

No. 771,525.

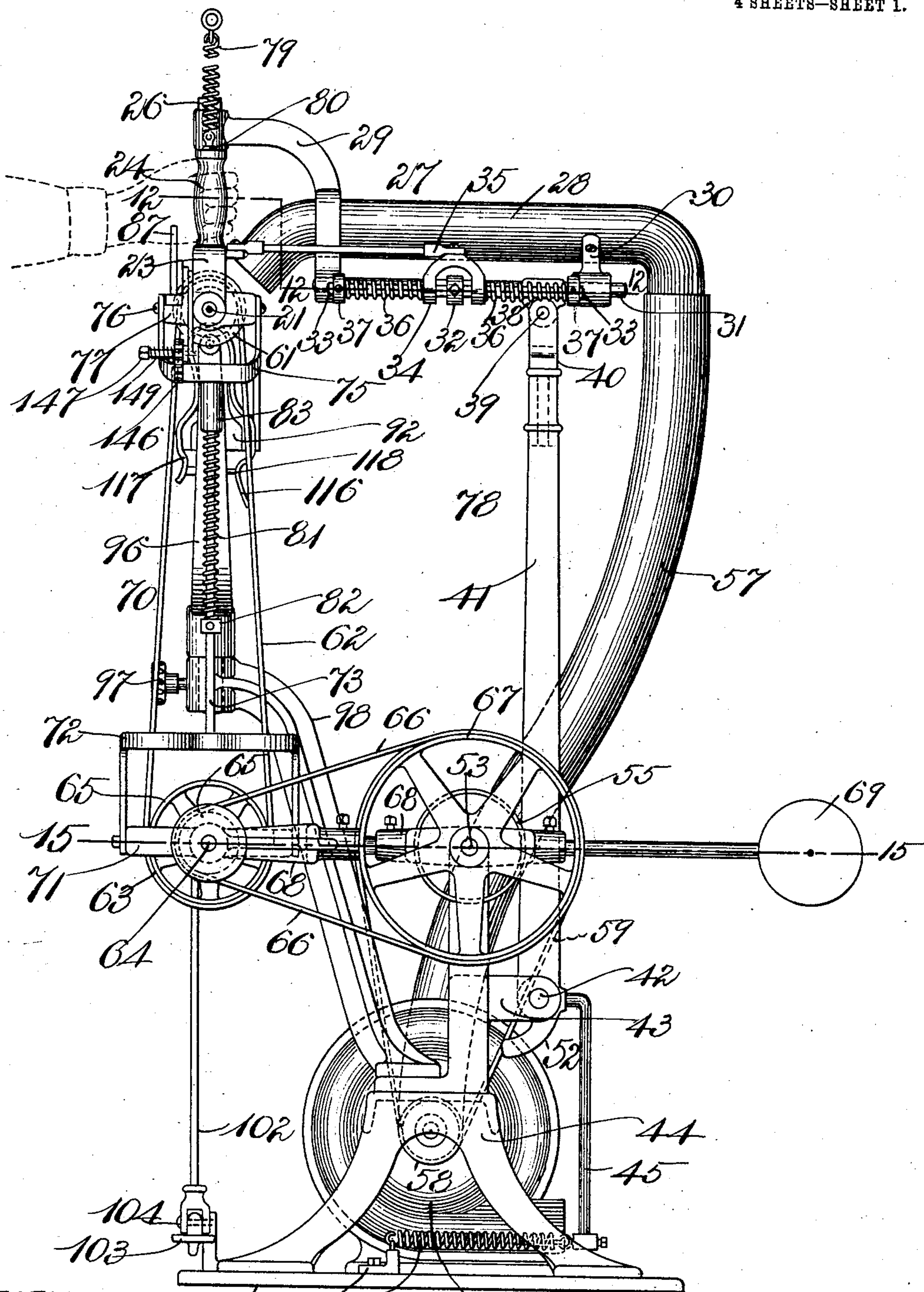
PATENTED OCT. 4, 1904.

Z. BEAUDRY.
MACHINE FOR TRIMMING HEELS.

APPLICATION FILED MAY 25, 1903.

NO MODEL.

4 SHEETS—SHEET 1.



Witnesses:

Franklin C. Low
Louis A. Jones

Fig. 1.

by his Attorney

Inventor:

Zotique Beaudry.

Charles S. Gooding.

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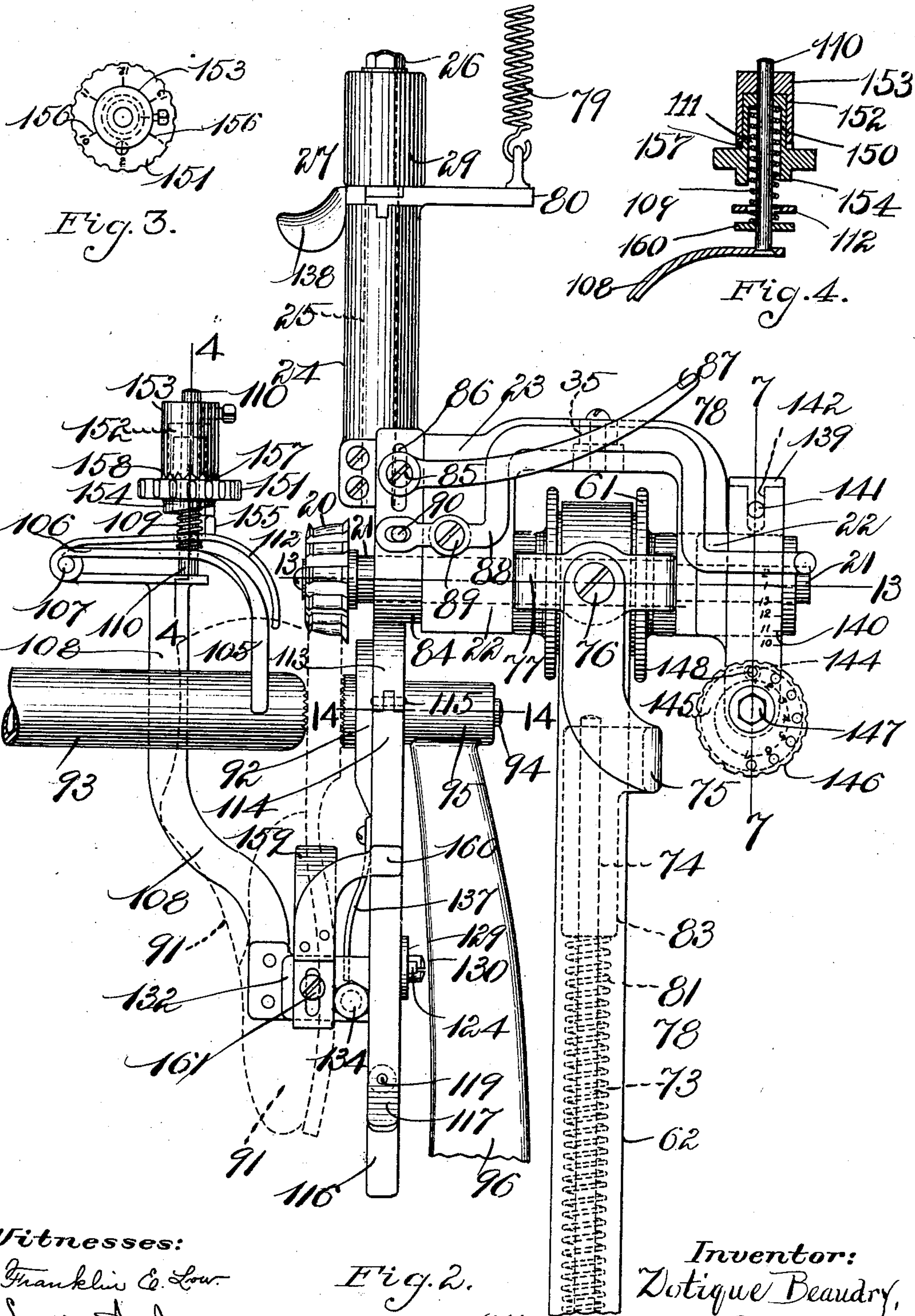
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4 SHEETS—SHEET 2.



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Fig. 2.

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4 SHEETS—SHEET 3.

