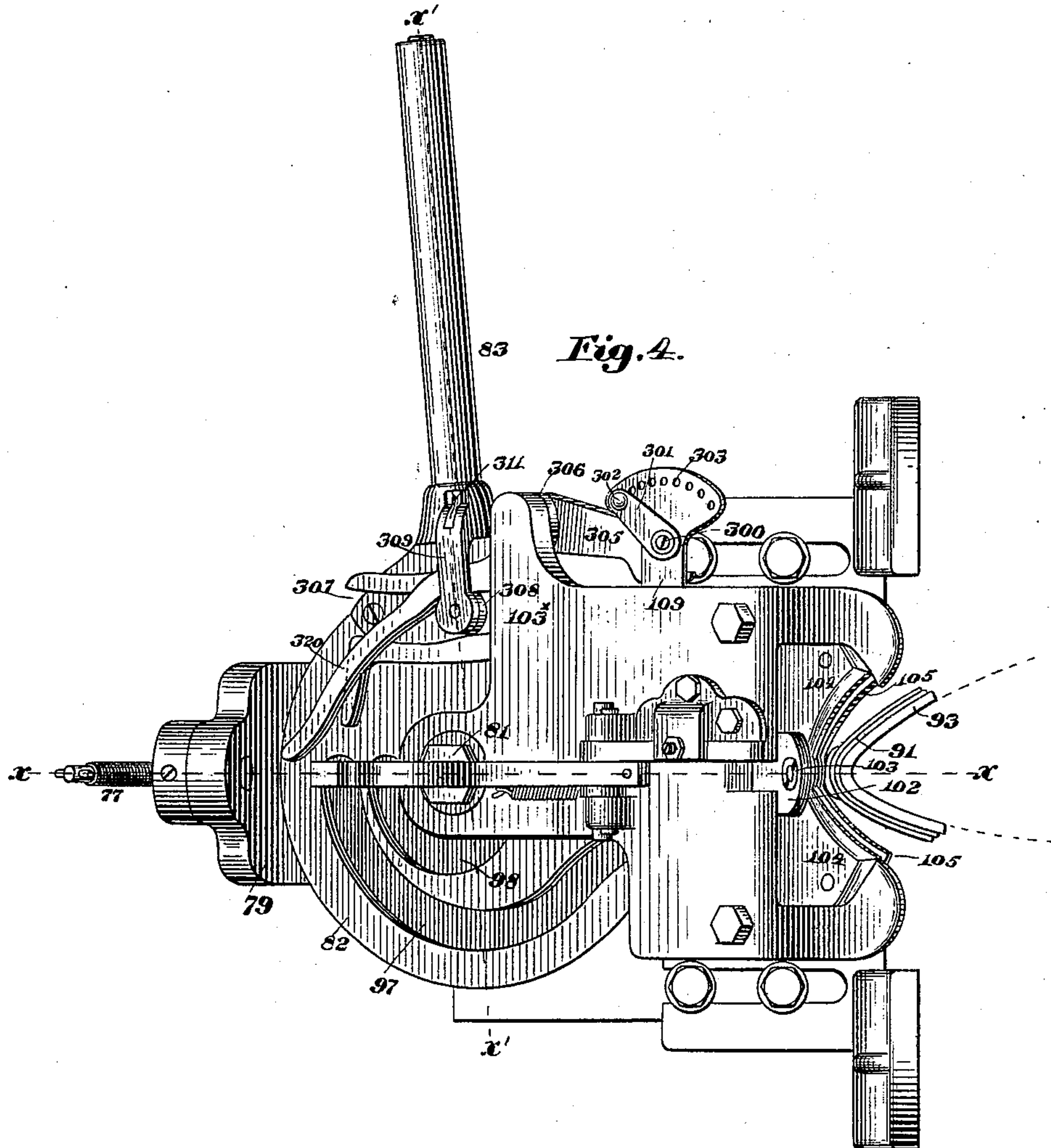
(No Model.)

9 Sheets—Sheet 4.

M. BROCK.
LASTING MACHINE.

No. 601,939.

Patented Apr. 5, 1898.



Witnesses:
Walter O. Lombard.
Fred S. Grunkel.

Inventor:
Matthias Brock,
by *Brooklyn & Auger*
Attys

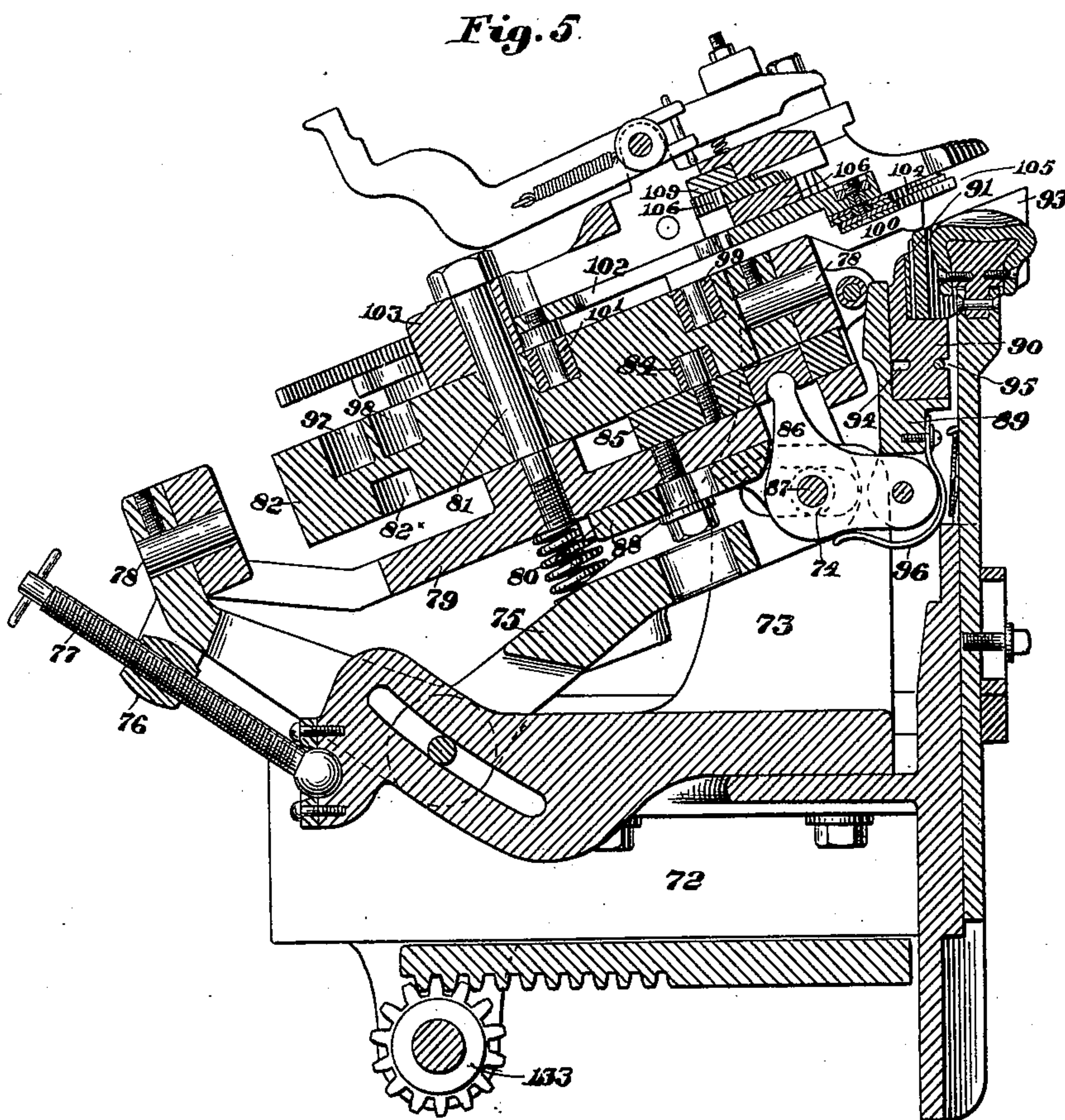
(No Model.)

