

(No Model.)

2 Sheets—Sheet 1.

M. ORTENBLAD.
NAILING HATCHET.

No. 561,809.

Patented June 9, 1896.

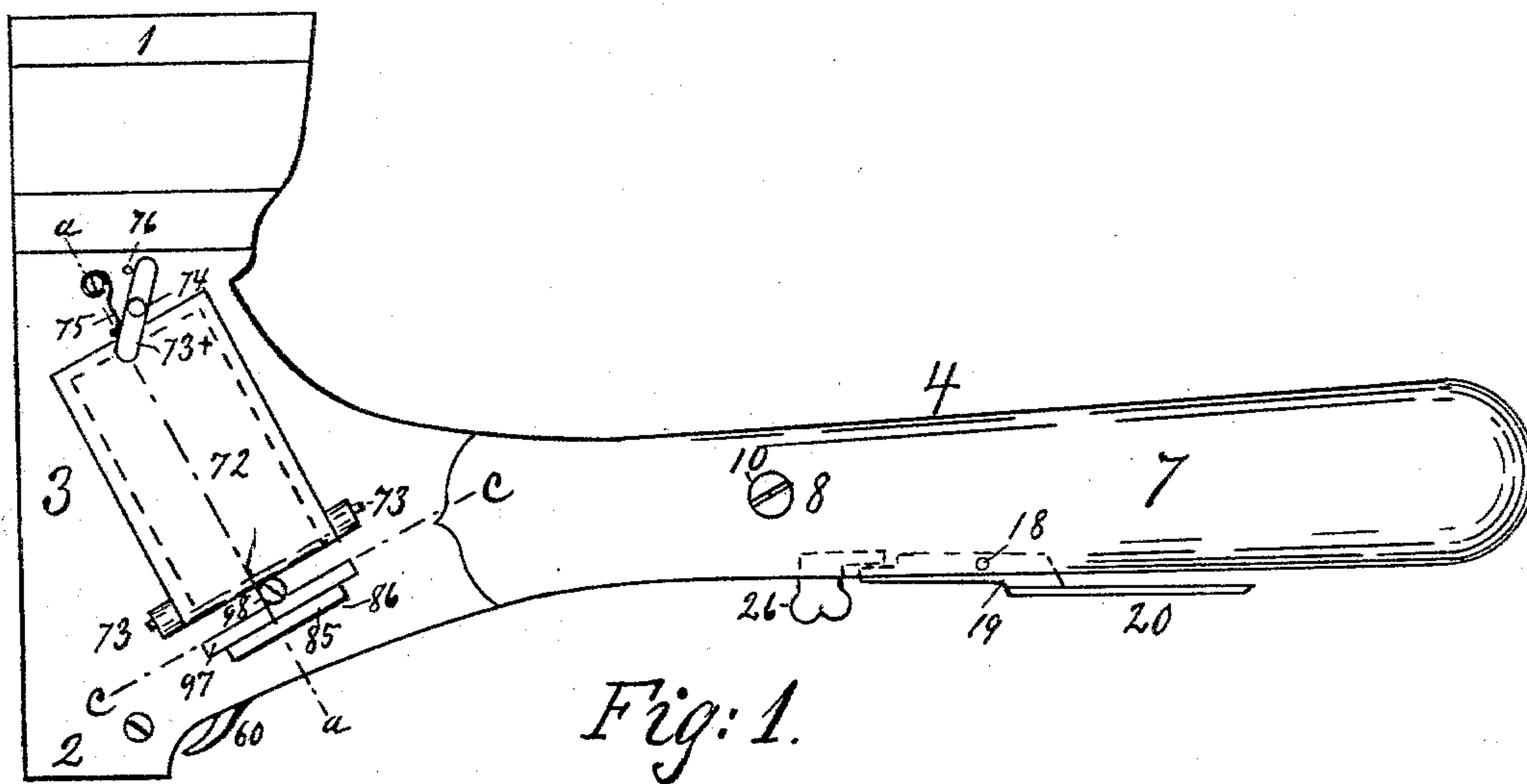


Fig: 1.

