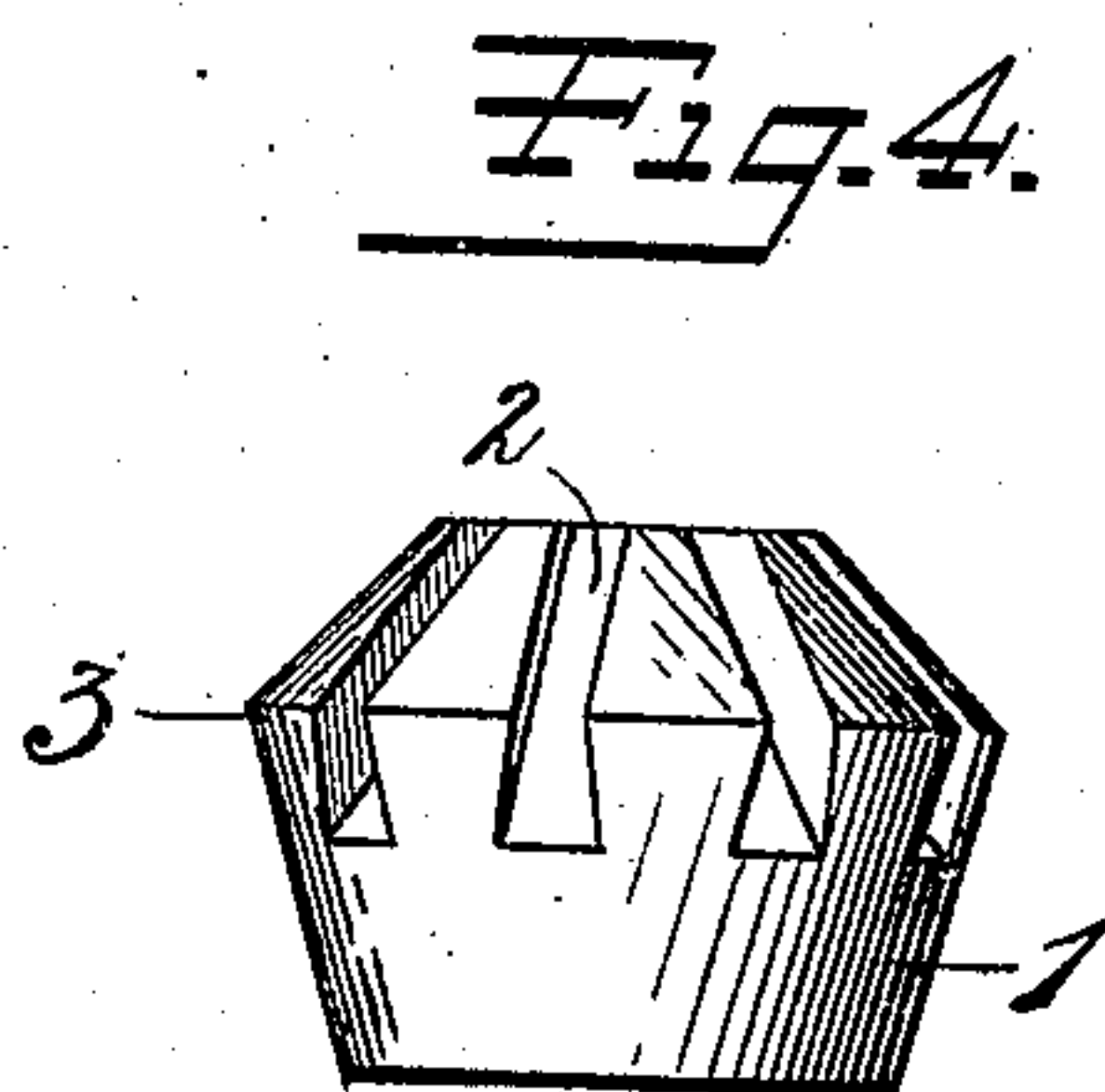
