

(Model.)

F. J. PRATT & J. H. LANE.
COMBINATION WRENCH.

No. 406,666.

Patented July 9, 1889.

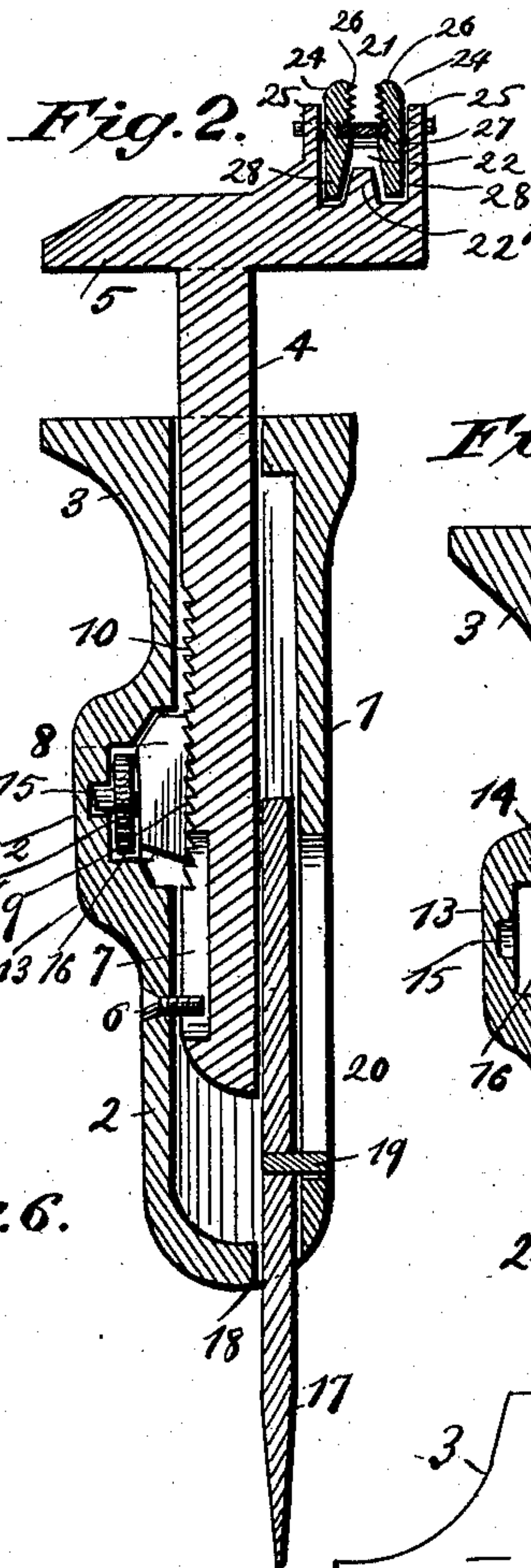
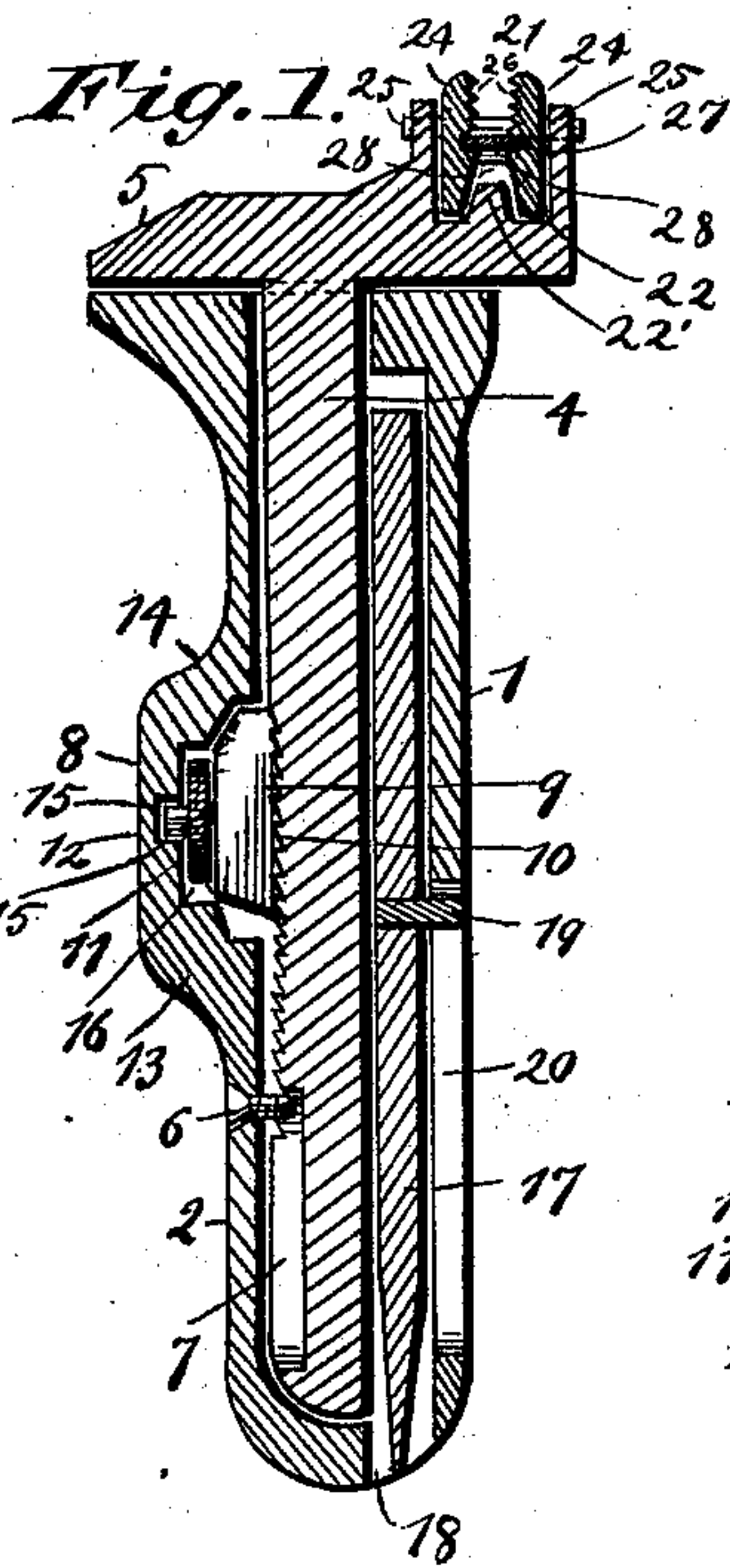


