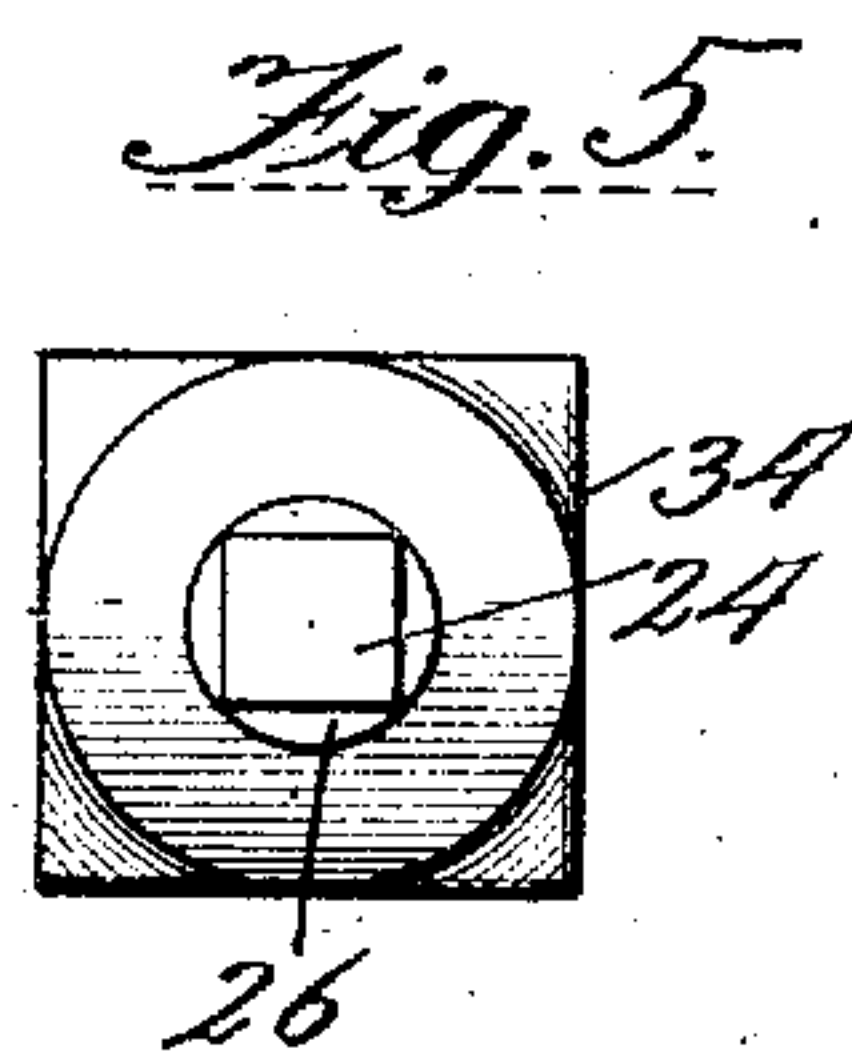
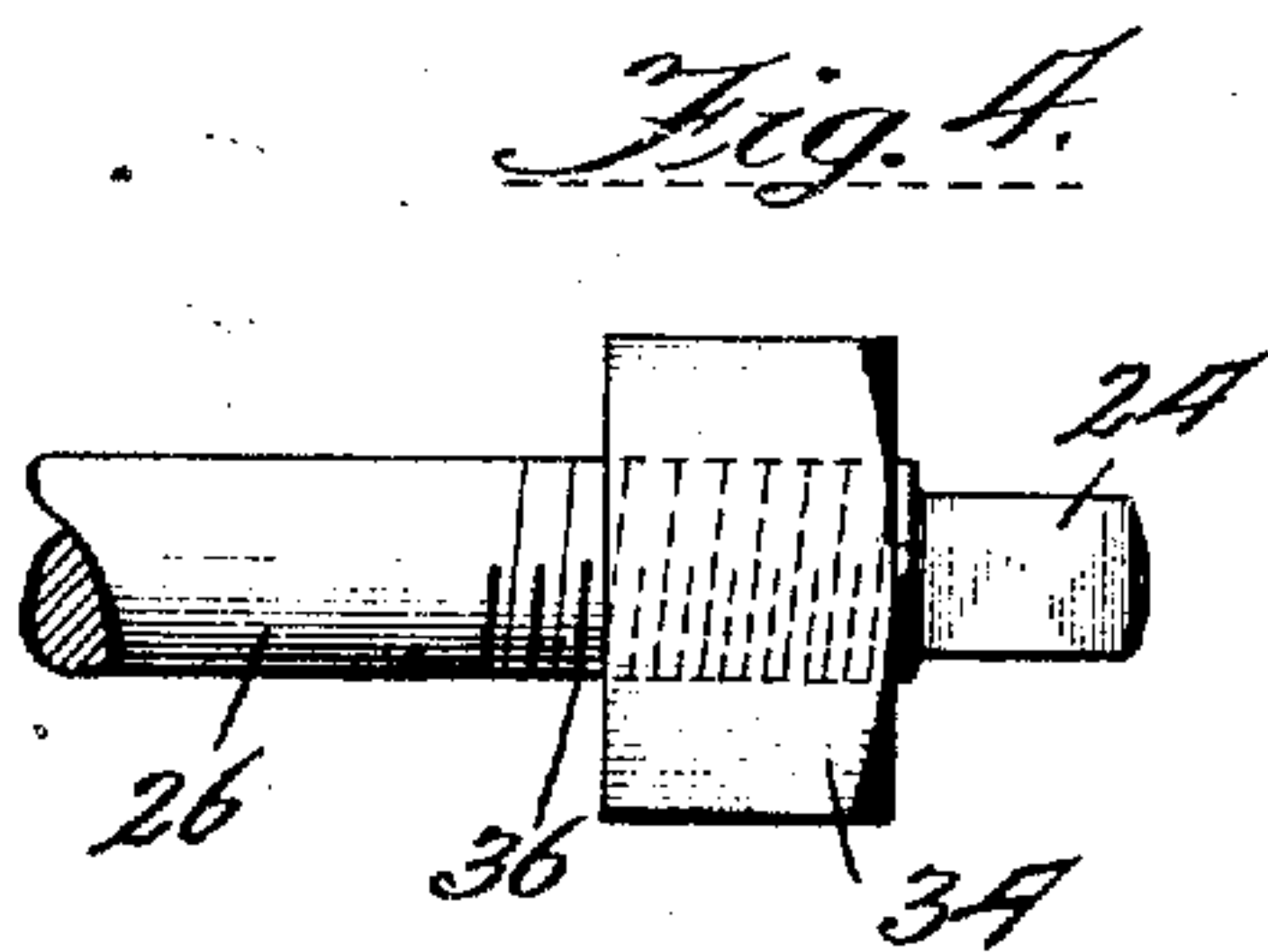
