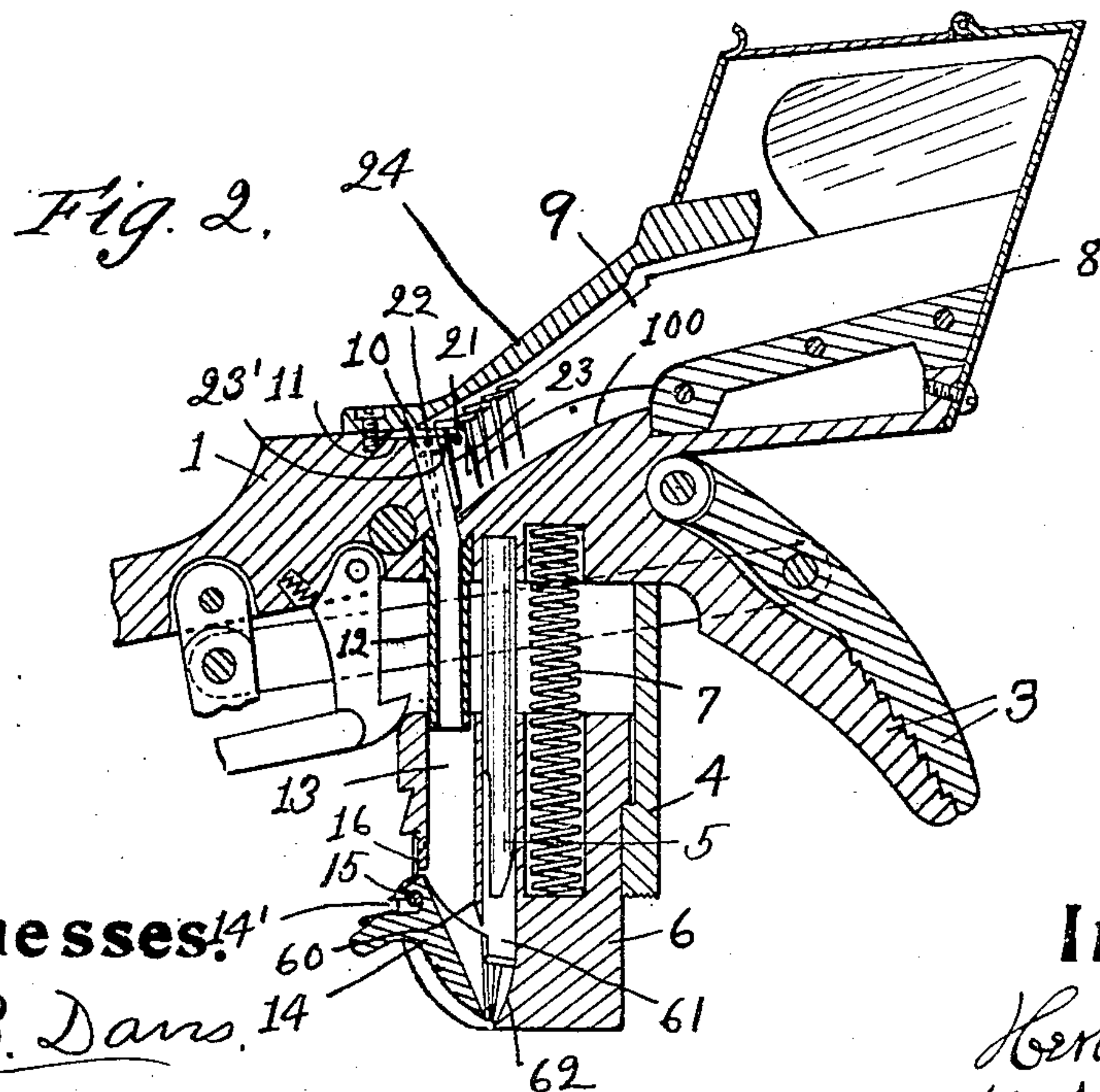
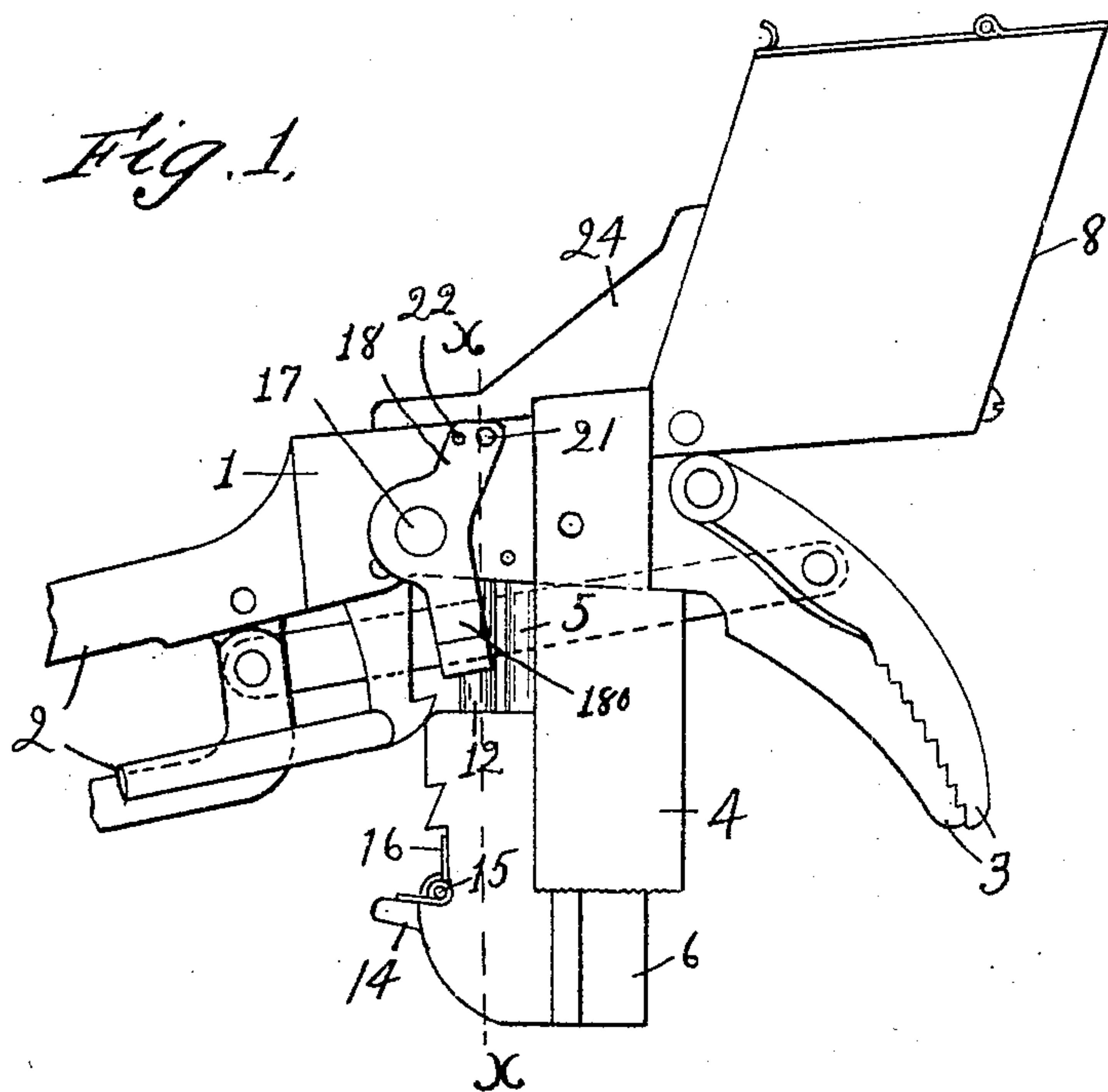