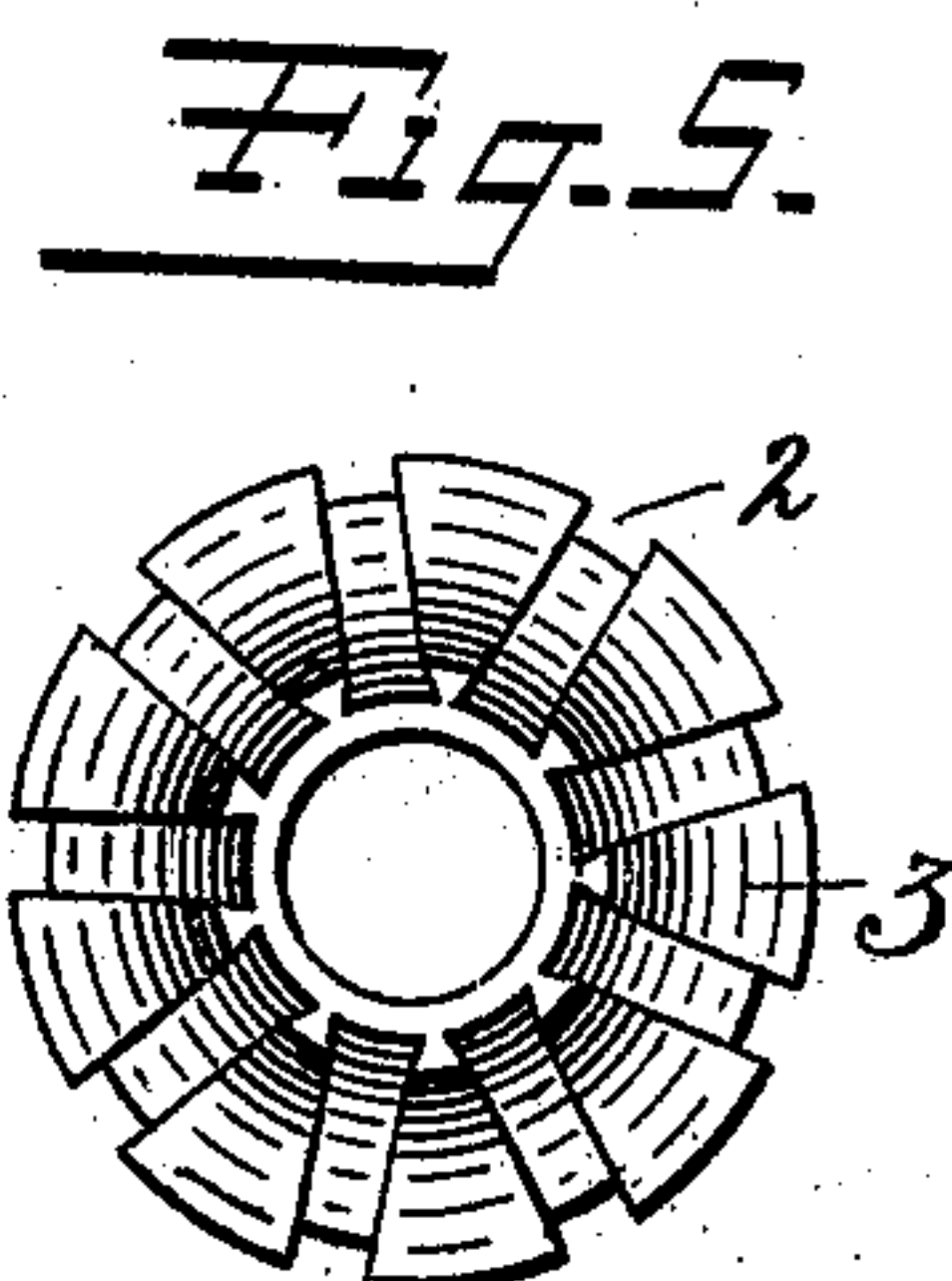
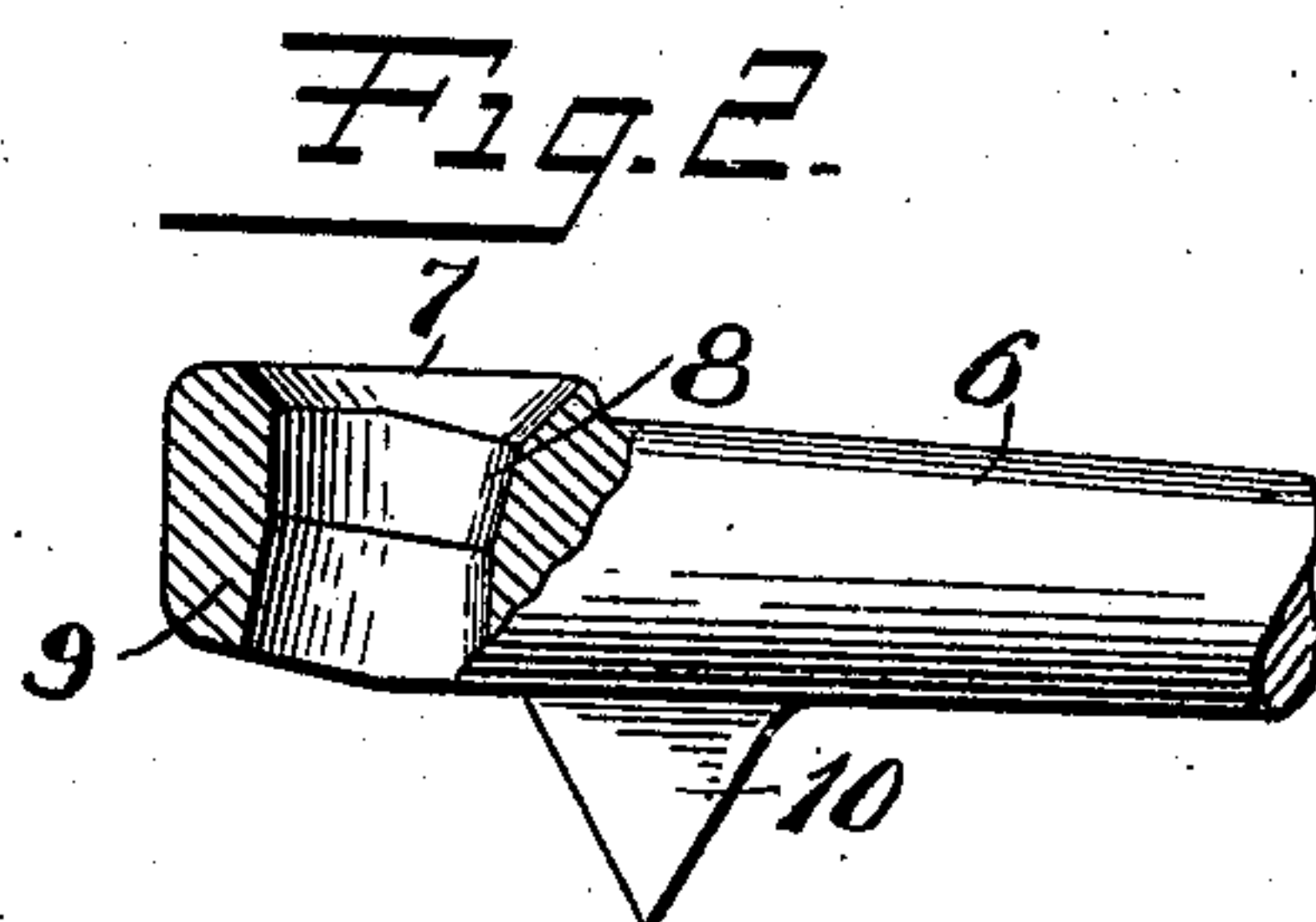