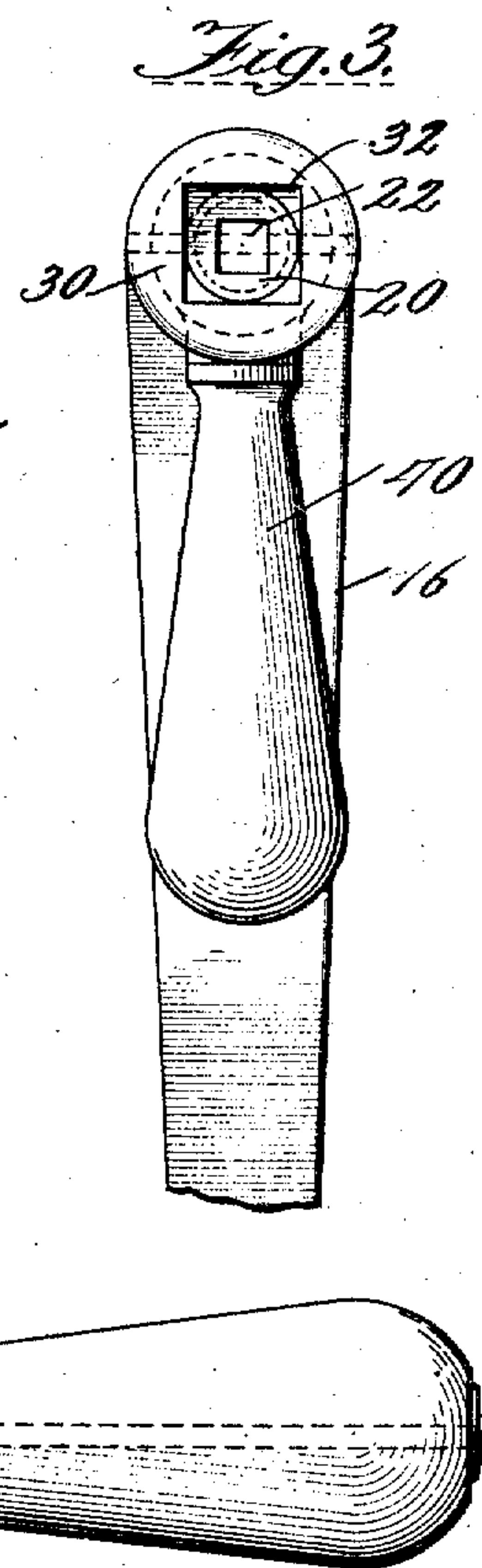