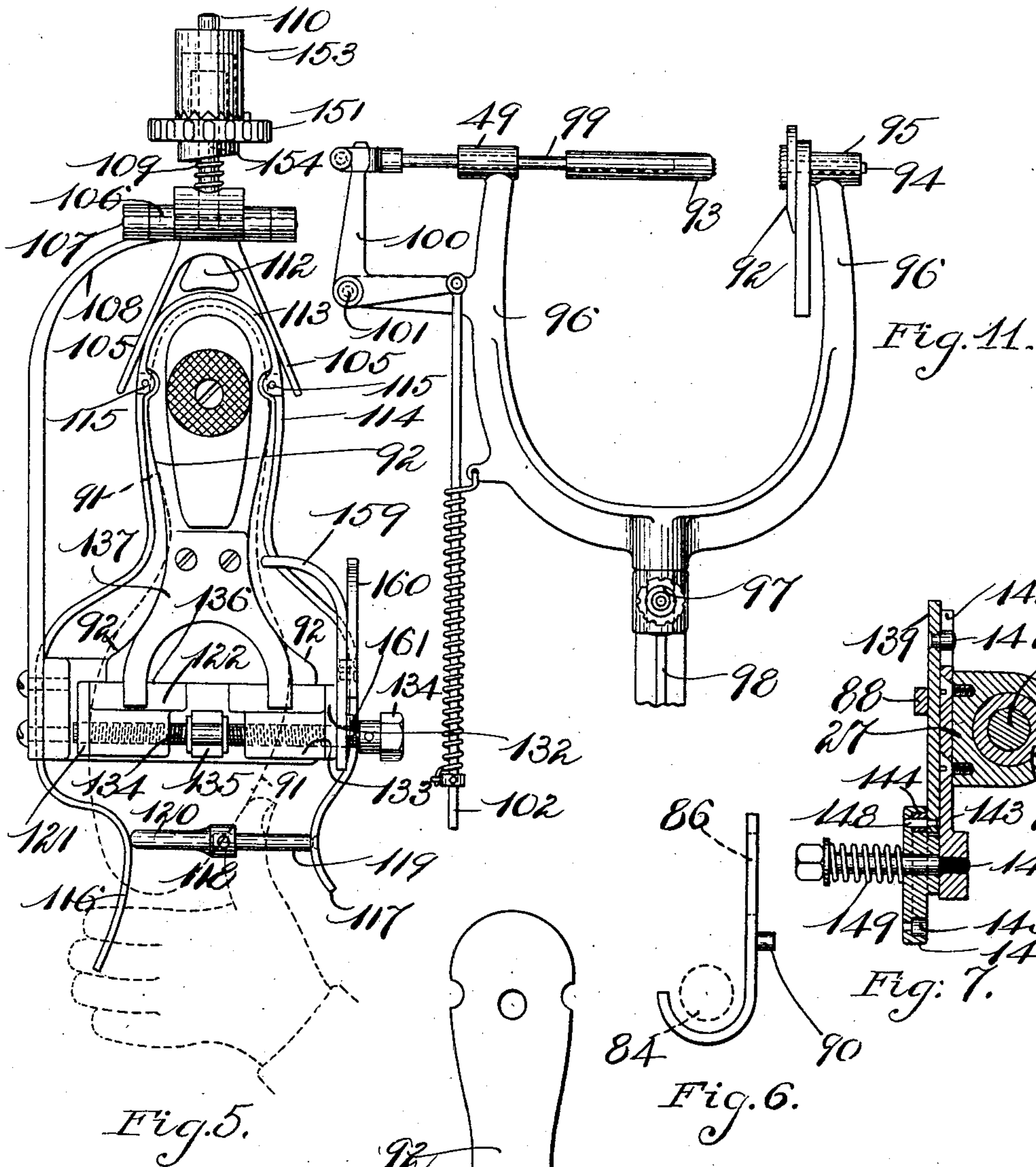


Fig. 5.

Fig. 6.

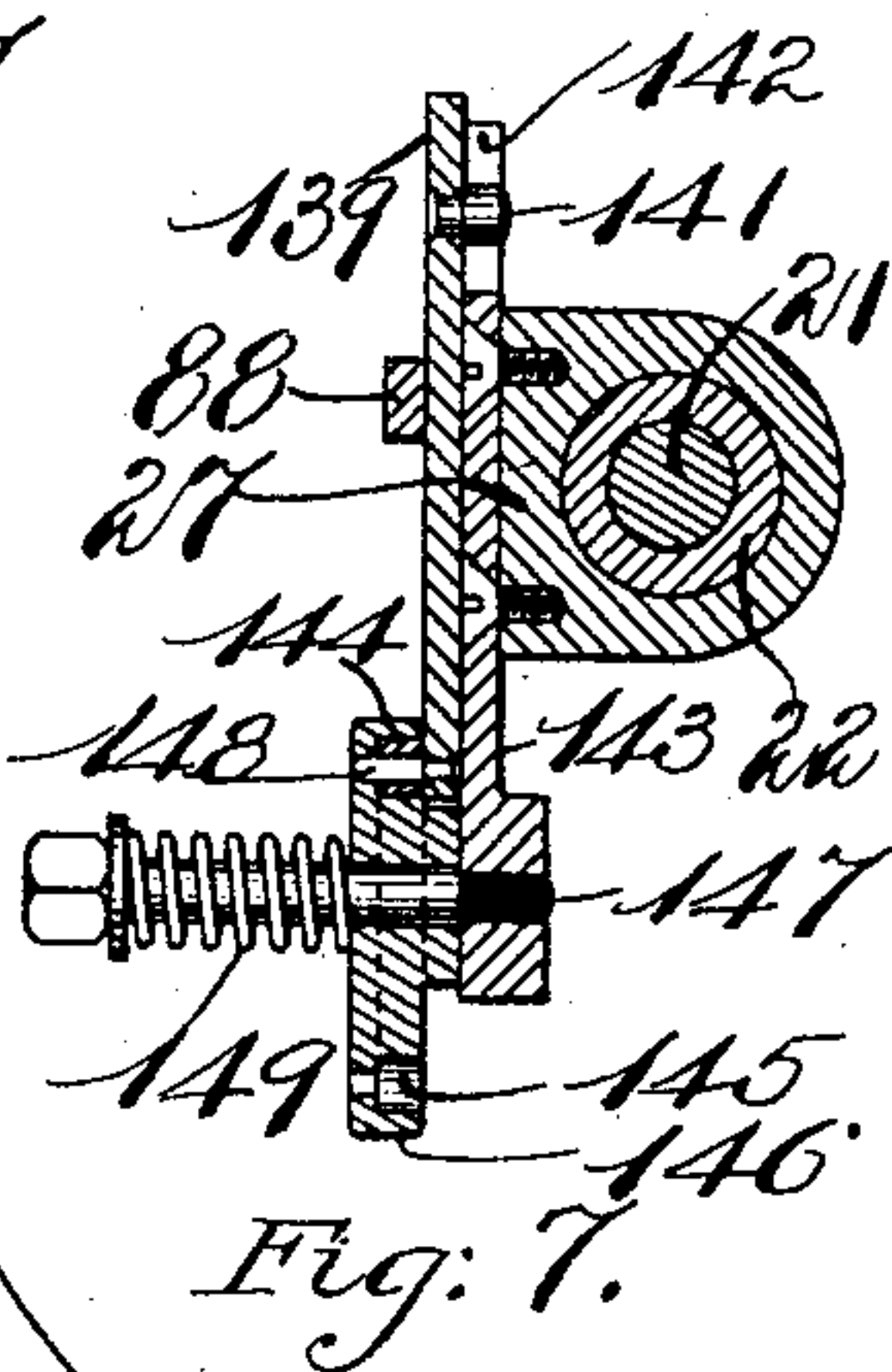


Fig. 7.

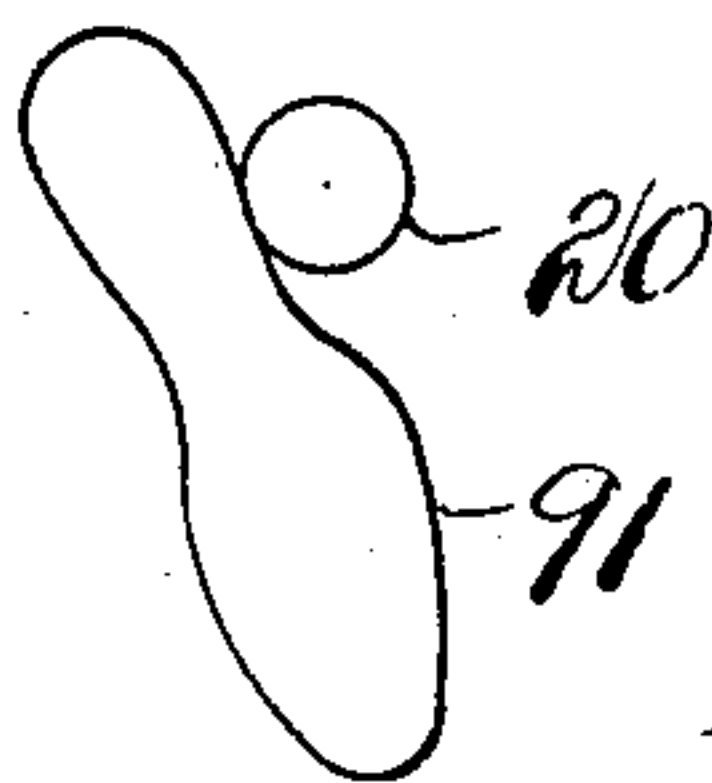


Fig. 9.