9 Sheets—Sheet 5.

M. BROCK.
LASTING MACHINE.

No. 601,939.

Patented Apr. 5, 1898.



Witnesses:
Walter C. Lombard.
Frederick S. Grunke.

Inventor:
Matthias Brock,
by Brocky & Gregory
Attys.

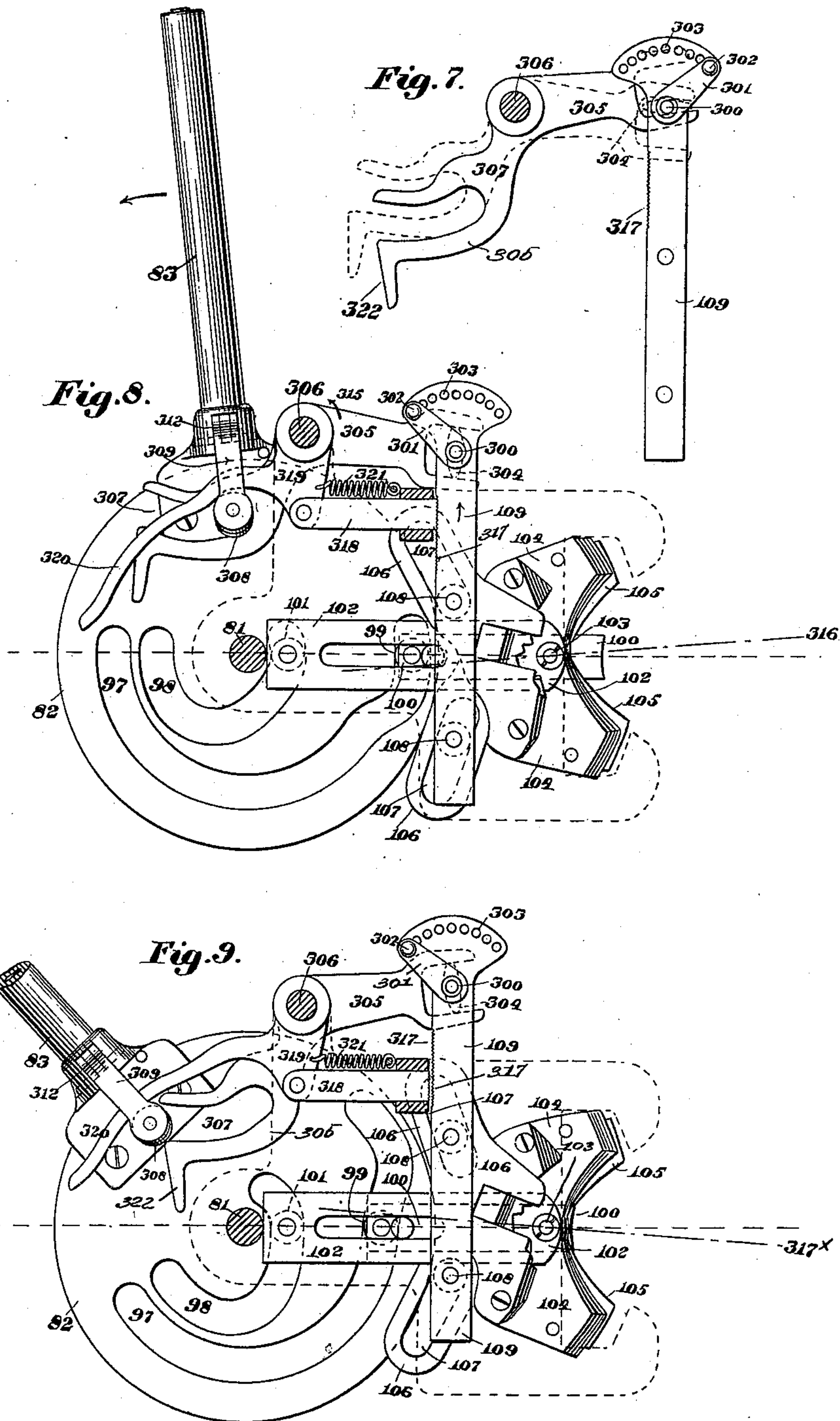
(No Model.)

9 Sheets—Sheet 6.

M. BROCK.
LASTING MACHINE.

No. 601,939.

Patented Apr. 5, 1898.



Witnesses:
Walter E. Lombard.
Fred S. Gunkel.

Inventor:
Matthias Brock,
by Crosby & Gregory
Attys.

(No Model.)

9 Sheets—Sheet 7.

M. BROCK.
LASTING MACHINE.

No. 601,939.

Patented Apr. 5, 1898.

Fig. 10.