H. B. NEWTON.
HAND TACKING TOOL.
APPLICATION FILED SEPT. 12, 1903.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

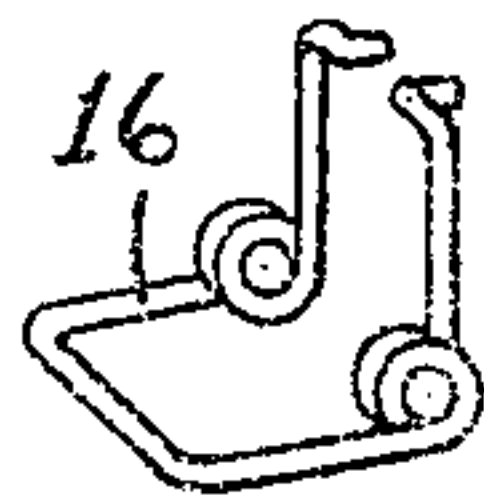
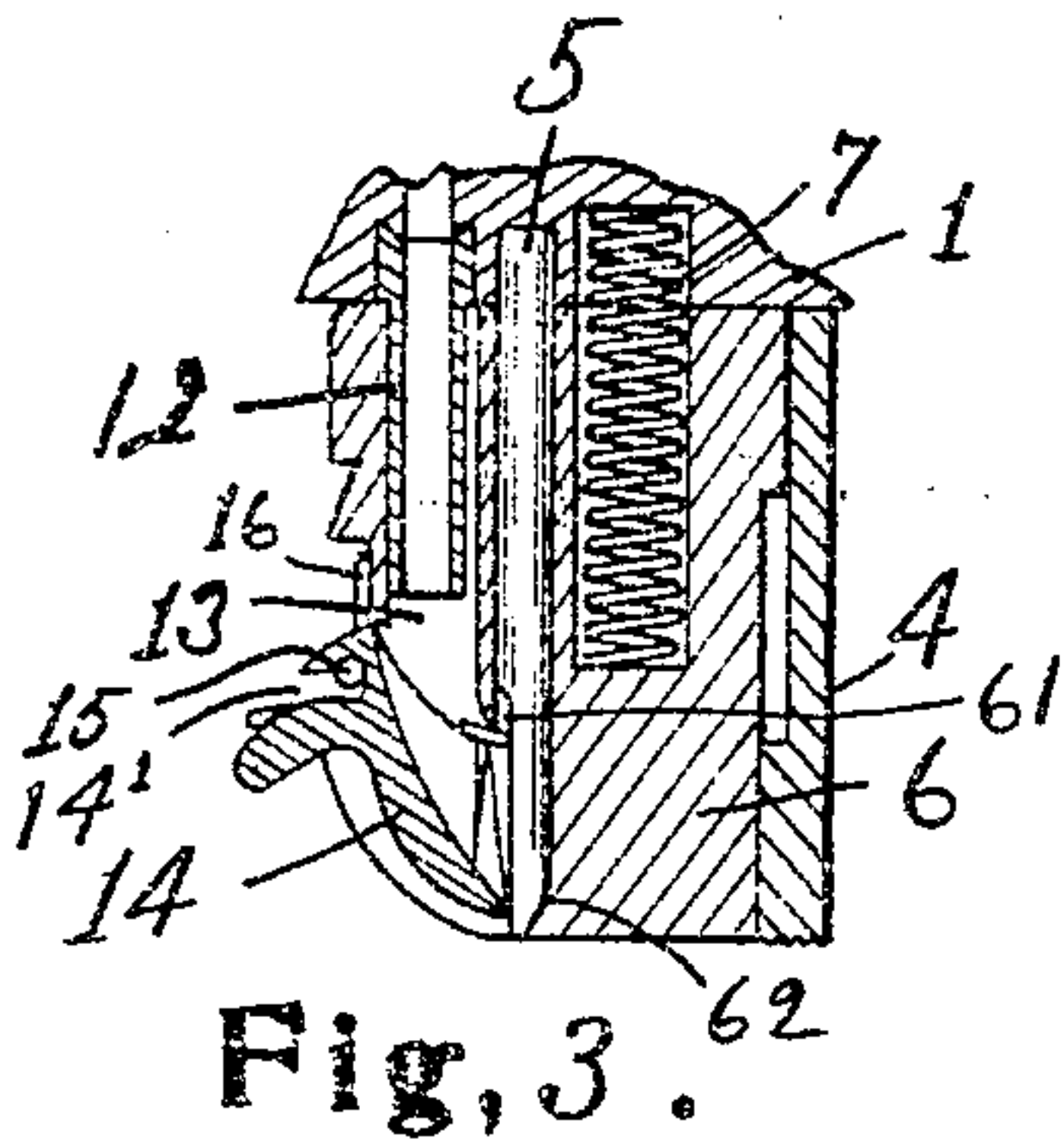


Fig. 6.

