

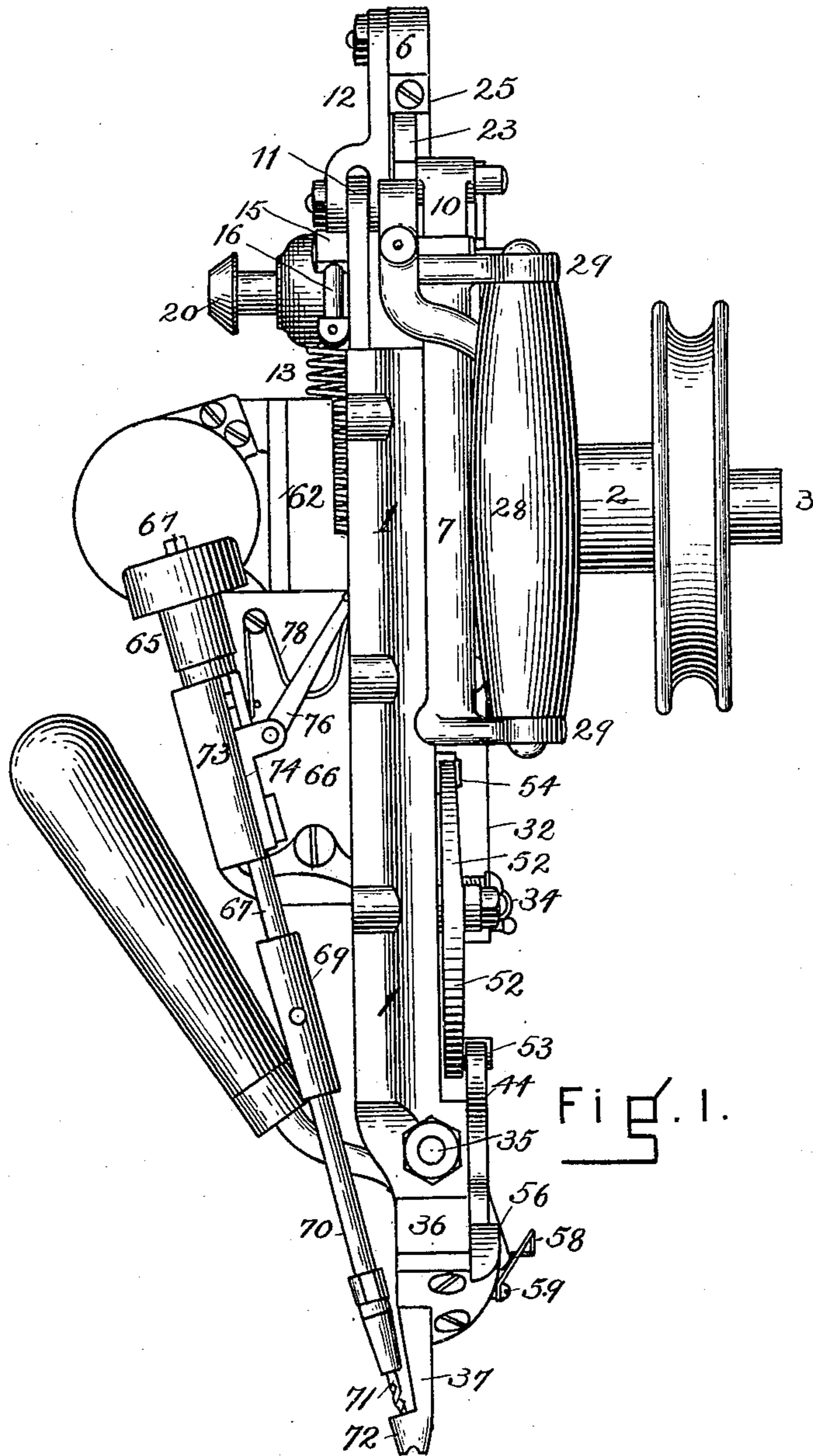
(No Model.)

6 Sheets—Sheet 1.

J. E. CRISP & W. AVERY.  
SUSPENDED POWER PEG DRIVING MACHINE.

No. 583,429.

Patented May 25, 1897.