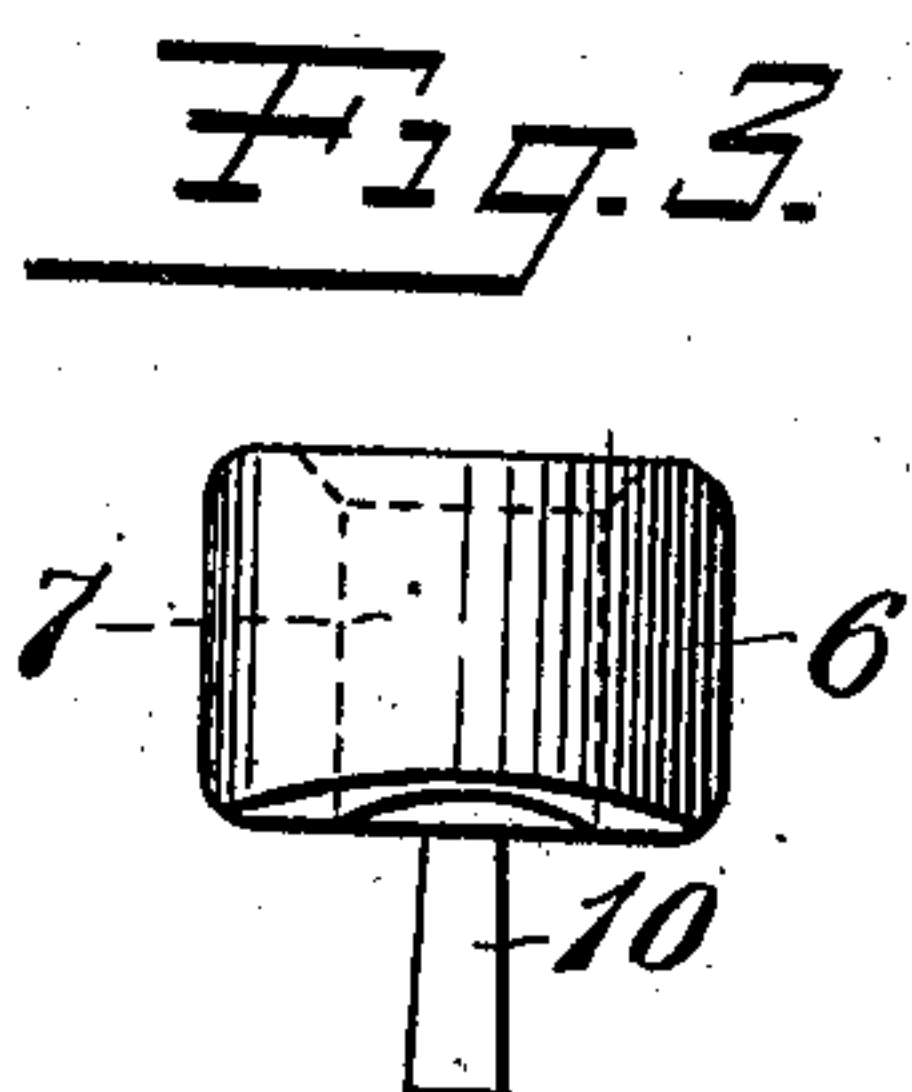