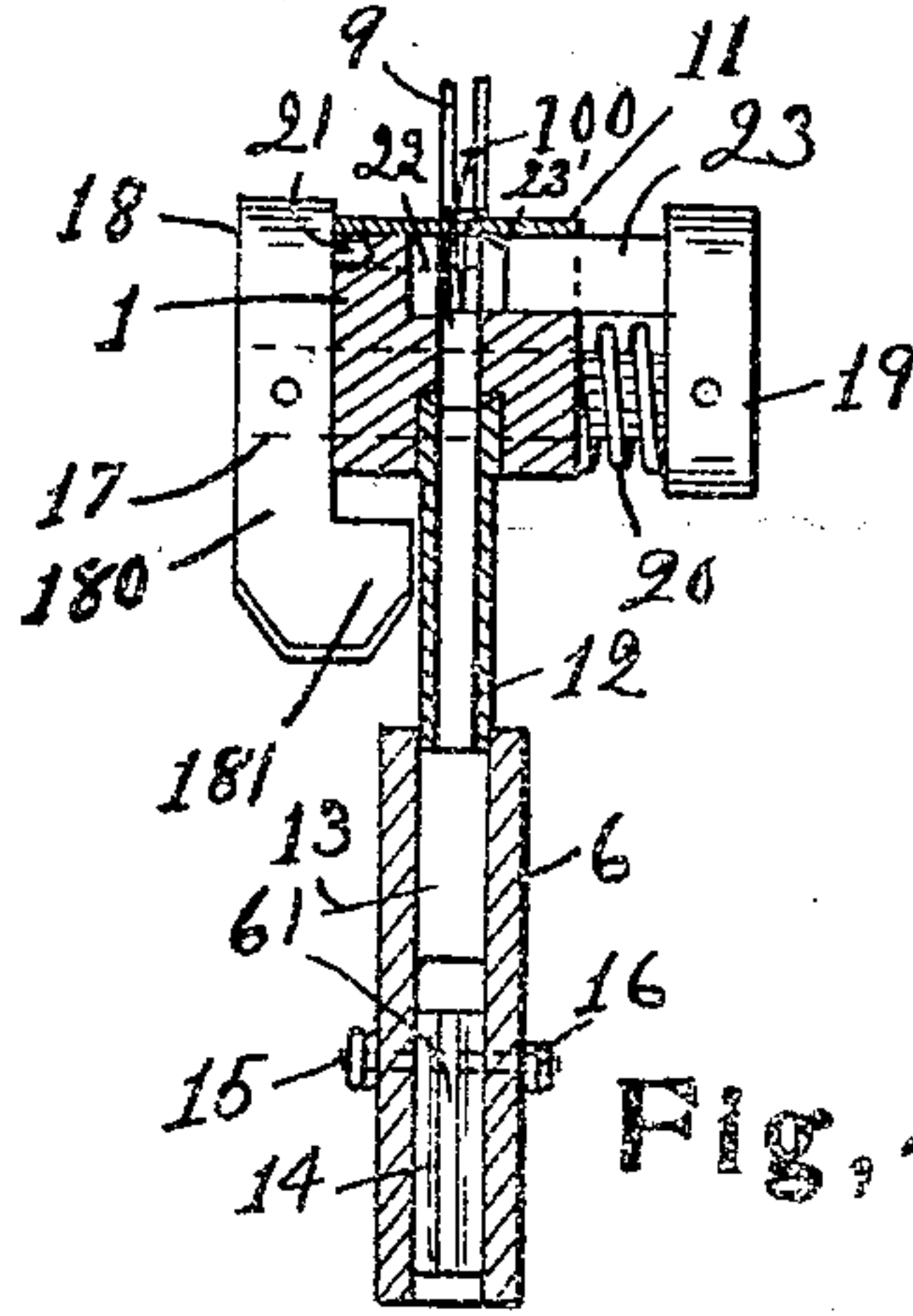


Fig. 4.

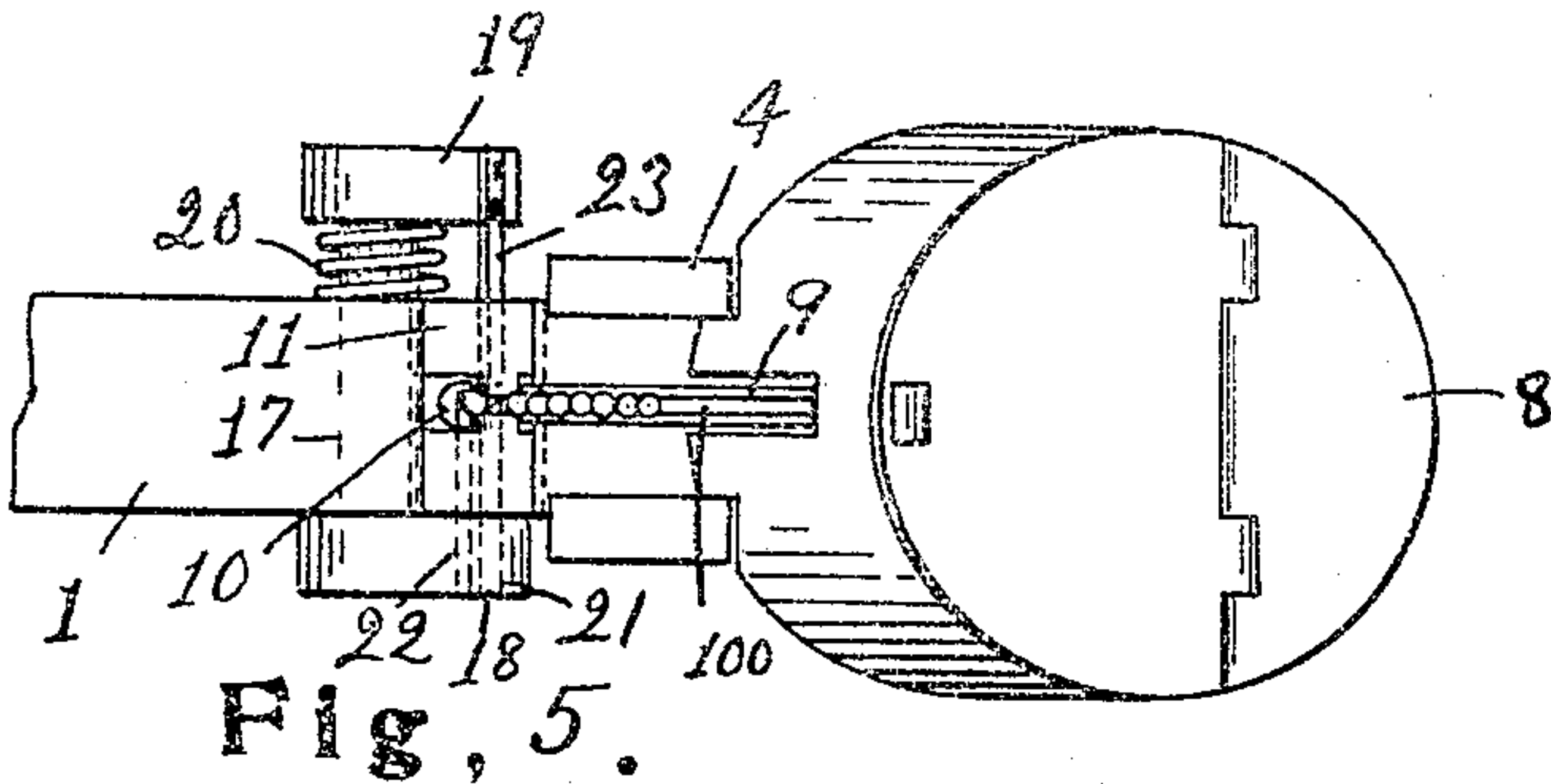


Fig. 5.

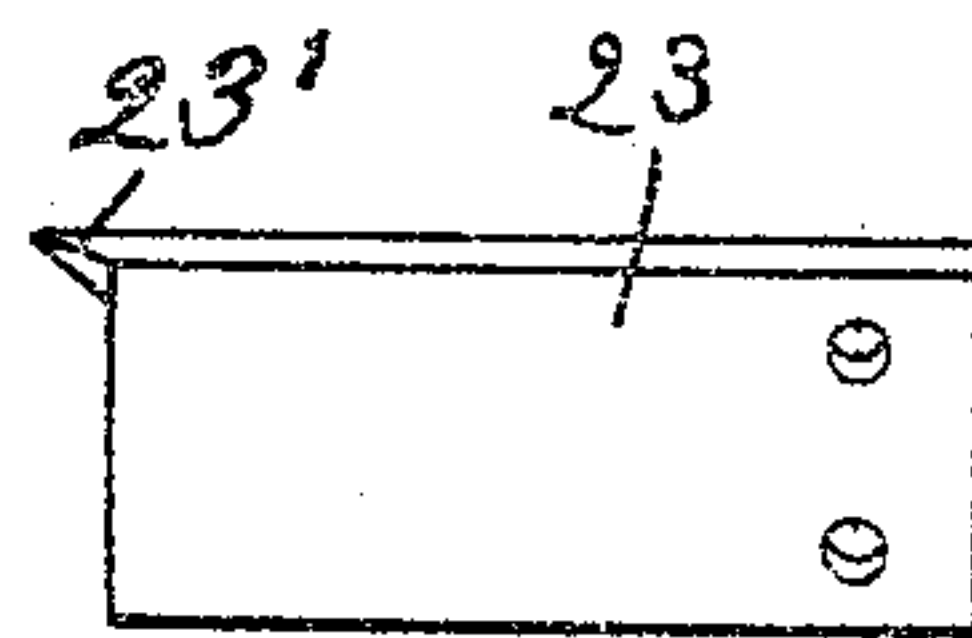


Fig. 7.

