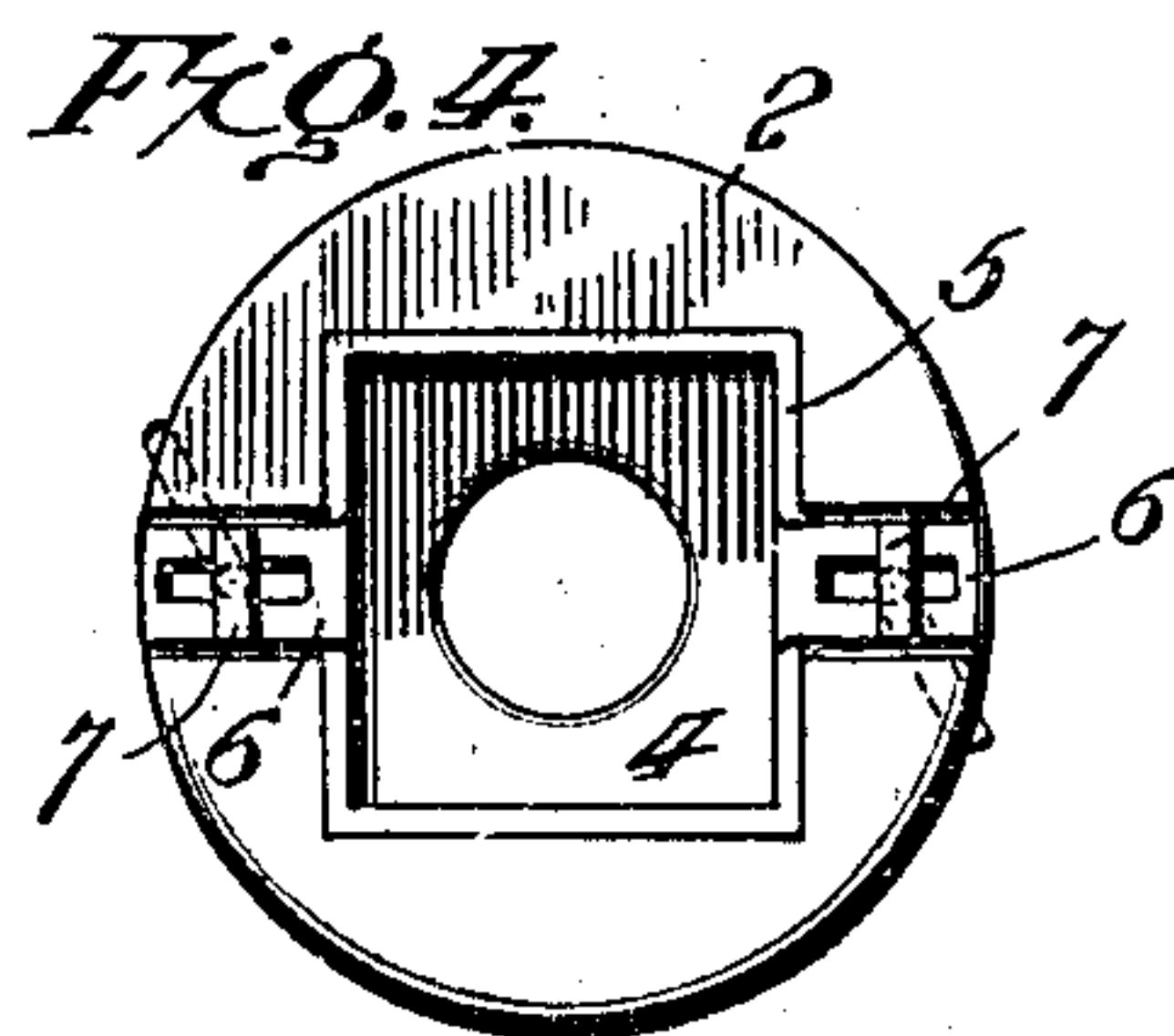
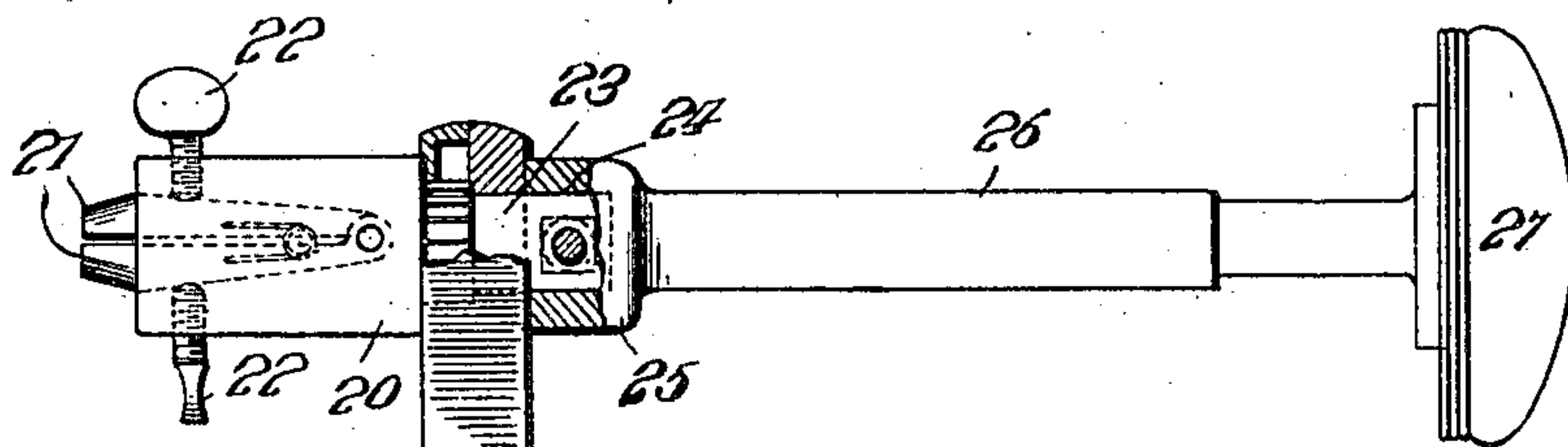