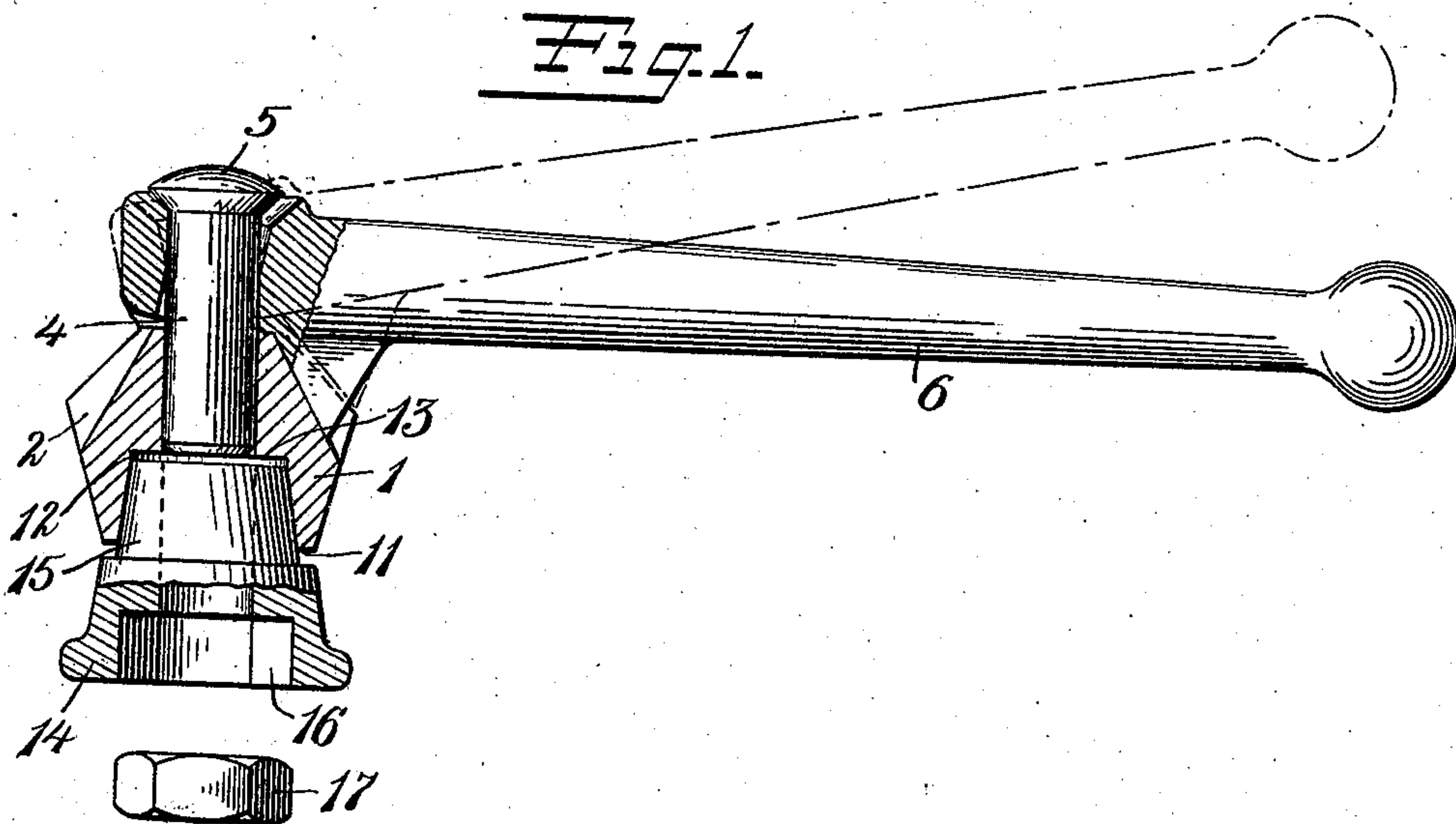


