

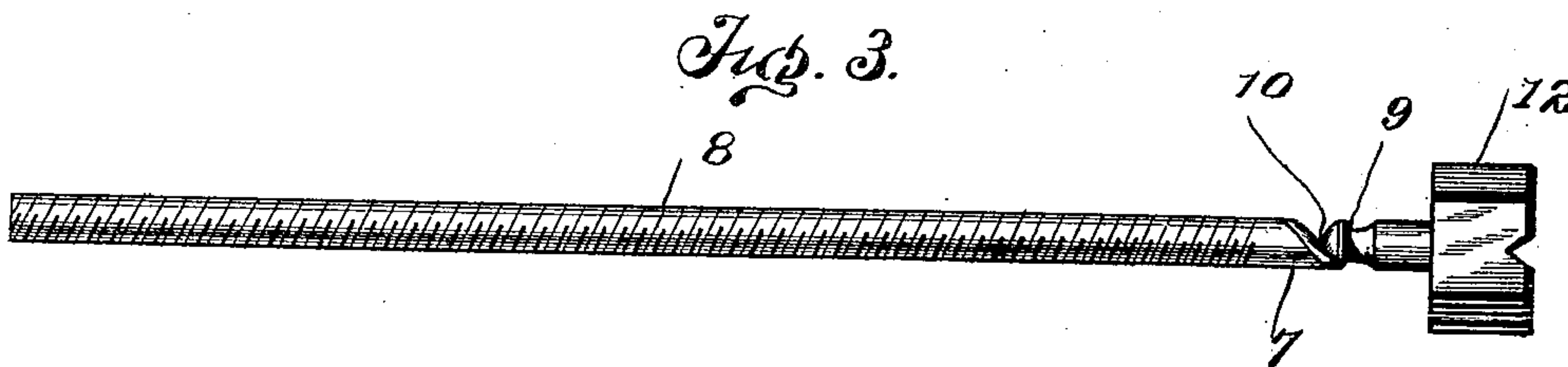
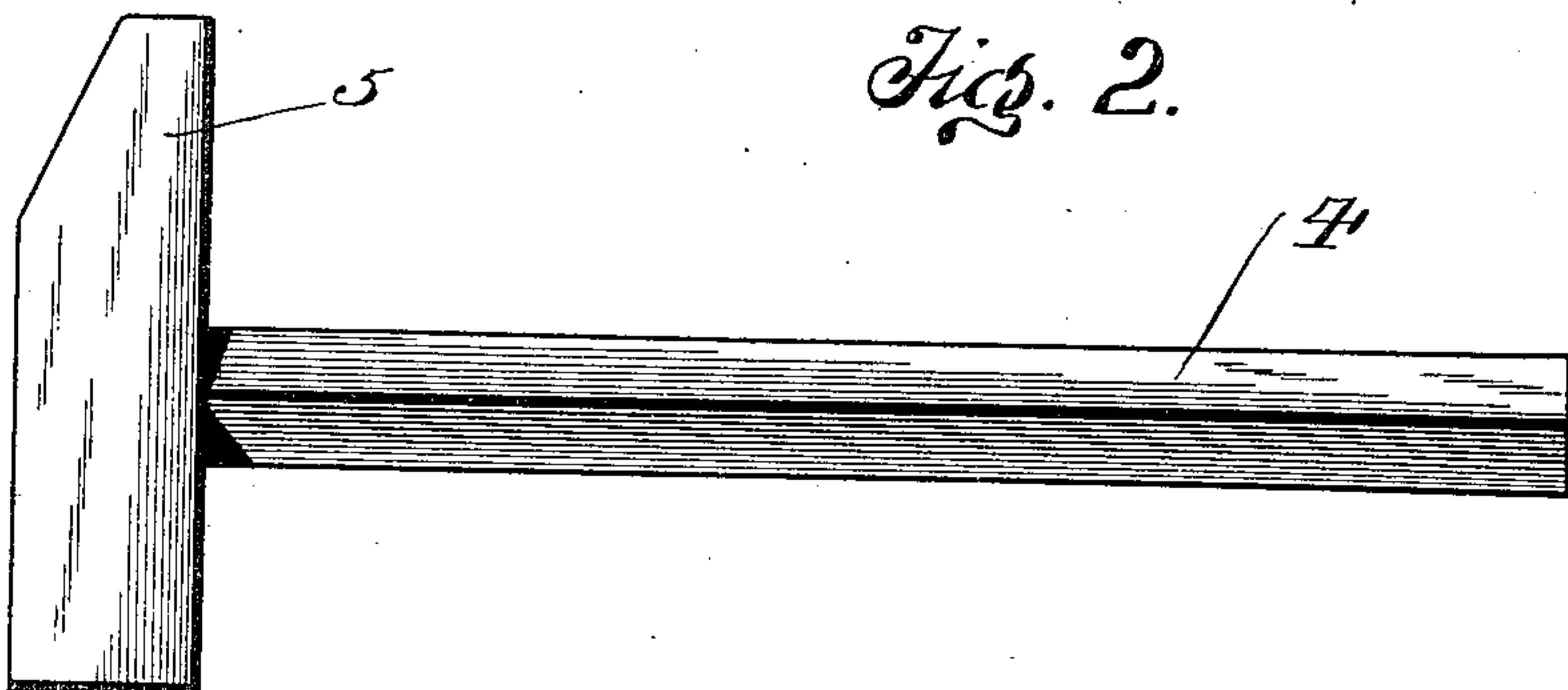