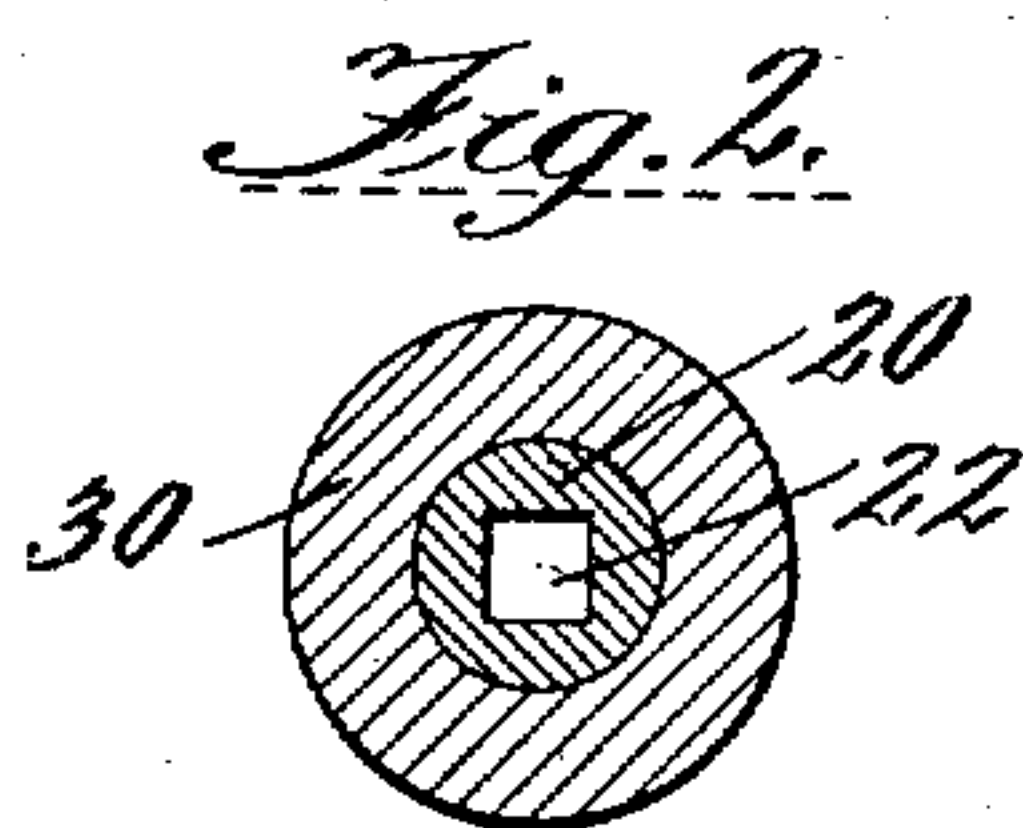
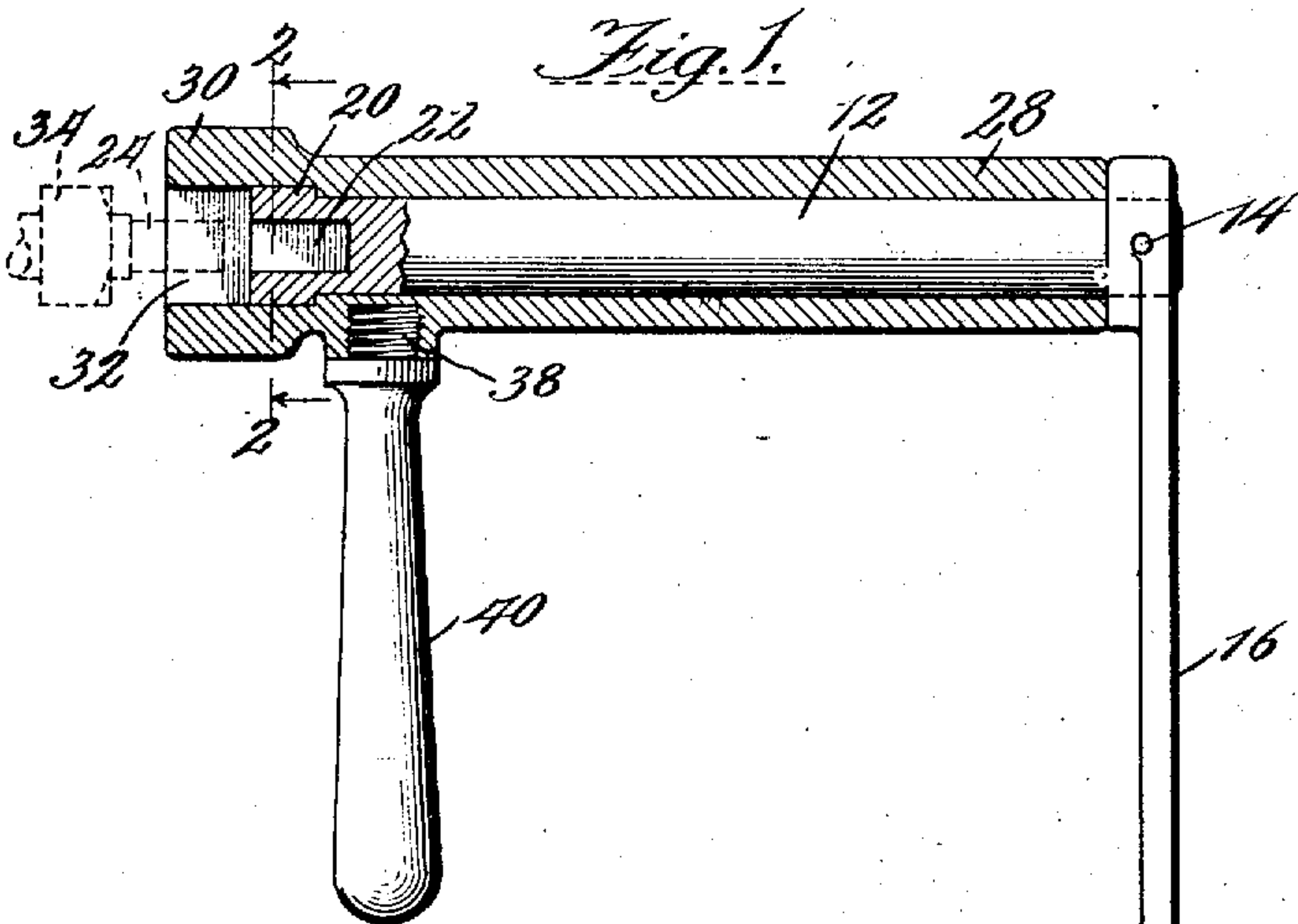