Fig. 3.

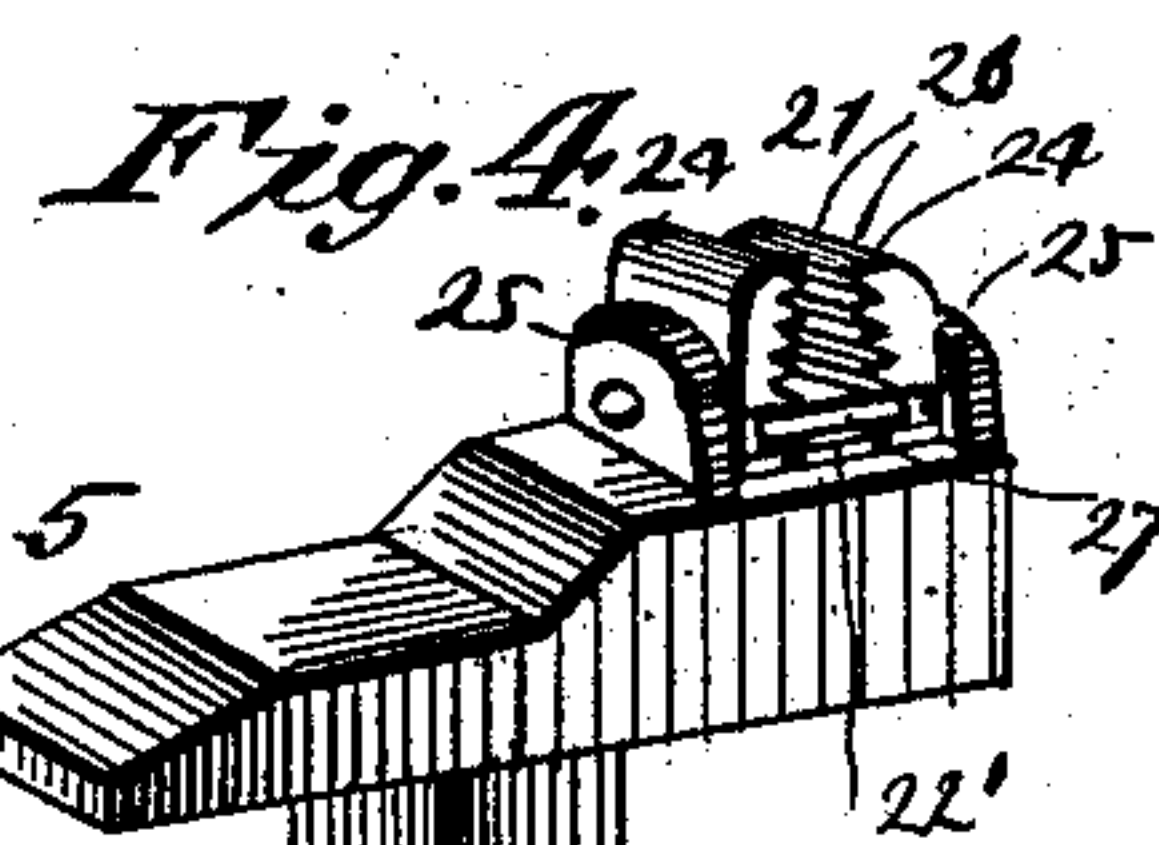