WITNESSES.  
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H. J. Crisp

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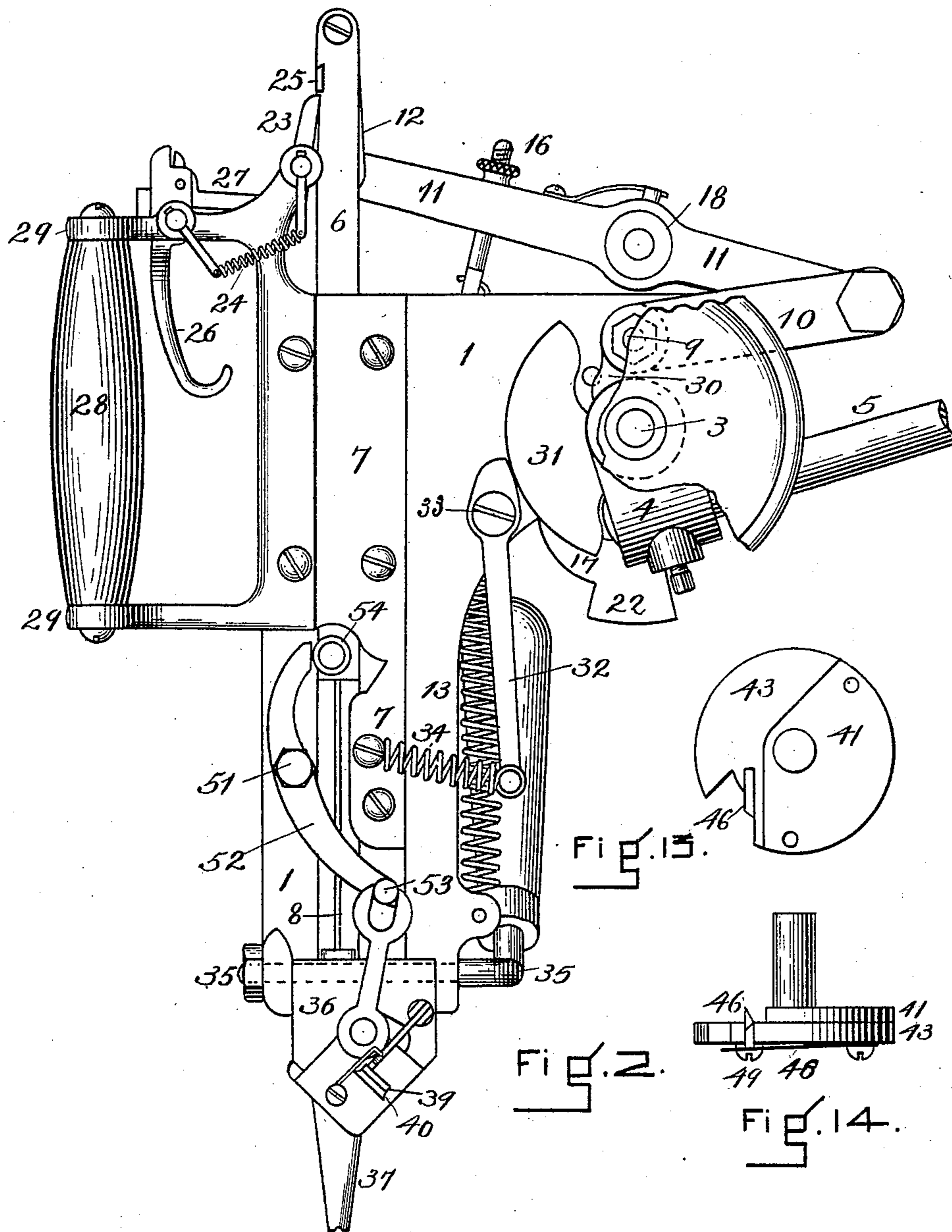
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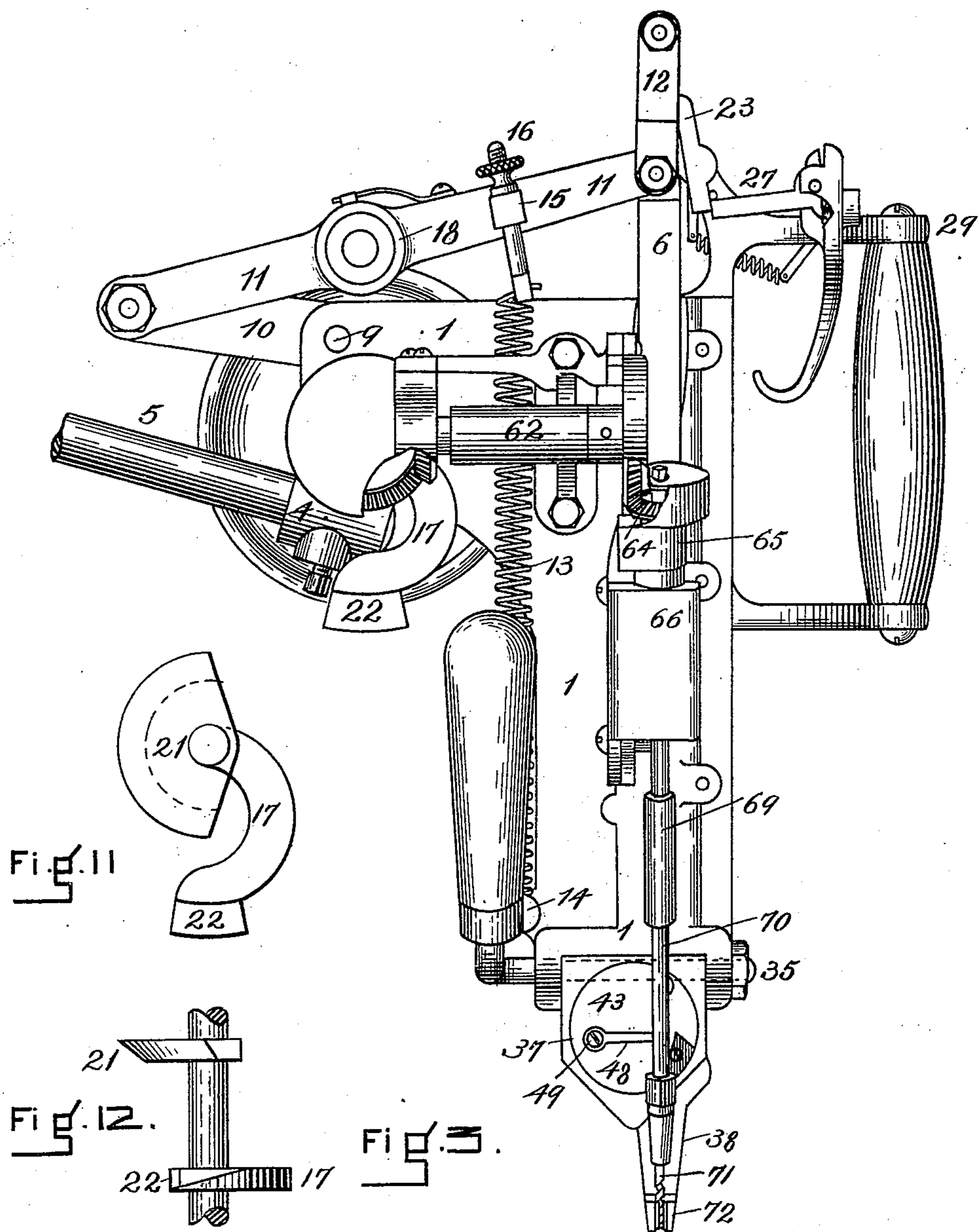
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(No Model.)

6 Sheets—Sheet 4.

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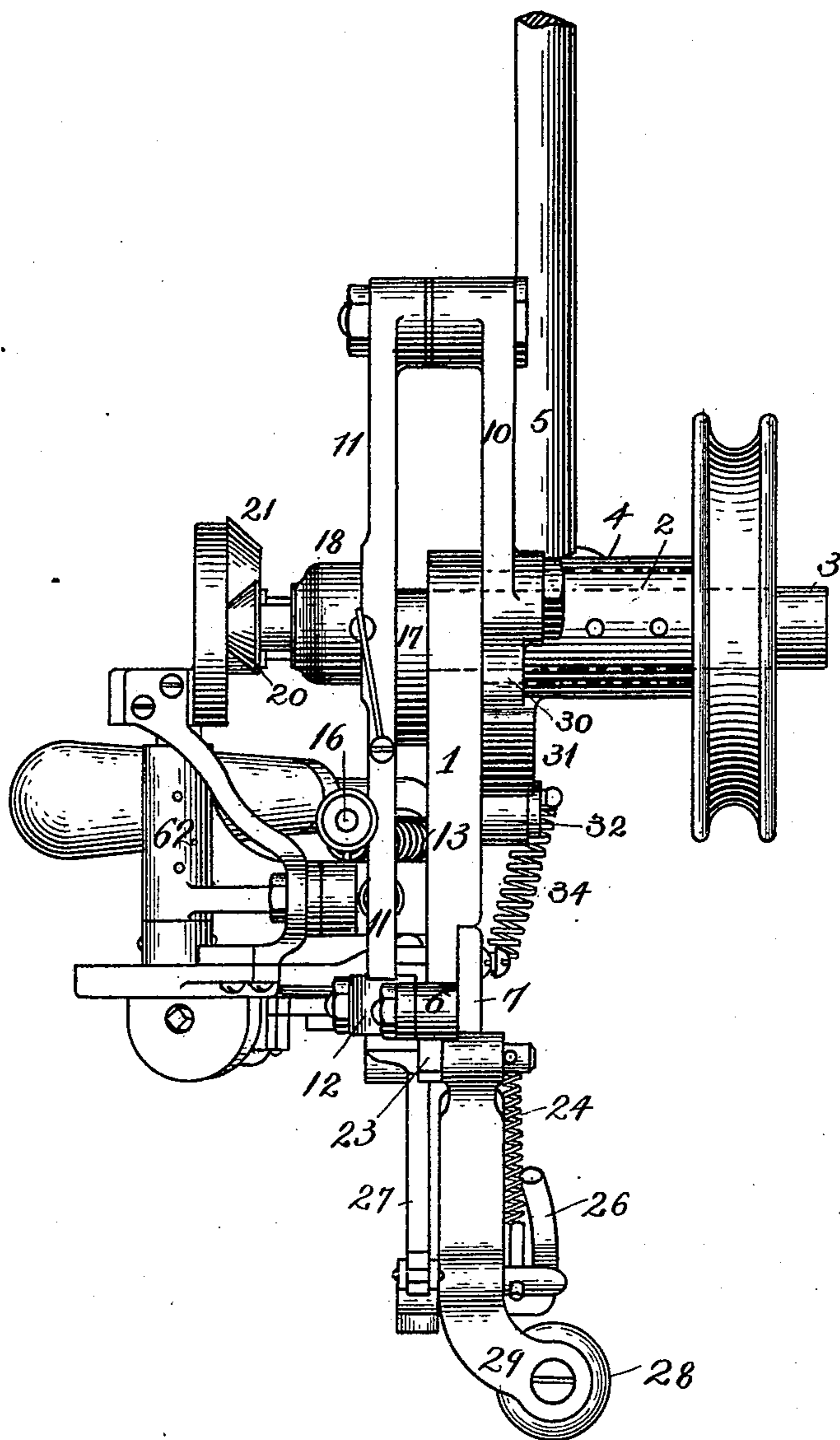


Fig. 4

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(No Model.)