956,467.

Patented Apr. 26, 1910.

2 SHEETS—SHEET 1.



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COMBINATION WRENCH.
APPLICATION FILED MAR. 31, 1909.

956,467.

Patented Apr. 26, 1910.

2 SHEETS—SHEET 2.

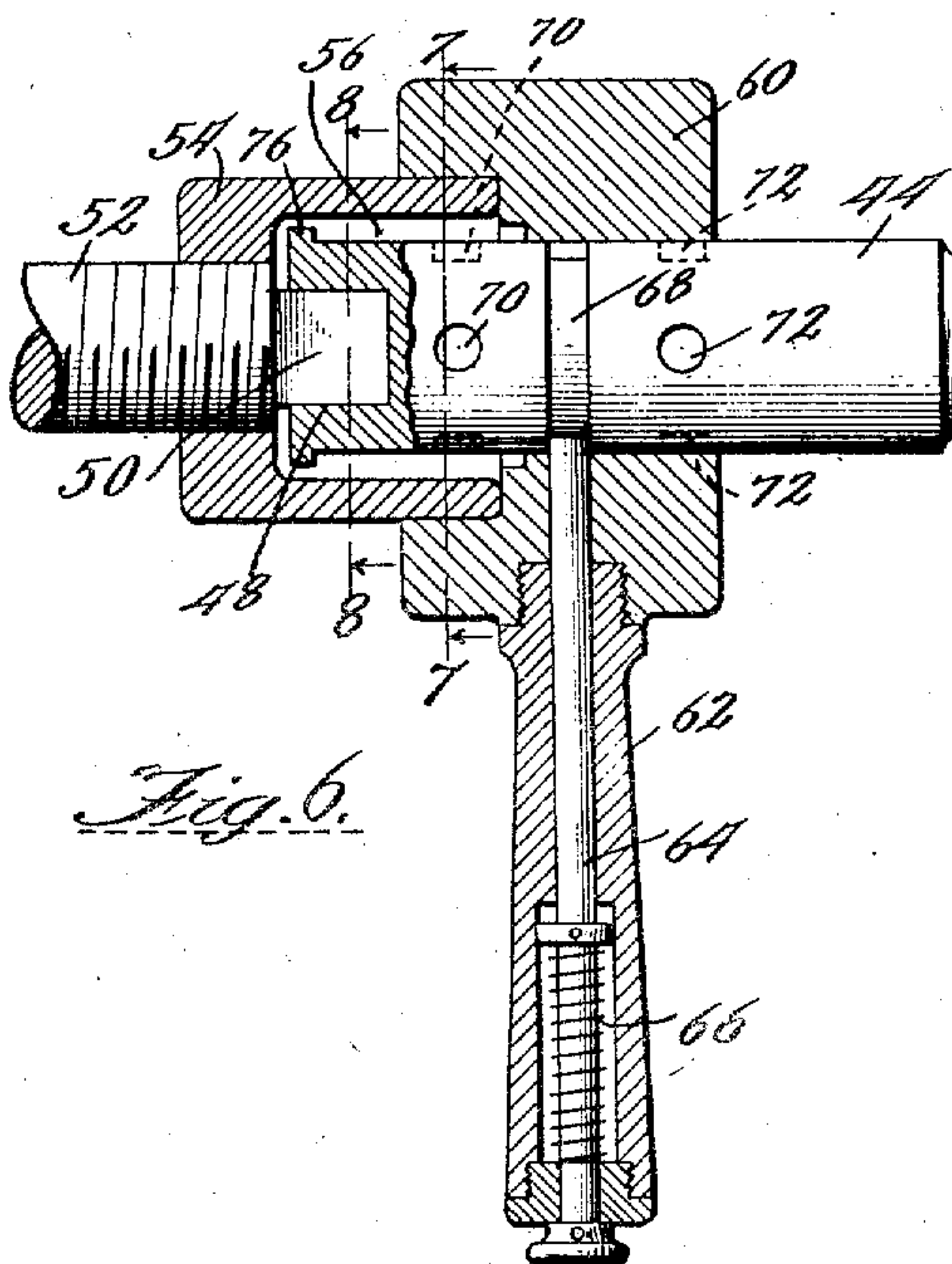


Fig. 6.