No. 847,601.

PATENTED MAR. 19, 1907.

G. B. PICKOP.
RATCHET WRENCH.
APPLICATION FILED JAN. 9, 1907.

2 SHEETS—SHEET 1.



Witnesses
Charles A. Reed
Langdon Moore

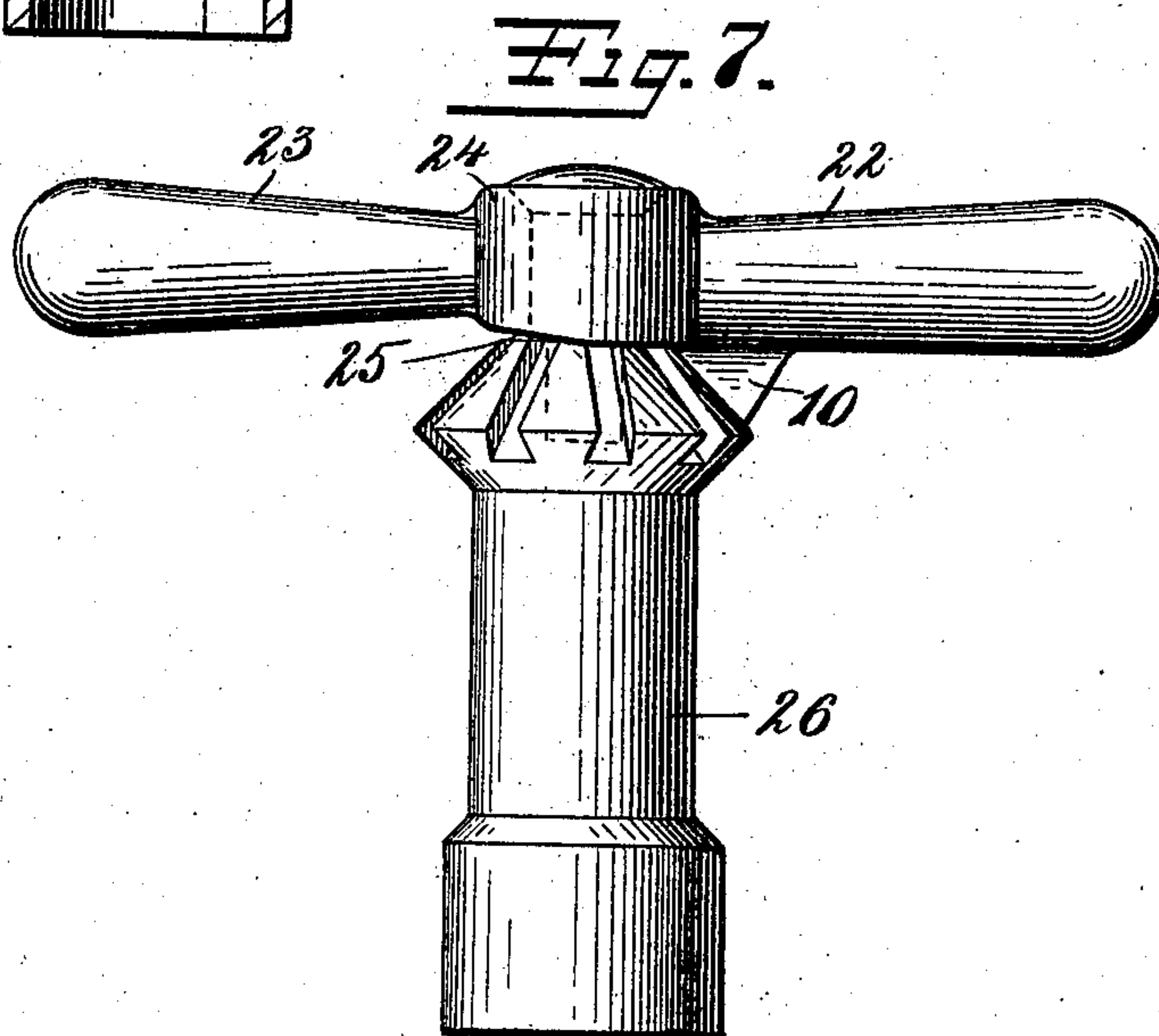