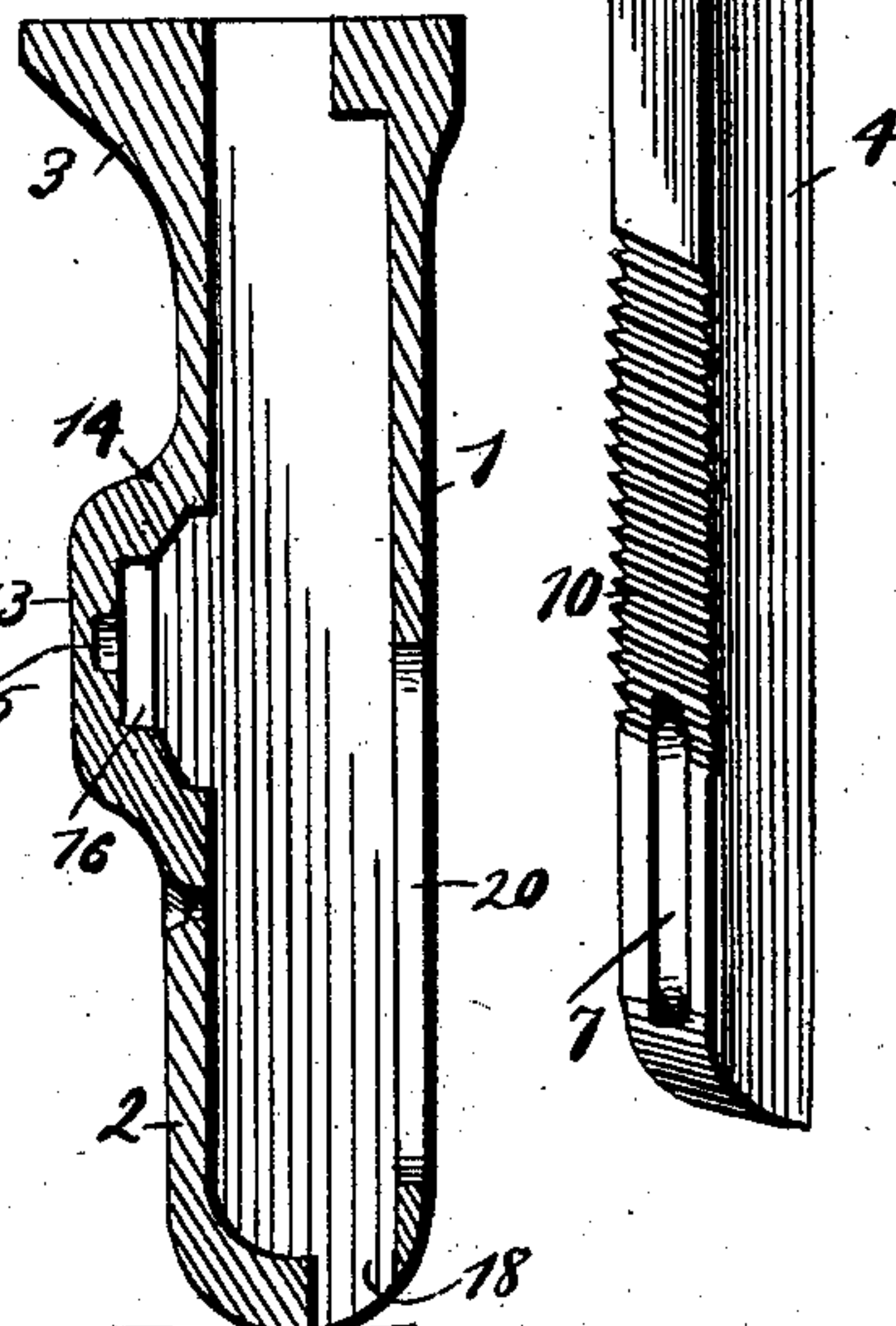


Fig. 6.