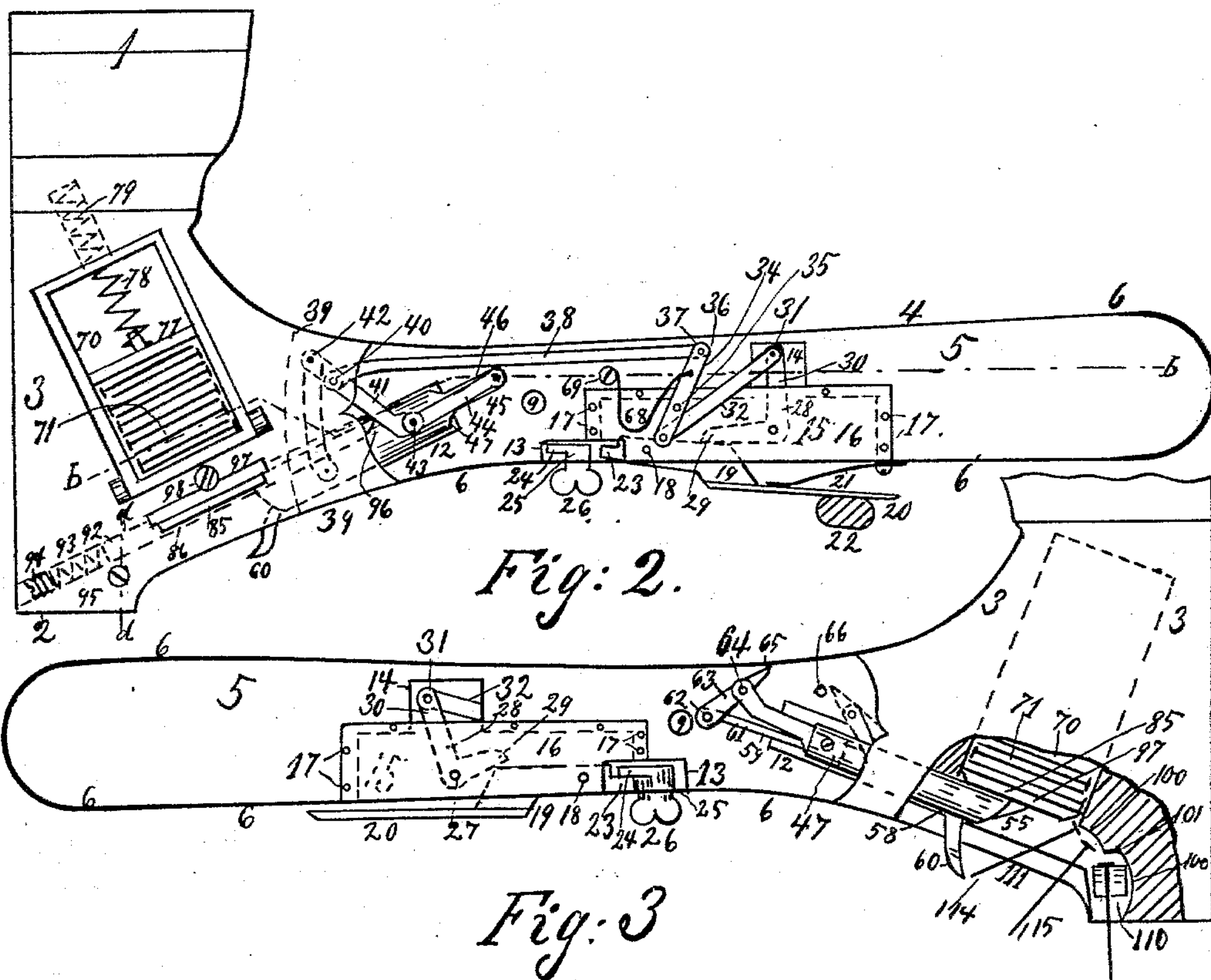


Fig: 2.

Fig: 3

WITNESSES:

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E. C. Carlson

INVENTOR:

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BY his ATTORNEY:
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(No Model.)

2 Sheets—Sheet 2.

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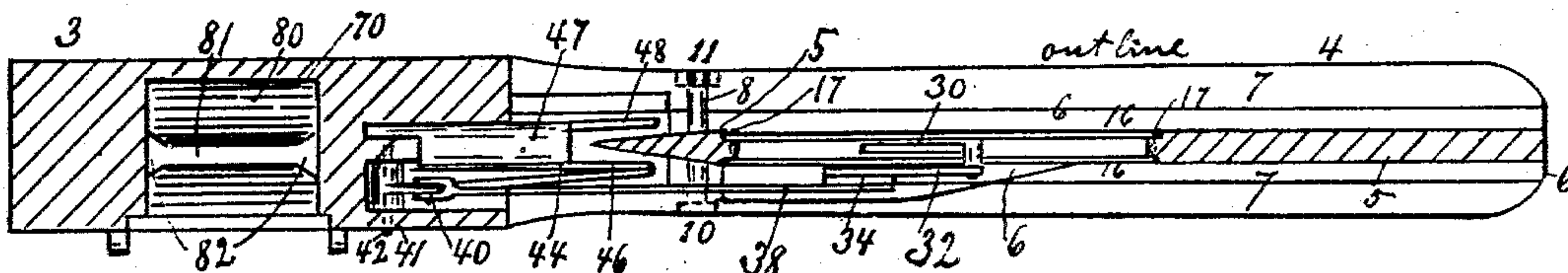


Fig: 4.

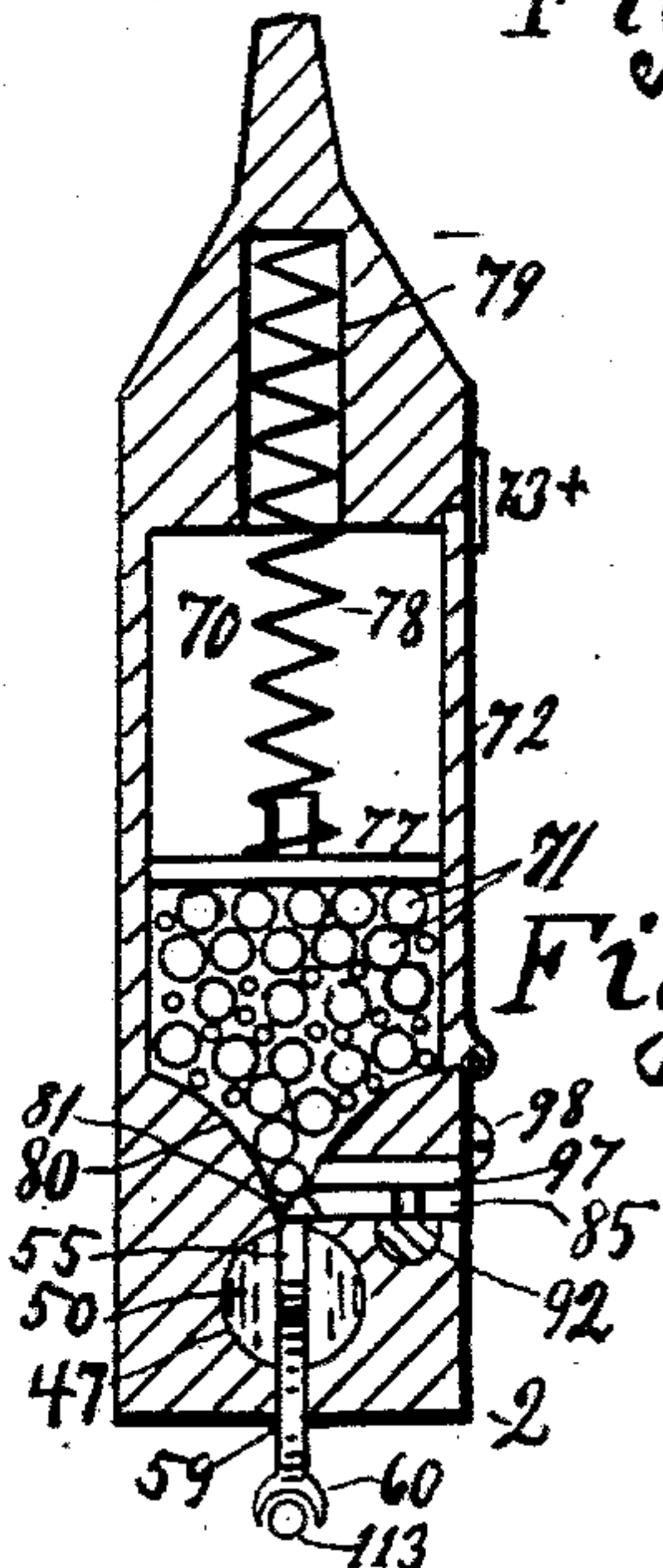


Fig: 5.