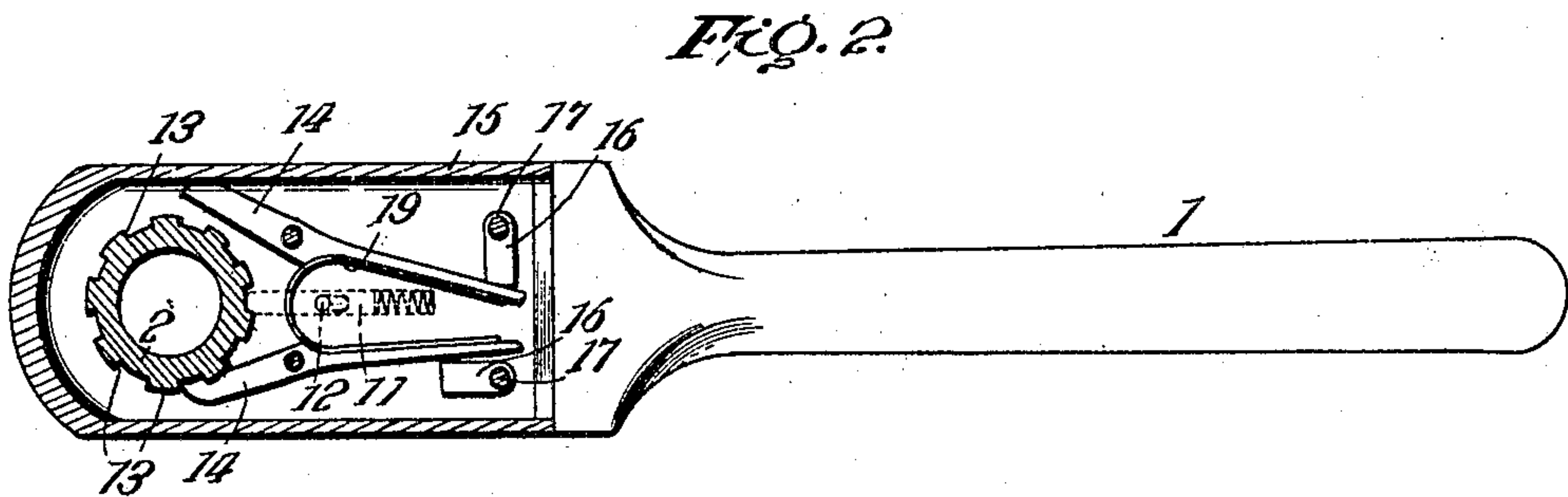
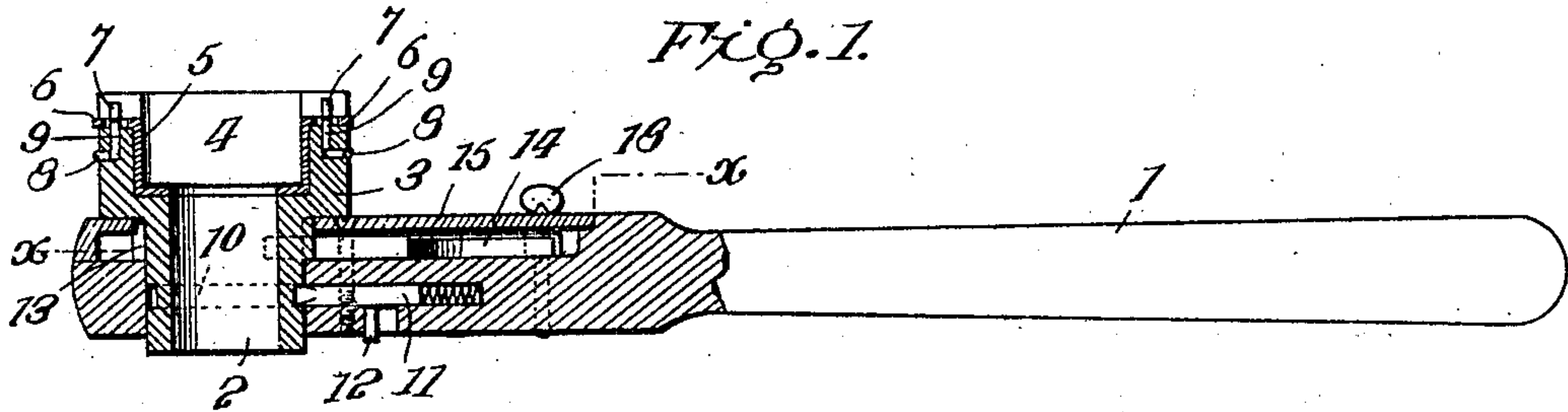