6 Sheets—Sheet 5.

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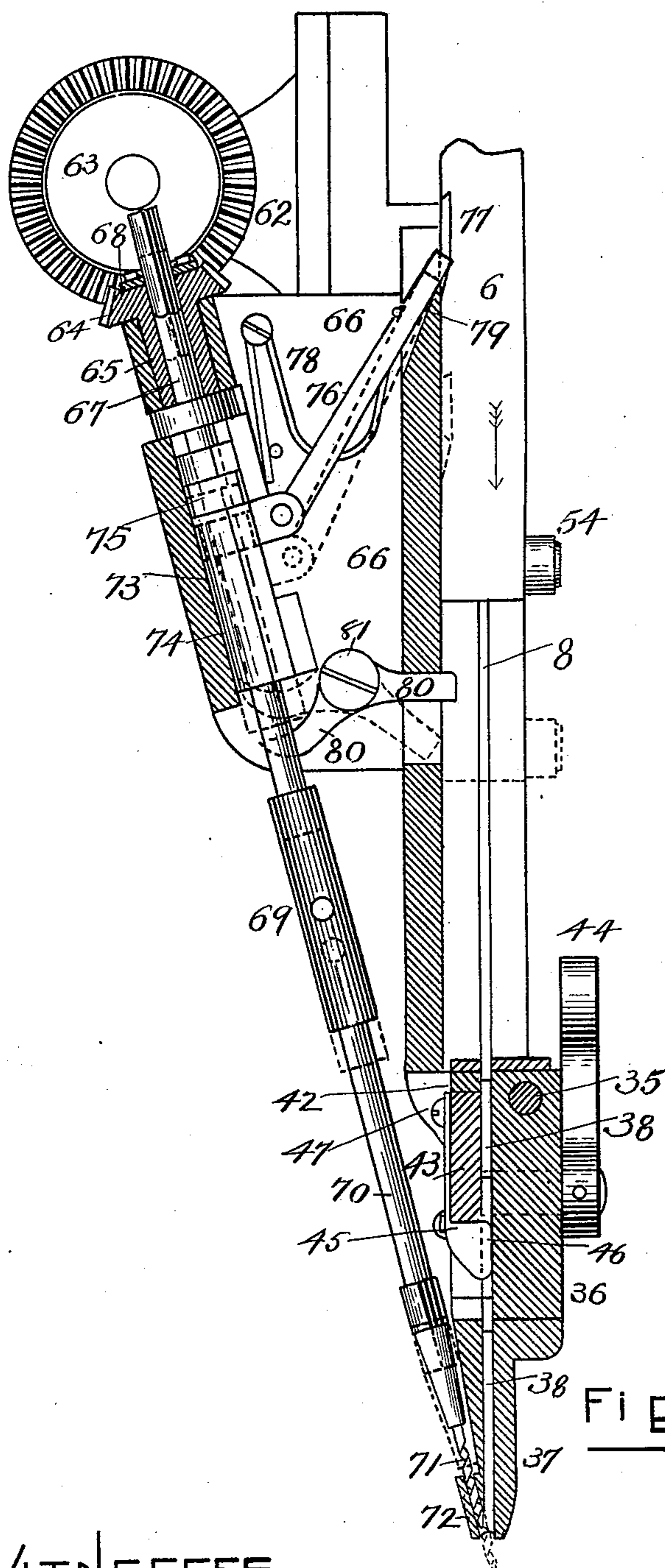


FIG. 5.

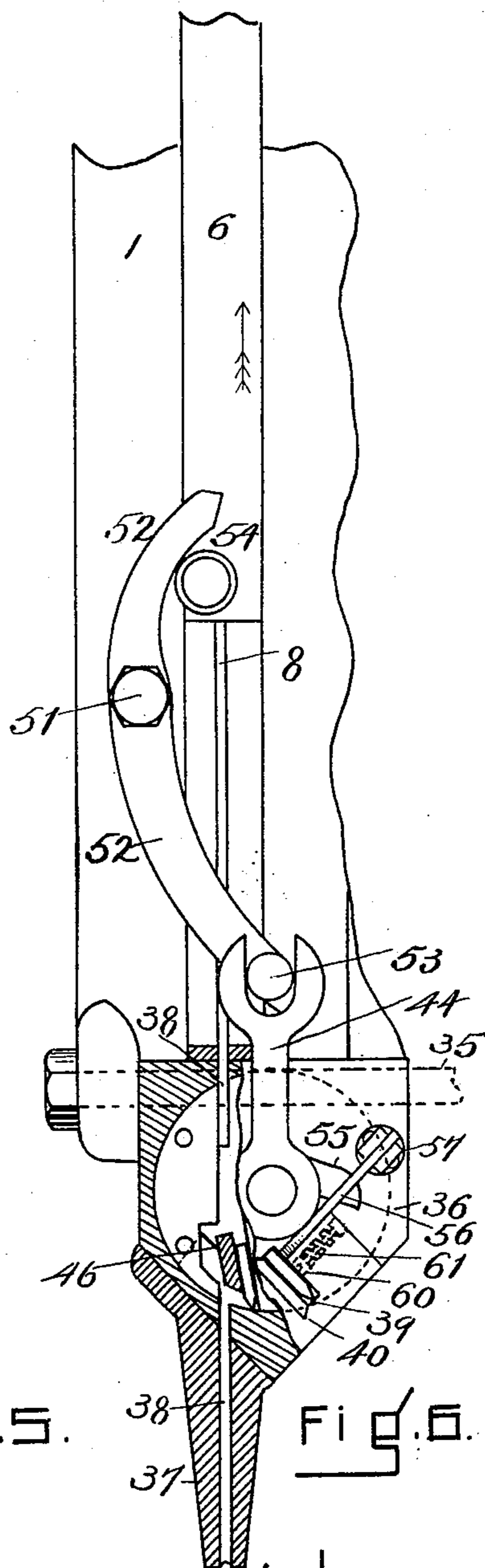


FIG. 6.

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6 Sheets—Sheet 6.