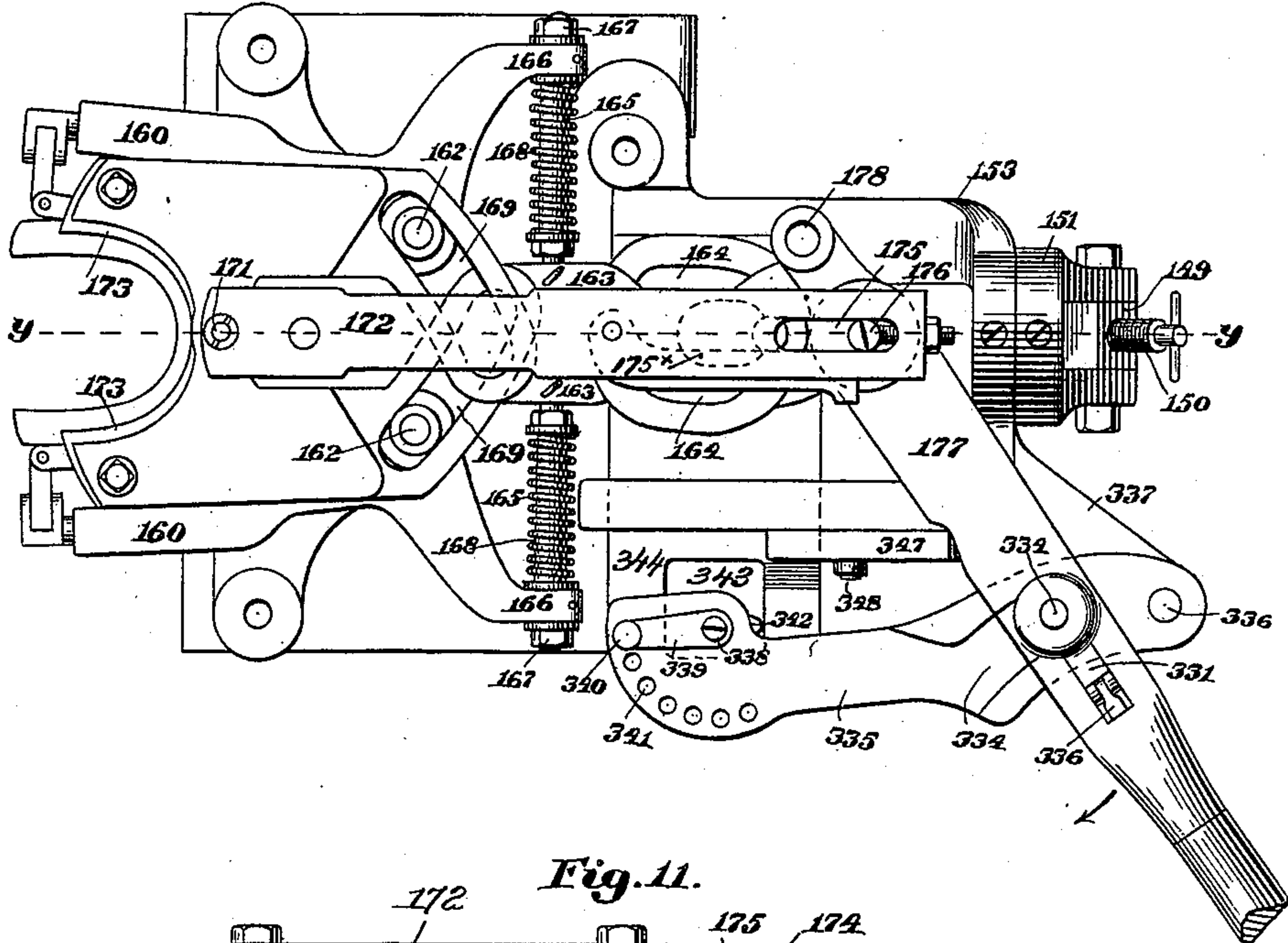
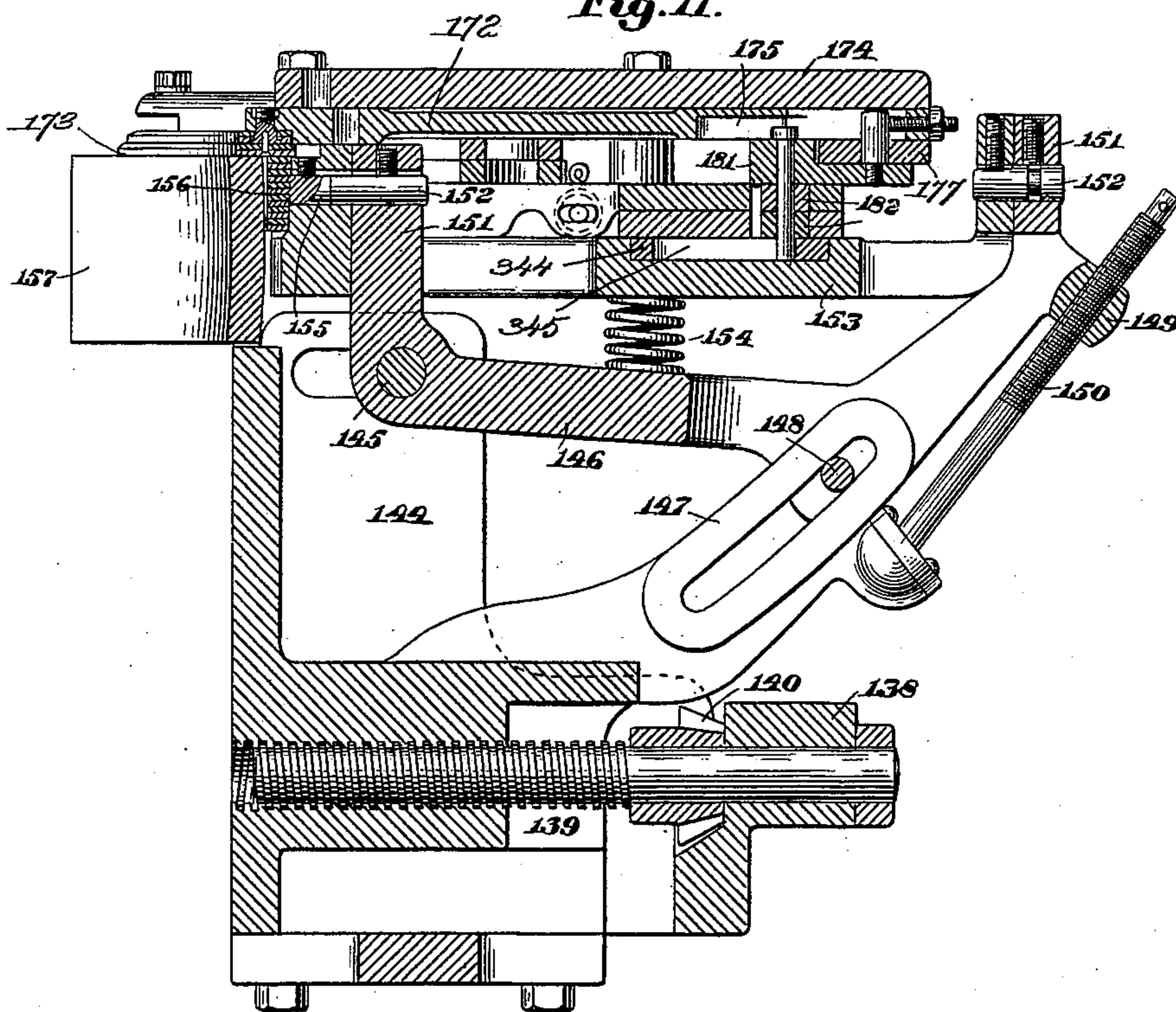


Fig. 11.



Witnesses:

Walter E. Lombard.
Fred S. Gumbach.

Inventor:

Matthias Brock,
by Crosby & Gregory
Attys.