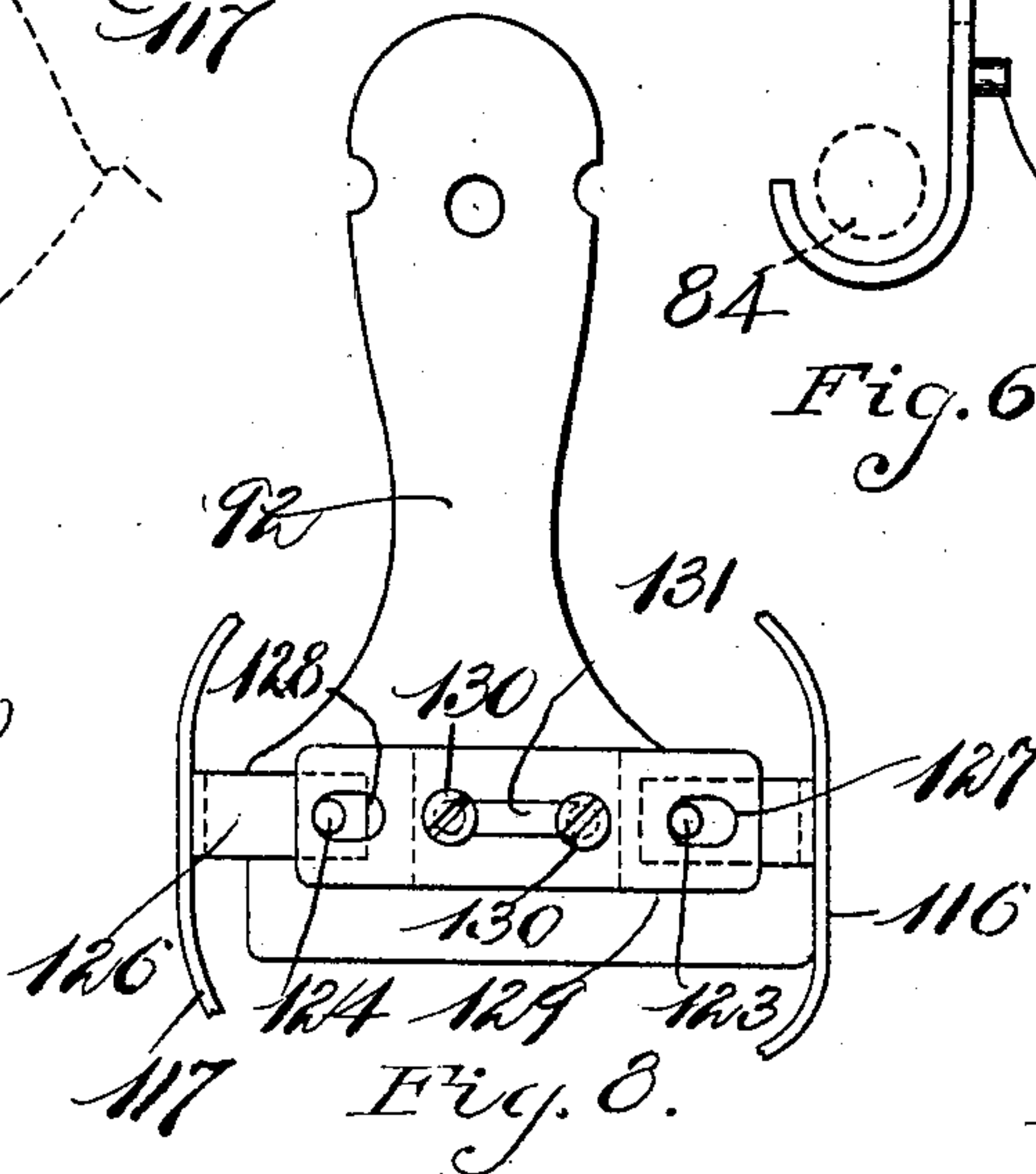


Fig. 8.

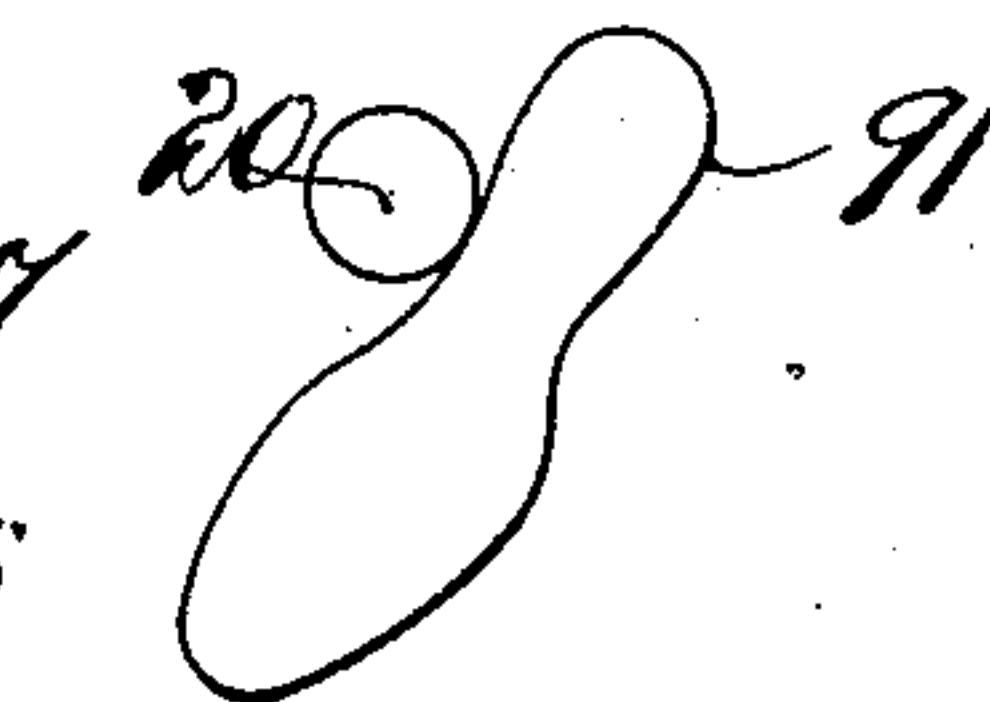


Fig. 10.