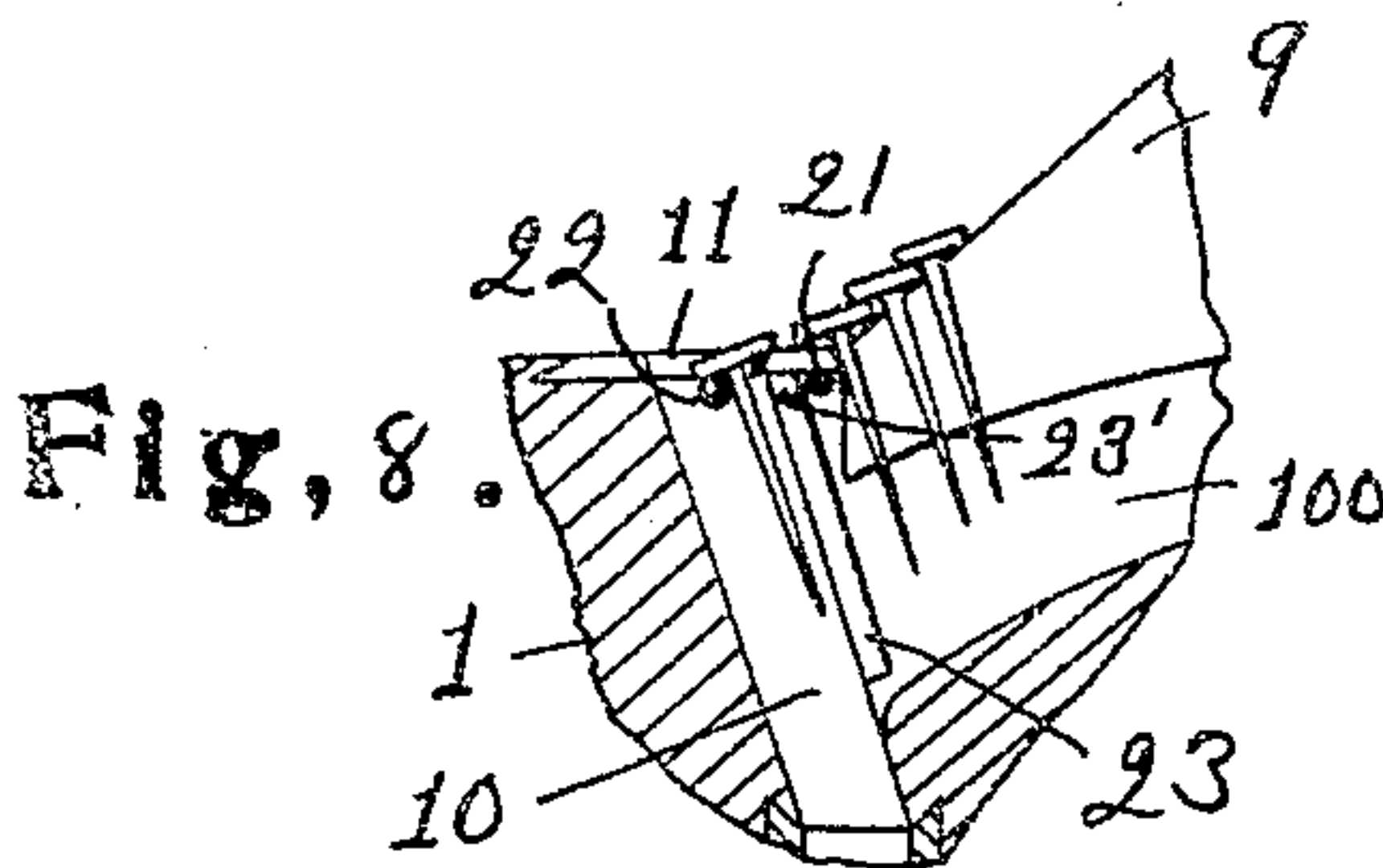


Fig. 8.

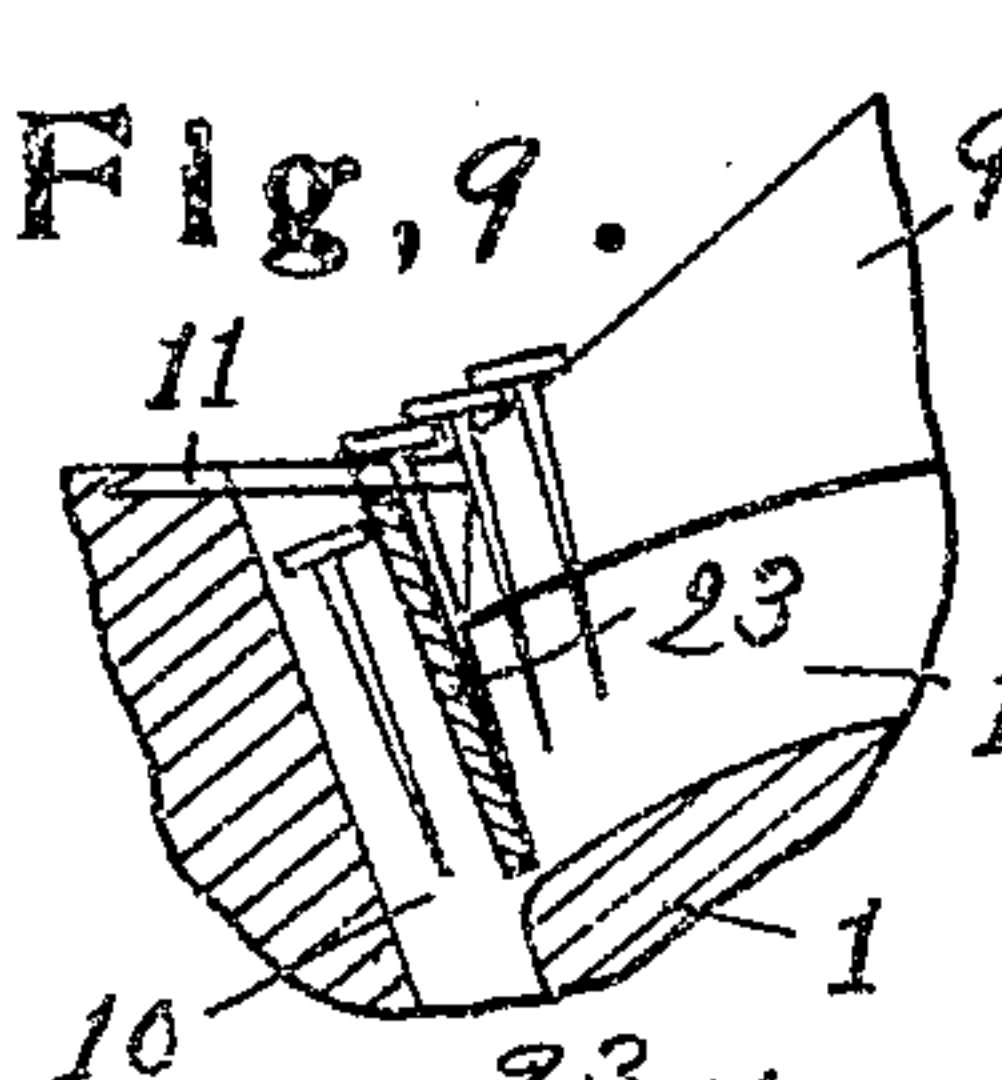


Fig. 9.