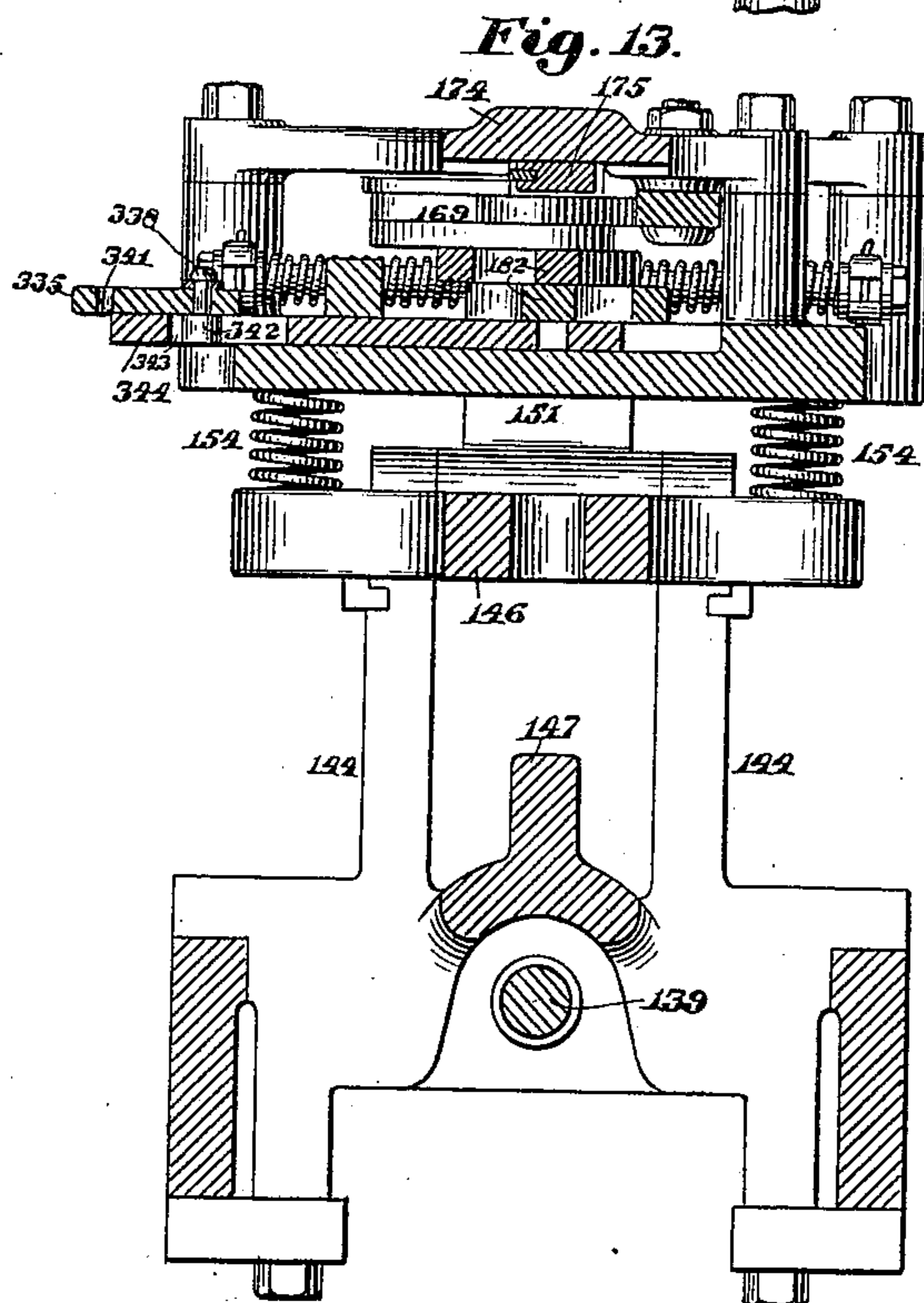
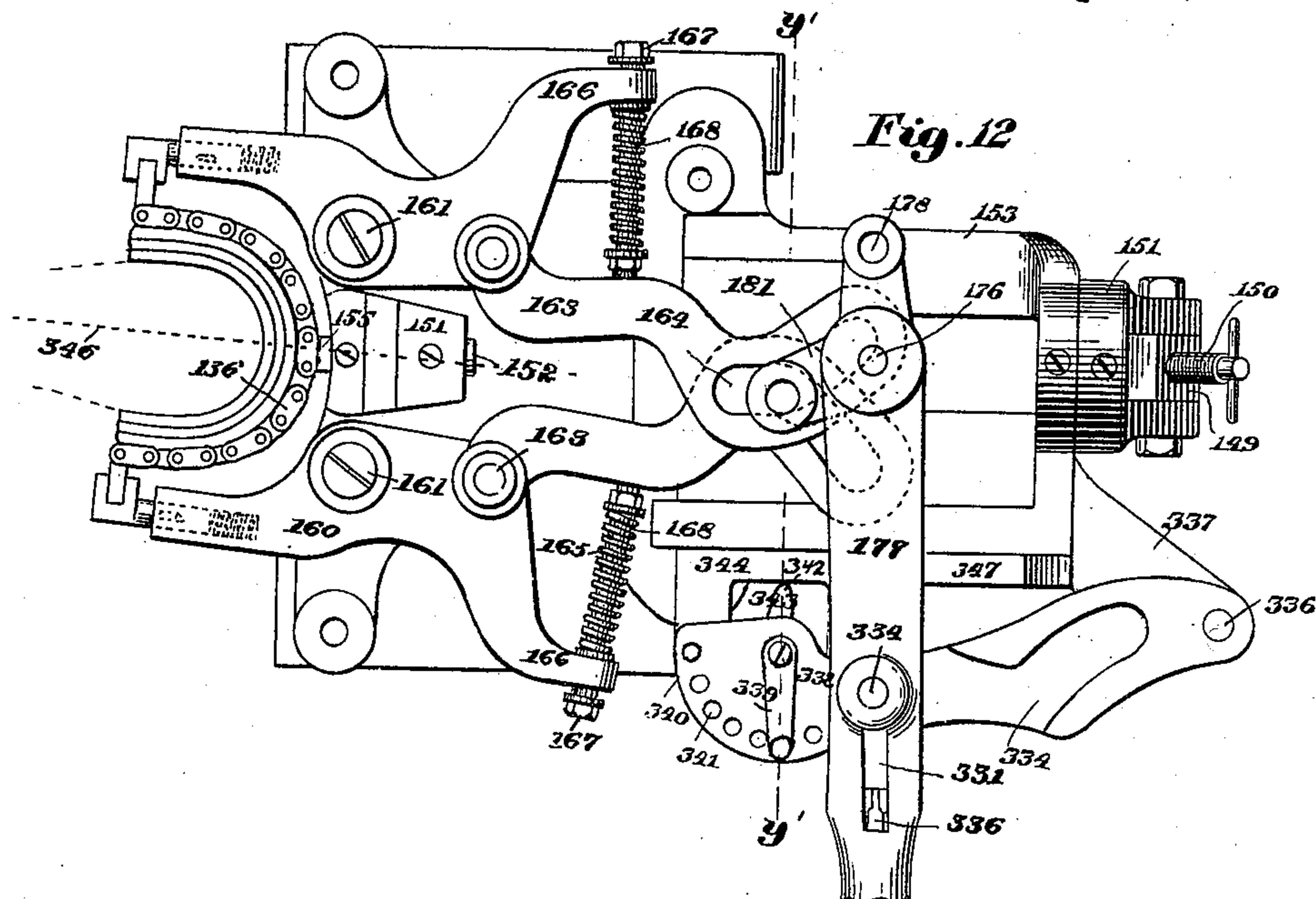
(No Model.)

9 Sheets—Sheet 8.

M. BROCK.
LASTING MACHINE.

No. 601,939.

Patented Apr. 5, 1898.



Witnesses:
Walter O. Lombard
Fred S. Grunke.

Inventor:
Matthias Brock,
by Crosby & Gregory -
Attys.