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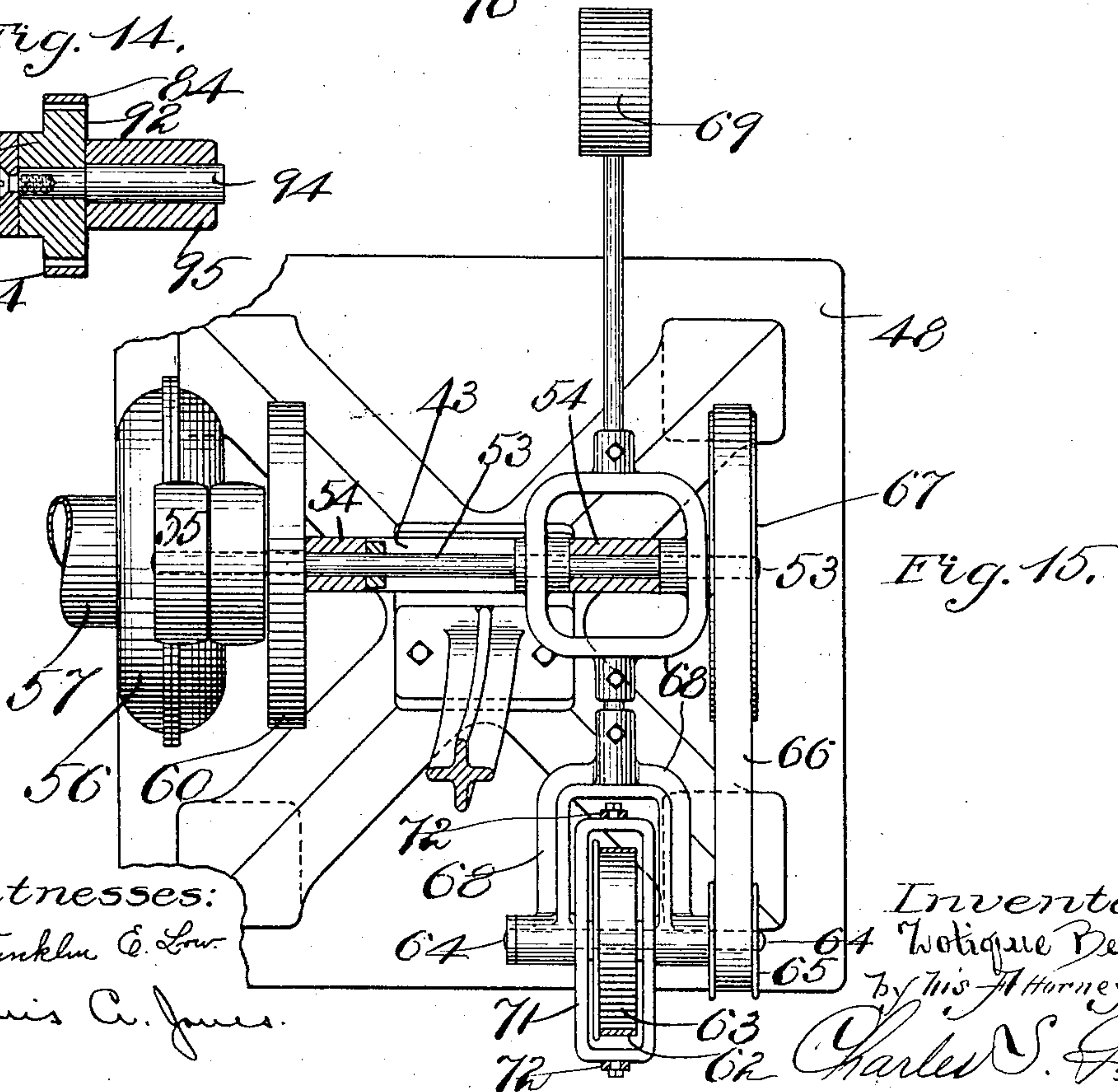
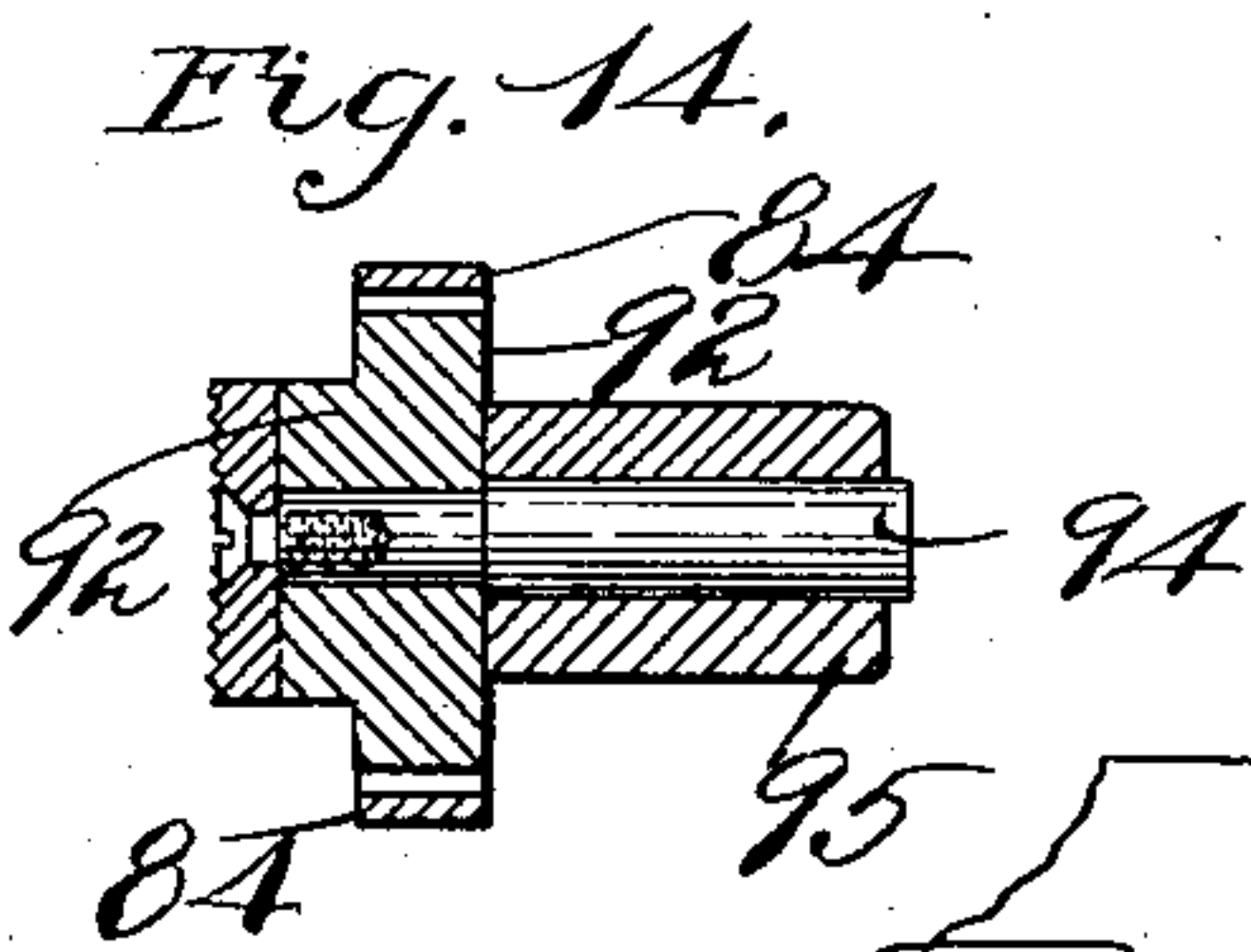
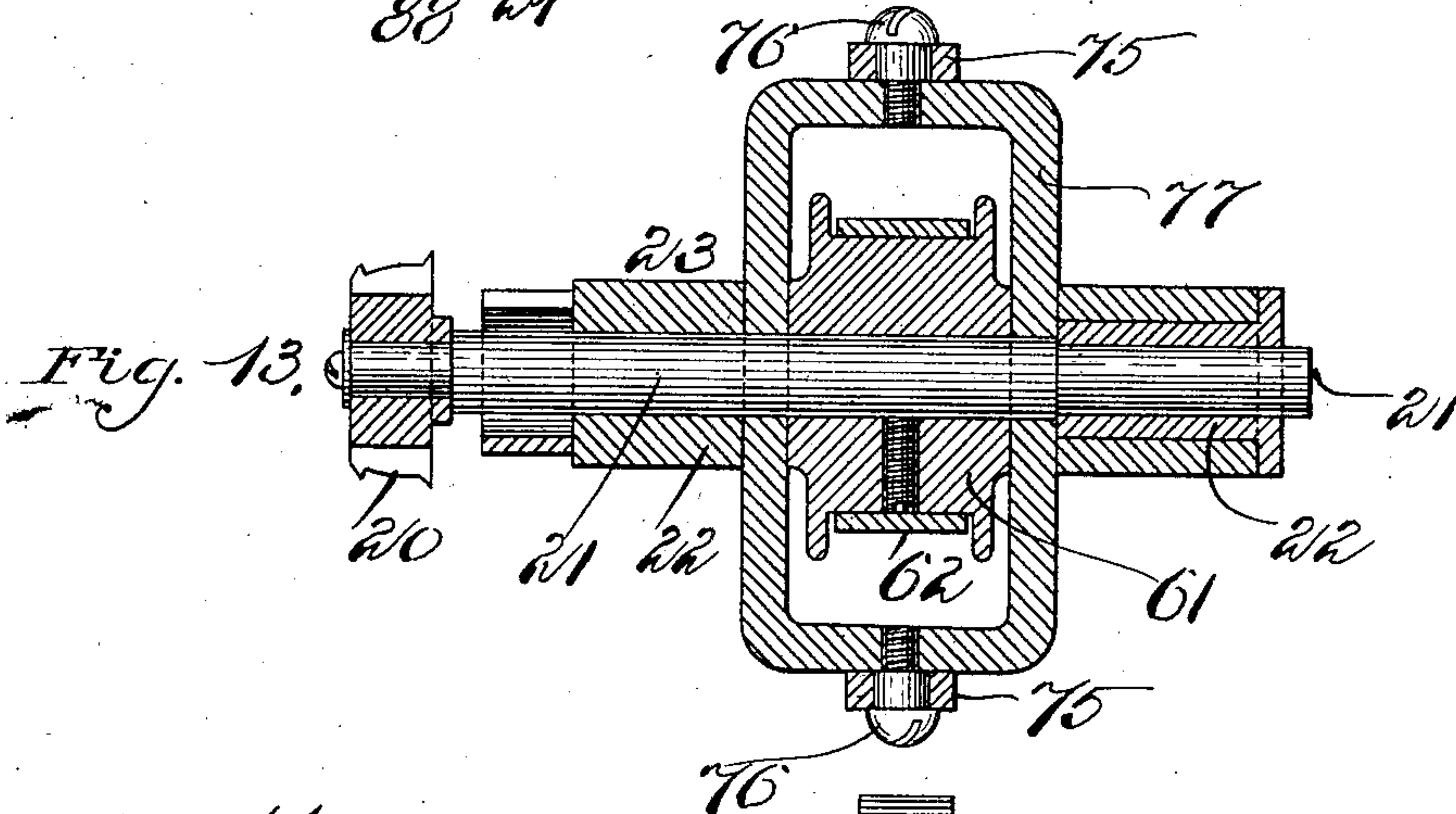
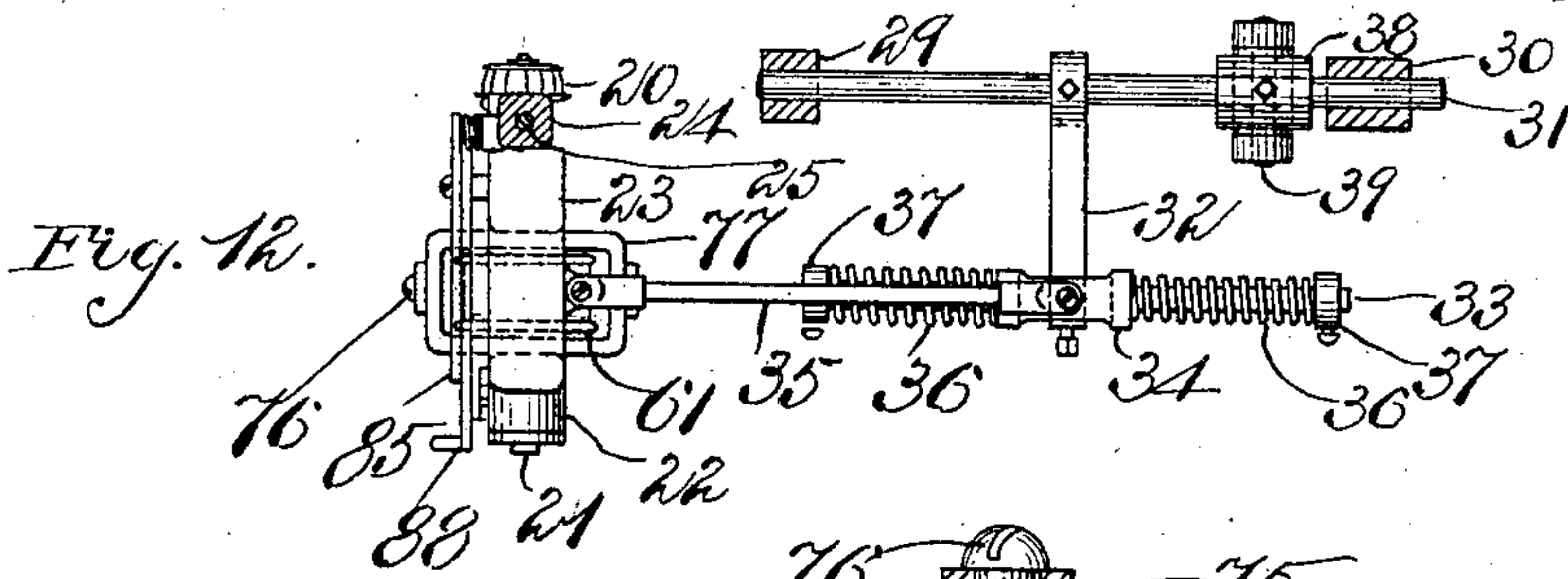
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MACHINE FOR TRIMMING HEELS.