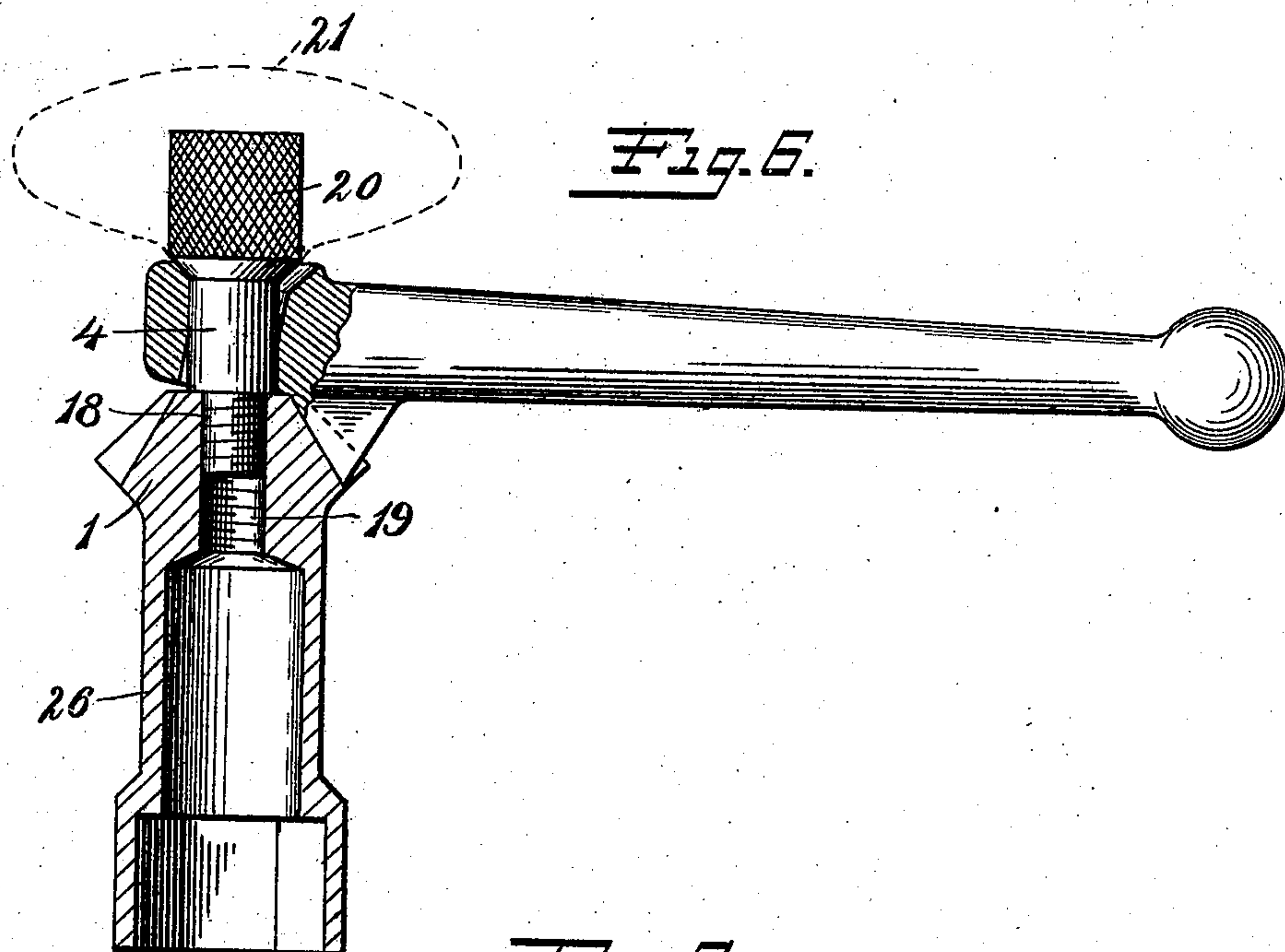
Inventor
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By *his Attorneys*
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