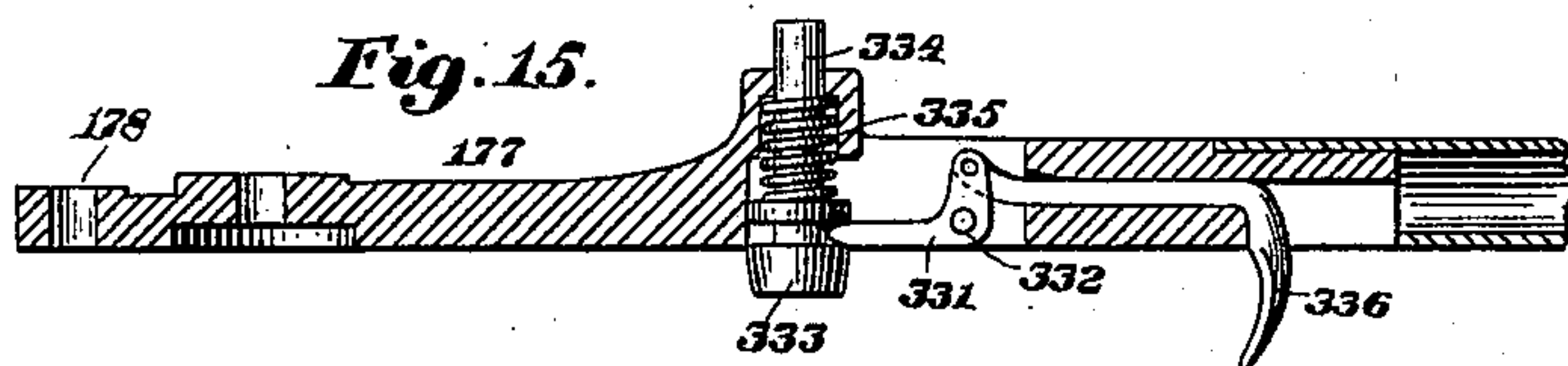
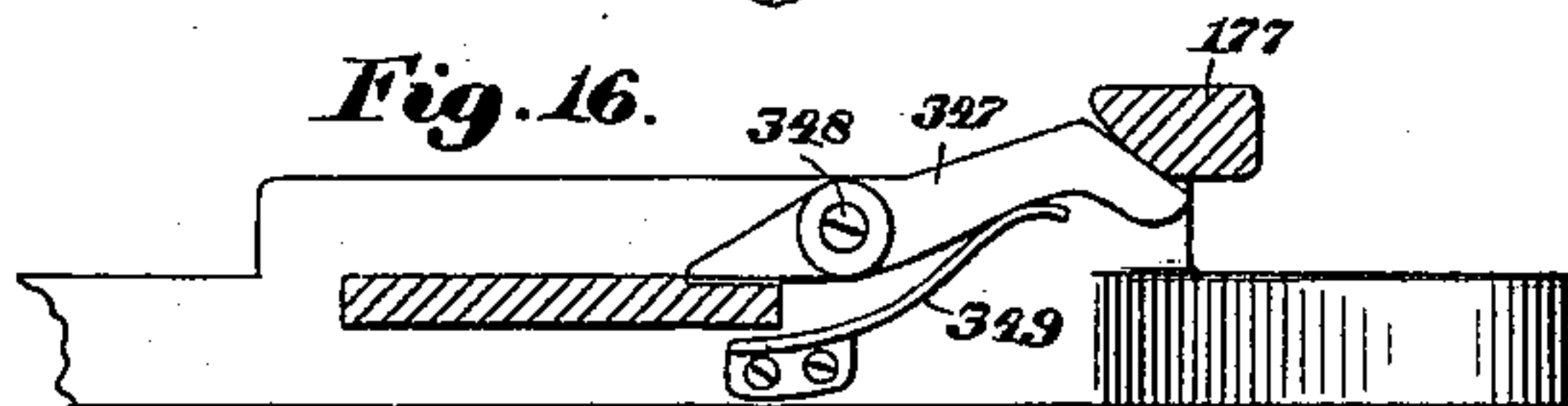
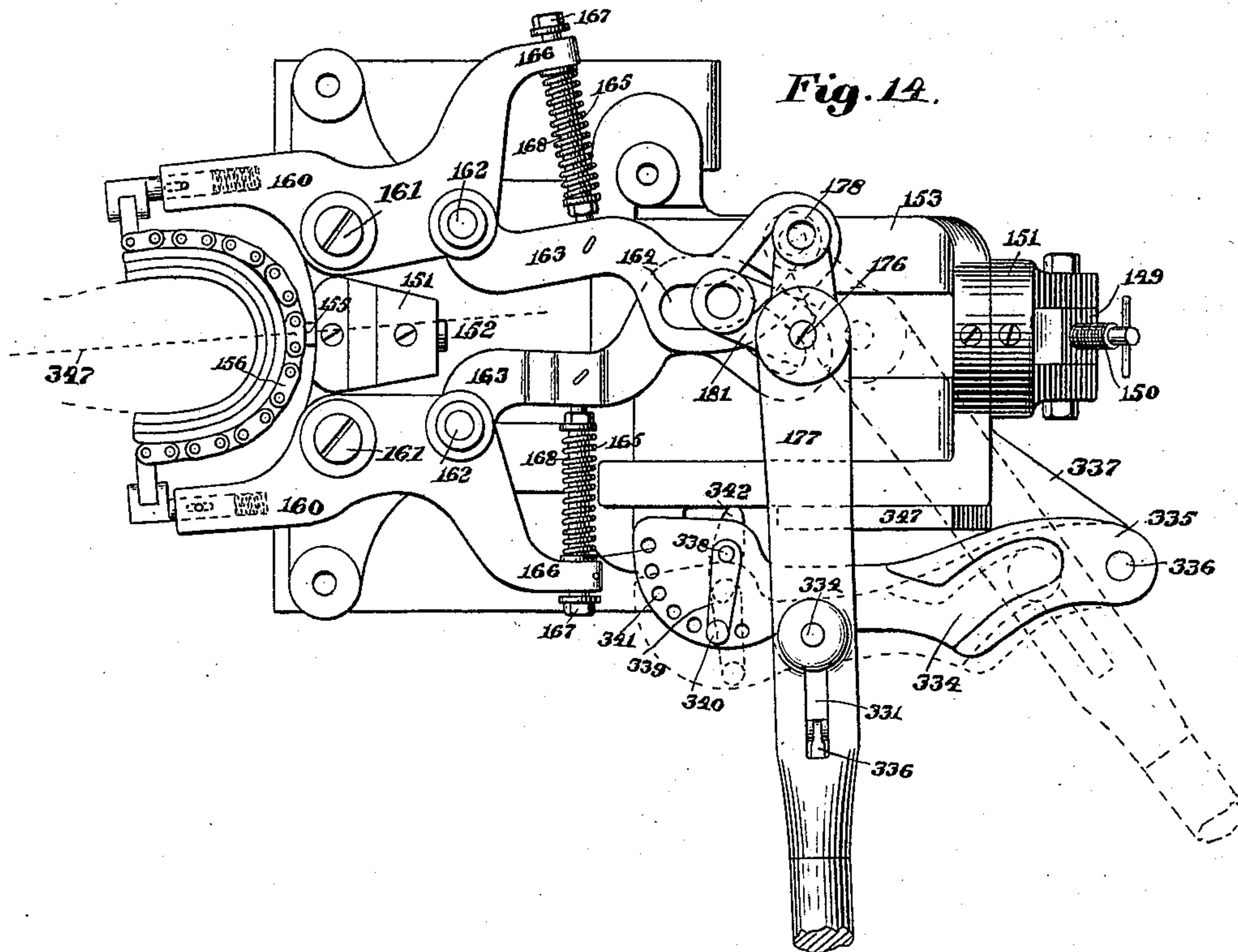
(No Model.)

9 Sheets—Sheet 9.

M. BROCK.
LASTING MACHINE.

No. 601,939.

Patented Apr. 5, 1898.



Witnesses:
Walter O. Lombard.
Thomas Drummond

Inventor:
Matthias Brock,
by Brocky Gregory.
Attys.

UNITED STATES PATENT OFFICE.

MATTHIAS BROCK, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE CONSOLIDATED & MCKAY LASTING MACHINE COMPANY, OF PORTLAND, MAINE.

LASTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 601,939, dated April 5, 1898.

Application filed August 14, 1897. Serial No. 648,240. (No model.)

To all whom it may concern:

Be it known, that I, MATTHIAS BROCK, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Lasting-Machines; of which the following description, in connection with the accompanying drawings, is a specification, like figures on the drawings representing like parts.

This invention relates to lasting-machines of the type employing side and end lasting devices, as distinguished from lasting-machines having a single pair of nippers to engage the material in successive positions around the last.

My invention has especial reference to means for adapting the end lasting devices to the ends of lasts, whether rights or lefts, having a difference of swing or inclination.

My present invention further relates to that class of lasting-machines wherein the transverse adjustment of the end lasting devices from one to another position to meet a change from a right to a left last, or vice versa, is effected by a manual operation distinct from the actual lasting operation, as distinguished from machines of this class wherein such transverse adjustment of the end lasting devices from right to left is effected automatically previous to or during the actual operation of lasting the ends of a shoe.

The object of this present invention is to improve the construction of machines of the former type in order to facilitate the operation of the same in the lasting of shoes, whether rights or lefts, having a difference of swing.

The special features of my invention will be hereinafter fully set forth.

In the drawings, Figure 1 is a side elevation of a lasting-machine containing an embodiment of my invention; Fig. 2, a top or plan view of the machine shown in Fig. 1; Fig. 3, an enlarged side elevation of the toe-head carrying the toe-lasting devices of the machine; Fig. 4, a top or plan view of Fig. 3; Fig. 5, a vertical section through the toe-lasting devices, the section being taken on the dotted line $x x$, Fig. 4; Fig. 6, a longitudinal section of the operating-handle for the toe-lasting devices, showing part of the means for adjusting the toe-lasting devices for rights and lefts, the section being taken on the dot-

ted line $x' x'$, Fig. 4; Fig. 7, a plan view of the parts coöperating with the parts shown in Fig. 6; Figs. 8 and 9, diagram views illustrating the parts Fig. 4 in different positions; Fig. 10, a top or plan view of the heel-head carrying the heel-lasting devices of the machine, Fig. 1, with the top plate removed; Fig. 11, a vertical section of the same on the dotted line $y y$, Fig. 10; Fig. 12, a view similar to Fig. 10, with some of the parts removed to expose those beneath; Fig. 13, a sectional view of the heel-lasting devices, the section being taken on the dotted line $y' y'$, Fig. 12; Fig. 14, a view similar to Fig. 12, with the parts in different positions; Fig. 15, a partial longitudinal section of the operating-handle for the heel-lasting devices and parts carried by said handle, and Fig. 16 a sectional detail showing the locking means at the heel end of the machine.

Referring to the drawings and to the machine therein illustrated as an instance of my invention, the base 1, driving-shaft 3, journaled in suitable bearings thereon, the column 37, the table 38, the side lasting devices 45 46, and the parts coöperating with the above-named parts are and may be of usual or well-known type, they being herein shown as embodied in the well-known McKay & Copeland lasting-machine familiar to those skilled in the art, it being considered that no further description thereof is herein necessary, as such parts and their connections form no part of my present invention, except in so far as they go to make up an operative machine to which my invention is applied and in connection with which my invention is operated.

Referring now particularly to Figs. 1, 3, and 5, the table 38 has suitable guideways, in which is mounted the longitudinally-sliding carriage 72, provided with stands 73, between which is mounted to rotate upon short adjustable studs 74 (shown in dotted lines, Fig. 5, and in full lines, Fig. 3) the yoke-shaped tipping-plate holder 75, provided at its rear end with a swivel-nut 76, in which is threaded the adjusting-screw 77, which acts upon the carriage and furnishes means for varying the tip of the said plate-holder about its transverse axis on the studs 74 to accommodate

the toe-lasting devices to the varying springs or longitudinal curvatures of and at the bottoms of the toe portions of the lasts employed in the machine.