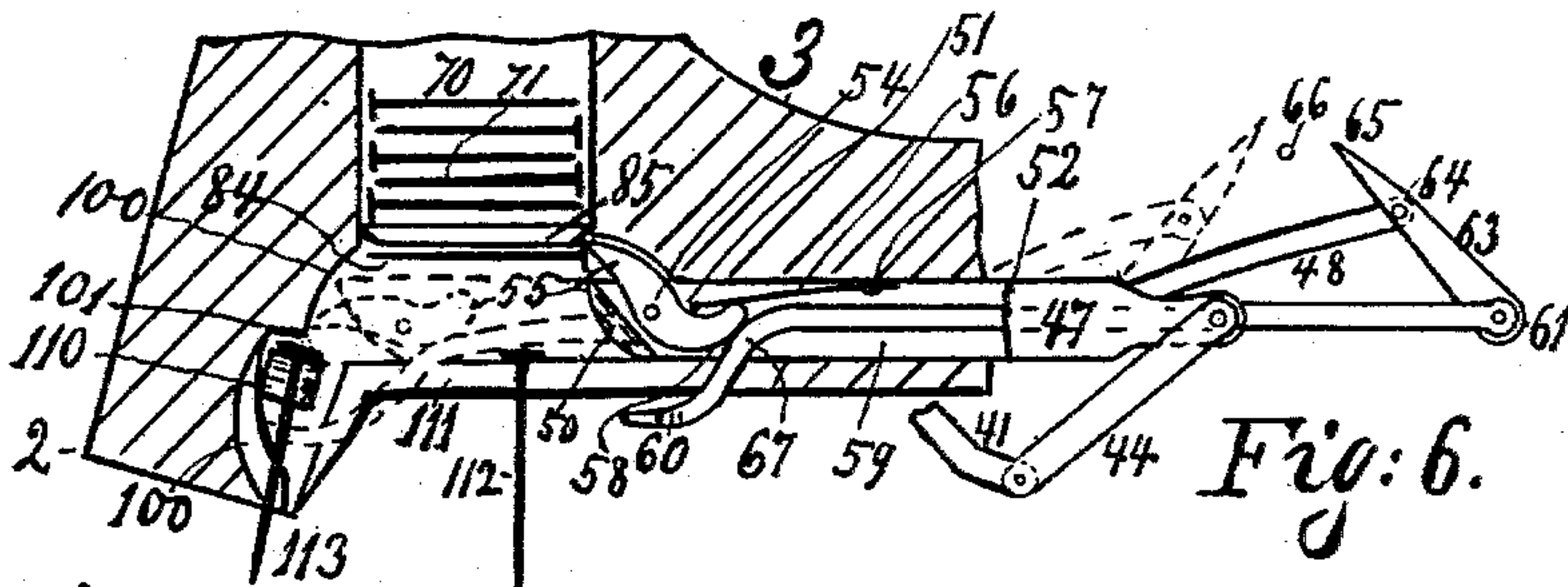


Fig: 6.

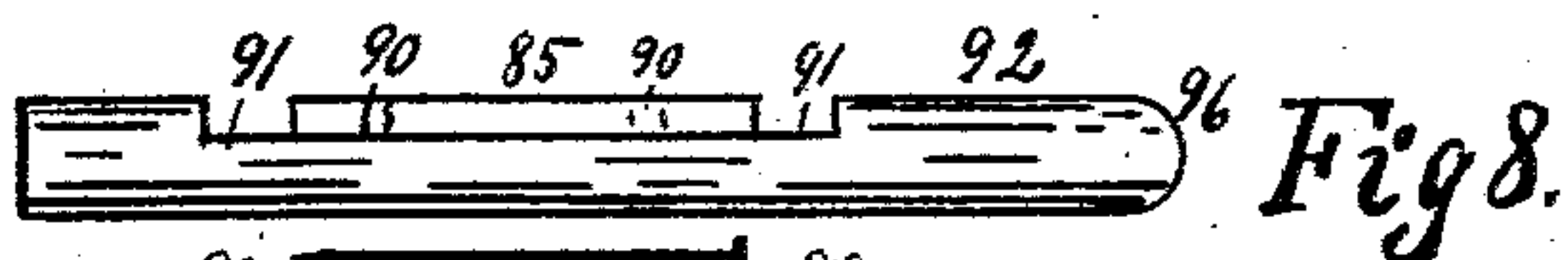


Fig: 8.

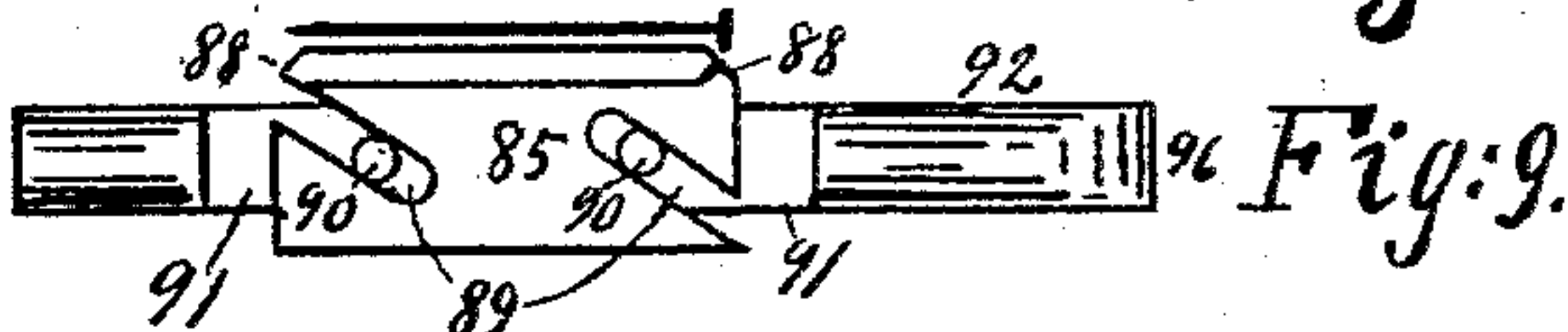


Fig: 9.