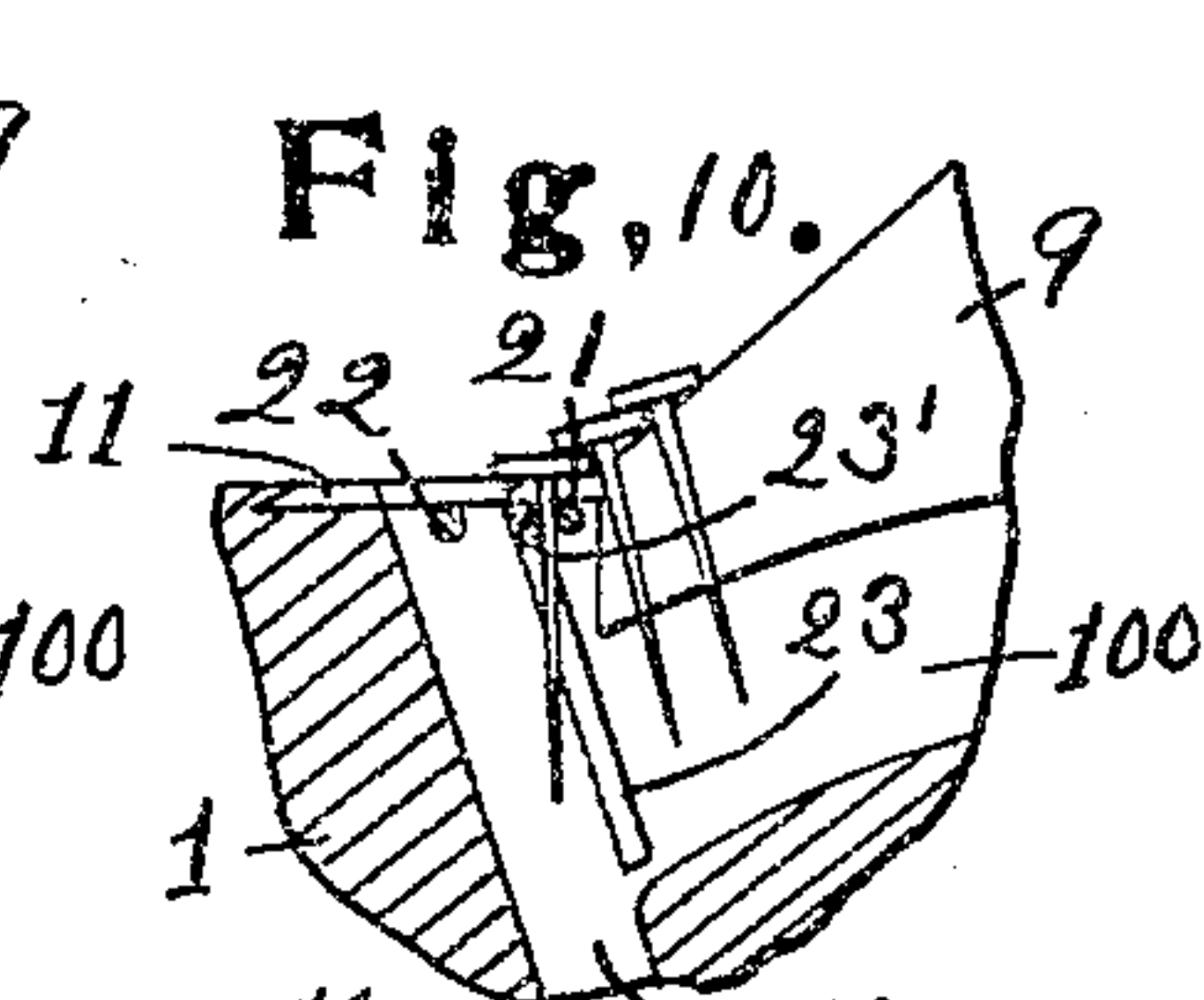


Fig. 10.

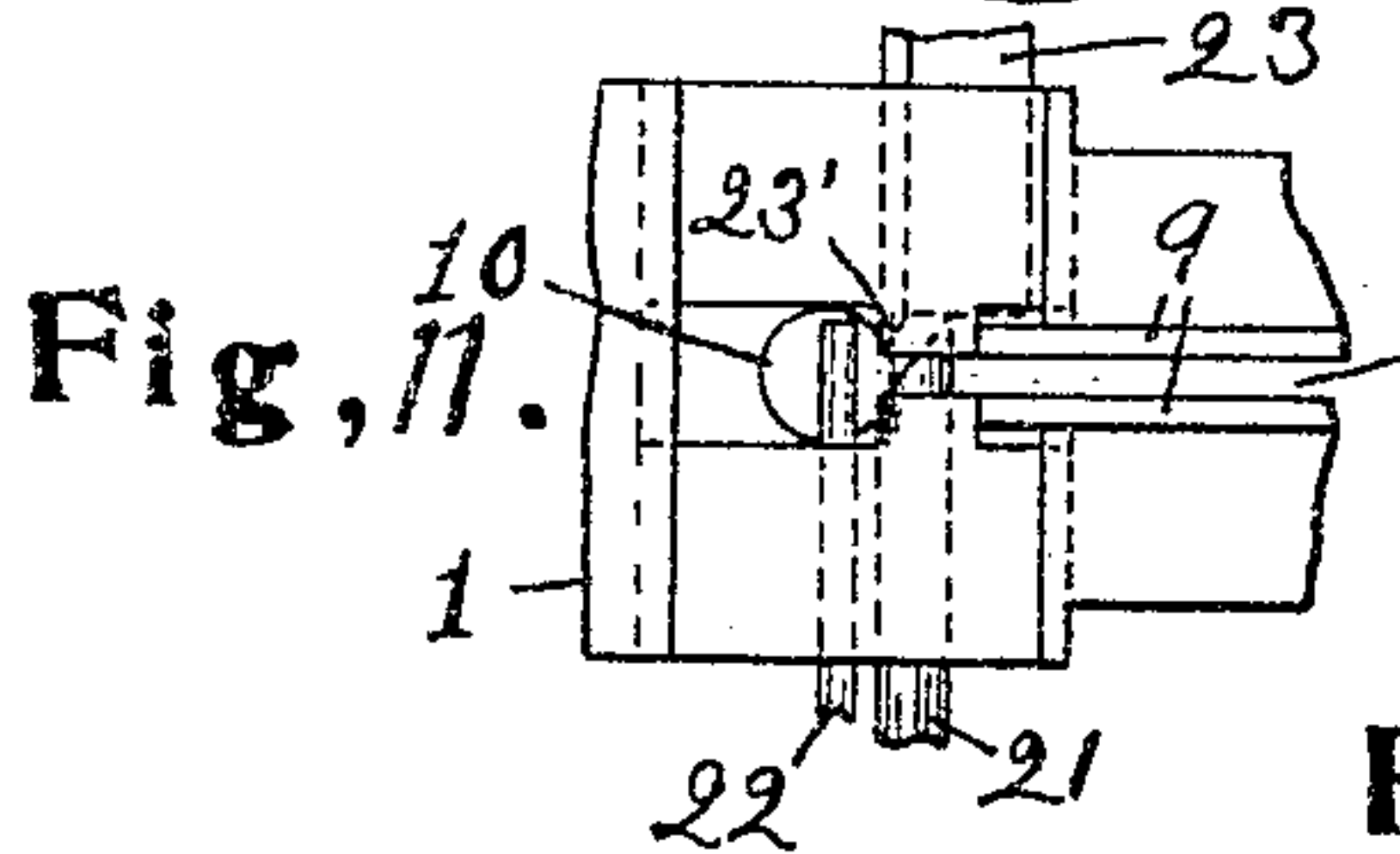


Fig. 11.