5 Pivotally mounted on studs 78 in the arms of the yoke-like tipping-plate holder 75 is the tipping plate 79, the same at its opposite sides resting upon suitable springs 80, which act normally to hold said tipping plate yieldingly
10 in a central or horizontal position.

A stud 81 on the tipping plate 79 furnishes proper axial bearing for the operating-cam 82, shown as disk-like in form and provided with an operating-handle 83, Fig. 8, by which the
15 operator may rotate said cam in either direction at will. At its under side the cam 82 is provided with a suitably-shaped cam-groove 82^x for the reception of the roller-stud 84 on the longitudinally-sliding block 85, which lat-
20 ter at its right-hand end, Fig. 5, is slotted to receive the vertical arm of the bell-crank lever 86, pivoted on the stud 87 (shown in full lines, Fig. 5) in the longitudinally-adjustable plate 88, fastened to the under side of the
25 tipping plate 79. The horizontal arm of this bell-crank lever 86 is jointed to the lower end of and supports the end-wiper or clasp holder 89, shown as socketed at its upper end to receive therein the cylindrical shank 90 of the
30 end wiper 91, said end wiper, as herein shown, consisting of a U-shaped metallic plate or back with a leather or other covering-face 93.

The wiper-shank 90 is shown as circumferentially grooved at 94 to receive the pin 95, which prevents said shank and its wiper ris-
35 ing from the said socket without interfering with the free rotation of the said wiper and shank in the said socket.

A spring 96 acts upon the horizontal arm
40 of the bell-crank lever 86 and holds the end wiper or clasp 93 back in its proper position against its back support on the tipping plate.

The operating-cam 82 at its upper side is provided with two cam-grooves 97 98, the
45 groove 97 receiving the roller-stud 99 on the under side of the abutment-slide 100, the outer end of which (see Fig. 5) is shaped and adapted to constitute an abutment against which the toe of the shoe is placed when po-
50 sitioning the shoe preparatory to lasting. As the operating-cam is rotated this abutment-slide is withdrawn by said groove, so as to avoid interference with the working parts op-
55 erating about or in the vicinity of the toe.

The inner cam-groove 98 referred to receives the roller-stud 101 on the under side of the end-wiper slide 102, arranged in guideways in the under side of the cap 103^x. To the
60 outer end of this wiper-slide, being at the right, Figs. 8 and 9, are pivoted at 103 the toe-wiper carriers 104 and toe-wipers 105, adjustably secured on said carriage. These wiper-carriers have respectively secured to their upper sides the rearwardly-extended
65 cam-plates 106, which cross each other like a pair of shears and are diagonally slotted at 107 to receive the roller-studs 108, (shown in

dotted lines, Figs. 8 and 9, and in full lines, Fig. 3,) depending from the transversely-sliding bar 109, having its bearings in the under
70 side of the cap referred to.

Rotation of the operating-cam 82 acts through its groove 98 to move the wiper-slide 102 forward, carrying therewith the wipers, which are pivoted thereto, this forward move-
75 ment of the wipers carrying the same over the toe end of the last, at the same time causing their attached cam-plates, acted upon by the depending roller-studs 108 referred to, to be moved one laterally toward the other, to
80 thereby close the said wiper-carriers and their wipers over the end of the last as they advance to lay or wipe the material over and upon the bottom of the last.

So far as described the operation of the
85 mechanism is substantially as follows: Rotation of the operating-cam 82 first causes the slide 85 at the under side thereof to be withdrawn to the left, Fig. 5, and thereby, through the bell-crank lever 86, raise the end
90 wiper or clasp 91 93 to cause the same to wipe the material of the upper smoothly about the sides of the toe end of the last. Rotation of the said cam also acts to withdraw the abutment
95 100 after the last has been positioned and, further, causes the slide 102 to advance to close the wipers over the last, as described. The toe-wipers 105 (see Figs. 8 and 9) are shown as shaped to evenly meet the sides of the toe end
100 of a perfectly straight last when the latter is in position in the machine. Hence for crooked lasts presenting a swing of a greater or less extent at their toe ends the said wipers must be shifted to the right, as in Fig. 8, or to the
105 left, as in Fig. 9, in order that they may still evenly meet the sides of the toe end of a last which by reason of its swing stands in the alignment indicated by the angular dotted lines, Figs. 8 and 9. To accomplish this trans-
110 verse shifting of the end wipers or lasting devices to meet lasts, either rights or lefts, having a difference of swing, I have provided the end of the slide-bar 109 (see Figs. 4 and 8) with a rotatable stud 300, to the upper end of
115 which is attached a short crank-arm 301, provided at its free end with a knob 302, adapted to engage one or another of the series of recesses 303 in the end of the slide-bar, the said crank-arm 301 being preferably resilient to enable the knob 302 to be withdrawn from any
120 one of said recesses and afterward be permitted to spring into any other, as may be necessary for the adjustment of the stud 300, for a purpose to be described. On the under side
125 of the stud 300 is a flattened head 304, arranged between the arms of the forked end of a lever 305, fulcrumed on a stud 306, carried by the cap 103^x, the tail end of the said lever being likewise forked to present a curved or cam-shaped pathway 307. (Shown
130 best in Fig. 7.) This camway 307 is designed to receive the roller-stud 308, (see Fig. 6,) carried at the under side of the lever 309, pivoted at 310 on the operating-handle 83,

said lever 309 being actuated to raise the said roller-stud from and drop it into the camway 307 by means of a sliding finger-rod 311, arranged within the operating-handle and attached at 312 to the said lever 309 above its fulcrum. A spring 313 acts to press the finger-rod 311 always to the right, Fig. 6, to hold the roller-stud 308 normally in the camway 307, said rod being provided with a depending finger-piece 314, adapted to be engaged by the thumb of the hand of the operator when moving the handle-lever 83, and by means of which finger-piece the said rod 311 may be moved to the left, Fig. 6, against the action of said spring to lift the roller-stud out from the said camway. With the handle-lever 83 in its normal position, Fig. 8, the roller-stud 308 stands at the inner end of the camway 307 and holds the lever 305 in its position Fig. 8, with the slide-bar 109 also in its position Fig. 8, its depending roller-studs 108 holding the toe-wipers in position to act upon a left last when in lasting position in the machine, the alinement of said toe-wipers being then normally in the position indicated by the dotted line 316, Fig. 8—that is, the alinement of the toe-wipers is normally such as to adapt said wipers to a last of a certain swing, herein shown as a left last. If it is desired to shift the alinement of the said wipers so as to adapt the latter for a right last having an opposite swing, the operator will swing the operating-handle 83 in the direction of the arrow, Fig. 8, to actuate the lasting devices, as before, and will not disturb the position of the finger-piece 314 at the under side of said handle-lever, permitting the spring to hold the said finger-piece in position with the roller-stud 308 in the camway 307, so that said roller-stud in the rotation of the lever will shift the lever 305 in the direction of the arrow 315, and thereby move the slide-bar 109 in the direction of the arrow thereon into its position Fig. 9 and through the roller-studs 108 shifting the toe-wiper plates into position with their alinement, as indicated by dotted lines 317^x, Fig. 9. On return of the handle-lever 83 at the completion of the lasting operation the roller-stud 308 will return the said lever 305 and the wiper-plates again to their normal positions, Fig. 8, in readiness to act upon a left last. When, however, it is desired to last on a left last, the alinement of the toe-wipers should of course be permitted to remain at that side of the center line of the machine, (indicated by the dotted line 316, Fig. 8,) and in such case the operator in swinging the handle-lever 83 to actuate the lasting devices will by his thumb press the finger-piece 314 to the left, Fig. 6, and thereby lift the roller-stud 308 out from the camway 307, so that in the swinging of the said handle-lever the lever 305, its connected slide-bar 109, and the toe-wipers will remain in their normal positions, as in Fig. 8.