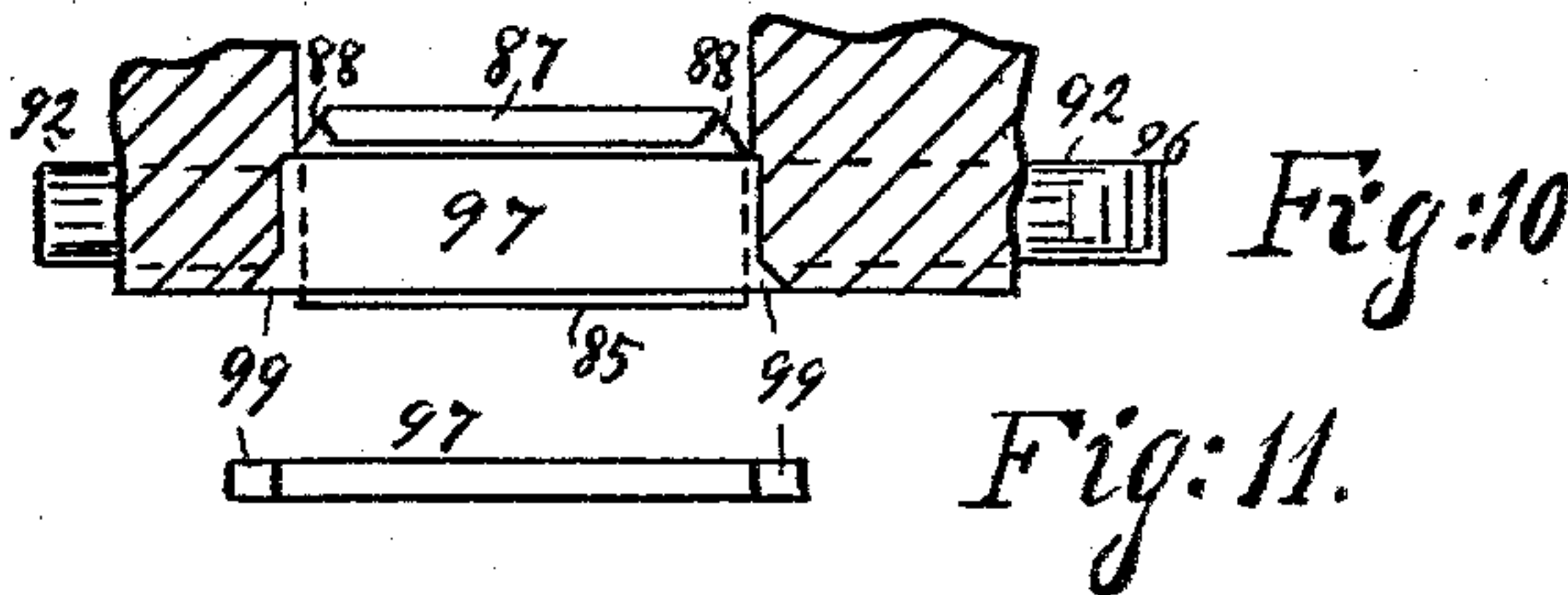


Fig: 10.

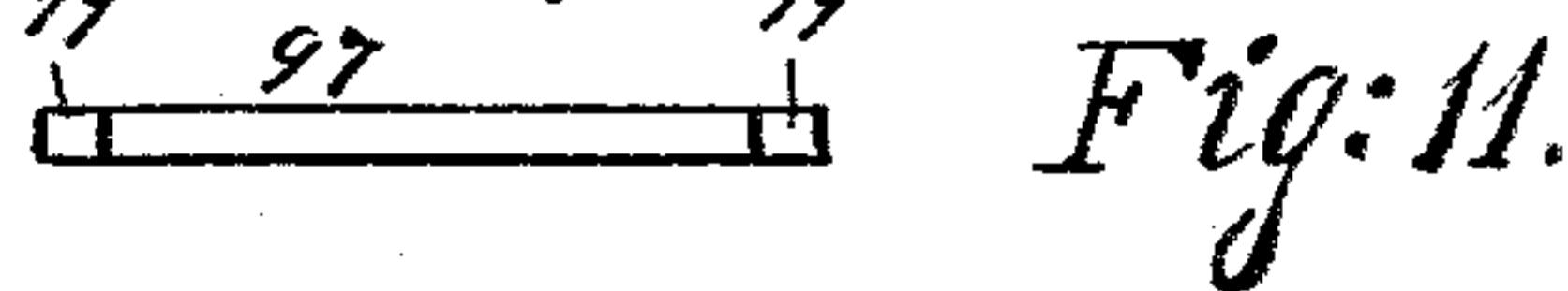


Fig: 11.

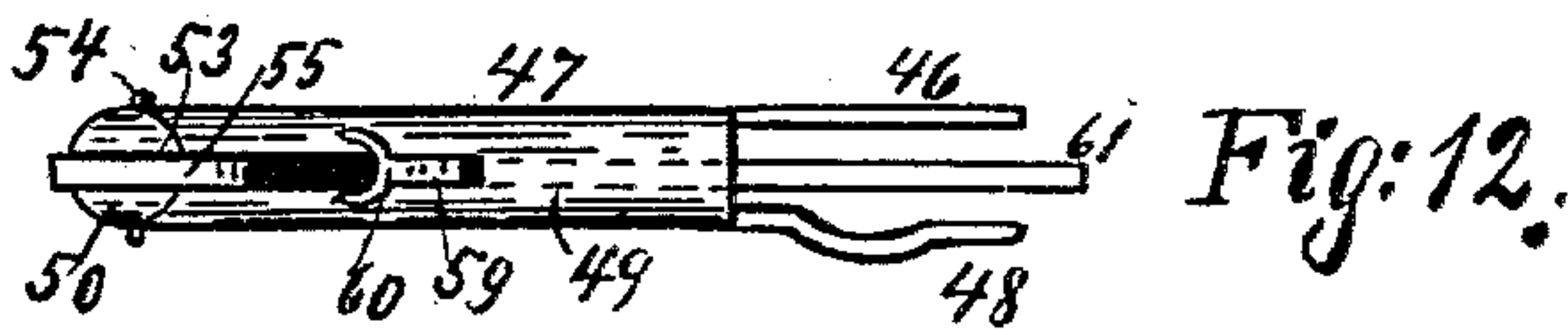


Fig: 12.