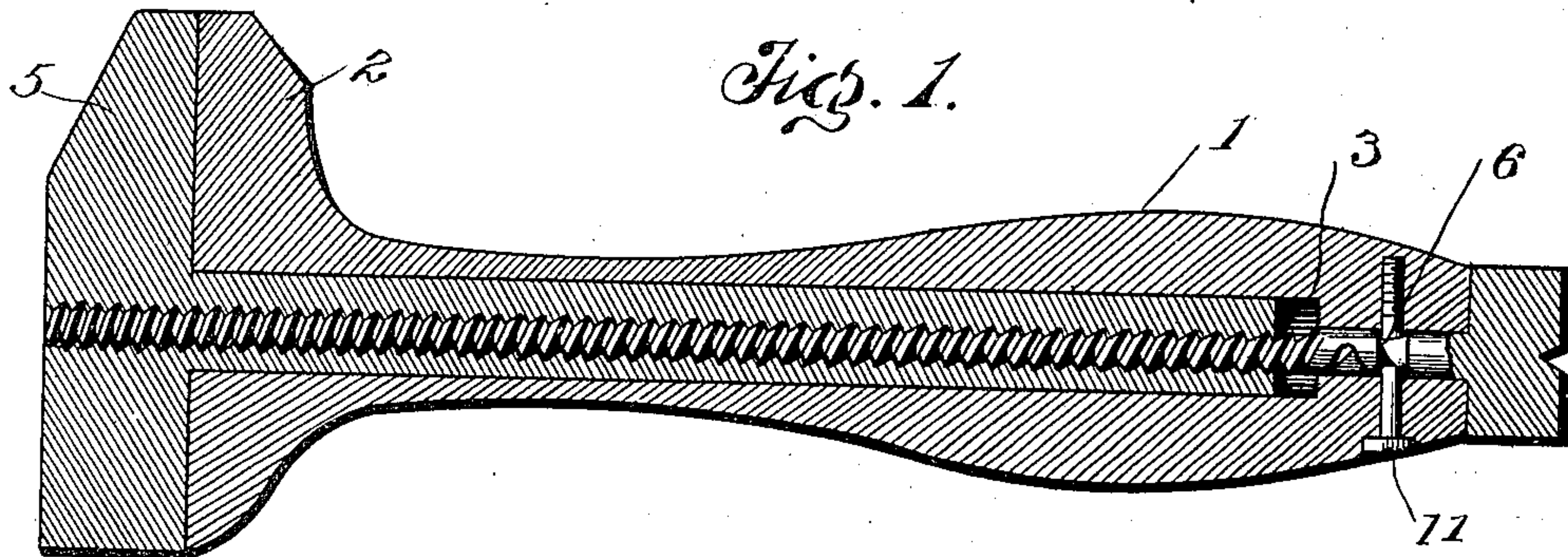
No. 670,114.