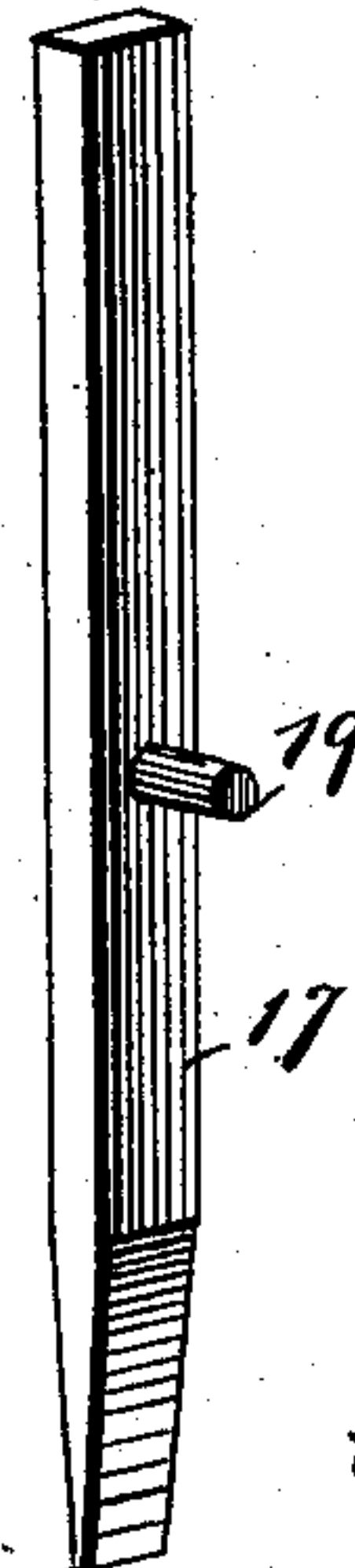


Fig. 5.

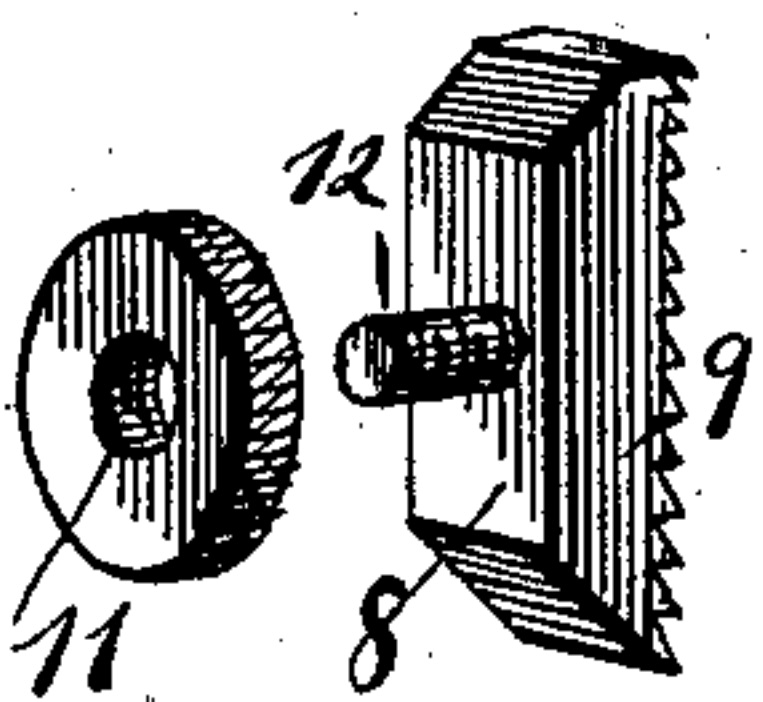


Fig. 7.