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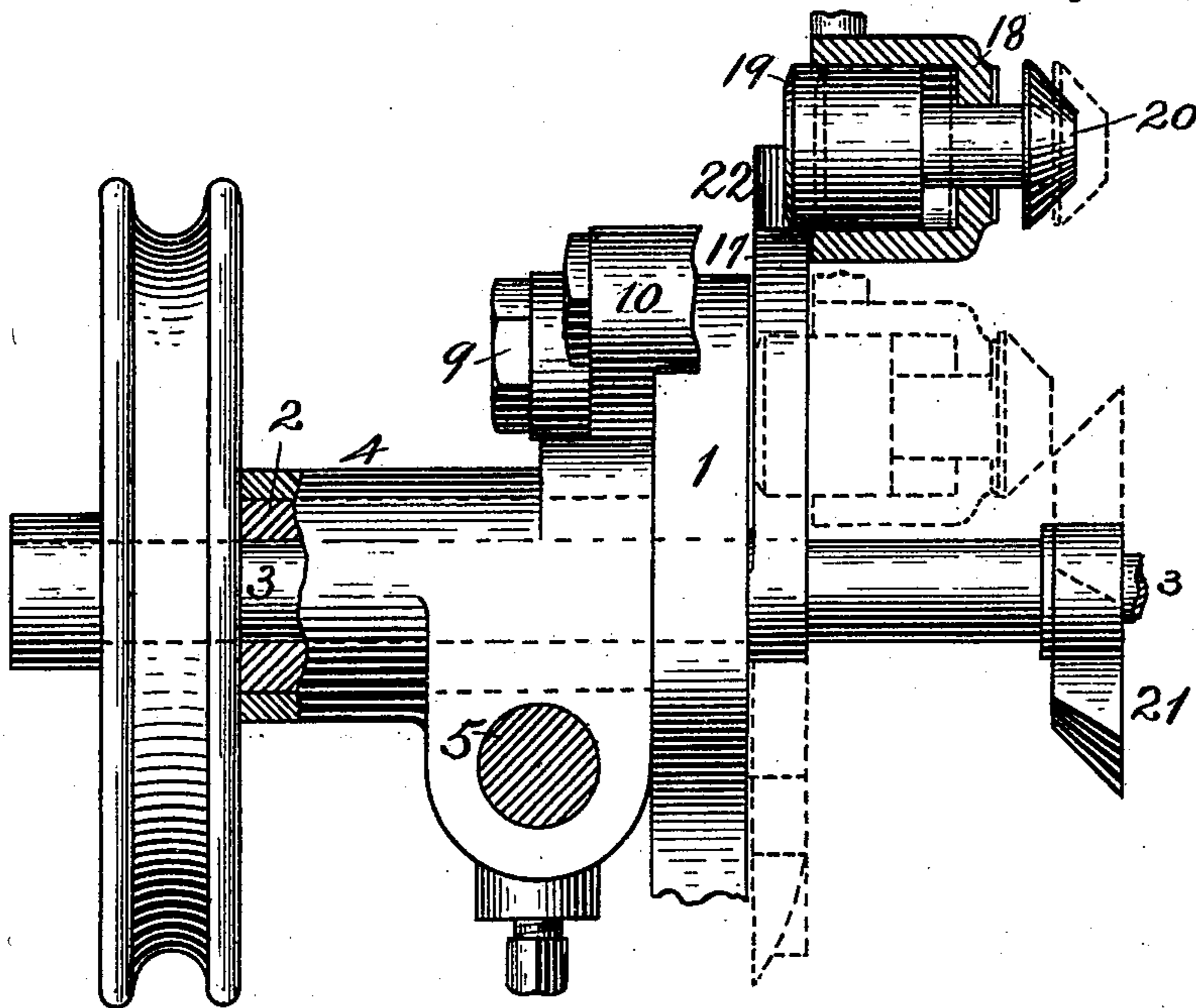


Fig. 7.

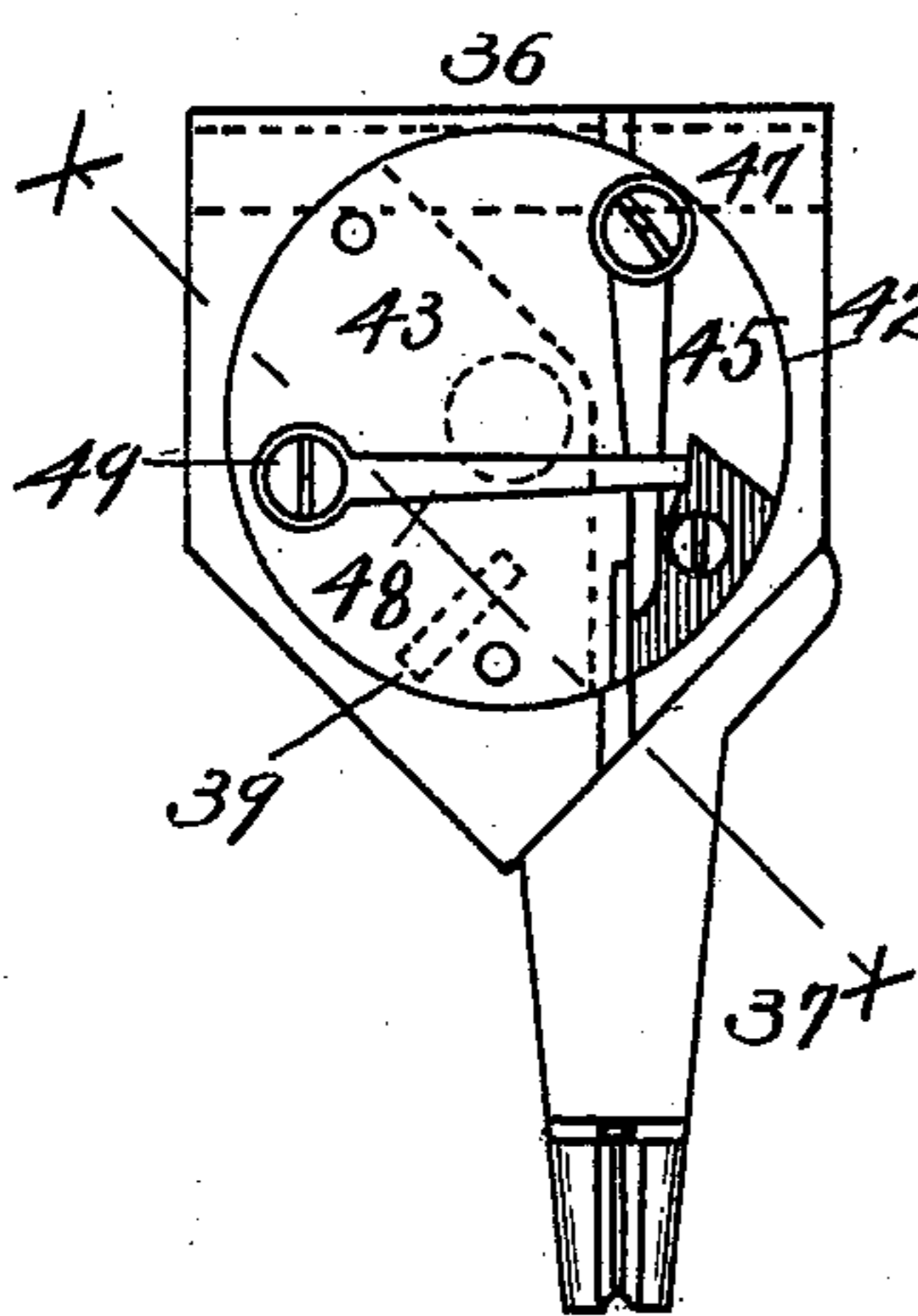


Fig. 8.