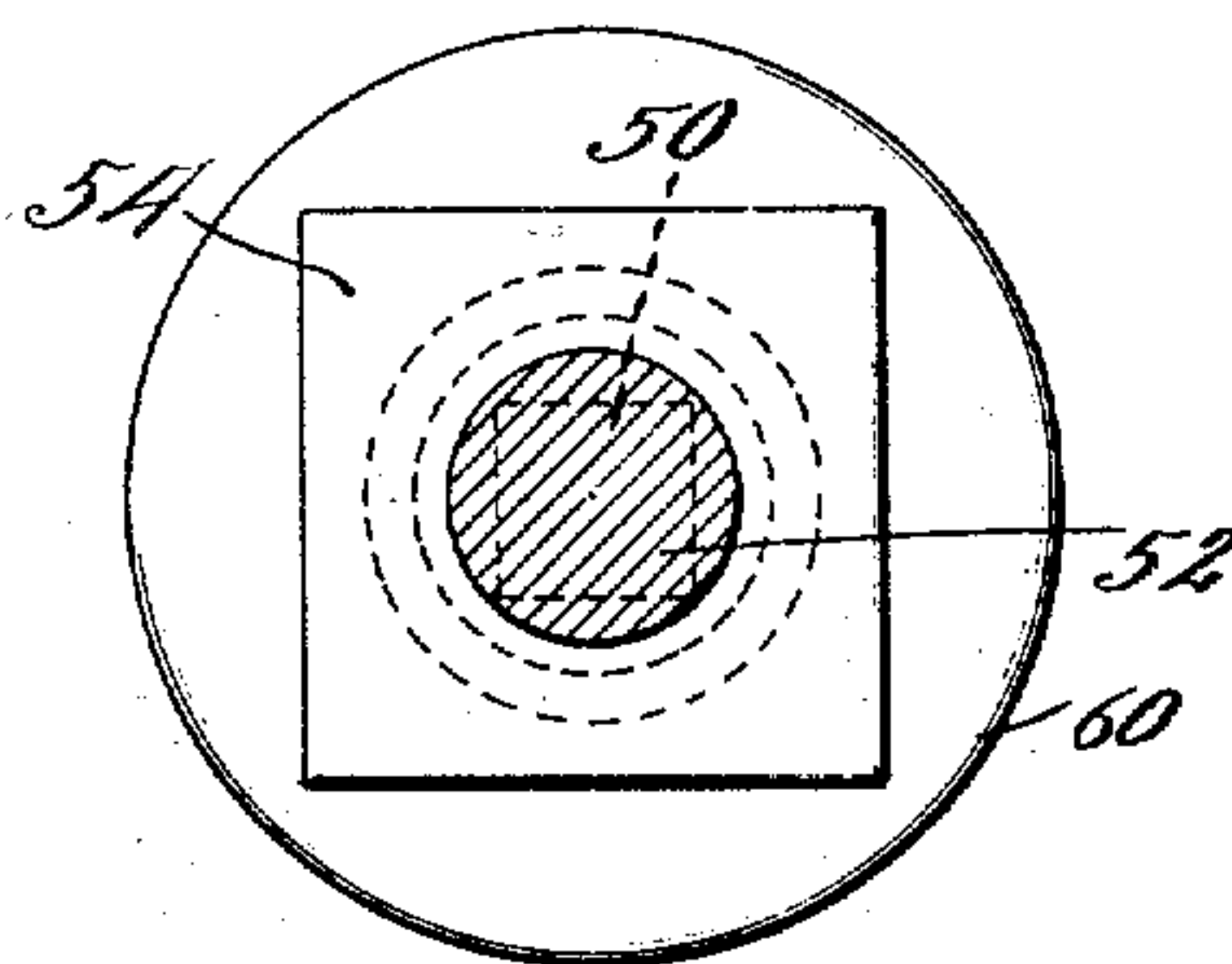


Fig. 9.

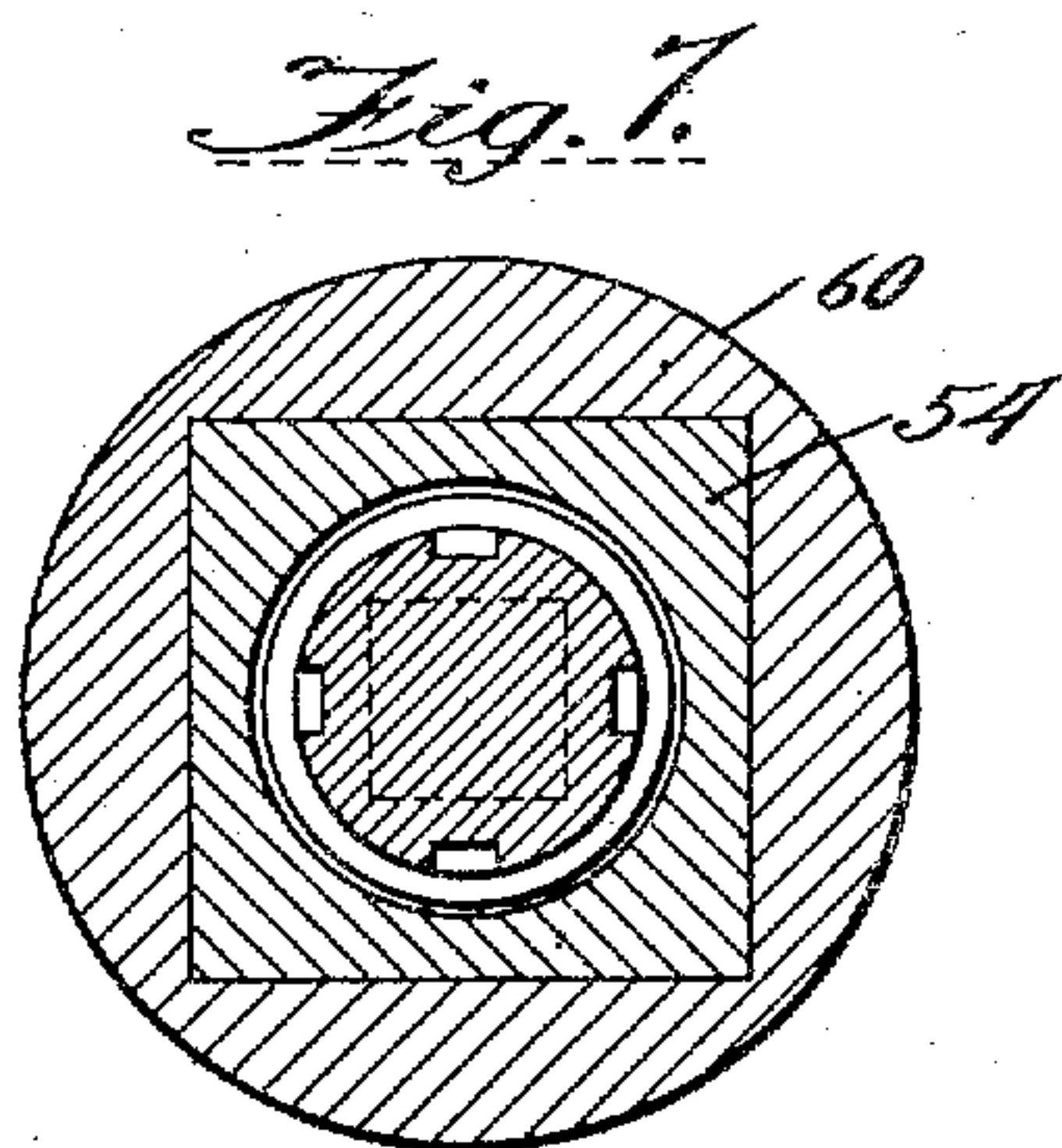


Fig. 7.