No. 837,537.

PATENTED DEC. 4, 1906.

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RATCHET WRENCH.

APPLICATION FILED JUNE 27, 1906.



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UNITED STATES PATENT OFFICE.

PETER C. BEYER, OF SHOHOLA, PENNSYLVANIA.

RATCHET-WRENCH.

No. 837,537.

Specification of Letters Patent.

Patented Dec. 4, 1906.

Application filed June 27, 1906. Serial No. 323,596.

To all whom it may concern:

Be it known that I, PETER C. BEYER, a citizen of the United States, residing at Shohola, in the county of Pike and State of Pennsylvania, have invented certain new and useful Improvements in Ratchet-Wrenches, of which the following is a specification.

This invention embodies improvements in ratchet-wrenches or similar tools, and relates particularly to the provision of novel operating mechanism therefor and other details of construction, the construction and advantages for which will be readily apparent as the description proceeds.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a longitudinal sectional view showing the preferred embodiment of the invention. Fig. 2 is a longitudinal view on the line X X of Fig. 1. Fig. 3 is a side elevation and partially in section showing a modified embodiment of the invention wherein the ratchet mechanism is utilized for drilling or reaming purposes. Fig. 4 is a front elevation of the head.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Specifically describing the invention, the numeral 1 designates a stock or handle, one end of which is enlarged and provided with a transverse opening to receive a tubular extension 2 at one end of a rotatable head 3, mounted thereon. The head 3 is provided with a socket adapted to receive a nut in order to admit of a very common use of the invention in applying nuts or removing such parts from bolts. The socket of the head is indicated at 4, and it is contemplated to increase or decrease the size of this socket by inserting socket-pieces 5 therein, which latter may be of different sizes, so that any one may be selected and placed in the socket 4 of the head, according to the size of the work which is to be operated upon by the mechanism. The socket-pieces 5 are preferably of many-sided form and extensions 6 project from opposite sides of each socket-piece, being apertured to receive T-heads 7, formed with finger-pieces 8, applied to opposite sides of the head 3. The finger-pieces 8 project