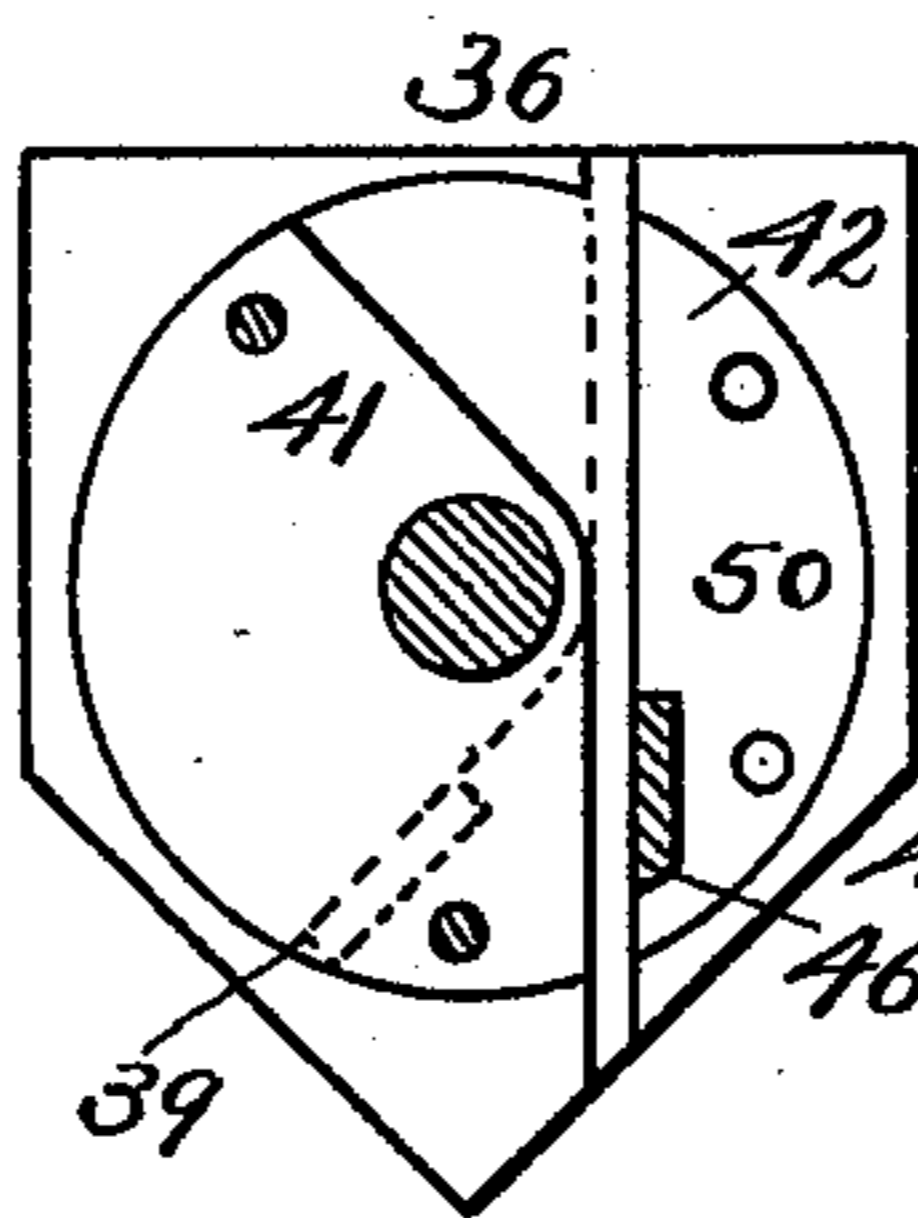


Fig. 10.

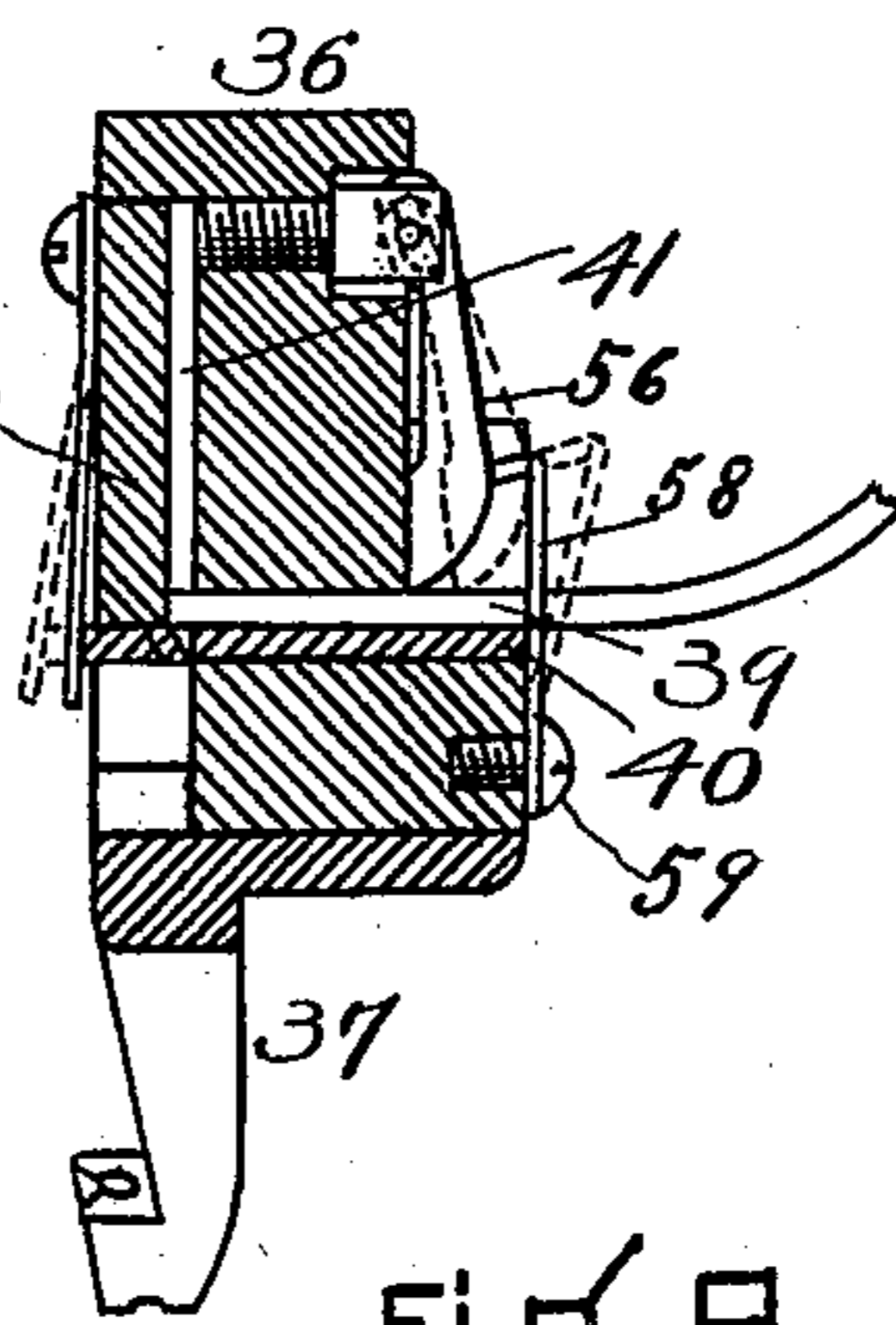


Fig. 9.

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# UNITED STATES PATENT OFFICE.

JOSEPH E. CRISP, OF SOMERVILLE, AND WILLIAM AVERY, OF WORCESTER, MASSACHUSETTS, ASSIGNORS, BY MESNE ASSIGNMENTS, TO THE GOOD-YEAR SHOE MACHINERY COMPANY, OF PORTLAND, MAINE.

## SUSPENDED POWER PEG-DRIVING MACHINE.

SPECIFICATION forming part of Letters Patent No. 583,429, dated May 25, 1897.

Application filed February 25, 1893. Serial No. 463,765. (No model.)

*To all whom it may concern:*

Be it known that we, JOSEPH E. CRISP, of Somerville, in the county of Middlesex, and WILLIAM AVERY, of Worcester, in the county of Worcester, State of Massachusetts, have invented certain new and useful Improvements in Suspended Power Peg-Driving Machines; and we do hereby declare the following, with the annexed drawings, to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to improvements upon that class of pegging-machines which are suspended so that they can be moved from place to place, as the pegs are required, by the operator, where the machine is operated by power-actuated mechanism to drive a single peg.

The object of this invention is to produce a machine of the class described the use of which will be less arduous upon the operator than those heretofore known.

To this end the invention consists in the novel features of construction, operation, and combination of parts hereinafter described.