APPLICATION FILED MAY 25, 1903.

NO MODEL.

4 SHEETS—SHEET 4.



Witnesses:
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Inventor:
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UNITED STATES PATENT OFFICE.

ZOTIQUE BEAUDRY, OF LYNN, MASSACHUSETTS.

MACHINE FOR TRIMMING HEELS.

SPECIFICATION forming part of Letters Patent No. 771,525, dated October 4, 1904.

Application filed May 25, 1903. Serial No. 158,665. (No model.)

To all whom it may concern:

Be it known that I, ZOTIQUE BEAUDRY, a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented new and useful Improvements in Machines for Trimming Heels, of which the following is a specification.

This invention relates to a machine for trimming the edges of the heels of boots and shoes, and is more particularly adapted to trimming the edges of spring-heels for ladies' and misses' boots and shoes.

The object of the invention is to provide a strong, practical, and easily-operated machine in which a rotary cutter is journaled upon a frame in such a manner that said cutter may be carried around the edge of the shoe-heel from the shank portion on one side of said shoe to the shank portion on the opposite side thereof by rocking said frame in one direction, while the shoe, which is pivotally supported upon a jack, is rotated in the same general plane as said cutter, but in the opposite direction thereto.

It is also the object of this invention to so support the rotary cutter that the same may be rocked transversely to the edge of the shoe-heel, and thus follow the varying curves of said shoe-heel and of the shank portion of the sole immediately adjoining the heel.

The object of this invention is further to provide a form to guide the rotary cutter as it is being carried around the heel, as hereinbefore described, and means to adjust the cutter toward or away from the edge of the heel to accommodate shoes of different sizes, and, still further, this invention has for its object to provide a form which may be easily and readily adjusted to accommodate rights and lefts.

The object of this invention is, finally, to provide a machine for the purpose specified which may be readily adjusted and adapted to trim the heels of boots and shoes of different styles, shapes, and sizes by means of certain adjustments of the device for holding the boot or shoe and of the cutter each with relation to the other.

The invention consists in an improved form by which the rotary cutter is guided with re-

lation to the edge of the heel of the shoe, said form being adjustable to rights and lefts, and, further, the invention consists in the means by which said rotary cutter is adjusted toward and away from said form for different sizes of shoes.

The invention again consists in certain improved adjusting means, whereby the location of the periphery of the cutter to the periphery of the form may be varied, and also means for adjusting the devices by which the shoe is centered and located with relation to the periphery of the form and with relation to the periphery of the cutter.

The invention again consists in a machine of the character described of the elements hereinbefore set forth in combination with a cutter-frame carrier, a cutter-frame pivoted to said cutter-frame carrier, a rotary shaft journaled upon said cutter-frame, and a rotary cutter fast to said shaft.

The invention finally consists in the combination and arrangement of parts set forth in the following specification and particularly pointed out in the claims thereof.

Figure 1 is a side elevation of my improved machine for trimming the edges of the heels of boots and shoes. Fig. 2 is an enlarged front elevation viewed from the left of Fig. 1 of the rotary cutter and its supporting-frame, together with the form and a portion of the jack upon which the shoe is supported, the shoe being shown in dotted lines, some of the parts being broken away to save space in the drawings. Fig. 3 is a detail plan of a portion of the heel-locating means. Fig. 4 is a transverse section taken on line 4 4 of Fig. 2. Fig. 5 is a detail side elevation as viewed from the left of Fig. 2 or as viewed from the rear of Fig. 1, illustrating the construction of the form by means of which the cutter is guided as it passes around the edge of the heel, the hand of the operator being shown in dotted lines. Fig. 6 is a detail side elevation of the follower looking toward the right, Fig. 2. Fig. 7 is a section on line 7 7, Fig. 2. Fig. 8 is a rear elevation of the form-carrier and stop-plate, together with a portion of the shank-guide plates. Fig. 9 is a diagrammatic view illustrating the position of the cutter

with relation to the sole of the shoe during the first part of the trimming operation. Fig. 10 is a view similar to Fig. 9, illustrating the position of the cutter with relation to the shoe-sole at the end of the trimming operation. Fig. 11 is a detail view of the jack and operating-treadle rod, together with the form-carrier, the same being shown upon a reduced scale to save space in the drawings. Fig. 12 is a detail plan, partly in section, on line 12 of Fig. 1. Fig. 13 is a section on line 13 of Fig. 2. Fig. 14 is a detail section on line 14 of Fig. 2. Fig. 15 is a plan view, partly in section, on line 15 of Fig. 1, illustrating the pulley-driving mechanism.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 20 is a rotary cutter for trimming the edges of the heels of boots and shoes, well known to those skilled in the art. Said rotary cutter is fast to a shaft 21, journaled in bearings 22 in the cutter-frame 23. The cutter-frame 23 is provided with a vertical handle 24, integral therewith and pivoted to rock upon a vertical spindle 25, constituting a rock-shaft, fastened by a nut 26 to a cutter-carrier frame 27. The cutter-carrier frame 27 consists of a rigid horizontal suction-pipe 28 and an arm 29, rigidly fastened thereto. A rod 31 is constructed to slide in bearings provided in the under side of the arm 29 and in the bracket 30, fast to the under side of the pipe 28, Fig. 12. An arm 32, fast to the rod 31, has a rod 33 rigidly affixed thereto, and upon said rod 33 is a yoke-shaped slide 34, arranged to slide thereon and connected by a link 35 to the cutter-frame 23. Encircling the rod 33, upon opposite sides of the slide 34, are spiral compression-springs 36, one end of each of said springs bearing against said slide, the other end thereof bearing against collars 37, fast to the rod 33. It will be seen that when the cutter-frame 23, together with the cutter-shaft 21 and cutter 20, are rocked upon the spindle 25, fast to the arm 29 of the cutter-carrier frame 27, the link 35 will push the slide 34 longitudinally of the rod 33, said slide being returned to its normal central position, as indicated in Fig. 1, by the springs 36 on either side thereof, and thus it will be seen that the cutter-frame is held normally in a central position, as shown in Figs. 1 and 12, by said springs 36.

A block 38, fast to the rod 31, has a pivotal pin 39 extending transversely therethrough and fast to the upper end of a forked arm 40, constructed to swivel upon the upper end of a vertical lever 41, which constitutes a cutter-frame standard pivoted at 42 to a stationary frame 43, supported upon a base 44. The standard 41 has a downwardly-projecting arm 45 fast thereto, the lower end of which is connected by a spring 46 to a bracket 47, fast to the base-plate 48. The distance to which the vertical lever 41, constituting the cutter-frame

standard, can be rocked toward the right, Fig. 1, is limited by a downwardly-projecting stop-arm 52, the lower end of which engages the frame 43 and forms a stop to limit the motion of the cutter-frame standard 41 toward the right in Fig. 1.

The main driving-shaft 53 is journaled in bearings 54 upon the frame 43 and is rotated by means of a driving-pulley 55, fast thereto. The chips removed from the heel of the boot or shoe by the cutter 20, as hereinafter described, are drawn away from the shoe through the suction-pipe 28 by a suction-blower 56, connected to said fixed pipe 28 by a flexible pipe 57, the fan of the blower being rotated by a pulley 58, driven by a belt 59, said belt being in turn driven by a pulley 60, fast to the main driving-shaft 53.

The cutter-shaft 21 has a pulley 61 fast thereto, to which rotary motion is imparted by a belt 62, driven by a pulley 63, fast to a shaft 64, said shaft 64 being rotated by a pulley 65, fast thereto and driven by a belt 66, said belt 66 being in turn driven by a pulley 67, fast to the main driving-shaft 53. The shaft 64 is journaled in a horizontal pulley-carrier frame 68, pivoted to rock upon the main driving-shaft 53 and having affixed thereto a counterweight 69. The end of the pulley-carrier frame 68 in which the shaft 64 is journaled is connected by a link 70 to the cutter-frame 23, the upper end of said link being pivotally attached to said cutter-frame by the cutter-shaft 21.