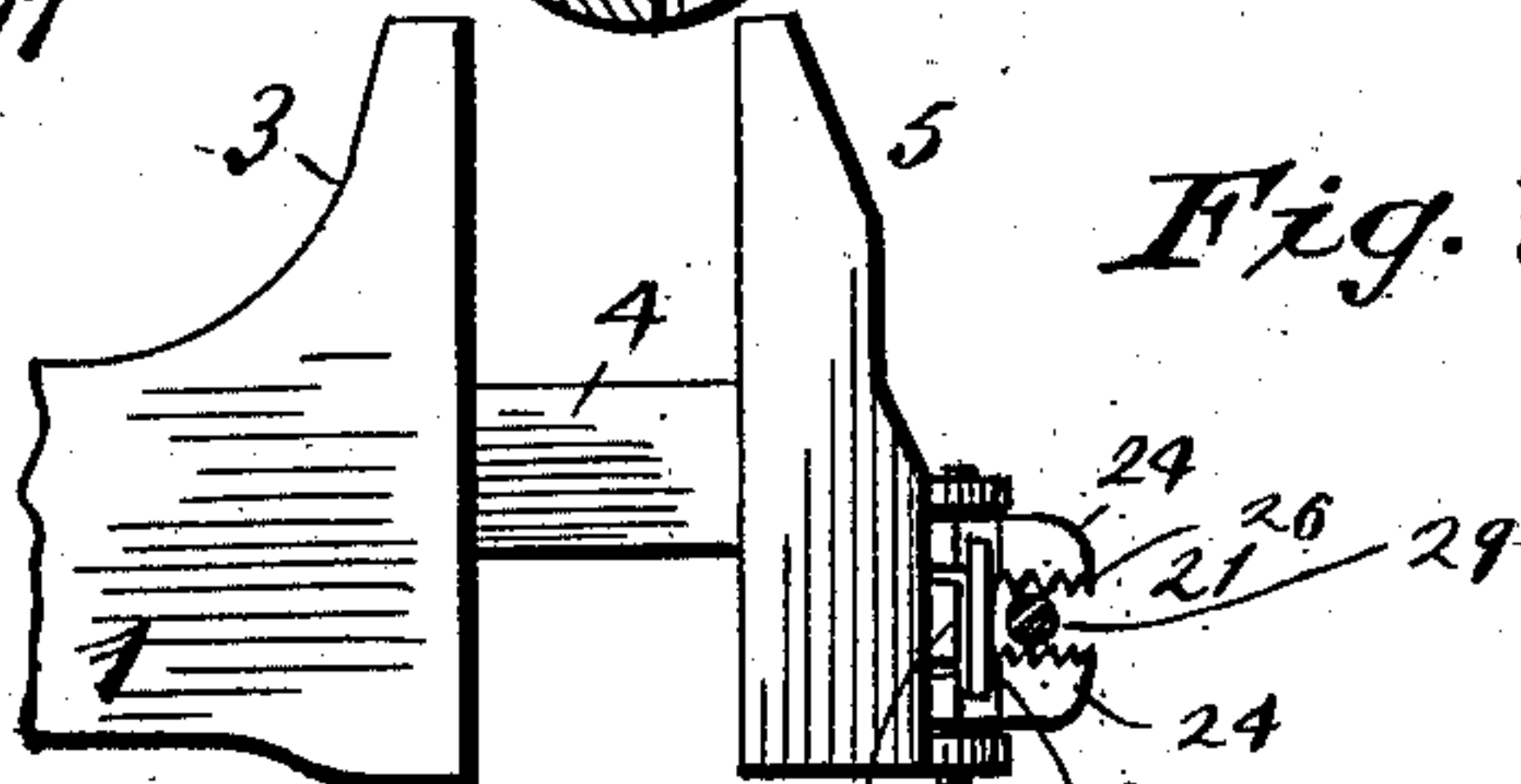


Fig. 8.