The invention is illustrated in the drawings, in which—

Figure 1 is a front elevation of the machine, showing the relation of the bit which forms the peg-receiving holes to the peg-delivery nozzle and its mode of operation. Fig. 2 is a side elevation of the machine, showing the peg-wood feeding and guiding devices, the friction-brake which assists in resisting the stress of the driver-raising mechanism, together with further details to be referred to hereinafter. Fig. 3 is a side elevation of the opposite side to Fig. 2, showing the mechanism which operates the bit and driver. Fig. 4 is a plan of the machine. Fig. 5 is a vertical section showing the means for reciprocating the bit and by full and dotted lines its extreme positions. Fig. 6 is a portion of Fig. 2, enlarged, with the cap removed and a portion of the throat and delivery-nozzle in section, showing a peg moving from the peg-wood guideway to the peg-driveway and the parts for operating the peg-wood shear. Fig. 7 is a back elevation of a portion of the ma-

chine, partly in section, showing the means for supporting the machine and also the means for operating the endwise-reciprocating driver-elevating roll. Fig. 8 is a rear elevation of the throat, shear-carrier, and delivery-nozzle, enlarged. Fig. 9 is a section of Fig. 8 on line *xx*, showing the construction of the peg-strip-feeding mechanism. Fig. 10 is a rear elevation of the throat, showing by full and dotted lines the positions of the peg-wood shear to the peg-wood guideway. Figs. 11 and 12 are views showing the relations of the cams which operate the endwise-reciprocating driver-elevating roll. Figs. 13 and 14 are views showing the construction of the shear-carrier and the parts attached thereto.

The frame of the machine 1 is constructed of any suitable material, and formed upon or secured to this frame are the various parts to be described in detail hereinafter.

Formed upon or secured to the frame 1 at 2, Figs. 4 and 7, there is a projecting hub, which has a suitable bearing for the main shaft 3 of the machine formed within it. The outer side of this hub is turned to fit and swing in the bearing 4, fixed on the supporting-arm 5, and it is so located upon the frame 1 that said frame, with the parts of the machine attached thereto, will nearly balance. The supporting-arm 5 and the connecting mechanism therefor to the motor-shaft are substantially the same as that heretofore used for the same purpose and require no specific description.

Fitted to a suitable guideway formed in the frame 1 is the reciprocating driver-bar 6, which is held in place by the cap 7, secured to the frame by screws in the usual manner, as shown by Figs. 2 and 4. The driver-bar 6 carries the round driver 8 and is spring-driven at the desired time and place and is then automatically power-elevated by the following mechanism:

Pivoted to the frame 1 at 9 is the lever 10, Figs. 3, 4, and 7, which is allowed a very slight movement on its pivot for a purpose to be hereinafter described.

Pivoted to the outer end of the lever 10 is the swinging arm 11, whose free end is connected to the driver-bar 6 by the short link

12, Figs. 1 and 3, so that motion given to the swinging arm is communicated to the driver-bar. The swinging arm 11 is drawn down to drive a peg by the pull-spring 13, which is  
 5 secured to the frame at 14 and adjustably secured to the swinging arm on the projection 15 by the adjusting-screw 16.

The outer end of the main shaft has fixed to it a suitable belt-pulley, and to raise the  
 10 driver by power against the tension of the spring 13 there is formed upon or secured to said shaft the elevating-cam 17, Figs. 3, 4, 7, 11, and 12, which is placed so that it will revolve between the sides of the frame and  
 15 swinging arm, as shown by Figs. 4 and 7.

The main shaft and the parts attached thereto are constantly revolving, and to connect the swinging arm 11 with the cam 17 to raise the driver after a peg has been driven  
 20 there are formed upon or attached to the swinging arm the round bearings 18, of different diameters, as shown by Fig. 7. To these bearings are fitted the roll and stem 19, to the outer end of which is fixed the angular  
 25 roll 20, the whole of this device being free to revolve on said bearings and also free to be reciprocated endwise the width of the cam 17.

To reciprocate the roll 19 over and from the path of revolution of the cam 17 at the proper  
 30 intervals, there is secured to the driving-shaft the inclined cam 21, which when the swinging arm is down will engage with the angular roll 20 and move the roll 19 endwise over the path of cam 17, as shown by the lower dotted  
 35 lines of Fig. 7, and said cam will then engage with the roll 19 and raise the swinging arm 11.

The outer end of the cam 17 is provided with the incline or face-cam 22, Figs. 11 and 12, which will move the roll 19 endwise, (from  
 40 over the path of said cam to the position shown by the upper dotted lines of Fig. 7,) when said roll has been elevated to its highest position.

The shape and location of the cams 21 and  
 45 22 with reference to each other and to the rolls 19 and 20 is such as to prevent the endwise locking of said rolls between the faces of said cams during the descent of the driver.

Where the machine is used to drive pegs at  
 50 considerable side inclinations, a light friction device of some kind upon the roll 19 will be found desirable to prevent said roll from sliding out of the swinging arm and over the cam 17, and perhaps preventing the full descent  
 55 of the driver. A device of this class is shown in Figs. 2, 3, and 4, consisting of a small round pin passing through the bearing 18, which is pressed toward the roll by a light spring, secured to the swinging arm by a suit-  
 60 able screw.

To hold the driver-bar 6 elevated against the tension of the spring 13 after the cam 17 has so elevated it, there is mounted in a suitable bearing, formed upon a projection of the  
 65 cap 7, the dog 23, which is pressed toward the driver-bar by the spring 24, as shown by Figs. 2 and 3, so that it will engage with the catch

25, formed in the driver-bar, when said bar has reached its highest position.

To release the driver-bar and drive a single  
 70 peg in any desired place, a trigger 26 is mounted on another projection of the cap 7, which trigger is provided with a spring-operated sear 27, which engages with a downward projection of the dog 23, and will trip  
 75 said dog in the usual manner when said trigger is pressed. The spring 24 is also used to return the trigger to operative position after it has been pressed, as will be understood by  
 80 reference to Fig. 2.

Beyond the trigger the upper guiding-handle of the machine 28 is secured to the projections 29 of the cap. When said cap is removed, the dog, trigger, and their connecting  
 85 mechanism are also separated from the machine without disturbing their relations to each other.

In free oscillating, suspended, and swinging power-operated machines of the species  
 90 herein described as heretofore known the whole torsional or other strain of the power operation had to be resisted by either a large amount of extra weight added to the machine or by the muscular exertion of the operator. To remedy this defect and reduce the labor of  
 95 the operator, the lever 10, which is pivoted, as has been before described, to the frame 1, has its inner end 30 extended so that it will bear on the outside of the inner portion of the bearing 4, as shown by Figs. 2 and 4.

The contacting faces of the lever and bearing are fitted to each other, so that as the machine is swung on the bearing there will be substantially no resultant motion to the outer  
 100 end of the lever 10.

The lever 10 is given just freedom enough of motion on its pivot to allow the end 30 to rest upon the bearing 4 without pressure when the swinging arm 11 is held up by the dog 23. In this position the action of the driving-  
 110 spring causes the swinging arm to act upon the lever 10 as a lever of the second order and tend to separate the part 30 from the bearing 4.

After the peg has been driven and the end-  
 115 wise-reciprocating roll 19 has been moved over the cam 17 the instant the cam is in contact with the roll the swinging arm becomes a lever of the third order, and its action on the lever 10 causes the arm 30 to engage with the  
 120 outside of the bearing 4 and clamp the frame 1 thereto until the driver is elevated and held by the dog, when the order of the leverage of the swinging arm with reference to the lever 10 becomes again the second until another peg  
 125 is driven.

To prevent inconvenient vibration of the machine when the operator releases his hold upon it, there is formed upon or attached to the outside of the bearing 4 the segment 31,  
 130 and the lever 32 is pivoted to the frame 1 at 33, as shown by Fig. 2. To the longer arm of this lever is attached the pull-spring 34, whose opposite end is secured to any suitable

place upon the frame or cap of the machine. The action of the spring 34 presses the short arm of the lever 32 against the face of the segment 31, where it acts as a brake and produces the desired result.

Between suitable projections on the lower part of the frame 1 the throat 36, which contains or supports the peg-wood guiding, feeding, and shearing mechanism, is secured by the bolt 35, which bolt is prolonged beyond the side of the frame and is provided with the lower guiding-handle of the machine, as shown by Figs. 1 and 3.