GEORGE B. PICKOP, OF NEW BRITAIN, CONNECTICUT.

RATCHET-WRENCH.

No. 847,601.

Specification of Letters Patent.

Patented March 19, 1907.

Application filed January 9, 1907. Serial No. 351,426.

To all whom it may concern:

Be it known that I, GEORGE B. PICKOP, a citizen of the United States, residing at New Britain, county of Hartford, Connecticut, have invented certain new and useful improvements in Ratchet-Wrenches, of which the following is a full, clear, and exact description.

My invention relates to an improved ratchet-operated wrench, useful where it is desirable to turn the socket member continuously in either direction and wherein the handle can only be turned a short distance by reason of lack of room. To accomplish this operation, I provide a socket member with a series of teeth so placed as to coact with a lug depending from the handle, which latter is secured to the socket member by a suitable bearing arranged to act as a fulcrum and yet permitting the handle to be moved so as to engage with any of the notches between the teeth. The socket member may be made in one piece, and in such case is only applicable to one size of nut; but the nut-engaging part may be made separable, so that any one of a series may be interchanged with another to adapt this tool to different-sized nuts or drill-shanks, taps, screw-drivers, or the like. Often it is necessary to apply pressure in the direction of the socket member, as in the case of operating a drill-shank or screw-driver, and in such cases the handle-bearing may be provided with an enlarged head or handle similar to that on a bit-brace. In some cases also I may apply an auger-handle to the tooth-carrying member. A wrench of this class is especially advantageous in bridge-building, iron and steel construction work, and very useful in connection with automobiles in removing and replacing spark-plugs and other inaccessible parts, and, in fact, in any place where there is not sufficient clearance for the handle to make a complete revolution.

Another feature of this construction is that all the parts are open and easily cleaned, so there is no danger of its getting clogged with dirt and becoming inoperative.

In the drawings, Figure 1 is a view in side elevation, partly in section. Fig. 2 is a fragmentary view in side elevation, partly in section, of the handle portion. Fig. 3 is an end view of Fig. 2. Fig. 4 is a view in side elevation of the body. Fig. 5 is a plan view of Fig. 4. Fig. 6 is a view in side elevation,

partly in section, of a modification. Fig. 7 is a view in side elevation of another modification.