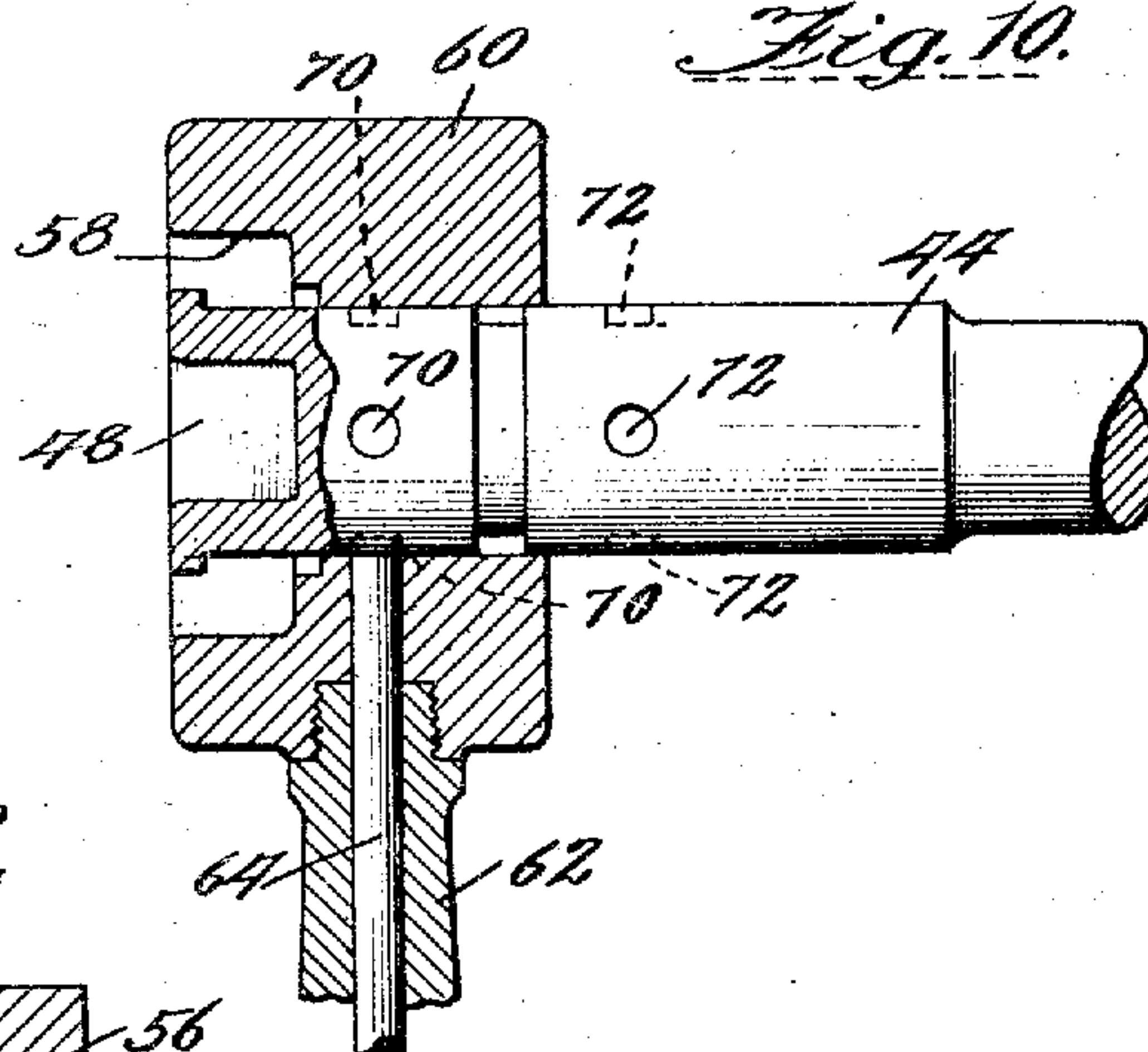


Fig. 10.