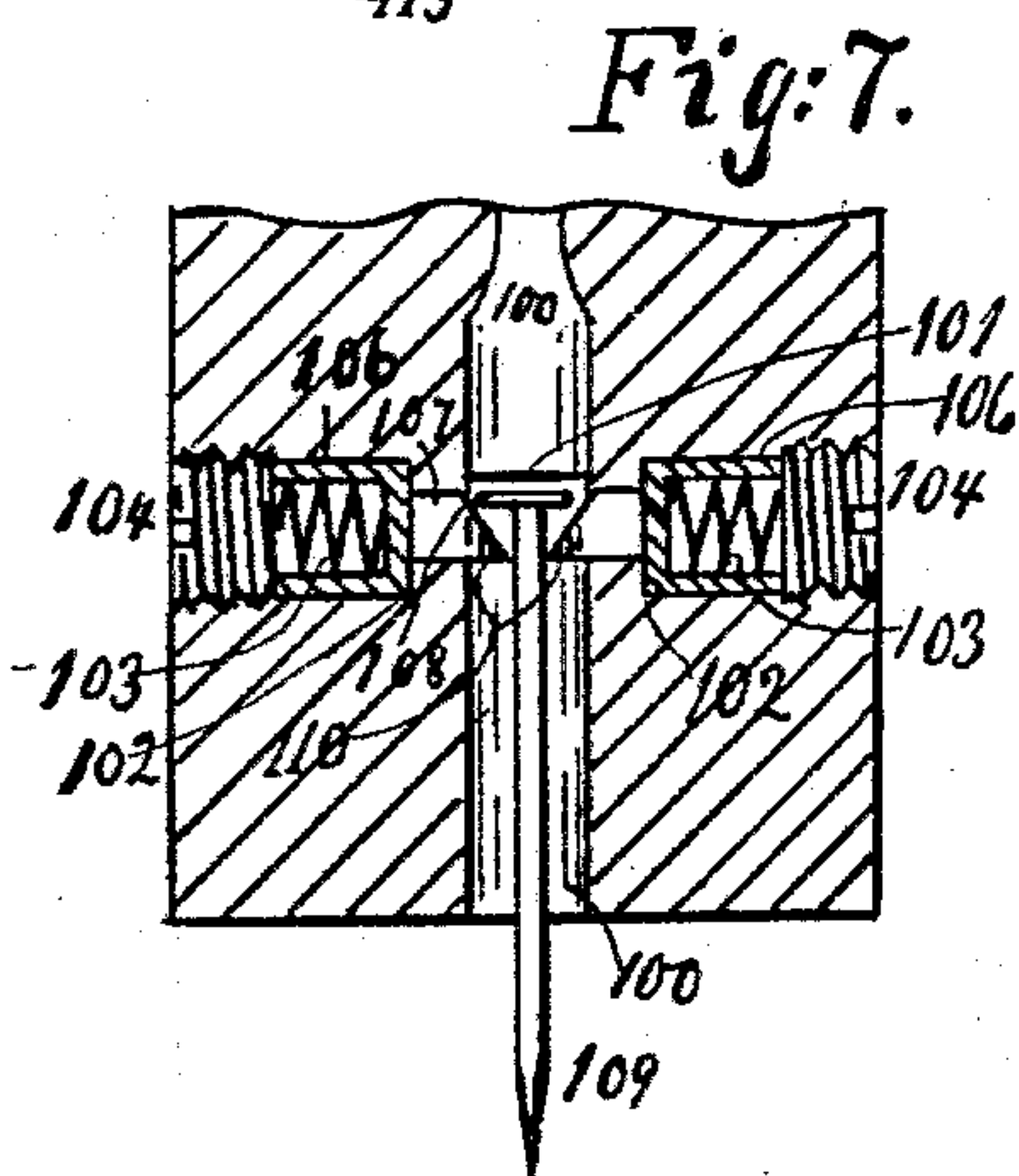


Fig: 7.

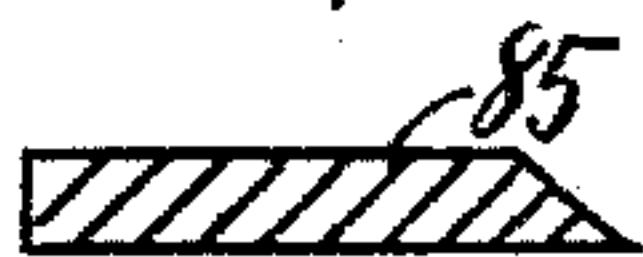


Fig: 15.

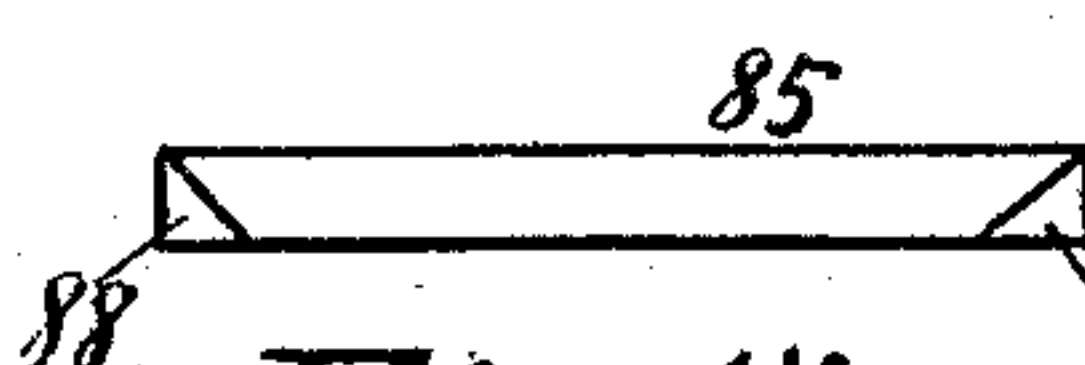


Fig: 14.



Fig: 13.

WITNESSES:

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UNITED STATES PATENT OFFICE

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TO CHARLES J. PALMER, OF ST. PAUL, MINNESOTA.

NAILING-HATCHET.

SPECIFICATION forming part of Letters Patent No. 561,809, dated June 9, 1896.

Application filed March 31, 1894. Serial No. 505,946. (No model.)

To all whom it may concern:

Be it known that I, MAGNUS ORTENBLAD, a citizen of the United States, residing at Sandstone, in the county of Pine and State of Minnesota, have invented certain new and useful Improvements in Nailing-Hatchets; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in hatchets of the class that carry nails in a box or chamber and are provided with a mechanism for delivering the nails one by one as fast as they are driven in place by the hatchet.