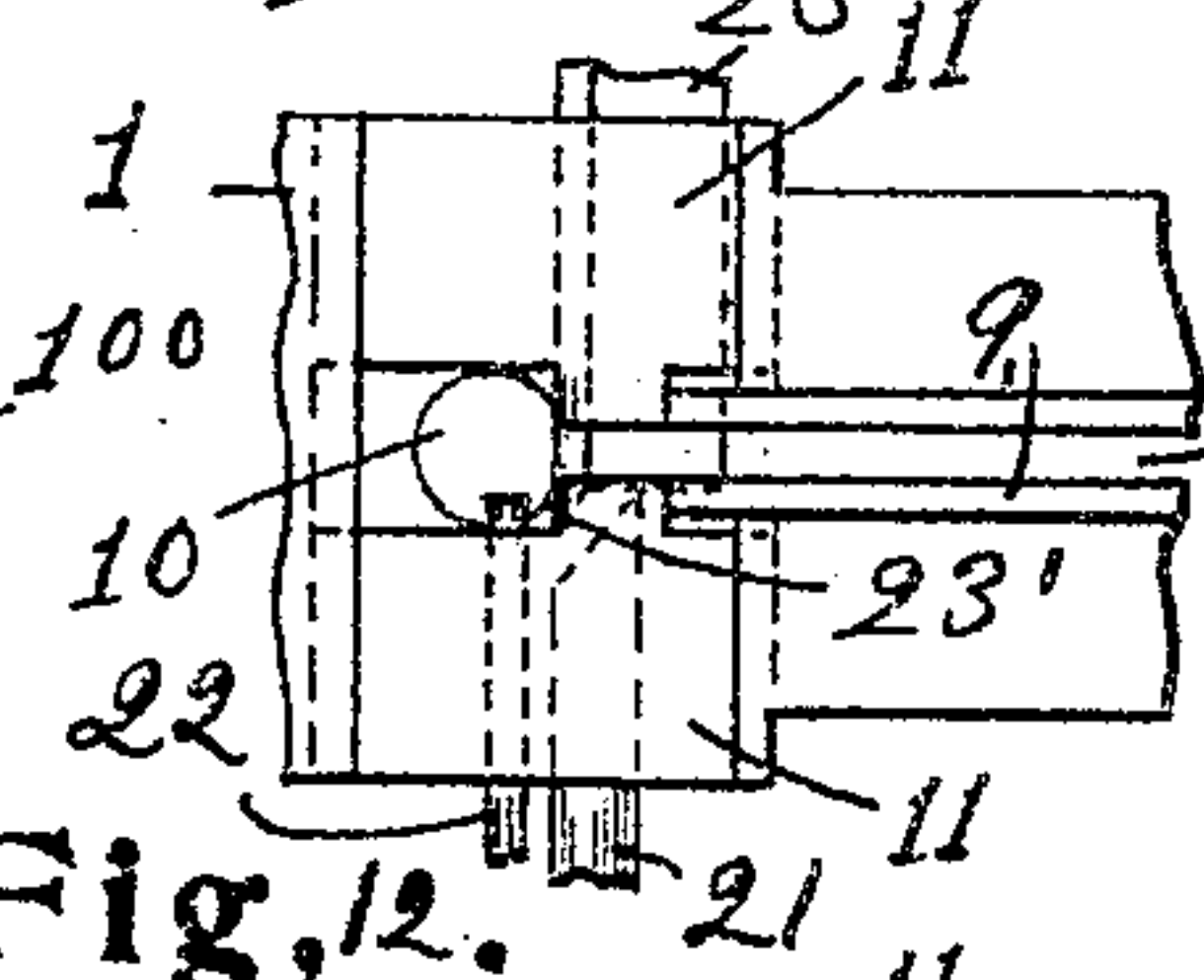


Fig. 12.

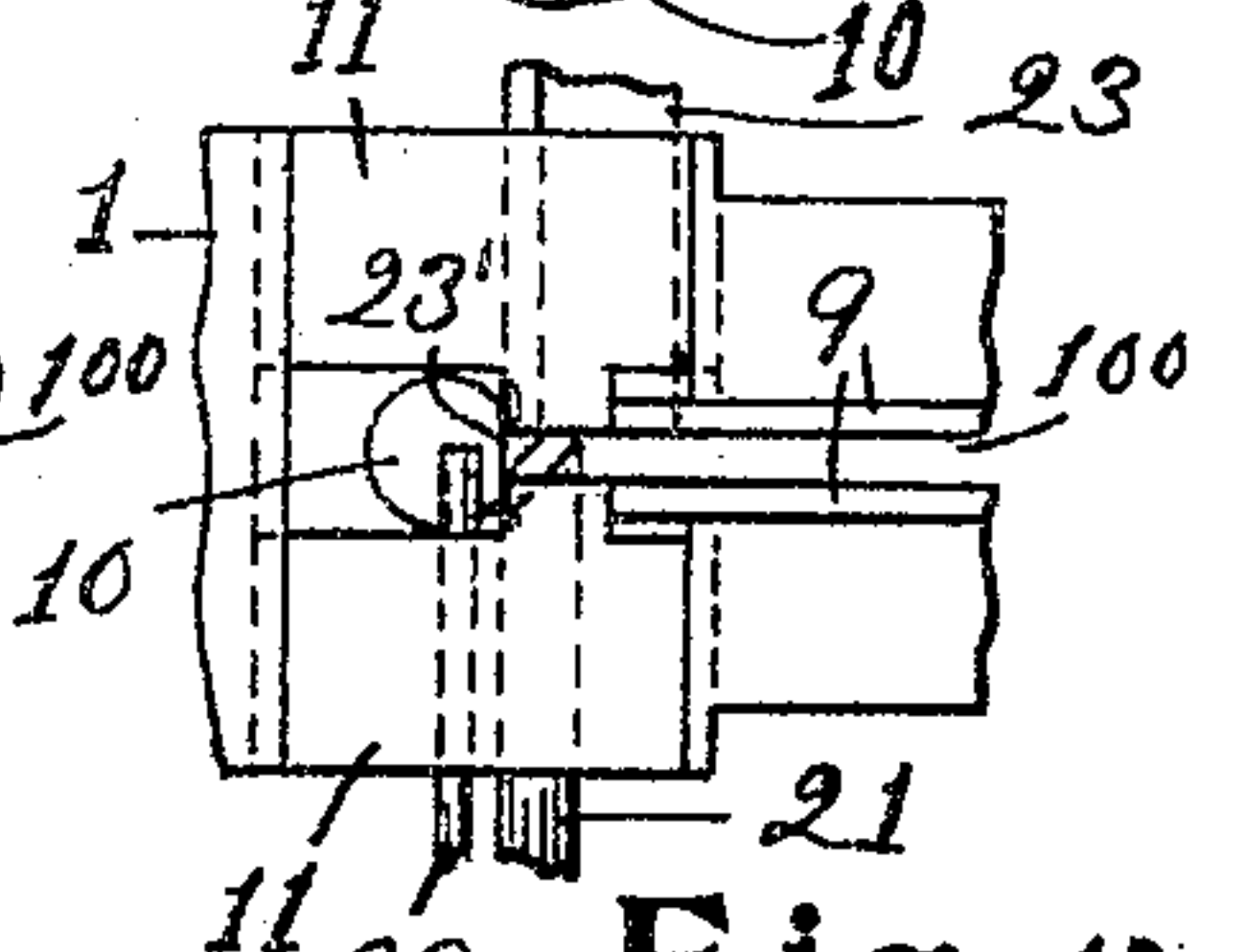


Fig. 13.