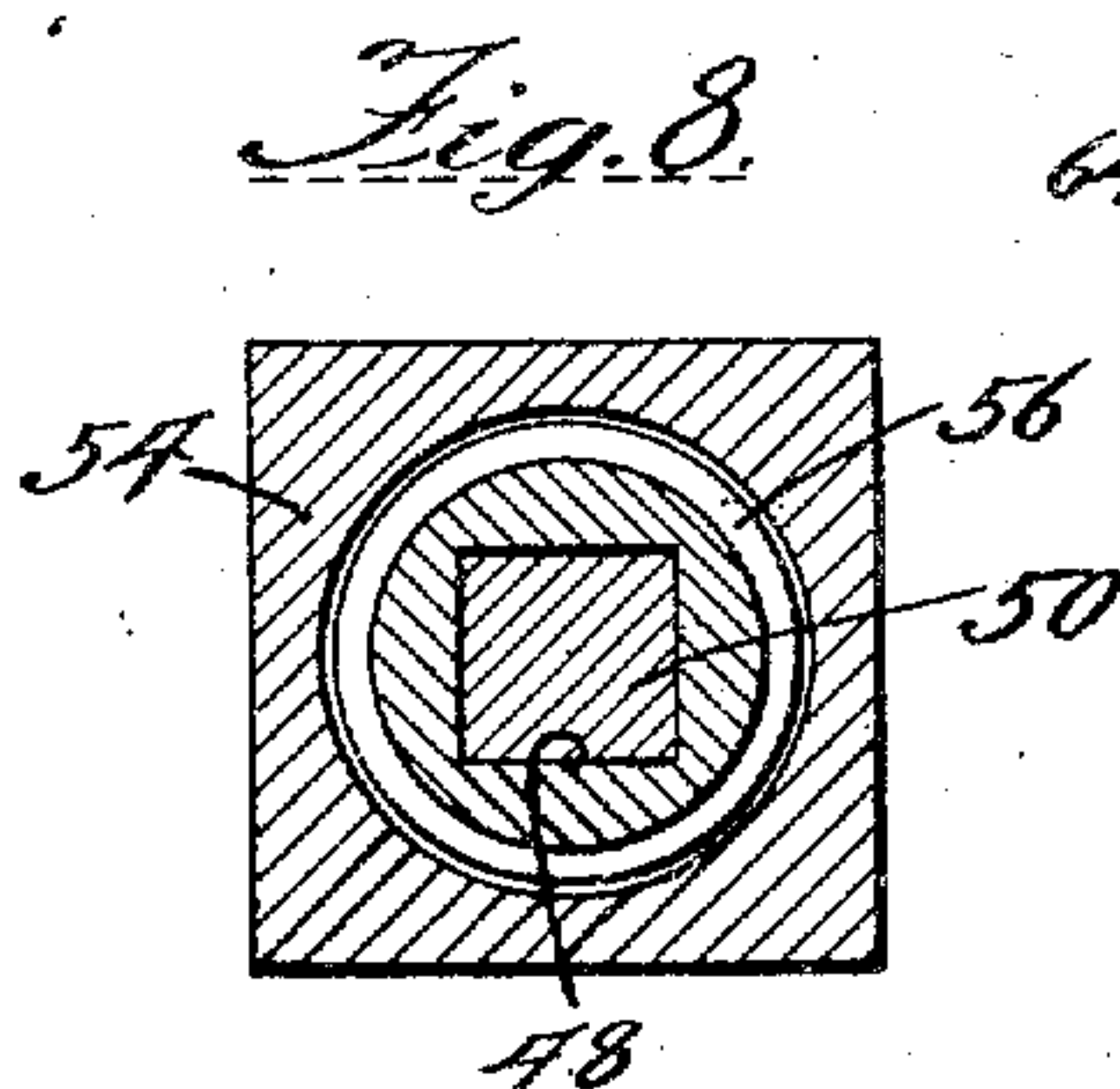


Fig. 8.

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UNITED STATES PATENT OFFICE.

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COMBINATION-WRENCH.

956,467.

Specification of Letters Patent.

Patented Apr. 26, 1910.

Application filed March 31, 1909. Serial No. 486,973.

To all whom it may concern:

Be it known that I, GEORGE E. ANDERSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Combination-Wrenches, of which the following is a specification.

This invention relates to wrenches and its object is to provide a wrench by which a shaft, bolt or screw member and a nut thereon may each be independently engaged by the wrench mechanism and either one of them be rotated as desired.

The invention consists in a device capable of carrying out this object which is neat and compact in form, and can be conveniently made and operated.

More in detail the invention consists in means by which one of the wrenches proper may be rigidly connected to the other in different positions whereby the operating handle of the latter wrench may selectively operate either wrench.

Referring to the drawings, Figure 1 is a side view partially in section of the simplest form of the device of this invention; Fig. 2 is a sectional detail view on the lines 2—2 of Fig. 1; Fig. 3 is an end view of the device of Fig. 1, looking at it from the left side; Fig. 4 shows a bolt or rod and nut thereon adapted to be operated by the device of this invention; Fig. 5 is an end view of the parts of Fig. 4, looking at them from the right side; Fig. 6 is a detail view, partially in section, of a modified form of the device; Fig. 7 is a sectional detail view on the line 7—7 of Fig. 6; Fig. 8 is a corresponding sectional detail view on the line 8—8 of Fig. 6; Fig. 9 is an end view taken at the left hand side of Fig. 6; and Fig. 10 is a view corresponding to Fig. 6 showing the parts in a different adjusted position.

Referring again to the simple form of construction, a cylindrical shaft 12 is provided, to which is rigidly attached by means of a pin 14, a crank arm 16 and handle 18. The opposite end of this shaft 12 carries a cylindrical enlargement or flange 20 in the interior of which is a non-circular, in the particular instance here shown a square, hole 22 adapted to act as a wrench when in en-

gagement with a correspondingly shaped end 24 on the shaft 26. This shaft beyond the left of the figure and not shown, may be either an ordinary shaft, bolt or a screw as desired—it forms no part of the invention. Journaled upon this shaft 12 between the flange 20 and the crank arm 16 is a tubular member 28, whose outer or left hand end, as shown in the drawing, carries an enlargement 30 within which is formed a non-circular, in the particular instance here shown a square, opening 32 adapted to engage a nut 34 screw threaded at 36 upon the shaft 26 heretofore described. Rigidly connected to this tubular member 28 by screw threads 38 or any other suitable means is a wrench handle 40. The fit between collar 28 and the rod or shaft 12 is loose enough so that either may be freely rotated with reference to the other, and the handles 40 and 18 are far enough apart so that the user may take hold of the handle 40 without danger of injuring his hand or fingers by contact with the crank arm 16 as either one of these members is rotated. The result of this construction is that when the simple wrench device of Figs. 1, 2 and 3 is applied to the parts shown in Fig. 4, the interior socket 22 engages the non-circular portion 24 of the shaft 26 while the exterior socket 32 engages the nut 34 and the operator may, if desired hold the handle 40 stationary and by the use of the handle 18 rotate the interior wrench, thus rotating the shaft 26 while the nut 34 remains stationary, or he may, by holding the handle 18 stationary and rotating the handle 40, move the nut 34 upon the stationarily held shaft 26. The two sockets being concentric and mounted in one tool, the device has the distinct advantage of doing away with the use of two tools, which have heretofore been necessary and greatly simplifies the work required and the amount of attention required in manipulating the nut 34 with reference to the shaft 26 or vice versa.