The objects of my invention are in general to provide a nailing-hatchet of the above-named class which is especially adapted for shingling and lathing, and is of a simple, effective, and reliable construction, that will not easily get out of order, and which will deliver the nails regardless of the position in which the hatchet is held. I attain these objects by the novel construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is a left-hand side view of my complete hatchet. Fig. 2 is a left-hand side elevation of the hatchet with one side of the woodwork of the handle and the lid of the nail-box removed. Fig. 3 is a right-hand side elevation of the hatchet with the wooden handle removed and a portion of the body of the hatchet shown in section. Fig. 4 is a longitudinal sectional top view on the line *b b* in Fig. 2 with the woodwork of the handle shown in outline. Fig. 5 is a sectional front elevation on the line *a a* in Fig. 1. Fig. 6 is a left-hand sectional side elevation of a portion of the body of the hatchet and the mechanism contained therein. Fig. 7 is an enlarged sectional rear view of a portion of the hatchet on the line *d d* in Fig. 2. (The free end of the handle is referred to as the "rear.") Fig. 8 is a left-hand side view of a certain slide of the mechanism. Fig. 9 is a top plan view of Fig. 8. Fig. 10 is a sectional top view on the line *c c* in Fig. 1 through the left half of the

body of the hatchet. Fig. 11 is an edge view of a portion of Fig. 10. Fig. 12 is a detail bottom view of the main slide by which the nails are handled. Fig. 13 is an end view, Fig. 14 an edge view, and Fig. 15 a transverse section, of the plate 85 in Fig. 9, which separates one nail at a time from the charge in the hopper or nail-holder.

Referring to the drawings by reference-numerals, 1 is the cutting edge, 2 the nail-driving face or hammer, 3 the body, and 4 the handle, of the hatchet. The body 3 may be made in halves and riveted or screwed together or cast in one piece of iron or steel, the details of which are therefore herein omitted.

From the body 3 extends rearwardly a central web or plate 5, the edge of which is provided with a rim 6, overhanging both sides of the plate, as best shown in Figs. 3 and 4. 7 are the wooden parts of the handle. They are placed one upon each side of the web 5, fitted inside and guided by the rims 6 and secured to the web by a saw-handle bolt 8, extending through the two wooden pieces 7 and through the hole 9 in the intervening web and having the head 10 and screw-threaded nut 11 let flush into the woodwork on each side of the handle. In the web 5 are, besides the hole 9, the apertures 12, 13, and 14. Communicating with the apertures 13 and 14 is a chamber or inclosure 15, in the present instance formed by cutting an elongated hole through the web 5 and covering it up on both sides by the plates 16, secured by the rivets 17 to each side of the web and let in flush with the latter. In the inclosure 15 I pivot at 18 the operating-lever 19, having the thumb or finger piece 20, normally held downward by a spring 21, but may be pressed close to the handle by the operator's forefinger, of which 22 is a front section. The front end of the lever 19 has a small projection 23, adapted to engage under the end 24 of a latch 25, secured to the thumb-spindle 26, which is journaled in the rim 6.

When the projection 23 of the latch is turned forward, as in Fig. 2, the lever 19 20 is free to be worked; but if the latch is turned rearward, as in Figs. 1 and 3, the lever is locked up to the handle and all the mechanism in the hatchet is at rest while the hatchet may

be used for other purposes than driving nails of the size it is built to receive in its chamber. Between the plates 16 I pivot at 27 a bell-crank lever 28, of which the shorter arm 29 engages the upper side of the lever 19, and its longer arm 30 extends up into the aperture 14, where it is pivoted at 31 to the rear end of the link or short rod 32, the lower or front end of which is pivoted at 33 to the short end of a scale-beam lever 34, fulcrumed on the stud 35, and having its long end 36 pivoted at 37 to the rear end of the operating-rod 38, whose front end extends into the chamber or pocket 39, provided in the rear of the left side of the body of the hatchet, (see Fig. 4 and dotted lines in Fig. 2,) where it is pivoted at 40 to the lever or arm 41, which has its upper end pivotally secured at 42 to the body of the hatchet and to its lower end pivoted at 43 the link 44, whose rear end is pivoted at 45 to the arm 46, which projects rearwardly from the left side of the centrally-located round slide 47, while upon the right side of the web 5 extends rearwardly another arm 48 from the rear end of the right side of the slide 47, which will now be described. It consists of a cylindrical tube 49, having a slanting front end 50, which is provided with a heavy bottom extending as far back as to 51 in Fig. 6. The outer or front side of the bottom is curved rearwardly in the middle, as indicated by shading in Fig. 6, where the slide is shown in central section, back to the cut-away line 52. The front and solid portion of the slide is provided with a central slit 53, in which I pivot at 54 the nail-picker 55.

56 is a spring riveted at 57 to the inner side of the tube 49, and pressing upon the rear end 58 of the picker 55 tends at all times to hold its front end elevated as high up as it can come, which is shown in Fig. 6, where the normal position of the picker is shown in solid lines, and in dotted lines are shown as well the picker as the slide and the parts operating and operated by the slide when thrown forward to bring out a nail from the nail-box, presently to be described. The slot 53, in which the picker is located, extends rearwardly into the lower side of the tube 49, so as to form an opening 58, through which passes and is located a gooseneck-shaped rod 59, of which the front end is bifurcated or formed into a crutch-top-shaped jaw 60, and the rear end 61 extends through the tube and projects out of the rear end of it between the arms 46 and 48. (Best shown in Figs. 3, 5, and 6.) The rear end 61 of the bar 59 is pivoted at 62 to the lower and longest end of a traveling lever 63, which is pivotally secured at 64 to the rear end of the arm 48, and has its upper short and pointed end 65 engaging alternately either side of the pin 66, rigidly secured in the web 5, every time the slide is moved either backward or forward by the operating mechanism already described and located mostly on the left side of the central web 5. When the push-bar 59 is pushed forward by the swing-

ing motion of the lever 63, the upper curve 67 of the gooseneck touches up under the rear end 58 of the picker and tilts it into the position shown in dotted lines in Fig. 6. There is sufficient slack and spring in the parts to permit the pointed end 65 of the lever 63 to rise high enough to engage the pin 66, after the lever is tilted by the pin and has slid by it in either direction.

68 is a U-shaped spring, secured with one end to the screw 69 and with the other end engaging the scale-beam lever 34. Its function is to throw rearwardly and into new engagement the slide 47 and the entire mechanism so far described every time the thumb-lever 19 is permitted to release its lifting pressure up under the arm 29 of the bell-crank lever 28.