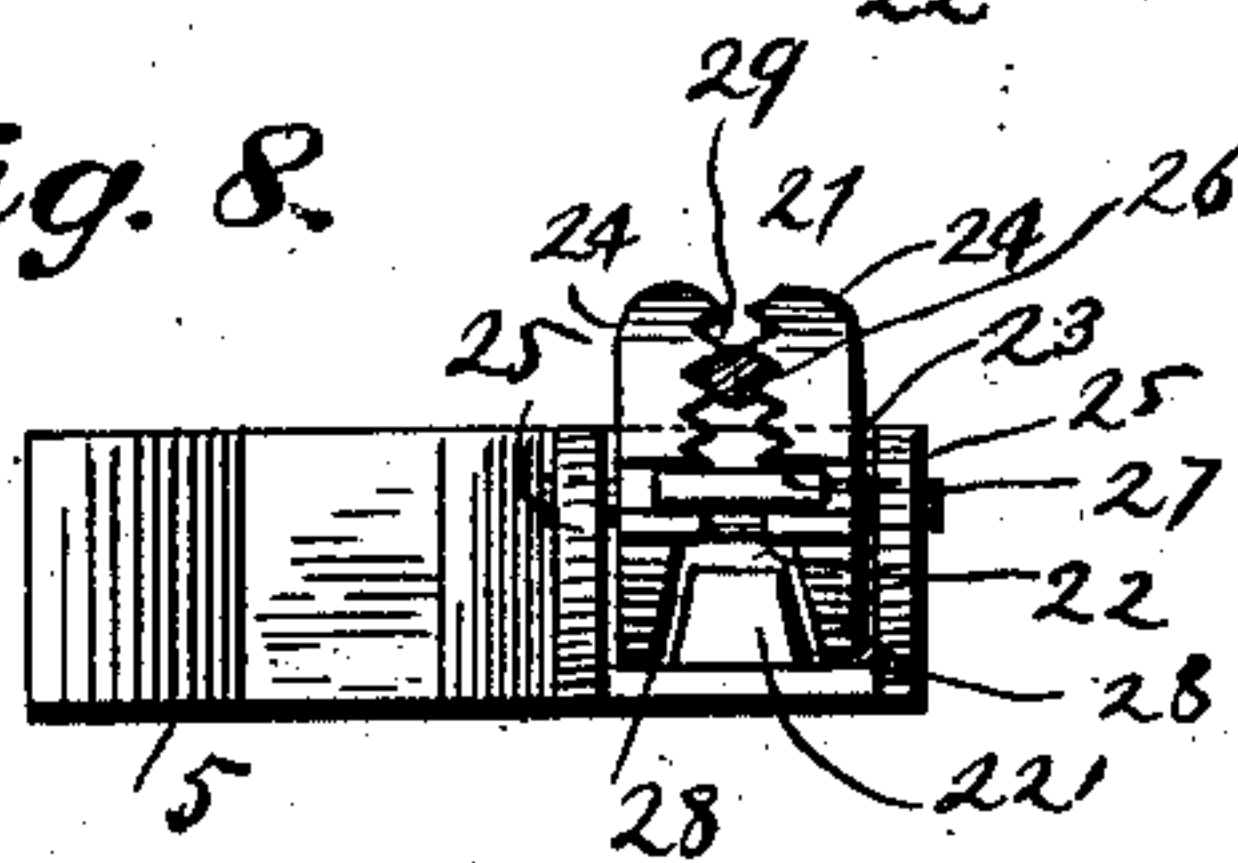


Fig. 9.