laterally from short rods 9, longitudinally arranged in openings in the head 3, and when said finger-pieces are turned in one direction they will cause the T-heads 7 to be arranged transverse to the openings in the extension 6, and thereby lock the socket-piece 5 in the socket 4, though admitting of ready displacement thereof whenever it is desired to substitute a socket-piece of different size therefor. The tubular extension 2 of the head 3 is provided with a groove 10 on its peripheral portion, and a sliding catch 11, mounted for movement longitudinal of the handle 1, has one end arranged to engage in the groove 10 of the extension 2 to prevent disconnection of said extension from the handle 1. The catch 11 has a finger-piece 12 projecting outwardly therefrom and from the outer side of the handle 1, convenient for manipulation by the user of the device and adapted to admit of ready removal of the head 3 from the handle.

The peripheral portion of the extension 2 is also provided with teeth 13, adapted to be engaged by ends of pawls 14, which are mounted between a side of the handle 1 and the plate 15, which is detachably secured to said side of the handle at which the head 3 operates. The plate 15 has an opening through which the head 3 passes, and said plate furthermore houses the pawls 14 in the customary manner and also incloses small cranks 16, which extend from small or short shafts 17, mounted in the handle 1 and plate 15. The cranks 16 engage the outer sides of the end portions of the pawls 14 and thumb-pieces 18 at the outer extremities of the shafts 17 and adjacent to the outer face of the plate 15 and are adapted to be turned so as to cause one of the cranks 16 to throw the engaging end of the adjacent pawl 14 inwardly, and thereby cause the opposite end of the pawl, which coöperates with the teeth on the extension 2, to move away from said teeth. One of the pawls 14 is normally in engagement with the teeth 13 of the extension 2, while the other of said pawls is normally disengaged from said teeth. The reversal of the engagement of the pawls 14 will effect turning of the head 3 in the desired direction when the handle 1 is moved back and forth in the usual manner. A curved spring 19, such as commonly employed, is arranged between the outer ends of the pawls 14 and normally tends to cause said pawls to engage with the teeth 13.

Under certain conditions it is desirable that the ratchet mechanism, hereinbefore described, be used for operating a drill or reamer or similar tool, and Fig. 3 illustrates this adaptation of the invention. In this instance the head is indicated at 20 and is of somewhat-modified construction. Said head 20 is provided with a socket adapted to receive the shank of a bit, reamer, or similar tool, and arranged in the socket are complementary engaging members 21, operable by set-screws 22 to positively secure the bit or other tool to the head 20. The extension 23 of the head 20 is somewhat longer than the similar extension 2 of the head 3, as described, and is received in a recess 24, formed in an enlargement 25, located at one end of an auxiliary handle 26. The handle 26 is provided in order to steady the operating mechanism at the outer end thereof and is provided with a swiveled knob 27, attached to the outer extremity of the rod with which the enlargement 25 is formed. The enlargement 25 is secured to the extension 23 by means of a transverse fastening, and this admits of

ready detachment of the auxiliary handle from the rotatable head 20, so that this head may be utilized independently of the auxiliary handle, as described.

Having thus described the invention, what is claimed as new is—

In means of the class described, and embodying a rotatable head provided with a socket, a detachable socket-piece fitted in the socket of the head, extensions projecting laterally from opposite sides of the socket-piece, rods movably mounted on the head and formed with heads passing through the extensions of the socket-piece, and finger-pieces for manipulating said rods to cause the heads thereof to engage and disengage with regard to the extensions of the socket-piece.

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

PETER C. BEYER. [L. s.]

Witnesses:

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