From the foregoing description it will be

seen that the toe-wipers are normally in position to act upon a last having a certain swing—for instance, the swing of a right or it may be of a left last—and that when a last having a swing adapted to the normal position of the toe-wipers is employed the mechanism is so manipulated as to permit the said wipers to remain in their normal positions. When, however, a last having an opposite swing is to be acted upon, the operator manipulates the mechanism to shift the said lasting devices into opposite angular alinement for said other last, the mechanism, if left to itself, automatically returning said plates to their original position as to alinement after each lasting operation.

To lock the lasting devices in their proper positions for lasting, whatever be the swing, I have herein serrated the edge of the slide-bar 109, as at 317, Fig. 7, and have arranged to cooperate with the serrated edge of the said bar the serrated end of a locking-slide 318, jointed to the lever 319, pivoted about the fulcrum-stud 306 and having a tail portion 320 extended in the path of the roller-stud 308, so that whether said stud be maintained in the camway 307 or be raised therefrom it will in each instance on the initial swinging movement of the handle-lever 83 move the locking-lever 320 to first unlock the slide-bar 109 to permit the latter to be moved, if any movement is to take place, and afterward by clearing the end of the said tail portion 320 permit the said locking-lever, under the action of a spring 321, Fig. 8, to spring into position, holding the locking-slide 318 in engagement with the serrated edge 317 of the slide-bar to lock the same and the plates in the position in which they have been set for operation.

To vary the shift of the toe-lasting devices, the resilient crank-arm 301 may be swung into one or another position to vary the angular position of the flattened head 304 in the forked end of the lever 305, the amount of lost motion between said head and the arms of the forked end of the said lever, according to the particular angular position of the said head, determining the extent to which the slide-bar and the toe-wipers will be moved or shifted upon movement of the lever 305, which is always constant.

The forked end of the lever 305 is shown as provided with an inclined face 322 to enable the roller-stud 308, when necessary, to move the said lever in order that it may enter the camway 307. After having raised the roller-stud 308, as described, the operator may during the subsequent and usual movements of the handle 83 permit the said roller-stud to roll upon the tail 320 as a support, rendering it unnecessary to keep the thumb constantly against the finger-piece 314.

By reason of the serrated engagement of the locking device for holding the plates in operative position said plates may be locked in any position or at any angle, as desired.

The toe-carriage may be longitudinally adjusted by means of the hand-wheel 135, fast on the shaft 134, carried by the table, and to which is attached the spur-wheel 133, meshing with a rack on the carriage. (See Figs. 1 and 5.)

Referring now particularly to Figs. 10 to 16, inclusive, the table 38 is provided with suitable guideways for the sliding heel-carriage 138, made adjustable by means of a screw 139, (shown best in Fig. 11,) held against longitudinal movement at one of its ends and provided with a beveled pinion 140, in mesh with a bevel-wheel 141, (see Fig. 1,) fast on a hand-wheel shaft 142 journaled, on the table, and provided with a hand-wheel 143, rotation of which causes longitudinal adjustment of the carriage, as may be necessary. The heel-carriage 138 is provided with two vertically-extended arms or stands 144, slotted horizontally at their upper ends to receive the adjustable pivot-bolt 145, on which is pivoted the tipping-plate holder 146, shown as bifurcated at its rear end to receive the curved slotted arm 147 on the carriage 138, a guide-pin 148 passing through the plate-holder and the slotted arm. The tipping-plate holder 146 at its rear end carries a swivel-nut 149, in which is threaded the adjusting-screw 150, connected at its lower end, preferably by a universal joint, with a lug on the slotted arm 147 of the carriage. Rotation of the adjusting-screw 150 swings the plate-holder and the parts carried thereby about the pivot 145 to vary the tip or vertical inclination of the plate-holder to adapt the parts carried thereby to the different swings of different lasts.

The plate-holder 146 at its opposite ends is provided with vertically-extended ears 151, to which is hung on the longitudinal trunnions 152 the tipping plate 153, adapted to swing transversely about the longitudinal axes of the said trunnions to adapt its parts to the roll of the heel end of the last, springs 154 at the sides of the said plate maintaining the latter normally in central or horizontal position. To the front of the tipping plate 153 is secured, as by a screw 155, the middle portion of the clasp-chain 156, within which is arranged the flexible clasp 157, adapted to embrace the heel end of a last with the material thereupon.

The positioning devices 160 (see Fig. 14) are fulcrumed at 161 on the tipping plate and have jointed to them at 162 (see Fig. 12) one of the ends of the actuating-levers 163, provided, respectively, with the angular slots 164, each of said slots extending longitudinally for a distance near its end adjacent the joint 162 and then angularly, as shown, the angular portions of the two slots extending at opposite angles and crossing each other like shears. Springs 165 are interposed between the actuating-levers 163 and the tail portions 166 of the positioning devices referred to, said springs being limited in their movements by nuts 167 on the ends of the limiting-bolts 168.

The wiper-carriers are pivotally connected at 171, Fig. 10, to the end of a common actuator 172, shown as a slide-bar, said carriers having secured to their under sides adjustable wipers 173, although said wipers and carriers may be made integral, if desired.

The sliding actuator-bar 172 is arranged to slide in guideways in the under side of the top plate 174, said bar at its rear end (see Fig. 10) having a longitudinal slot 175, which receives the pin 176 on a hand-lever 177, fulcrumed at 178 to the free end of a short pivot-carrying lever, (not shown, it being immaterial to this invention.)

Jointed to the under side of the hand-lever 177 is a link 181, (shown best in Fig. 12,) carrying at its free end a roller-stud 182, dropping into the angular slots 164 of the actuators referred to, said stud at its upper end being guided in the slot 175 in the under side of the actuator-bar, as shown in Fig. 11.

Having placed the last, with its shoe, upon the last-support, shown as the usual jack or heel-pin 157^x, the operator, by means of the hand-wheel 143, moves the heel-carriage to the left in the drawings to cause the heel-clasp to embrace the heel end of the last with the material thereupon. The operator now draws the handle 177 toward him, in the direction of the arrow, Fig. 10, causing its pin 176 to travel for a short distance in the slot 175 in the actuator-bar without moving the latter or the wipers. During the time of this last motion, however, the roller-stud 182 on the short link 181, connected with the said hand-lever, moves to the left in the opposite angular portions of the slots 164 and causes the latter to be thrown outwardly and thereby, through the springs 165, move the inner or free ends of the positioning devices and clasp inwardly toward the heel end of the last to cause said clasp to tightly embrace the heel end of said last.

The pivots 162, connecting the positioning devices with their actuators, are vertically extended to form bearings for rollers which enter the cam-slots 169 in the heel-wiper carriers and cause the latter, with the heel-wipers or lasting devices carried thereby, to be opened and closed over the heel end of the last as they are withdrawn or advanced by movement of the actuator-bar 172 after the pin 176 reaches the end of its slot 175 in the actuator-bar. The forward end of the slot 175 is enlarged, as at 175^x, to enable the pin of the roller-stud 182 to have considerable lateral movement therein for shifting of the wiper-plates, as hereinafter described, the rear and narrower portion of said slot acting always to center the said pin with relation to its tipping plate whenever the operating-handle is returned to its original position.

The positioning devices, as shown, operate to stop the inward movement of the heel-plates always at substantially the same distance in from the outside of the last whatever be the width of the latter.