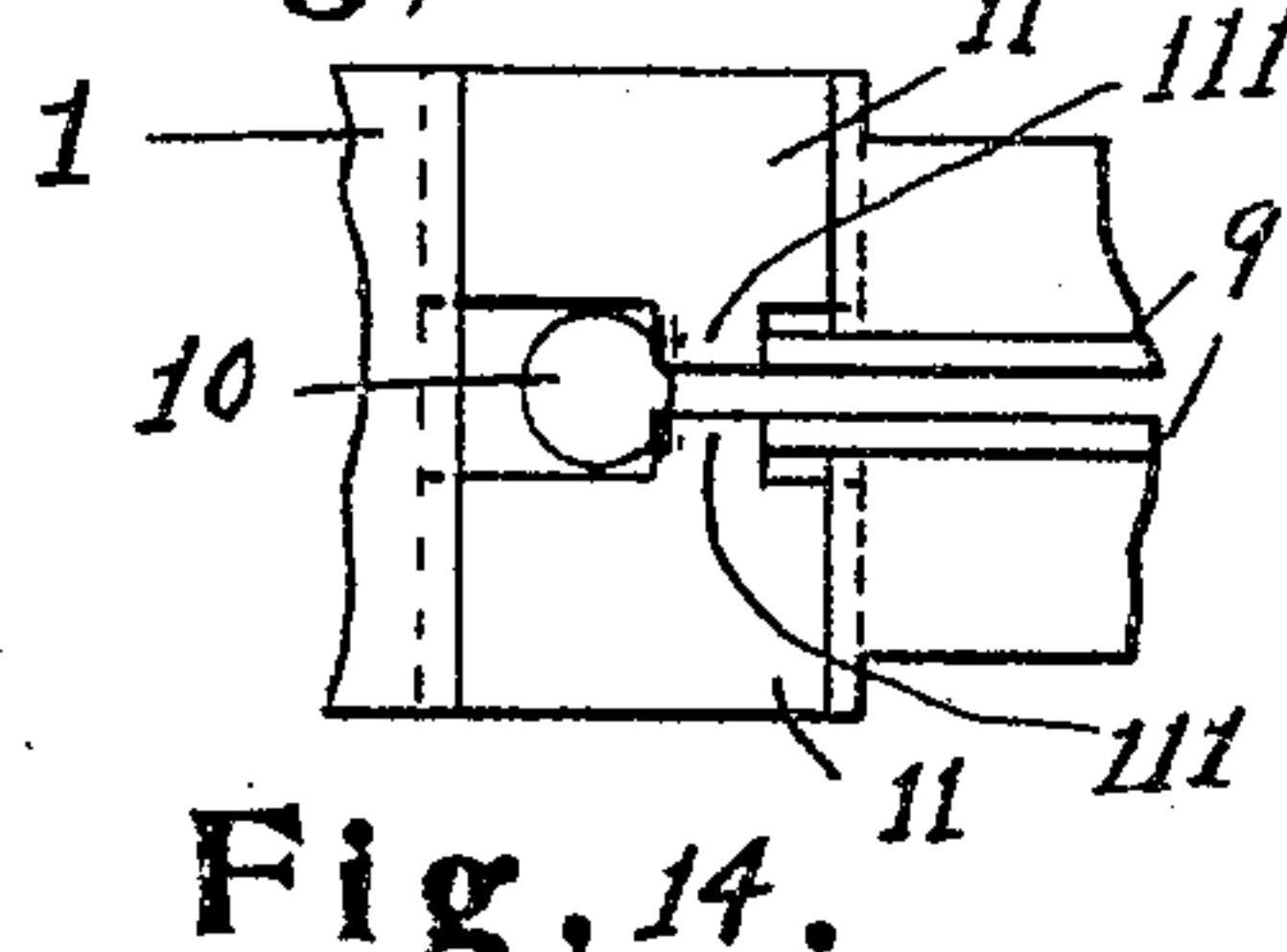


Fig. 14.

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UNITED STATES PATENT OFFICE.

HERBERT B. NEWTON, OF HAVERHILL, MASSACHUSETTS.

HAND TACKING-TOOL.

SPECIFICATION forming part of Letters Patent No. 778,600, dated December 27, 1904.

Application filed September 12, 1903. Serial No. 172,998.

To all whom it may concern:

Be it known that I, HERBERT B. NEWTON, of Haverhill, county of Essex, State of Massachusetts, have invented an Improvement in
5 Hand Tacking-Tools, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to certain improvements in automatic hand tacking-tools of the character shown in the patent to Hebert, No. 696,968, in which the tacks are fed separately from a magazine to a tack-driving mechanism, the feeding and driving mechanism being
10 operated by a reciprocating operating member which is forced inward when the work is struck by the tool.

In producing a practical form of tacking-tool of the character above specified I have
20 experienced great difficulty in securing a tack-feeding means which was both durable and operative under all ordinary conditions, and while the feeding mechanism shown in pending application Serial No. 170,668 is sufficiently durable, yet the means for preventing
25 the tacks from dropping head end first down the tack-passage shown therein will not always perform its intended function.

My invention has for its principal object to
30 provide a tack-feeding mechanism which is so constructed and arranged that all liability of the tacks turning over and dropping head first down the tack-passage is avoided.

In the drawings, Figure 1 represents a side
35 elevation of the head of a tacking-tool provided with my invention. Fig. 2 is a central longitudinal section thereof. Fig. 3 is a similar view of the tack-driving mechanism, showing the parts in a different position. Fig. 4
40 is a cross-section on the line *xx* of Fig. 1. Fig. 5 is a plan view with the raceway-cover removed. Fig. 6 is a detail view of the latch-spring. Fig. 7 is a detail view of the raceway-closing plate. Figs. 8 to 14 are detail
45 views showing the different positions assumed by the parts in delivering the tacks from the raceway into the tack-passage.

The main body 1 of the tool is provided with the usual handles 2 and jaws 3, and a
50 hammer 4 and driver 5 are secured to said

body, said driver being adapted to reciprocate in a passage provided therefor through the operating member 6, the latter being reciprocally mounted in the hammer and pressed outwardly by the spring 7. The tack-magazine 8 is mounted on the front end of the
55 body and is provided with the usual vertical parallel raceway-plates 9, which extend downwardly therefrom in an oblique direction into a slot 100, formed in the body 1, said slot being of sufficient depth to permit the tacks to be suspended therein by their heads upon the
60 upper edges of the plates and leading into the middle of the front side of a tack-passage 10, which passes obliquely through the main body of the tool. The plates 9 terminate at a point a short distance in front of the passage 10, and the remaining portion of the raceway to said passage is formed by flat horizontal plates 11, which are secured to the upper
70 side of the body at opposite sides of said slot and are provided with rectangular-shaped projections 111 at their adjacent ends, arranged so that their upper surfaces are practically continuous with the corresponding
75 edges of the raceway-plates 9 at the ends of the latter. The ends of said projections are flush with the inner sides of said plates, respectively, and the opposite side edges thereof from the raceway are beveled and extend
8 over the upper end of the passage 10 a short distance, as shown in Figs. 8 to 14.

A tube 12 is secured in the under side of the body 1, its upper end being inwardly beveled and fitting in a correspondingly-shaped annular groove formed about the lower end of the tack-passage 10, so that there are no shoulders or other obstructions in the passage at the point where the tube is connected to the
8 body. The tube 12 extends into and is adapted to slide in a tack-passage 13, which extends
90 from end to end of the operating member 6, and the lower end of said passage is closed by a latch 14, which is pivoted at 15 to the member 6 in a slot which leads through the rear
95 side of said member into the passage 13. The front side of said latch is grooved to form a raceway, the supporting edges of which extend obliquely downward across the passage 13 beneath and closely adjacent the partition 1

60, which is integral with the member 6 and separates the tack-passage 13 from the passage in which the driver reciprocates, as described in said application Serial No. 170,668.

5 A tack-receiving chamber 61 is thus formed in the lower end of the driver-passage, the rear side of which is inclosed by the latch 14. The front wall of said chamber is inclined toward the lower end of the latch, as indicated
10 in Figs. 2 and 3 at 62, said projection acting to hold the tack in such a position that it will lie in the general direction of the curve through which the hammer of the tool is moving as it strikes the work, so that the tack may be
15 driven in the desired direction. Said rigid projection also will prevent the head of the tack from slipping to one side of the driver when it is clenched by driving it against an iron-bottomed last.