The link 70 consists of a tilting frame 71, Figs. 1 and 15, pivotally supported upon the shaft 64 and rigidly fastened to an upwardly-extending bracket 72, the bracket 72 having a rod 73 fast thereto and extending upwardly therefrom through a hole 74, formed in a yoke 75, through which hole said rod 73 is free to slide longitudinally, Fig. 2. The yoke 75 is pivotally fastened by screws 76 to a tilting frame 77, pivoted upon the rotary cutter-shaft 21, Fig. 13.

It will be seen that the swing-frame 78, having four sides forming substantially a parallelogram, is formed by the cutter-frame 23 and cutter-frame carrier 27, constituting an upper horizontal side of said parallelogram; a rear vertical side consisting of the cutter-frame standard 41, pivotally connected at the upper end thereof to said cutter-frame carrier and at the lower end thereof to the frame 43; a lower horizontal side of said parallelogram formed by the pulley-carrier frame 68, pivoted to the frame 43 at 53, the parallelogram being completed by the front vertical side, consisting of the link 70, pivoted at its lower end to the pulley-carrier frame 68 and at its upper end to the cutter-frame by means of the tilting frame 77 and cutter-shaft 21. The weight of the cutter-frame and cutter-frame carrier is partly supported by a spiral spring 79, the lower end of which is attached to an

arm 80, fast to the vertical handle 24 of the cutter-frame 23, the upper end of said spring 79 being fastened to a stationary support, (not shown in the drawings,) but which may be attached to the ceiling of the room in which the machine is located or may be fastened to a bracket extending upwardly from the frame of the machine.

A spiral compression-spring 81 encircles the rod 73, Figs. 1 and 2, the lower end of said spring bearing against a collar 82, fast to said rod 73, the upper end thereof bearing against a boss 83 upon the yoke 75.

A follower 84 is rigidly fastened to the cutter-frame 23 by a clamp-screw 85, fast to an arm 87, said screw passing through a slot 86, formed in said follower and having screw-threaded engagement with the cutter-frame 23. The follower 84 is adjusted vertically or radially in relation to the cutter 20 by means of a lever 88, pivoted at 89 to the cutter-frame 23 and connected by a pin 90 to said follower 84. By raising the arm 87 the clamp-screw 85 will release the follower 84, whereupon by raising or lowering the right-hand end of the lever 88 the follower 84 will be respectively lowered or raised. The right-hand end of the lever 88 rests against the face of a gage 139, and upon the face of this gage is engraved an index 140, so that the distance or angle through which the lever 88 is moved, and consequently the distance through which the follower 84 is moved by said lever 88, is indicated by the index upon the face of said gage 139.

For a shoe No. 2 the lower edge of the lever 88, at the right-hand end thereof, is placed opposite the index marked "2." For a shoe No. 1 the lower edge of said lever will be placed opposite the index marked "1," and so on for different-sized shoes. It is evident that if the diameter of the cutter 20 is varied either by the grinding of said cutter or by substituting a different cutter for the one which had previously been used upon the machine the gage would not correctly indicate the proper position of the follower 84, and to overcome this objection so that the gage 139 may be set or adjusted for different diameters of cutters, said gage is arranged to slide upon the side of a plate 143, fast to the cutter-carrier frame 27, as shown in Figs. 2 and 7, and is guided at its upper end by a pin 141, which projects into a slot 142, provided in said plate.

The lower end of the gage 139 has journaled thereon a friction-roll 144, which projects into a groove 145, formed in the rear face of a disk 146. The disk 146 is eccentrically journaled upon a stud 147, fast to the plate 143, so that upon rotating said disk the gage 139 will be raised or lowered. The disk 146 is locked in position by a pin 148, fast to the plate 143 and arranged to project into one of the holes 1 2 3, &c., provided in said disk 146. The pin 148 also acts as a stud upon which the fric-

tion-roll 146 is journaled. The disk 146 is held upon the pin 148 and against longitudinal motion upon the stud 147 by a spiral spring 149, encircling the stud 147. In adjusting the gage-plate 139 to accommodate varying diameters of cutters the disk 146 is drawn toward the left, Fig. 7, and rotated until the desired hole numbered 1, 2, 3, 4, &c., in said disk comes opposite the pin 148, when said disk is allowed to be forced toward the right by the spring 149 and said pin 148 enters the required hole in the disk and locks the same against rotation upon the stud 147. This rotation of the disk 146, it will be seen, will raise or lower the gage 139 and compensate for cutters of varying diameters.

The shoe 91, the heel of which is to be trimmed, (indicated in dotted lines in Figs. 2 and 5,) is clamped against a form-carrier 92 by a reciprocatory clamp-sleeve 93, Fig. 11. The form-carrier 92 is provided with a cylindrical shank 94, fast thereto and journaled to rock in a bearing 95 upon a jack-frame 96, said jack-frame being fastened by a hand-screw 97 to a standard 98, fast to the frame 43. The clamp-sleeve 93 is rotatably supported upon a reciprocatory rod 99, constructed to slide in a bearing 49, formed upon the jack-frame 96. Said rod 99 is moved longitudinally in said bearing by a bell-crank lever 100, pivoted at 101 to the jack-frame 96. The bell-crank lever 100 is rocked upon its pivot (and a longitudinal motion imparted to the rod 99 and clamp-sleeve 93 to clamp the heel of the shoe against the form-carrier 92) by means of a treadle-rod 102 and treadle 103, said treadle being pivoted at 104 to the base 44. When the shoe is placed in the machine by the operator, it is located in substantially a central position with relation to the median line of the form-carrier pivot 94 and of the clamp-rod 93 and also centrally located beneath the rotary cutter 20 by two guide-fingers 105 integral with a plate 106, pivoted at 107 to a supporting-arm 108, fast to the form-carrier 92, Figs. 2 and 3. The guide-fingers 105 are held against the shoe with a yielding pressure by a spiral spring 109, which encircles a stud 110, fast to the support 108, the lower end of said spiral spring 109 bearing against the upper face of the plate 106 and the upper end thereof bearing against the upper end of a recess 111, formed in a rotary adjusting-sleeve 150, journaled to rotate upon the stud 110. The rotary adjusting-sleeve 150 is provided with a flange 151, by means of which it may be rotated, and with an upwardly-projecting hub 152, constructed to fit in a recess formed in the hollow sleeve 153, fast to the stud 110. From the under side of the flange 151 projects a cam-shaped ring 154, and bearing against the under side of this ring is a vertical pin 155, fast to a gage-finger 112. The gage-finger 112 serves as a means for locating the position of the shoe, said gage-finger be-

ing supported upon the pivotal pin 107 and bearing at its free end against the back of the upper of the shoe.

In operating the guide-fingers 105 and gage-finger 112 to locate the boot centrally and at the proper height with relation to the cutter 20 the shoe is inserted in the machine, as shown in Fig. 2 in dotted lines, with the rear end of the shoe bearing against the gage-finger 112 and with the sides bearing against the guide-fingers 105 and is pushed upwardly until the pin 155 comes in contact with the under surface of the cam-ring 154, the spring-fingers 105 yielding to allow the gage-finger 112 to be pushed upwardly, as hereinbefore described. If it is desired to raise or lower the gage-finger 112 to accommodate varying sizes and styles of shoes, the flange 151 is rotated to the proper position, as indicated by an index 156, provided upon the upper face of said flange, said flange and the rotary adjusting-sleeve, of which it is an integral part, being locked in position by the V-shaped projections 157 upon the upper face of said flange engaging notches 158, provided in the lower edge of the hollow sleeve 153.

The form by which the cutter 20 is guided to the proper position in relation to the heel of the shoe 91 consists of a heel-plate 113 and two shank-guide plates 114 114. The heel-plate 113 is curvilinear and substantially semi-circular in form and is rigidly fastened to the form-carrier 92. The shank-guide plates 114 114 are of curvilinear outline and are pivoted at 115 115 to the heel-plate 113 at opposite ends thereof, respectively. The upper portion of the guide-plates 114 114 is of the general outline corresponding to the contour of the edge of the shoe-sole from the shank portion to about the central portion transversely of the heel thereof, and said upper portions of the shank-guide plates 114 114 act as guides to determine the proper relation of the cutter to the heel and shank portion of the sole of the shoe which is being trimmed. Said shank-plates are, moreover, extended downwardly, as shown in Figs. 2 and 5, to form handles 116 117. The distance to which the handles 116 117 may be brought toward each other is limited by a gage-rod 118, formed in two parts 119 and 120, adjustably connected one to the other, whereby the length of the gage-rod 118 as a whole may be varied, the part 119 being rigidly fastened to the handle 117.