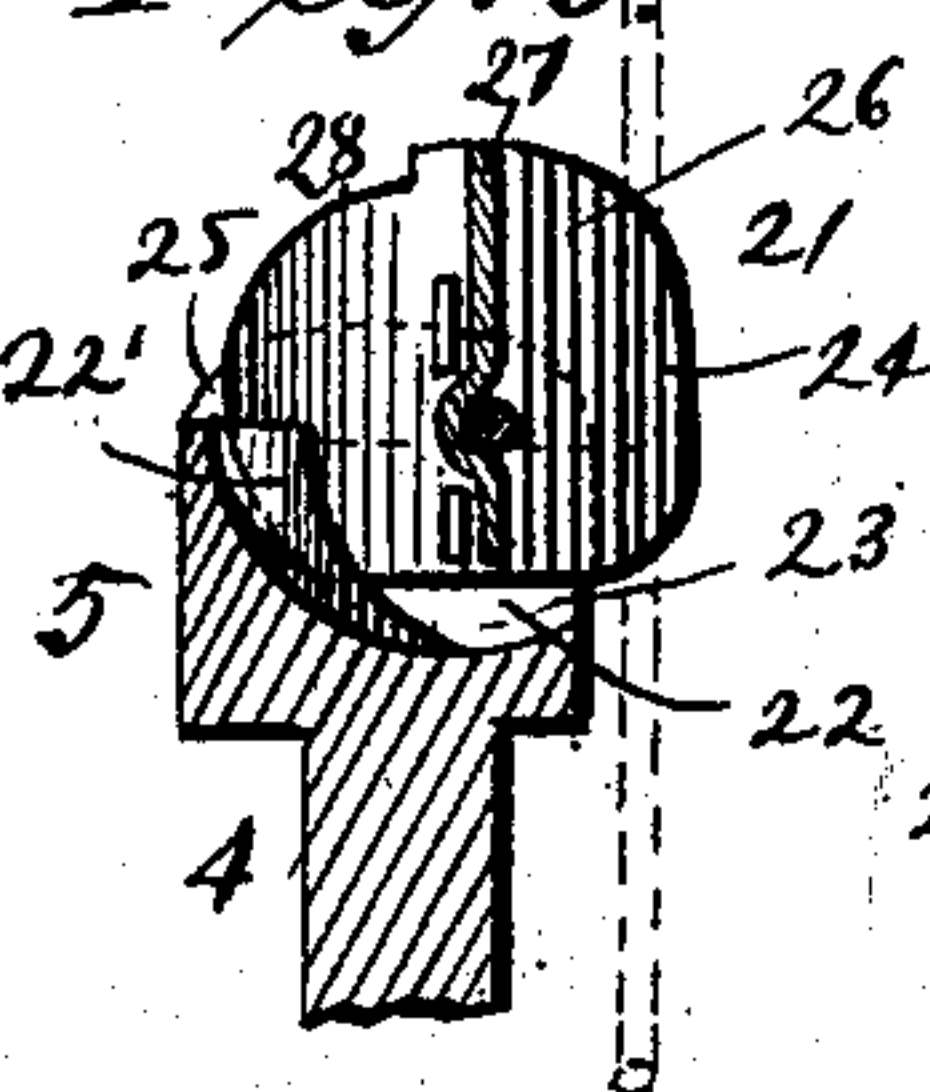
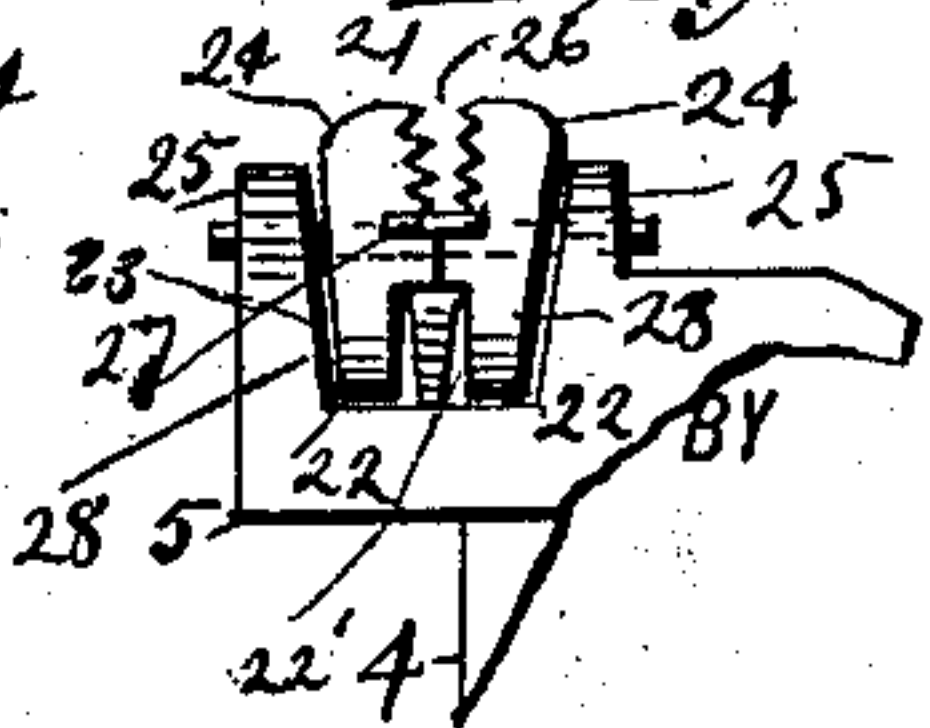


Fig. 10.



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UNITED STATES PATENT OFFICE.

FRED J. PRATT AND JOHN H. LANE, OF JACKSON, MICHIGAN.

COMBINATION-WRENCH.

SPECIFICATION forming part of Letters Patent No. 406,666, dated July 9, 1889.

Application filed June 19, 1888. Serial No. 277,556. (Model.)

To all whom it may concern:

Be it known that we, FRED J. PRATT and JOHN H. LANE, both of Jackson, in the county of Jackson and State of Michigan, have invented a new and Improved Combination-Wrench, of which the following is a full, clear, and exact description.

This invention relates to wrenches, and has especial reference to wrenches adapted to be used with bicycles.

The object of the invention is to provide a wrench so constructed as to comprise several different kinds of tools in one.