To positively shift the heel-wipers to the right or to the left, as may be required, to adapt the same to heel ends of lasts, either rights or lefts, having opposite inclinations, I have herein provided the under side of the handle-lever 177 with a sliding finger-piece 336, which is jointed at its end to one arm of a bell-crank lever 331, (see Fig. 15,) pivoted at 332 in the said lever and having its horizontal arm engaging a circumferential groove in a roller 333, depending from the said handle-lever and mounted upon the lower end of a pin 334, acted upon by a spring 335, which normally presses the said roller into its lowermost position. When in such position, the said roller 333 enters a cam-groove 334 in a lever 335, pivoted at 336 (see Figs. 10 and 14) to an arm 337 of the tipping plate. The free end of the lever 335 is provided with a rotatable stud 338, provided at its upper end with an arm 339, preferably resilient and carrying a head 340, adapted to enter one or another of a series of recesses 341 in the said lever, the lower end of the said stud carrying a flattened head 342, which enters a preferably rectangular aperture 343 in the transversely-sliding bar 344, mounted on the said plate. This transversely-sliding bar is horizontally slotted at 345 at its inner end to receive the depending end of the pivot-pin carrying the rollers 182 referred to, and shown best in Fig. 11. By transversely sliding this bar 344 the pin referred to carrying the rollers 182 is carried to one or to the other side of the longitudinal center line of the heel-head, and thereby through the carrier-actuators, in the slots of which the rollers 182 are arranged, acts to swing the carriers and the heel-wipers thereon to one and then to the opposite side of the said center line to cause the said wipers and the positioning devices co-operating therewith to face first in one angular direction and then in an opposite to thereby adapt the alinement of the same and the line of motion of the wipers to the alinement of the heel end of the last whether it be a right or a left or whatever be its degree of swing.

The heel-wipers and clasp are normally in the position shown in Fig. 12, wherein they face in the direction of the dotted line 346, which is so inclined with relation to the median line of the head as to adapt said wipers and clasp for the heel end of a left last. When now the operator swings the operating-handle to actuate the lasting devices, the depending roller-stud 333 thereon will engage the walls of the cam-groove 334 in the lever 335 and swing the latter into its position Fig. 14, shifting the slide-bar 344 to thereby swing the wiper-carriers, wipers, and clasp, so that their alinement will be as indicated by the dotted line 347 on Fig. 14, adapting the same to the heel end of a right last. By turning the flattened head 342 into different positions the amount of lost motion between its opposite

edges and the walls of the aperture in the slide-bar in which it is located will be varied thereby to vary the movement of the said wiper-plates as desired.

It will be evident, of course, that with the roller 333 always in action the wipers or lasting devices will be positioned, as indicated at 347, at each movement of the operating-handle. When, however, it is desired to have the plates in the position indicated at 346 to operate upon the end of a last having an opposite swing, the operator by his thumb will press the finger-piece 330 to the right, Fig. 15, and thereby lift the roller 333 out of engagement with the walls of the cam-groove 334, movement of the said operating-handle then taking place without moving the lever 335, thereby leaving the lasting-plates in their normal position.

To lock the heel-lasting plates or devices and clasp in desired working position, I have serrated a portion of the upper surface of the slide-bar 344, as in Fig. 10, and coöperating with this surface is the appropriately-shaped end of a locking-lever 347, (see Fig. 16,) pivoted at 348 to the tipping plate and having its inclined upper end arranged adjacent to the handle-lever 177, a spring 349 holding the said lever 347 against the said handle-lever. Initial movement of the handle-lever depresses the raised end of the locking-lever 347 and unlocks the slide-bar, permitting the latter to be moved or not, according to the position of the roller 333, and by the time said roller shall have completed any movement of the slide-bar the moving handle-lever 177 releases the locking-lever and permits it to spring into locking engagement with the sliding bar to hold the latter against movement.

From the foregoing description it will be clear that one of the main features of my present invention is a machine wherein the end lasting devices when lasting on crooked lasts are normally in such position or alinement as will adapt the same to a last end having a certain swing or inclination—for instance, a right or a left—instead of being normally in an intermediate or central position adapted neither for a right nor a left crooked last, and that in my invention no transverse shifting of the end lasting devices from this normal position or inclination to an opposite position or inclination is necessary until a last end of opposite swing is presented to the lasting devices and this regardless of the manner in which the said plates are moved when they are to be shifted.

Of course by means of the flattened heads herein shown the end lasting devices may be made to operate in the line of the head when straight lasts are to be worked upon.

Another feature of my invention will now be understood, which is a machine wherein the end lasting devices, if not already shifted for a right or a left, may be so shifted manually by a means—*e. g.*, the finger-piece and

its connections—auxiliary to the actuating means for said end lasting devices, yet dependent for its operation upon the operation of said actuating means. As an example of this, the right and left shifting of the end lasting devices by the finger-piece 330 is independent of the actuating means for and to close the end lasting devices over the last, yet said finger-piece is dependent for its operation upon the handle-lever which actuates the end lasting devices in lasting.

The finger-piece is herein shown as a convenient auxiliary means for varying or eliminating the automatic shifting of the end lasting devices, as hereinafter referred to, but my invention is not to be restricted to the use of a finger-piece as such auxiliary means.

Yet another feature of my invention is the automatic locking of the end lasting devices in their right and left positions by operation of the actuating means for closing said lasting devices over the last.

In the mechanism hereinbefore described it will be noted that the wipers or end lasting devices are automatically shifted into position to meet the swing of the end of a last—for example, a right last—whenever the operating-handle is moved to actuate the lasting devices, but that the operator by moving the finger-piece on the operating-handle may disconnect the automatic means for shifting the lasting devices, so that said lasting devices will not be shifted on movement of the operating-handle.

As far as known to me I am the first to provide means for automatically shifting the end lasting devices to meet the swing of a last in connection with means for disconnecting said automatic shifting means at the will of the operator.

My invention of course is not limited to the embodiment herein shown and described, for the same may be varied within the spirit and scope of my invention and may be adapted to machines of other types than that herein employed for illustration.

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

1. A lasting-machine containing end lasting devices to act upon the material at an end of a last, said lasting devices automatically and normally assuming a position for a last of one swing, and means to shift the said lasting devices into position for a last of opposite swing when necessary.

2. A lasting-machine containing end lasting devices to act upon the material at an end of a last, said lasting devices normally assuming a position for a last of one swing, means to shift said lasting devices into position for a last of opposite swing, and means to vary said normal position and the said position into which the said lasting devices may be swung.

3. A lasting-machine containing heel and

toe lasting devices, normally assuming a position for a last of one swing, and means to shift said heel and toe lasting devices into positions for a last of opposite swing when necessary.

4. A lasting-machine containing end lasting devices to act upon and last the material at an end of a last, actuating means for said end lasting devices, and auxiliary means to shift said lasting devices for right and left lasts having a difference of swing, said auxiliary means being dependent for its operation upon the operation of said actuating means.

5. A lasting-machine containing end lasting devices to act upon and last material at an end of a last, actuating means for said end lasting devices, and means auxiliary to said actuating means to shift said lasting devices for right and left lasts, said means being operable by the hand of the operator operating said actuating means in substantially one and the same operation.

6. In a lasting-machine containing end lasting devices to last the material at an end of a last, an operating-handle controlling the lasting operation of said devices, and means operable by a hand engaging said operating-handle to shift said lasting devices for right and left lasts.

7. A lasting-machine containing end lasting devices to last the material at an end of a last, an operating-handle controlling the lasting movements of the said lasting devices, and a movable member mounted on said operating-handle, movement of which relatively to said handle operates to cause said lasting devices to be shifted for right and left lasts.

8. A lasting-machine, containing end lasting devices, an operating-handle for imparting lasting movement thereto, a movable member arranged close to said operating-handle, connections intermediate said movable member and said lasting devices for transversely shifting said end lasting devices to change the alinement thereof by movement of the said movable member, and means to render said connections inoperative.

9. A lasting-machine containing end lasting devices, an operating-handle therefor, connecting means under the control of the operator between said operating-handle and lasting devices for transversely shifting the latter on movement of the former at times and not at others, as necessary.

10. In a lasting-machine, the combination with end lasting devices, and means to transversely shift the same for rights and lefts, of means automatically to lock said lasting devices in the positions into which they are shifted during the lasting operation.

11. In a lasting-machine, the combination with end lasting devices, and an operating-handle to impart lasting movement thereto, of locking means for said lasting devices controlled by movement of the said operating-handle.

12. In a lasting-machine end lasting de-
vices to last the material at the end of a shoe,
actuating means therefor, means automatic-
ally to shift said lasting devices into position
5 to meet the swing of the end of a last and
means under the control of the operator for
disconnecting said automatic shifting means
at will.

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

MATTHIAS BROCK.

Witnesses:

FREDERICK L. EMERY,
LAURA T. MANIX.