In the preferred form of my invention, 1 is a body member, provided with recesses 2, forming abutment shoulders or teeth 3. At the center of this body member is a bearing 4, having a head 5.

6 is a handle, one end of which is provided with an aperture 7, adapted to the bearing 4. The opposite upper and lower sides of the aperture 7 are cut away at 8 and 9 in line with the center of the handle to allow a limited amount of vertical or lifting movement thereof upon the bearing 4. At the under side of the handle, near the aperture 7, depends a lug 10, adapted to engage in the recesses 2 of the body member 1 when the handle is depressed. The recesses 2, as shown, are wider at the bottom than at the surface, and the sides of the lug 10 slant inward in order to coact with the sloping surfaces of the teeth 3 to afford a superior grip. The lower portion of the body member 1 is provided with a socket-like opening 11, the side walls of which slant inward to a point 12 and then preferably extend parallel a short distance to the bottom 13.

14 is one of a series of different-sized interchangeable socket members provided at its top with a projection 15, adapted to the aperture 11. The parallel portion of the aperture at 12 affords a clearance between the bottom 13 and the top of the projection 15 to allow for wear. The bottom of the member 14 is provided with a socket-opening 16 to engage a nut 17, such as shown in Fig. 1. It is obvious that by providing a number of interchangeable socket members any-sized nut may be engaged thereby, and, furthermore, a drill-shank, tap, or screw-driver (not shown) may be provided with a body similar to 15 and be secured to the body member 1 in the same manner.

Fig. 6 shows a modification in which the bearing 4 is screw-threaded at 18 to engage in an internally-screw-threaded aperture 19 in the body member 1, and the opposite end is provided with a knurled head 20. In either form the head may be enlarged, as shown in dotted lines 21, to provide a handle. In Figs. 6 and 7 the body member and socket member are integral.

Fig. 7 shows a modified form of handle in which the two arms 22 and 23 extend from

opposite sides of the center portion 24, surrounding the main bearing. The bottom of 24 opposite the lug 10 is cut away, as shown at 25, to allow the rocking motion necessary
5 to remove the lug 10 from the recesses in body 26.

In operation the socket is placed over the nut or device to be turned and the lug of the handle engaged in a recess of the body mem-
10 ber and then turned as far as desired. By rocking the handle on the stud the lug is disengaged, and the handle may be returned to its original position and the operation re-
15 peated. The socket remains in engagement with the nut and is continuously rotated throughout the operation.

What I claim is—

1. In a device of the class specified, the combination of a body member provided
20 with a socket and a series of peripheral teeth, a bearing-stud thereon, a one-piece handle surrounding said bearing, the opposite upper and lower sides of said stud-receiving aperture being cut away in a line
25 with the center line of the handle to permit of a lifting movement thereof, and a lug depending from said handle adapted to engage the teeth to rotate the body member.

2. In a device of the class specified, the
30 combination of the body member, a series of beveled teeth thereon, a stud thereon, an integral handle and bearing member loosely mounted on said stud, said mounting permitting a rotating and limited lifting movement
35 of said handle, and a projection and the han-

dle adapted to engage the teeth to rotate the body member.

3. In a device of the class specified, the combination of the body member, a handle provided with an integral bearing member
40 rotatably mounted thereon, and having a lifting movement relatively thereto, a clutch member carried by said handle and cooperating clutch members carried by said body adapted to coact with the handle-clutch to
45 lock said parts together for rotation.

4. In a device of the class specified, the combination of the body member, a series of beveled teeth thereon, an integral handle and bearing member rotatably mounted thereon,
50 having a limited lifting movement, a lug on said handle adapted to engage said teeth, and a socket member detachably secured to said body member.

5. In a device of the class specified, the
55 combination of the body member, a series of teeth thereon, a stud thereon, an integral handle and bearing member loosely mounted to rotate on said stud, and having a limited angular movement thereto, a lug on said
60 handle adapted at one end of said movement to engage said teeth, said body member provided at its base with a conical clutch-aperture and the clutch member provided with a conical clutch projection secured in said
65 body member.

GEORGE B. PICKOP.

Witnesses:

G. ERNEST ROOT,
WM. V. COLLIN.