20 A slot 14' is formed in the latch 14 and leads into the hole therethrough in which the pivot 15 is located, and a spring 16 of bail-like form is secured at its ends in the member 6, encircles pivot 15, and presses against the up-
25 per side of a projecting handle formed on the rear side of the latch, normally holding the lower end of the latch against the inclined wall 62, said slot 14' permitting the ready removal of said latch by swinging it to an extreme rearward position without removing the
30 pivot 15 in case it becomes necessary to remove clogging tacks from the tack-passage.

A rod 17 is reciprocally mounted in the body 1, and arms 18 and 19 are secured thereto and
35 extend at right angles from said rod 17 at opposite sides of the body 1. The arm 18 is provided with a downwardly-extending portion 180, and the latter is provided with an inwardly-extending shoulder 181 in position
40 to be engaged by the upper end of the operating member. A spring 20 on the rod 17, between the body and the arm 19, acts to hold the arms in the position shown in Fig. 5. Two parallel fingers 21 and 22 are rigidly mounted
45 in the arm 18 and extend toward the raceway beneath one of the plates 11. The finger 21 next the magazine is pointed and beveled at its end on the side next finger 22, and the latter is preferably made blunt. The fingers are
50 arranged so that the straight side of finger 21 moves close to the ends of the plates 9 and so that the corresponding side of finger 22 moves at such a distance in the rear of the beveled edges of projections 111 as to permit a tack
55 to be supported between them.

A tack holding and intercepting plate 23 is mounted in the arm 19 and is movable in a slot formed in the body beneath the other plate 11 in a path parallel to the paths of
60 movement of the fingers 21 and 22. The width of said plate is preferably equal approximately to the distance between the under side of plate 11 and the bottom of the raceway-slot. The path of movement of the plate
65 is approximately tangential to the tack-pas-

sage 10, said plate being held in an oblique position, with its upper edge approximately flush with the beveled side edges of projections 111, and being provided with a pointed projection 23' at its upper end corner, the up- 70 per side of which extends in line with the upper edge of the plate and which is of approximately the same length as the width of the raceway. The ends of the fingers 21 and 22 and the broad end of said plate are in approxi- 75 mately the same plane. A raceway-cover 24 completely incloses the top of the raceway and the upper end of passage 10 in the usual manner.

The operation of the above-described feed- 80 ing mechanism is as follows: The tacks being fed into and suspended in the raceway in the usual manner when the operating member is in its outermost position, as shown in Figs. 1 and 2, the fingers 21 and 22 will be moved 85 across the raceway so that the first tack will rest against the separating-finger 21. When the operating member is moved inwardly to the position shown in Fig. 3, the fingers 21 and 22 will be withdrawn, and at the same 90 time the plate 23 will be advanced, so that the tack which was held by the finger 21 will be permitted to pass the same; but as the plate will have been moved across the raceway before this occurs the tack will be intercepted 95 by the plate 23, as shown in Fig. 9. As the member 6 again moves outwardly the plate 23 will be withdrawn from in front of this tack; but the tack will be held by the projection 23' until the tack-retaining finger 22 has 100 crossed the raceway-slot, so that when it finally moves past the projection 23' it will be caught by the finger 22 and one side of its head will be supported upon the beveled edges of the projections 111 and the other side will 105 be supported by the finger 22, so that it will be held in and parallel with the passage 10, as shown in Fig. 8. As the plate 23 is being withdrawn from in front of the tack which it was intercepting the finger 21 will be ad- 110 vanced and its inclined side will pass between this tack and the next succeeding tack, separating the two tacks. The projection 23' at the end of the plate 23 will hold the tack and yet permit it to swing to a vertical posi- 115 tion as the finger 21 passes between the tacks, and as the next tack is supported on the inclined portion of the raceway the bodies of the two tacks will be held so that they diverge, therefore permitting the finger to pass be- 120 tween them more readily. The provision of the projection 23' also prevents defective or crooked tacks from becoming wedged between the plate 23 and the finger 21. When the operating member is again moved inwardly, the 125 finger 22 will be withdrawn from beneath the head of the tack which it was supporting, so that the tack will be free to fall into the passage, as indicated in Fig. 9. At the same time the plate 23 will be advanced, closing the 130

end of the raceway-slot, so that while the action caused by swinging the tool, together with the weight of the head of the tack, would cause the pointed end of the tack to swing back into the raceway and turn over, so that it would drop head first down the passage 10, if the plate 23 were not present, all possibility of this occurrence is prevented, as the diameter of the passage when thus closed is less than the length of the tack. The tack will thus fall until it rests against the side of the driver, as shown in Fig. 3, and then will fall in front of the end thereof when the operating member moves outward.

While I consider it to be especially desirable to have the plate 23 completely close the end of the raceway-groove, so that there will be no chance for the tacks to become caught, nevertheless the plate will perform its function without completely closing it, so that the word "closing" as used in the claims is intended to include any device which closes the raceway-groove sufficiently to prevent tipping of the tacks as they enter the tack-passage.

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

1. An automatic tacking-hammer of the character described comprising a main body having a tack-passage of less diameter than the length of the tacks and a raceway-slot, in which the tacks are suspended, leading into said passage, means for delivering the tacks separately from said slot to said passage and for holding a single tack by its head in position to fall in said passage when liberated, an intercepting-plate movable transversely of said slot at its delivery end, and means for moving said plate to close said slot below the point at which the tack is supported, simultaneously with the liberation of the tack, substantially as described.

2. An automatic tacking-hammer of the character described, comprising a main body having a tack-passage of less diameter than the tacks, and a tack raceway-slot leading into one side of said passage, a tack-holding finger movable across said passage adjacent the end of said raceway and arranged to support a tack in said passage, a plate movable across said raceway adjacent said passage to close said raceway at its delivery end, and means for withdrawing said finger to one side of said passage to release the tack and for simultaneously

moving said plate across the raceway, substantially as described.

3. A hand tacking-tool of the character described, comprising a main body having a tack-passage and a tack raceway-slot leading into one side of said passage, means for supporting the tacks by their heads in said slot, a tack-separating finger and a tack-holding finger movable transversely of said raceway from one side thereof, an intermediate holding and intercepting plate movable across said raceway from the opposite side thereof adjacent said passage to close said raceway at its delivery end, means for withdrawing said fingers to one side of said raceway and for simultaneously moving said plate across the same, substantially as described.

4. A hand tacking-tool of the character described, comprising a main body having a tack-passage, and a tack raceway-slot leading into one side of said passage, means for supporting the tacks by their heads in said slot, a tack-separating finger and a tack-holding finger movable transversely of said raceway from one side thereof, a holding and intercepting plate movable across said raceway adjacent said passage to close said raceway at its delivery end, means for withdrawing said fingers to one side of said raceway and for simultaneously moving said plate across the same, substantially as described.

5. A hand tacking-tool of the character described, comprising a main body having a tack-passage, and a tack raceway-slot leading into one side of said passage, means for supporting the tacks by their heads in said slot, a tack-separating finger and a tack-holding finger movable transversely of said raceway from one side thereof, a holding and intercepting plate having a projection at its end overlapping the end portion of said fingers, said plate being movable across said raceway adjacent said passage to close said raceway at its delivery end, means for withdrawing said fingers to one side of said raceway and for simultaneously moving said plate across the same, substantially as described.

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

HERBERT B. NEWTON.

Witnesses:

LOUIS H. HARRIMAN,
H. B. DAVIS.