In the modified form of the device shown in Figs. 6 to 10 inclusive, a shaft 44 is provided with an operating handle 46 like handle 16—18 and at the opposite end of the shaft 44 is an interior non-circular socket opening 48 corresponding to the opening 22

in Figs. 1, 2 and 3. This socket opening 48 engages the non-circular end 50 upon a shaft 52 corresponding to shaft 26. The nut 54 used upon the shaft 52 is of a different construction from that shown in the preferred form in that it is considerably larger and has in its face a recessed opening 56 within which the entire socket member carried by or integral with the shaft 44 may enter when the wrench opening 48 engages the non-circular end 50 of the shaft 52. The outer circumferential surface of the nut 54 is made non-circular, in the particular instance here shown square, as best seen in Figs. 7 and 9, so as to fit into a corresponding socket opening or recess 58 formed within the outer wrench member 60, which is, in this form of the device, made rather short and thick, as best seen in Figs. 6 and 10, and journaled upon the shaft 44. Rigidly secured to this outer wrench member 60, by any suitable means, is a handle 62, corresponding to the handle 40. Within this handle 62 is a latch pin or rod 64 normally urged upward when viewed as Fig. 6 by spring 66, adapted to enter an annular groove 68 formed in the circumference of the rod 44 at the position shown in Fig. 6 wherein the two parts of the wrench simultaneously engage the member 50 and the nut 54 as shown; exactly as the wrench of Figs. 1, 2 and 3 engages the parts it is designed to operate. This groove 68 is of sufficient size so that the end of the pin 64 enters it loosely and does not interfere with the ready rotation of either the wrench members 60 or 44 in exactly the same manner as the parts of the preferred form of the wrench are operated. Parallel with this annular groove 68 and at a distance therefrom are two rows of circular holes 70 and 72 respectively, extending around the circumference of the shaft 44 and in which the end of the rod 64 may be selectively inserted. The row of holes 70 is, as shown in Fig. 10, at such a position that when the wrench member 60 is moved forward or to the left in Fig. 6, to the position shown in Fig. 10, and the pin 64 is inserted in one of the holes 70, the wrench member 60 will therefore be rigidly locked upon the rod 44 in the position shown in which, when the outer wrench member 60 is applied to the nut 54, the inner wrench member does not engage at all the member 52, with the result that the operator may rotate the handle 46 a reasonable substantial distance at least, without any interference or obstruction by the member 50. The row of holes 72 is so located that when the outer wrench member 60 is moved toward the right in both Figs. 6 and 10 until the pin 64 engages one of the holes 72, the outer wrench member is sufficiently far back upon

the rod 44 so that the operator may, by the use of the handle 46, use the inner wrench member to rotate the shaft 52 without the outer wrench member coming in contact with the nut 54. The outer wrench member 60 is prevented from dropping off the shaft 44 by the use of the flanged collar 76.

It may be properly stated that this device is primarily designed for use in connection with a school desk wherein the shaft 26 or 52 operates an elevating mechanism controlling a part of the desk and the nut 34 or 54 serves the purpose of locking said shaft and attached parts in adjustable position, all as more fully appears in a patent application for such a desk filed herewith, Serial No. 486,974, but the device is manifestly capable of use in many other sorts of mechanisms.

The word "socket" is used in the claims to cover and include any sort of noncircular form or device adapted to engage with a corresponding part on an adjacent bolt, nut, shaft, tube, or the like.

What I claim as new, and desire to secure by Letters Patent, is:

1. A wrench comprising one socket member, a handle for rotating the same, a second socket member concentrically journaled about the first member, and an independent handle engaging the second socket member for controlling it.

2. In a mechanism of the class described, the combination of a shaft carrying at one end a socket and at the other end means for rotating it, a bearing block rotatably and slidably mounted upon the shaft, a socket member carried by the bearing block, means for rotating the bearing block about the shaft, and mechanism for detachably locking the bearing block in selected longitudinal position upon the shaft while permitting rotation thereof.

3. In a device of the class described, the combination of two concentric members each provided with sockets adapted to engage different objects, a journal bearing between the two members whereby either may be rotated with reference to the other, independent mechanisms for operating each of the socket members, and means for detachably locking the two sockets together whereby rotating either socket will rotate the other.

4. In a mechanism of the class described, the combination of a shaft carrying at one end a socket and at the other end means for rotating it, a bearing member rotatably and slidably mounted upon the shaft, a socket carried by the bearing member, means for rotating the bearing member about the shaft, mechanism for detachably locking the bearing member in selected longitudinal position

upon the shaft while permitting rotation thereof, and means whereby the bearing member may be positively locked upon said shaft at a distance along the shaft from said position in which rotation is permitted as stated.

In witness whereof, I have hereunto sub-

scribed my name in the presence of two witnesses.

GEORGE E. ANDERSON.

Witnesses:

DWIGHT B. CHEEVER,
C. J. CHRISTOFFEL.