To the lower part of the throat 36 there is secured the peg-delivery nozzle 37, as shown by Figs. 1, 5, and 6, of sufficient length to allow the use of the machine in combination with a lasting-machine. Through these two parts there is formed the driveway 38, through which the pegs are driven into the work. Through the front of the throat 36 there is formed the guideway 39 for the strip of peg-wood from which the pegs are sheared, as will be hereinafter described.

The guideway for the peg-wood is placed some distance from the driveway for the pegs, as shown by Figs. 8 and 10, and it is set with reference to the driveway so that it will hold the peg-wood crosswise of the strip at about an angle of forty-five degrees thereto.

Below and forming the under side of the peg-wood guideway is the removable piece 40, the inner square end of which forms one member of the shears which cut the pegs from the end of the strip.

The movable member of the square-edged shears 41 first separates a peg from the angularly-held strip and then swings and holds it in line with the driveway under the driver by the following mechanism:

At the rear side of the throat there is formed the circular recess 42, and within this recess is mounted the shear-carrier 43, Figs. 8, 9, and 10, whose supporting-pivot passes through the throat and has the lever 44 fixed to its outer end, so that the hub of the lever will act as a collar to hold the carrier in place, as shown by Figs. 5 and 6.

The movable member of the peg-wood shear 41 is made from sheet metal the thickness of the peg-wood and is shaped as shown by Fig. 10, and as the carrier to which it is fixed is oscillated the cutter moves from the position shown by the dotted lines to that shown by the full lines. This cutter is secured to the carrier by means of suitable steady-pins fixed in the carrier, from which it can be readily removed, and it is held in position upon the steady-pins by contact with the bottom of the recess 42 when the lever 44 is fixed in place.

A portion of the carrier is cut away, as shown by Figs. 8, 13, and 14, so that slivers of peg-wood can pass out instead of being forced down the driveway.

Secured to the outer side of the carrier is the piece 45, whose projecting lip 46 is so located upon and guided by the carrier that it

forms a pocket which will receive and retain a peg during its journey from the guideway to the driveway, as shown by Fig. 6.

The piece 45 is loosely held by the screw 47, so that it can swing to and from the driveway, and a light spring 48, fixed to the carrier by the screw 49, presses said piece toward the driveway.

After the round driver 8 has moved the peg from the pocket into the driveway the carrier and the parts connected thereto are moved back for another peg, and to cause the lip 46 to press back the spring 48 and pass over the driver its inner end is beveled, as shown by Fig. 14.

In the recess 42 there is fixed the piece 50, of the same thickness as the shear, which has a recess formed in its side to receive the end of the lip 46, as shown by Fig. 10, in combination with which it completes the side of the driveway in the recess opposite the shear which forms the other side. The other sides of the driveway in the recess are formed by the bottom of said recess and the inner side of the carrier.

The movable member of the shears fixed upon the carrier is operated at the proper times to shear, move, and hold a peg in the driveway by the reciprocation of the driver-bar, as follows: The free end of the lever 44, fixed on the pivot of the shear-carrier, is forked, as shown by Fig. 6, and pivoted to the frame 1 at 51 is the double-ended curved lever 52, whose lower end carries the pin 53, which engages with the fork of the lever 44 and causes said levers to move in unison. The inner edge of the lever 52 is suitably curved, and the movement of the roll 54, mounted to revolve on a pin fixed in the driver-bar 6, produces positive and correctly-timed movements of the peg-shear when said driver-bar reciprocates.

The peg-wood-feeding mechanism is operated by the inclined projection 55, formed upon or attached to the hub of the lever 44, which projection moves the swinging feed-pawl 56 back upon the peg-strip whenever the shear 41 moves a peg under the driver. The feed-pawl 56 is mounted upon the front of the throat at 57, so that its operative end will swing in line with the guideway, and its rear end is slotted, as shown by Fig. 9, so that it can move on the supporting-pin to and from the peg-strip. The spring 58, secured to the front of the throat at 59, draws the feed-pawl toward the peg-strip and also moves it and the peg-strip toward the shear-carrier, when said shear is moved back to the position shown by the dotted lines of Fig. 10, and the projection 55 is swung from under the feed-pawl by the rise of the driver-bar. A retainer-pawl 60 in a suitable pocket in the front of the throat over the guideway, as shown by Fig. 6, is pressed toward said guideway by the spring 61 to hold the peg-strip in position when the feed-pawl is moved back to take a fresh hold upon said strip.

Heretofore in suspended peg-driving machines the hole to receive the peg has been punctured in the leather by the action of mechanism which drove a tapering awl into the materials to be fastened and then withdrew it. To insure the penetration of the awl to the required depth into the stock, the machine had to be of sufficient weight to resist the tendency of the act of driving the awl to impart momentum thereto when operating upon the hardest kind of stock. Unless the weight of the machine were sufficient the operator would have to hold the machine down to the work to produce the required result. In either case the operator would be called upon to perform a greater quantity of labor than was desirable, in one case in moving and adjusting and in the other in holding the machine to its work. To remedy these defects, the character and principle of operation of the puncturing instrument in the present machine has been changed from the usual awl and driving mechanism therefor to that of a high-speed revolving bit, which in operation draws the machine toward the work instead of, as in the case of the awl, pressing the machine away from the work. This bit is made with a coarse increasing spiral and a rather blunt point, and when pressed toward the material by the action of a spring will, by its revolution, draw itself in to the required depth with certainty each time, and then twist the material out of its spiral to clear itself from the stock, so that it can be raised by the action of a spring just sufficient to raise the weight of the parts carrying it. This bit can be used upon metal-bottom lasts without danger of injury, for as soon as the blunt point strikes the metal the downward motion of the bit is stopped and the revolution clears the spiral groove, so that the spring can raise the bit from the hole it has just made. This bit, which performs its functions in the same period of time as is required for the awl in other machines, is constructed and operated as follows:

Formed upon or attached to the frame 1 is the stand 62, Figs. 3, 4, and 5, with a suitable bearing, which supports a short shaft at right angles to the main shaft 3, so that bevel-gears fixed on the adjoining ends of said shafts will correctly intermesh. On the other end of the short shaft there is fixed the bevel-gear 63, which intermeshes with the bevel-gear 64, as shown by Fig. 5. The gear 64, in the present instance formed integral with a sleeve-like hub, is mounted to revolve on the outside of said hub in a bearing 65, formed upon the stand 66, a collar being fixed to the lower end of the hub to restrain it from end-wise motion.

To the interior of the sleeve of 64 there is fitted the shaft 67, whose upper end is squared and fitted to the plate 68, secured to the top of the gear 64, so that said shaft can be reciprocated within the sleeve, but must revolve therewith.

Below the stand 66 the shaft 67 has fixed to it the coupling 69, which connects it to a short section of shaft 70, whose lower end carries the chuck which holds the bit 71, which bit revolves and reciprocates in a bearing 72, formed at the lower end of the peg-delivery nozzle. The stand 66, which is formed upon or attached to the frame 1, holds the bit-shaft at an inclination to the driveway, and the bearing 72 is so positioned with reference thereto that the center lines of the bit-shaft and the driveway will intersect a short distance below said driveway, so that the pegs will readily enter the hole made by the bit. On the stand 66 there is formed at 73 a guideway, and fitted to move in this guideway is the slide 74, through which the shaft 67 passes and has bearing.

The collar 75 is fixed to the shaft, and its sides are fitted to a slot in the slide, so that the shaft is free to revolve within the slide, but is reciprocated thereby.