The invention consists in a wrench constructed and arranged as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a view in vertical section of a wrench, with parts in closed position, constructed in accordance with this invention. Fig. 2 is a similar view with parts extended. Fig. 3 is a similar view with parts removed. Fig. 4 is a perspective view of the movable jaw and its shanks detached. Fig. 5 is a detail of parts designed for fastening the shanks. Fig. 6 is a view of the screw-driver detached. Fig. 7 is a side view of the head of the wrench, broken away, showing jaws extended and a clamp on the movable jaw engaging a wire rod. Fig. 8 is an end view thereof. Fig. 9 is a face view thereof, in vertical section; and Fig. 10 is a side view of movable jaw, partly broken away, showing auxiliary jaws.

In the construction of this invention we combine, with a wrench, a screw-driver and a grip for holding and manipulating a wire rod.

1 indicates the casing of a wrench formed with the handle 2 and fixed jaw 3. Within the casing 1, which serves as a socket therefor, is located the shank 4 of the movable jaw 5, limited in its movement by means of a pin or screw 6 in the wall of casing 1, projecting into a slot 7 in the shank 4. The jaw 5 is held in adjusted position by means of a block 8, having a serrated surface 9, thrown into and out of engagement with a serrated surface 10 on the shank 4 by a thumb-nut 11, engaging a screw-threaded pin 12 on the block 8. The block 8, pin 12, and nut 11 are located in a

recess 13 in the enlarged portion 14 of the casing 1, having a socket 13, in which the end of pin 12 rests. The periphery of nut 12 projects through openings 16 in the sides of recess 13. The upper end of block 8 bears against the upper end of recess 13, thereby relieving the pin 12 from strain when the wrench is in use.

In order to have a screw-driver conveniently at hand, a bit 17 is located in the casing 1, adjacent to shank 4, and is held in place in the casing and moved out of the same into operative position through slot 18 by means of pin 19, projecting through the vertical slot 20 in the casing.

A wrench constructed as hereinbefore set forth will be found to be very serviceable and especially useful in connection with the nuts and screws of a bicycle. The wrench may be made of a convenient size and the movable jaw 5 easily adjusted to position and firmly held to its work in connection with the fixed jaw 3.

It will be noticed that the serrated surfaces 9 and 10 of the block 8 and shank 4 have their teeth beveled in opposite directions, so that shank 4 cannot slip out of the casing. By simply turning in one direction or the other the nut 11 the block 8 is released from or clamped to the shank 4. The jaw 5 may be adjusted to position for clamping a nut by moving it with the hand.

In order to tighten the spokes of a bicycle or detach them, a grip 21 is provided constructed as follows: The upper side of the jaw 5 is formed with a recess or socket 22, with a downward-tapering opening at one side, as at 23, and having located therein the automatically-closing jaw 24, eccentrically pivoted in the ears or projections 25 at the top of socket 22. The jaws 24 are formed with serrated surfaces 26, and have located between them a supporting-piece 27, on which they are adapted to move laterally. The jaws 24 are, when not in use, extended upward, as shown in Figs. 1, 2, and 4, and are held open by a vertical tapering rib 22' in the socket 22, located between their shanks 28.

To operate the grip 21, the jaws 24, in open position, are placed over one of the wire spokes 29 of a bicycle, the handle of the wrench being at right angles to the spoke.

The wrench-handle is then turned down, so as to be parallel with the spokes 29, as shown in Fig. 9. As the tapering sides of the ribs 22' are brought against the shanks 28 by the rotation of the jaw 5 with its shank 4 in bringing the wrench-handle down parallel with the spoke, the jaws 24 will be automatically firmly clamped against the spoke 29, and the latter may be turned without the wrench coming in contact with the adjacent spokes.

It will thus be seen that a serviceable and handy combination-tool is provided by means of this invention.

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

1. The combination, with the wrench provided with a socket having a lateral opening with tapering sides, of gripping-jaws eccentrically pivoted in said socket, substantially as described.

2. A wrench constructed with an auxiliary pair of automatic gripping-jaws eccentrically pivoted in a socket having a lateral opening

and tapering sides adapted to close the jaws, and a vertical central tapering rib located between the shanks of the jaws and serving to open the jaws, substantially as shown and described.

3. A combination-wrench consisting of casing 1, with serrated clamping-block 8 and thumb-nut 11, the movable jaw 5, with serrated shank 4, engaging block 8, the sliding bit 17, located in casing 1 and having pin 19, located in slot 20 and extensible through slot 18, and the grip 21, consisting of jaws 24, eccentrically pivoted to ears 25 and located in socket 22, with lateral opening 23, having tapering sides, and the vertical tapering rib 22', extending between the shanks 28 of jaws 24, substantially as and for the purpose specified.

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