When a left shoe 91 is clamped in position against the form-carrier 92 by the clamp-sleeve 93, as hereinbefore described, the operator, standing in front of the machine at the left of Fig. 1 and facing toward the right in said figure, grasps the handle 24 with his right hand and the handle 116 with the fingers of his left hand and places his thumb against the right-hand edge of said shoe-sole, as indicated in dotted lines in Fig. 5. With his thumb he holds the left-hand side of said shoe-sole, as

viewed in Fig. 5, against a flange 121, integral with an adjustable shoe-stop gage 122, and pulls upon the handle 116 with the fingers of said left hand until said handle 116 abuts against the left-hand end of the gage-rod 118, thereby moving the handle 117 with said handle 116 and tipping the shank-guide plates 114 114 upon their pivots 115 115 until they are brought to a stop by the stop-pins 123 124 abutting against the stop-plate 129. Said plate 129, Fig. 8, is fastened to the back of the form-carrier 92 by screws 130 130, which pass through a slot 131, formed in the plate 129, whereby said plate 129 may be adjusted from right to left upon the form-carrier 92. It will be understood that the pins 123 and 124 project through slots 127 and 128 and are fastened to plates 125 and 126, respectively, and the plates 125 and 126 are fast to the handles 116 and 117, respectively.

When a heel of a right-hand shoe is being trimmed in my improved heel-trimming machine, the outline of the sole will be practically the reverse of that shown in dotted lines in Fig. 5, and in this case the operator places the fingers of the left hand upon the toe portion of the shoe and brings the right-hand side of said shoe against a flange 132, integral with the shoe-stop gage 133. The thumb of the operator's left hand is placed against the right-hand side of the handle 117 in said Fig. 5, and said handle is pushed by the thumb of the operator toward the left in said figure until the portion 120 of the gage-rod 118 abuts against said handle 116, whereupon both of the handles 116 and 117 swing toward the left, Fig. 5, upon the pivots 115 115 until the pins 123 and 124 abut against the right-hand end of the slots 127 and 128, as viewed in Fig. 8, or against the left-hand end of said slots, as viewed in Fig. 5, it being noted that Fig. 8 is viewed from the rear of Fig. 3. When the shoe, together with the handles 116 and 117, has been brought to the position hereinbefore described, the heel-plate 113 and the shank-guide plates 114 114 are in position to correctly guide the rotary cutter around the heel portion of the shoe and around a portion of the shank of the sole of said shoe upon opposite sides thereof either for a right or a left shoe, as the case may be.

When the parts are held by the operator's hand in the position shown in Fig. 5, then the heel-plate and shank-guide plates are in position to guide the cutter for a left-hand shoe; but when the shoe is held against the flange 132 and the handles 116 117 drawn toward the right, as hereinbefore described, then the shank-guide plates are in proper relation to the heel-guide plate and to the shoe to properly guide the cutter to trim a right-hand shoe heel and a portion of the shank of the sole of said shoe. The flanges 121 and 132 may be moved toward or away from each other by means of a right and left hand

threaded screw 134, journaled to rotate in a stationary block 135, fast to the form-carrier 92. When the screw 134 is rotated, the shoe-stop gages 122 and 133 move toward or away from each other, sliding in ways 136, provided in the form-carrier 92, said gages being held in position in the ways by a flat spring 137, fast to the carrier 92 and having a yoke-shaped downward extension, one arm of said yoke bearing against the stop-gage 133 and the other against the stop-gage 122.

It will be understood that when the machine hereinbefore described is not in operation the swing-frame 78 is in a position slightly toward the right of that shown in Fig. 1, the four sides of the parallelogram swinging upon the pivots 42, 39, 21, and 64, said swing-frame being carried toward the right by the spring 46 until the stop-arm 52 abuts against the right-hand side of the frame 43. Assuming said swinging frame to be in the position hereinbefore described, with the stop-arm resting against the frame 43, it will be seen that the cutter 20 will be moved toward the right in said figure, so that the operator may easily introduce the shoe 91 in position upon the jack, as indicated in dotted lines in Figs. 2 and 5.

The general operation of the machine is as follows: After having jacked the shoe, as hereinbefore described, and brought the shank-guide plates and shoe into the position shown in Fig. 5 the operator grasps the handle 24 with his right hand, as shown in dotted lines in Fig. 1, resting the thumb of the right hand upon the thumb-piece 138, Fig. 2. He then tips the shoe into the position shown in diagram in Fig. 9, pulls the cutter 20 forward, and carries it downwardly into the position shown in said figure, with the follower 84 resting against the shank-guide plate 114. The cutter constantly rotating now commences to trim the edge of the shoe-sole at the shank portion thereof. The operator now rotates the shoe toward the right, Fig. 9, said shoe turning, together with the form-carrier 92 and the clamp-sleeve 93, from the position shown in Fig. 9 to that shown in Fig. 10. Simultaneously with this movement of the shoe from the position shown in Fig. 9 to that shown in Fig. 10 the operator pushes the cutter away from him by swinging the swing-frame 78 in the proper direction therefor, and said cutter travels upwardly from the right-hand side of the shank of the shoe around the heel to the left-hand portion of the shank of the shoe. It will be seen by the construction hereinbefore described of the swing-frame and the horizontal swinging motion possible to the cutter-frame on account of its being pivoted to swing upon the vertical spindle 25 that the rotary cutter is free to travel longitudinally of the shoe-sole and around the heel, and also that if there is any slight deviation from a straight line in the longi-

tudinal path traveled by said cutter in passing around the heel and along the side thereof said cutter will swing to accommodate itself to such variations upon the spindle 25 as a center, the springs 36 36 yielding to allow of this swinging motion of the cutter transversely of the heel of the shoe, but normally holding said cutter in a central position, as hereinbefore described.

In Fig. 1 the different parts of the machine are in the relative location to each other which they would assume if the shoe 91 were in the position shown in Fig. 5 and the cutter 20 just passing over the central or end portion of the heel. When the operator draws the swing-frame and cutter still farther toward him until the cutter and shoe are in the position indicated in Fig. 9, then the spring 46 is expanded and assists in carrying the cutter upwardly along the shoe sole and heel until it reaches the top or central portion of said heel, as in Fig. 2. When the cutter has arrived at the center of the heel, its travel from that point to the position shown in Fig. 10 is downwardly, and the tension upon the spring 46 is constantly decreasing. By reference to Fig. 2 it will be noted that if the follower 84 is adjusted upwardly by means of the lever 88 or radially with relation to the cutter 20 said adjustment will enable said cutter to descend to a lower point with relation to the guide-plate 113, and consequently a deeper chip will be taken from the shoe-sole. It will also be seen that by varying the position of the guide-fingers 105 and gage-finger 112 larger and smaller sizes of shoes may be adjusted in proper relation to the cutter 20 before the shoe is clamped to the form-carrier 92, as hereinbefore described. It will be noted that the spring 81, bearing at one end against the boss 83 and at the other end against a collar 82, the rod 73 being free to slide in said boss, allows the link 70 to automatically lengthen or be shortened, according to the varying positions of the cutter 20 and of the swing-frame 78.

It is evident by reference to Fig. 5 that the operator might inadvertently grasp the shoe (indicated in dotted lines in said figure) with the fingers of the left hand, place his thumb against the handle 117, and endeavor to move the shoe and shank guide plates into position to trim a right-hand shoe when a left-hand shoe is on the machine. To obviate this difficulty, a shank-gage stop 159 is provided fast to the flange 132. Now by reference to said Fig. 5 it will be seen that if the operator makes a mistake and tries to carry a left-hand shoe over toward the right and against the flange 132 on the shoe-stop gage 133 he will be prevented by the stop 159 from so doing, and if the shoe clamped to the machine were a right-hand shoe instead of a left-hand shoe, as illustrated in Fig. 5, then the differences in the curve of the shank of the shoe upon the

inner side would allow said shoe to be brought over until the edge of the sole rested against the flange 132. It is evident that if the form-carrier and the shoe clamped thereto, together with the swinging frame, were rocked, as hereinbefore described, with relation to each other to too great an extent the cutter would come in contact with the stop 159, and, moreover, it is not advisable for the cutter to run too far up on the shank of the sole of the shoe. To guard against this and guide the operator in order that he may not tip the form-carrier and the shoe thereon too far in relation to the swinging frame, a carrier-frame stop 160 is provided, which is fastened to the stop 159 and to the form-carrier by a screw 161.

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

1. In a machine for trimming heels, a form comprising a semicircular heel-guide plate and two shank-guide plates pivoted thereto at opposite ends thereof, respectively.
2. In a machine for trimming heels, a form-carrier, a heel-guide plate fast thereto, and two shank-guide plates pivotally supported upon said carrier at opposite ends, respectively, of said heel-guide plate.
3. In a machine for trimming heels, a form-carrier, a heel-guide plate fast thereto, two shank-guide plates pivotally supported upon said form-carrier at opposite ends respectively of said heel-guide plate, said shank-guide plates extended to form handles, and stops fast to said carrier to limit the extent to which said guide-plates may be swung upon their pivots.
4. In a machine for trimming heels, a form-carrier, a heel-guide plate fast thereto, two shank-guide plates pivotally supported upon said form-carrier at opposite ends, respectively, of said heel-guide plate, said shank-guide plates extended to form handles, stops fast to said carrier to limit the extent to which said guide-plates may be swung upon their pivots, and sole-gage stops fast to said form-carrier.
5. In a machine for trimming heels, a pivotally-supported form-carrier, means to clamp a shoe thereto, a heel-guide plate fast to said form-carrier, and two shank-guide plates pivotally supported upon said carrier at opposite ends, respectively, of said heel-guide plate.
6. In a machine for trimming heels, a pivotally-supported form-carrier, means to center a shoe thereon, means to clamp a shoe to said form-carrier, a heel-guide plate fast to said form-carrier, and two shank-guide plates pivotally supported upon said carrier at opposite ends, respectively, of said heel-guide plate.
7. In a machine for trimming heels, a stationary support, a form-carrier pivoted thereto, means to clamp a shoe to said form-carrier,

a form fast to said form-carrier, a pivotally-supported standard, a cutter-frame carrier pivoted thereto, a cutter-frame pivoted to rock horizontally upon said carrier, a rotary cutter journaled on said cutter-frame, and a follower fast to said cutter-frame and arranged to bear against said form.