In the body 3 of the hatchet I provide the nail-box or elongated chamber 70, in which the nails are thrown or placed with their heads turned, some rearwardly and some forwardly, as indicated by the nails 71.

72 is a lid or door, hinged at 73 and kept closed by the thumb-latch 73^x, pivotally secured at 74, held upon the edge of the door by the spring 75, and kept from swinging too far by the stop 76.

77 is a pressure-plate placed upon the top of the charge of nails and pressed down upon it by the pushing coil-spring 78, which, when the chamber is full of nails, is entirely compressed into the spring-barrel 79, provided for that purpose in the upper portion of the hatchet.

Near the bottom of the chamber 70 the side walls of the chamber are brought together to a slightly inwardly-curved V shape, as shown at 80 in Figs. 4 and 5, leaving between them the central opening 81, (best shown in Fig. 4,) which is only large enough to let one nail at a time drop down sideways through it. The slot 81, it will be observed, is widened out at both ends to form a clearing 82 and 83 for the heads of the nails to pass through. When a nail passes through this opening or gate 81, it is lodged against the upper side of the slide 47, as clearly shown in Fig. 6, where the nail 84 rests upon the slide in dotted lines, awaiting the retraction of the latter, so it can get farther down.

The gate 81 is closed by a sliding plate or shutter 85, which is located and moves in a slot 86 in the left side of the hatchet. The inner edge 87 of this plate is beveled off at its upper side and cut away at its corners 88, as best shown in Fig. 9, to allow only the lowest one of the nails in the box to move down into position ready to slip down by the shutter when it is retracted, so as to open the gate 81. The motion of the shutter 85 is caused by the engagement of its diagonal slots 89 with the pins 90, secured in the flattened top side of a round sliding bar 92, which is inserted in a round hole 93, (see dotted lines in Fig. 2 and section in Fig. 5,) drilled from the front of the hatchet and intersecting the slot 86.

the shutter or plate 85 is let down into the flattened top side 91 of the bar 92, as shown in Figs. 8 and 9.

94 is a screw-threaded plug screwed tightly into the front end of the hole 93. Between this plug and the front end of the slide 92 I place a pushing coil-spring 95, which actuates the bar 93 in a rearwardly direction, while the lever 41, touching against the rounded front end 96 of the bar 92, pushes it forward against the resistance of the spring every time it is swung forward by the operating mechanism.

In order to get the shutter 85 inserted in its place and dropped down upon the pegs 90, it is necessary to have the slot 86 about twice as wide up and down as the thickness of the shutter-plate 85. Hence after the shutter is put in there appears an idle space or opening above it, which I fill with an idle-plate 97, which is retained in the slot by the overhanging head of the screw 98, and prevented from moving too far in by its end projections 99, which are let into the side of the hatchet, as shown in Fig. 10, until the outer edge of the idle-plate comes flush with the outside of the hatchet and its inner edge comes flush with the slanting portion of the wall of the nail-box close above the shutter.

As best shown in Figs. 7, 6, and 5, there is in the rear side of the nail-driving hammer portion 2 provided a forwardly-curved groove 100, extending from the front end of the shutter 85 to the rear edge of the face 2 by which the nails are driven into the woodwork. This groove is provided near its middle or a little higher up with an offset forming a shoulder 101, below which is provided a pair of spring-held jaws 102, which are inserted in suitable holes drilled from opposite sides of the hatchet. In each of said jaws is a loosely fitted plug with a cavity in its outer end in which is placed a pushing coil-spring 103, which acts between the bottom of the cavity and the screw-threaded plug 104, which is screwed tightly into the hole outside the spring. The inner end of the hole is of a smaller size, so as to form a recess 105, which meeting the shoulder 106 of the sliding plug regulates its inward movement. The smaller portion of the holes are made square, and the inner and solid ends 107 of the sliding plugs passing therethrough are correspondingly made square, which prevents them from turning in the holes. The extreme inner ends of the sliding plugs are slanted off at their upper side to form the inclines 108, upon which the head of the nail 109 hangs, as shown in Fig. 7, where it will also be seen that the rear corners 110 of the jaws are slightly rounded, so as to permit nails to be moved sidewise in between the ends of the jaws.

Directly below and communicating with the cylindrical space or channel in which the main slide 47 moves is a slot 111, of which one side is shown in each of the views, Figs. 3 and 6. The gooseneck part of the bar 59 moves in this slot, and if a nail falls down

into it its point and body will pass out through the slot, while its head will remain inside and cause the nail to assume the position shown by the nail 112 in Fig. 6, from which position it may be sent forward to the position of the nail 113 by the forward motion of the slide 47 and the crutch-shaped end 60 of the bar 59, which holds the nail in the manner shown in Fig. 6, and in Fig. 5, where the nail 113 is shown in cross-section.

In further explanation of the operation it will be seen that when the nails are lodged in the nail-box they are spring-pressed toward the gate 81, and when the finger-lever 20 is pressed up to the handle the bell-crank lever 28, rod 32, scale beam or lever 34, rod 38, and swinging arm 41 are set in such motion as to throw forward the link 44, and thereby the main slide 47. The sliding bar 92 is also pushed forward by the arm 41. The latter motion causes the shutter 85 to open and let one nail pass down upon the slide 47. By relaxing the pressure on the finger-lever the springs 21, 68, and 95 throw the entire mechanism back to its normal position, and as the sliding bar 92 moves rearward it causes the shutter 85 to shut the gate 81, so that no more nails can escape from the nail-box, and as the main slide 47 gets back to its limit the nail, located like 84 in Fig. 6, will (in the case of shingling and the like work) drop down into the position 112 and by the next pressing on the finger-lever be pushed forward by the front end of the slide 47 and the bifurcated end 60 of the bar 59 and held in the position 113. The operator now gives one blow with the hatchet. The head of the nail meeting the shoulders 101 causes the nail to be driven into the woodwork about as far as it projects out of the hatchet, and when the hatchet is lifted preparatory to the next blow the nail sticking in the lumber causes the head of it to spread the jaws 102 and escape from them. The next blow is then given by the driving-face 2 of the hatchet, and the work is done. The last-mentioned pressing on the finger-lever 20, it will be observed, not only moved the nail in between the jaws 102, but also caused another nail to come down between the shutter 85 and the slide 47, so that after the first nail is driven it takes but one pressing on the lever 20 to bring out each nail in position for use. In the case of lathing on walls or ceilings which requires the hatchet to be inverted, the nail will or may remain in the position 84, (shown in Fig. 6,) from which position the slide 47 and picker 55 will simply push it endwise forward, causing the point of the nail to slide along the groove 100 and down between the jaws 102 into the position 113. If the nail is turned with its point toward the end of the main slide 47, (no matter whether the hatchet be inverted or not,) the pointed front end of the picker gets between the point of the nail and the bottom side of the shutter 85 and throws the point of the nail into the positions shown in

Fig. 3, as 114 115, from which it is pushed in between the jaws 102 in about the same manner already above described about the nail 112 in Fig. 6.