Hung upon ears projecting from the slide 74 is the swinging arm 76, whose upper free end engages with a suitable catch 77, formed upon the driver-bar. The free end of this swinging arm is pressed toward the driver-bar by the spring 78, secured to the stand 66, as shown by Fig. 5, whose outer end is bent at right angles to the swinging arm and engages with a notch formed on said arm with sufficient force to sustain the slide 74 and the parts connected thereto in the position shown by the full lines of said figure when the driver-bar is held up by the dog 23.

When the dog 23 is withdrawn from contact with the driver-bar, the driving-spring, aided by the spiral of the bit, moves the swinging arm and the parts connected with it downward until they are in the position shown by the dotted lines of Fig. 5, when the swinging arm 76 is swung clear of the catch 77 by contact with the incline 79, formed upon or attached to the frame 1. At this point the lower ends of the driver-bar 6 and the slide 74 are about in contact with the double-ended lever 80, pivoted to the stand 66 at 81, and the action of the driving-spring changes the position of said lever from that shown by the full lines to that shown by the dotted lines and raises the slide to its normal position of rest, where the spring 78 sustains the weight of the parts and leaves the driver-bar free to descend and drive the peg into the hole which has just been formed by the bit.

With the main shaft constantly revolving the driver-bar elevated and held up by the dog and a peg held by the movable part of the shear in the driveway the operation of the machine is as follows: The operator, by means of the guiding-handles, places the peg-delivery nozzle at the proper inclination upon the work and presses the trigger, which releases the driver-bar. The action of the driving-spring at once moves the bit-shaft down and presses the bit against the leather. The revolution of the bit, aided by the pres-

sure of the spring, causes the spiral of the bit to engage with and draw itself into the leather, either as far as the range of motion of the bit will allow or until the end of the bit contacts with metal. When the penetration of the bit is stopped by either cause, its next turn presses the leather in its spiral groove (which has aided it to penetrate therein) out of the groove into the leather forming the sides of the hole, leaving said hole in a different condition from what it would have been if made with a smooth puncturing-awl, and in as good, if not better, condition to receive and hold a peg. In case the end of the bit has struck a metallic substance which will not allow of its full penetration the action of the driving-spring will raise the nozzle of the machine from the leather until the descent of the bit is sufficient to allow the swinging arm connecting the bit-reciprocating slide to the driver-bar to be disconnected therefrom, when the action of the driving-spring will raise the bit by the action of the lower end of the driver-bar on the lever 80. At this time the driver will be in contact with the head of the peg, and the continued descent of the driver-bar will drive the peg into the hole just made by the bit. During the last part of the descent of the driver-bar the roll 54, by contact with the double-ended lever 52, has moved the shear 41 back to the position shown by the dotted lines of Fig. 10 and the incline 55 from under the feed-pawl 56, and another length of peg-wood has been moved between the shears. When the driver-bar is fully down, the inclined cam 21 moves the endwise-reciprocating roll 19 over the constantly-revolving cam 17, and it elevates the driver-bar, when the roll is moved from over the cam, and the driver-bar is again held up by the dog 23 as it was at the commencement of the driving process. During the rise of the driver-bar the roll 54 has swung the lever 52 in the opposite direction by contact with its upper end, and another peg has been sheared from the strip and moved into the driveway, the feed-pawl also being moved back for a fresh hold upon the peg-wood.

The advantages of the novel mechanical combinations which enter into the construction of this machine are many and important, the principal of which are, first, by the operation of the lever 10 30, which clamps the machine to the first of its supporting-bearings, the driver-bar is raised by the constantly-revolving elevating-cam, without the usual strain upon the operator, which materially assists him in positioning the machine; second, the use of the constantly-revolving bit, which draws itself into the leather, requires but little exertion on the part of the operator to hold the machine positioned, so that the peg will enter the hole thus made; third, the fact that the bit removes none of the stock from the hole, but pushes it into the sides thereof, causes the hole to have a peculiar holding quality, which holds the peg, when

driven, better than does the old process of awl-driving, which leaves a smooth hole, the power used to drive the peg being the same in both cases; fourth, in case the end of the bit should strike any metallic substance it will not be injured, as in the case of the driven awl, so that, if desired, pegwork can be done on a metal-bottom last; fifth, the action of the spring-moved bit-carrier is easy in itself, and when the driving-spring is released by the lever 80 the driving-bar has slowly acquired so much momentum that the usual rebound of spring-operated drivers is hardly noticeable; sixth, the relations of the cams fixed on the main shaft insure the proper driving of the peg; seventh, the fact that the driver-bar is held up against the driving-spring causes the bit to commence its action the instant the machine is started, so that it always commences and finishes its operations in the shortest possible period of time; eighth, the action of the brake 32 always holds the machine at the last forward or back inclination it was used at without care on the part of the operator, which makes it better adapted to follow the step-by-step process of peg-driving common to machines of this class, the result of the whole combination being a machine for peg-driving which is simple in construction, light in weight, easy of manipulation, and efficient in operation.

Having thus described our invention, its construction and mode of operation, what we claim and desire to secure by Letters Patent of the United States, is—

1. In a peg-driving machine, a constantly-revolving bit which will draw itself into the stock, spring-operated mechanism to move it to and from the stock at the desired times, in combination with suitable peg-feeding, peg-cutting and peg-driving mechanism, substantially as shown and described.

2. In a peg-driving machine, a constantly-revolving elevating-cam fixed to the main shaft, a driver-bar operated by a swinging arm, an endwise-reciprocating elevating-roll mounted in bearings on the swinging arm, an inclined roll fixed to the stem of the elevating-roll, in combination with cams fixed upon the main shaft and elevating-cam to reciprocate the elevating-roll over and from the path of the elevating-cam at the termination of the movements of the driver-bar, substantially as shown and described.

3. In a peg-driving machine, a driver-bar, a throat with a peg-driveway therein, a peg-wood guideway which holds the peg-wood crosswise the strip at an angle to the driveway, a swinging shear mounted in the throat to cut a peg from the strip and move and hold it in the driveway, peg-wood-feeding mechanism to move the peg-strip to the shear, in combination with a double-ended curved lever and suitable connecting mechanism between said shear and lever and lever and driver-bar, which positively actuates said shear by and with reference to the reciproca-

tions of the driver-bar, substantially as and for the purposes set forth.

4. A suspended peg-driving machine hung in a suitable bearing, whose driver is reciprocated by a spring in one direction and by power in the other, in combination with a clamp pivoted to the frame of the machine which is operated by and during the power operation to clamp the machine to its supporting-bearing, substantially as described.

5. In a suspended power-operated peg-driving machine, a bearing for supporting it, a driver-bar, a swinging arm, which reciprocates the driver-bar, a swinging lever pivoted to the frame of the machine, whose inner end can be moved to and from the bearing, and to whose outer end is pivoted the swinging arm, a spring to draw the swinging arm down, a power-operated cam to raise it, and a dog to hold it elevated, in combination with suitable intermediate mechanism, whereby the action of spring cam and dog alternately change the order of leverage of the swinging arm, substantially as described and for the purpose set forth.

6. In a suspended peg-driving machine the combination of a bearing for supporting it, the segment 31 fixed to said bearing, the le-

ver 32 pivoted to the frame and the spring 34, substantially as and for the purpose set forth.

7. In a peg-driving machine, a swinging shear for separating a peg from a strip of peg-wood, a carrier for said shear and a spring-operated projection mounted upon and moving with said carrier, which retains the pegs in position during their journey from the feedway to the driveway constructed and operating substantially as shown and described.

8. In a peg-driving machine, a peg-wood feed-pawl which is pivoted to swing parallel with the peg-wood guideway and is slotted to move on said pivot endwise toward the peg-strip in combination with a spring which draws it toward said strip and also swings it toward the peg-wood-separating mechanism and suitable power-actuated mechanism which moves it back upon said strip at the correct times, substantially as shown and described.

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Witnesses:

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