8. In a machine for trimming heels, a pivotally-supported form-carrier, means to clamp a shoe thereto, a form fast to said form-carrier, a swinging frame, a rotary cutter journaled thereon, a follower fast to said swinging frame and arranged to bear against said form, and means to adjust said follower radially with relation to the periphery of said rotary cutter.

9. In a machine for trimming heels, a pivotally-supported form-carrier, means to clamp a shoe thereto, a form fast to said form-carrier, a swinging frame, a rotary cutter journaled thereon, a follower fast to said swinging frame and arranged to bear against said form, means to adjust said follower radially with relation to the periphery of said rotary cutter, and a gage to indicate the extent of said adjustment.

10. In a machine for trimming heels, a pivotally-supported form-carrier, means to clamp a shoe thereto, a form fast to said form-carrier, a swinging frame, a rotary cutter journaled thereon, a follower fast to said swinging frame and arranged to bear against said form, means to adjust said follower radially with relation to the periphery of said rotary cutter, a gage to indicate the extent of said adjustment, and means to adjust said gage with relation to said adjusting means.

11. In a machine for trimming heels, a pivotally-supported standard, a cutter-frame carrier pivoted to said standard, a cutter-frame pivoted to rock horizontally upon said cutter-frame carrier, a rotary shaft journaled upon said cutter-frame, a rotary cutter fast to said shaft, a pivotally-supported form-carrier, means to clamp a shoe thereto, a form fast to said form-carrier, and a follower fast to said cutter-frame arranged to bear against said form and guide said cutter with relation to the edge of said shoe-heel.

12. In a machine for trimming heels, a cutter-frame carrier, a cutter-frame pivoted to said cutter-frame carrier, a rotary shaft journaled upon said cutter-frame, a rotary cutter fast to said shaft, a pivotally-supported form-carrier, means to clamp a shoe thereto, a form fast to said form-carrier, a follower fast to said cutter-frame arranged to bear against said form and guide said cutter with relation to the edge of said shoe-heel, and means to adjust said follower upon said cutter-frame radially with relation to said rotary cutter.

13. In a machine for trimming heels, a cutter-frame carrier, a cutter-frame pivoted to said cutter-frame carrier, a rotary shaft journaled upon said cutter-frame, a rotary cutter

fast to said shaft, a pivotally-supported form-carrier, means to clamp a shoe thereto, a form fast to said form-carrier, a follower fast to said cutter-frame arranged to bear against said form and guide said cutter with relation to the edge of said shoe-heel, means to adjust said follower upon said cutter-frame radially with relation to said rotary cutter, and a gage fast to said cutter-frame carrier constructed to indicate the extent of said adjustment.

14. In a machine for trimming heels, a cutter-frame carrier, a cutter-frame pivoted to said cutter-frame carrier, a rotary shaft journaled upon said cutter-frame, a rotary cutter fast to said shaft, a pivotally-supported form-carrier, means to clamp a shoe thereto, a form fast to said form-carrier, a follower fast to said cutter-frame arranged to bear against said form and guide said cutter with relation to the edge of said shoe-heel, means to adjust said follower upon said cutter-frame radially with relation to said rotary cutter, a gage fast to said cutter-frame carrier constructed to indicate the extent of said adjustment, and means to adjust said gage with relation to said adjusting means.

15. In a machine for trimming heels, a form-carrier, a pivot therefor, means to clamp a shoe to said form-carrier, and a form fast to said form-carrier; in combination with a swing-frame, pivots upon which said swing-frame is supported, a cutter-shaft rotatably supported on said swing-frame, a cutter fast to said cutter-shaft, the median lines of said form-carrier and swing-frame pivots and of said rotary cutter-shaft all lying in parallel planes extending perpendicularly to the face of the heel of said shoe, a follower fast to said swing-frame and adapted to bear against said form, and means to adjust said follower radially with relation to said rotary cutter.

16. In a machine for trimming heels, a jack, a form-carrier pivoted upon said jack, means to clamp a shoe to said form-carrier, a form fast to said form-carrier, a gage-finger arranged to bear against the rear end of said shoe, and means to centrally locate said shoe laterally with relation to said form.

17. In a machine for trimming heels, a jack, a form-carrier pivoted upon said jack, means to clamp a shoe to said form-carrier, a form fast to said form-carrier, a gage-finger arranged to bear against the rear end of said shoe, means to adjust said gage-finger longitudinally of said shoe, and means to centrally locate said shoe laterally with relation to said form.

18. In a machine for trimming heels, a jack, a form-carrier pivoted upon said jack, means to clamp a shoe to said form-carrier, a form fast to said form-carrier, and guide-fingers constructed to bear against said shoe upon opposite sides thereof, respectively.

19. In a machine for trimming heels, a jack,

a form-carrier pivoted upon said jack, means to clamp a shoe to said form-carrier, a form fast to said form-carrier, a gage-finger arranged to bear against the rear end of said shoe, means to adjust said gage-finger longitudinally of said shoe, guide-fingers constructed to bear against opposite sides of said shoe, respectively, and a spring holding said guide-fingers against said shoe.

20. In a machine for trimming heels, a form-carrier, a heel-guide plate fast thereto, two shank-guide plates pivotally supported upon said form-carrier at opposite ends, respectively, of said heel-guide plate, said shank-guide plates extended to form handles, stops fast to said carrier to limit the extent to which said guide-plates may be swung upon their pivots, and a shank-gage stop fast to said form-carrier.

21. In a machine for trimming heels, a pivotally-supported form-carrier, means to clamp a shoe thereto, and a form fast to said form-carrier; in combination with a cutter-frame carrier, a cutter-frame pivoted to rock horizontally upon said cutter-frame carrier, ways on said cutter-frame, a spring-controlled slide arranged to slide in said ways, and a link connecting said slide and cutter-frame.

22. In a machine for trimming heels, a pivotally-supported form-carrier, means to clamp a shoe thereto, and a form fast to said form-carrier; in combination with a cutter-frame carrier, a cutter-frame pivoted to rock vertically upon said carrier, ways on said cutter-frame, a spring-controlled slide arranged to slide in said ways, and a link connecting said slide and cutter-frame.

23. In a machine for trimming heels, a pivotally-supported form-carrier, means to clamp a shoe thereto, and a form fast to said form-carrier; in combination with a stationary frame, a cutter-frame standard pivoted thereto to rock in a vertical plane, said cutter-frame standard comprising a lever having an arm constructed to abut against said frame, a spring connecting said lever and frame and acting to move said arm toward said frame, a cutter-frame carrier pivoted to rock vertically upon the upper end of said vertical arm, and a cutter-frame pivoted to rock horizontally upon said carrier-frame.

24. In a machine for trimming heels, a pivotally-supported form-carrier, means to clamp a shoe thereto, and a form fast to said form-carrier; in combination with a cutter-frame carrier comprising in its construction a suction blower-pipe, a cutter-frame pivoted to said cutter-frame carrier, a rotary shaft journaled upon said cutter-frame, and a rotary cutter fast to said shaft.

25. In a machine for trimming heels, a pivotally-supported form-carrier, means to clamp a shoe thereto, and a form fast to said form-carrier; in combination with a swinging frame having four sides, each of said sides pivotally

supported at the opposite ends thereof and comprising substantially a parallelogram pivoted to rock in a vertical plane, a cutter-shaft journaled upon said swinging frame, and a cutter fast to said cutter-shaft.

26. In a machine for trimming heels, a pivotally-supported form-carrier, means to clamp a shoe thereto, and a form fast to said form-carrier; in combination with a swinging frame having four sides, each of said sides pivotally supported at the opposite ends thereof and comprising substantially a parallelogram pivoted to rock in a vertical plane, a cutter-shaft journaled upon said swinging frame, a cutter fast to said cutter-shaft, said cutter-shaft constituting a pivot by which two of the sides of said parallelogram are joined together.

27. In a machine for trimming heels, a pivotally-supported form-carrier, means to clamp a shoe thereto, and a form fast to said form-carrier; in combination with a swinging frame

having four sides forming substantially a parallelogram, said four sides comprising an upper horizontal side consisting of a cutter-frame and carrier therefor, a rear vertical side consisting of a cutter-frame standard, the upper end thereof pivoted to said cutter-frame carrier and the lower end to a stationary frame, a lower horizontal side consisting of a pulley-carrier frame pivoted to said stationary frame, a front vertical side, consisting of a link the lower end thereof pivoted to said pulley-carrier frame, the upper end thereof to said cutter-frame.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ZOTIQUE BEAUDRY.

Witnesses:

CHARLES S. GOODING,
ANNIE J. DAILEY.