B. H. SMITH.
WRENCH.

Patented Mar. 19, 1901.

(No Model.)

(Application filed Oct. 25, 1900.)



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UNITED STATES PATENT OFFICE.

BENJAMIN HOSTETTER SMITH, OF SHIPPENSBURG, PENNSYLVANIA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 670,114, dated March 19, 1901.

Application filed October 25, 1900. Serial No. 34,314. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN HOSTETTER SMITH, a citizen of the United States, residing at Shippensburg, in the county of Cumberland and State of Pennsylvania, have invented certain new and useful Improvements in Wrenches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has relation to wrenches; and it consists of certain novel features of combination and construction of parts, the preferred materialization whereof will be fully set forth in the following specification and illustrated in the accompanying drawings.

The object of my invention is to produce a wrench which will be very desirable for all of the various uses to which it may be possible to apply a wrench.

The prime object of my invention is to provide an adjustment for my wrench which renders it possible to use the same upon all sizes of nuts, a further object being to enable the operator to readily lock the jaws after the same have been adjusted in the desired position.

Other objects and advantages will be hereinafter made fully apparent.

In the accompanying drawings, Figure 1 is a longitudinal central section of my improved wrench complete. Fig. 2 is a detail of the movable jaw and the stem cooperating therewith, while Fig. 3 illustrates the means I employ to adjust the movable jaw in any desirable position.

In order to conveniently refer to the several features of my invention and their cooperating accessories, numerals will be employed, of which 1 indicates the handle of my wrench, which may be made any desired size and has preferably integrally formed therewith the fixed jaw 2.

The handle 1 is provided nearly throughout its entire length with the centrally-disposed bore 3, which is preferably square or diamond shaped in cross-section and is designed to receive the similarly-shaped stem 4, carried by the movable jaw 5, said parts being preferably integrally formed or forged from a single piece of suitable material.

The stem 4 is provided with a central threaded bore, which extends throughout its entire length and may, if desired, extend entirely through the movable jaw, as shown in Fig. 1, though it is not absolutely essential that said bore shall so extend through said jaw.

Connecting with the bore 3 (though of considerably less size) is the bore 6, which is round in cross-section and is designed to receive the round portion 7 of the threaded controlling-bolt 8, which latter is designed to fit within the threaded bore provided in the stem 4, as it is by means of said bolt 8 that the movable jaw is actuated.

The section 7 of the threaded bolt 8 is provided with the circumferential groove 9. Communicating with the circumferential groove 9 is the branch or auxiliary groove 10 extending inward in the groove 9, and designed to cooperate with the grooves 9 and 10, is the retaining-bolt 11, the inner end of which is preferably threaded and designed to be received by a threaded socket provided in the end of the handle, said bolt being disposed to one side of the center, so that it will rest normally in the groove 9.

The controlling-bolt 8 is provided with an enlarged outer end or head 12, which may be octagonal or may be properly milled, so as to afford a convenient frictional surface, that it may be grasped and readily rotated in either direction.

Having thus fully described the construction of my improved wrench, the operation thereof may be stated to be as follows: After the several parts have thus been properly assembled in their respective operative positions (the stem 4 being entered in the bore 3 and the controlling-bolt 8 entered within its threaded socket provided in said stem) it will be observed that by rotating the milled head 12 the movable jaw 5 may be readily moved outward or away from the jaw 2 and may be as readily drawn toward said fixed jaw by a reverse rotation of the head 12. The jaws therefore may be readily separated to any desired extent, so that they will receive between them the nut or bolt to be operated upon.

Should it be deemed desirable to lock the jaws, a slight outward pull upon the head 12

will cause the branch groove 10 to receive the retaining-bolt 11, when said bolt will securely hold the jaw in place.

5 While I have illustrated the controlling-bolt 8 as provided with the branch groove 10, said groove may be entirely omitted, if deemed desirable, and reliance placed wholly upon the circumferential groove 9 and the retaining-bolt 11, said bolt being designed to prevent
10 the outward movement of the bolt 8, thereby insuring that the jaws cannot move toward each other.

While I have described the preferred construction and combination of parts deemed
15 necessary to illustrate a practical application of my invention to use, it will be understood that I desire to comprehend all substantial equivalents and substitutes falling fairly within the scope of my invention.

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

The herein-described wrench comprising a

handle-section provided with a fixed jaw and having a central bore in combination with a movable jaw provided with a stem adapted 25 to fit the bore in said handle, said stem having a central threaded bore; a threaded controlling-rod adapted to be received by the bore in said stem and having the circumferential groove and a branch groove leading 30 obliquely from said circumferential groove, and a pin extending transversely through the end of the handle and normally resting in said circumferential groove and a suitable handle for rotating said controlling-rod, all 35 operatively combined in the manner specified and for the purpose set forth.

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

BENJAMIN HOSTETTER SMITH.

Witnesses:

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ANNA H. SMITH.