5 It will be understood that it is the motion of the slide 47 and its arm 48 that causes the top end 65 of the lever 63 to move against the pin 66, and that the touch against the pin 66 and then passing it causes the bar 59 to
10 make a long and quick motion and then stand still while the other parts move. This enables the picker 55 and slide 47 to turn the nail through the various stages 114 115 (shown in Fig. 3) before the bifurcated jaw 60 comes
15 forward to perform its function. If the said jaw 60 came earlier, it would prevent the point of the nail from turning down through the slot 111.

It is obvious that the mechanism of my
20 hatchet may be applied also in hammers for driving nails.

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

25 1. The nailing-hatchet having a suitable handle and in its body in front of the handle a nail-holding chamber accessible by means of a lid or door upon one side of it, said chamber having a substantially V-shaped bottom
30 terminating in a slot or central gate adapted to let one nail at a time pass sidewise down through it, a spring-actuated pressure-plate pressing the charge of nails toward said gate, a shutter-plate traversing the gate-opening
35 and closing it for each nail passing down; a slide or plunger moving in a channel in parallel direction with the nail-gate and being located centrally under and only about the thickness of a nail below the shutter of the
40 gate, so that only one nail can come down at a time, the channel in which the slide moves having in its lower side a longitudinal slot of a width sufficient to let the body of a nail pass freely through it, but to retain the head
45 of it in the channel, a lower nail gate or groove in the rear side of the hammer and driving-face of the hatchet, communicating with the said slot and channel so as to receive the nails either sidewise from the end of the
50 slot or point foremost from the channel direct, if the hatchet be inverted; said groove in the rear of the hammer being provided with two spring-held, at the upper and adjacent corners, beveled jaws projecting toward
55 each other from opposite sides of the groove, and a shoulder or recess near above the jaws, which are adapted to hold the nail with its head under the said shoulder and its point and body partly projecting below the driving-
60 face of the hatchet, and to yieldingly release the nail when it is partly driven into the lumber, said slide having in its front end a pivoted spring-held tilting tooth or picker, by which to insure its getting hold of the nails and
65 chasing them into the groove or lower gate, a pushing-bar having a crutch-top-shaped end straddling and pushing against the rear

side of the nail, thereby helping to move it into proper position between the spring-held jaws, which are slightly beveled off at their
70 adjacent rear corners so as to easily spread and receive the nail; an operating-lever pivoted to the handle of the hatchet and means for connecting it in operative contact with the said slide, pushing-bar, and shutter, substan-
75 tially as shown and described and for the purpose specified.

2. In a hatchet of the class described, the combination of the body portion, 3, having the cutting edge 1, nail-driving face 2, and inter-
80 mediate nail-chamber 70, with the pressure-plate 77, spring 78, located normally in a spring-barrel as 79, the hinged lid 72, having the spring-held latch 73, the said nail-box having a V-shaped bottom with a central slot-like
85 gate as 81, having at both ends enlargements as 82, for the heads of the nails to pass through the shutter-plate 85, moving in the side of the hatchet, traversing the gate and having the diagonal slots or notches 89, the sliding
90 bar 92, slidingly inserted in a hole as 93, partly intersecting the shutter, the screw-threaded plug 94, and spring 95, pressing against the front end of the bar 92, and a swinging lever as 41, pushing against the
95 rear end of it, said bar 92, having the flat side 91, and pins as 90, engaging the slots in the shutter; the lever 41, being pivoted with one end to the body of the hatchet inside a pocket or chamber as 39, and having its oppo-
100 site end pivotally connected by a link as 44, to a rearwardly-extending arm as 46, of a plunger moving below the shutter-plate 85, in a channel with a slotted bottom side and an adjoining groove-shaped nail-gate in the
105 rear side of the face portion 2, of the hatchet, the rod 38, beam-lever 34, having the spring 68, the rod 32, bell-crank lever 28, operating-lever 19, having the spring 21, and locking-latch 24, engaging its front end, said rod 38,
110 having its front end pivoted to the swinging arm 41, near its fulcrum, all connected and arranged in the body and handle of the hatchet, substantially as shown and described.

3. In a hatchet of the class described, the
115 combination of the body portion 3, having the nail-chamber with a V-shaped slotted bottom, the shutter 85, forwardly-curved groove 100, with the jaws 110, and offset 101; the handle 4, consisting of a central blade 5, extend-
120 ing from the body of the hatchet and having the rim 6, and partly-hollow side pieces 7, secured upon both sides of the blade, said blade or web 5, having the central inclosure 15, and the apertures 12, 13, and 14, and secured in
125 one of its sides a pin as 66; the slide 47, having the hollow body 49, the slot 58, slit 53, spring-held picker 55, pivoted in the slit, the front end or bottom 50, of the slide being in-
130 clined toward the picker and slanting rearwardly by its lower edge, said slide being located below the shutter 85, in a channel extending forward into the groove 100, and rearwardly into the aperture 12, and having in its

front portion a bottom slot as 111; the said
slide 47, having its rear end provided with two
arms 46, and 48, projecting one upon each
side of the web 5, the tilting lever 63, pivoted
5 to the arm 48, and engaging with its free end
the pin 66, the gooseneck-shaped push-bar
59, being pivoted to the lower end of the le-
ver 63, located inside the slide and having its
front portion extending through the slots 58,
10 and 111, so as to engage with its bifurcated
front end the rear side of the nail and with
its upper curve 67, tilt the picker 55, so as
to cause it to move the head of the nail in
under the shoulder 101, the other arm 46,

of the slide having connected to it the link 15
44, swinging arm 41, rod 38, spring-actuated
lever 34, rod 32, bell-crank lever 28, fulcrumed
in the inclosure 15; and operated by a finger-
lever as 19, acting up under the arm 29 of said
bell-crank lever, substantially as shown and 20
described and for the purpose set forth.

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

MAGNUS ORTENBLAD.

Witnesses:

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S. C. OLMSTEAD.