(No Model.)

J. C. JOHNSON.

WRENCH.

No. 483,222. Patented Sept. 27, 1892.

FIG. 1.

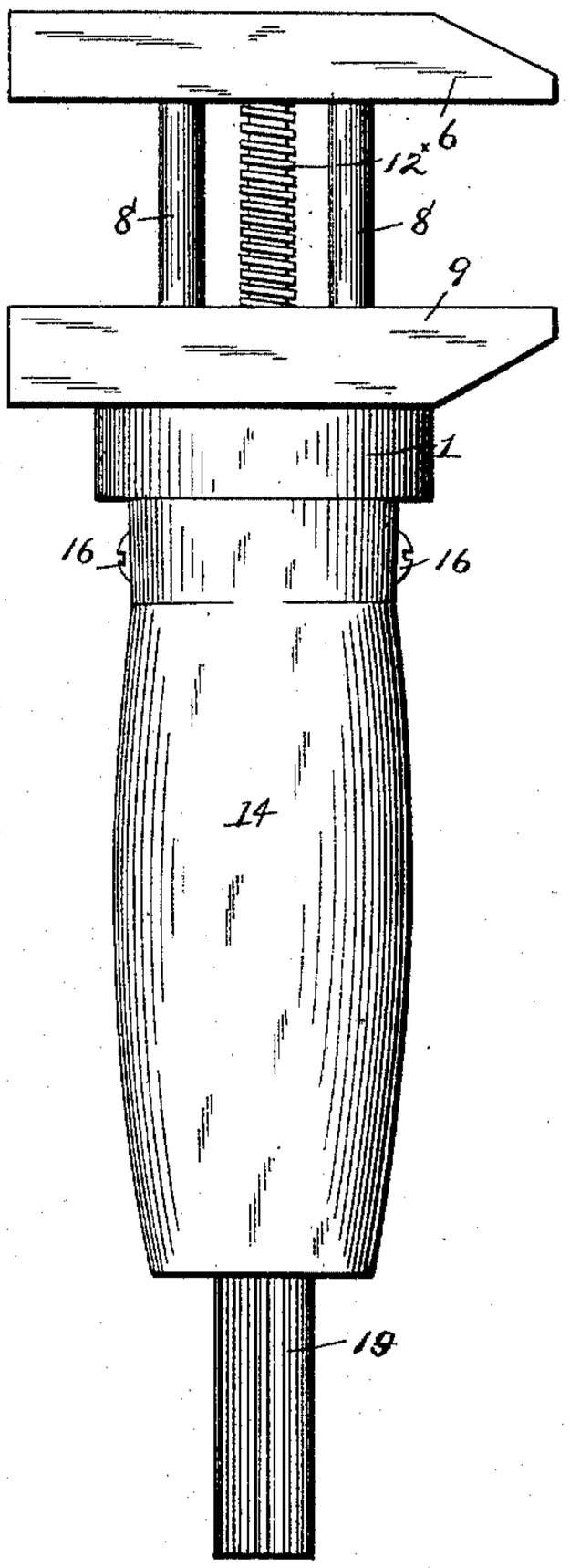


FIG. 2.

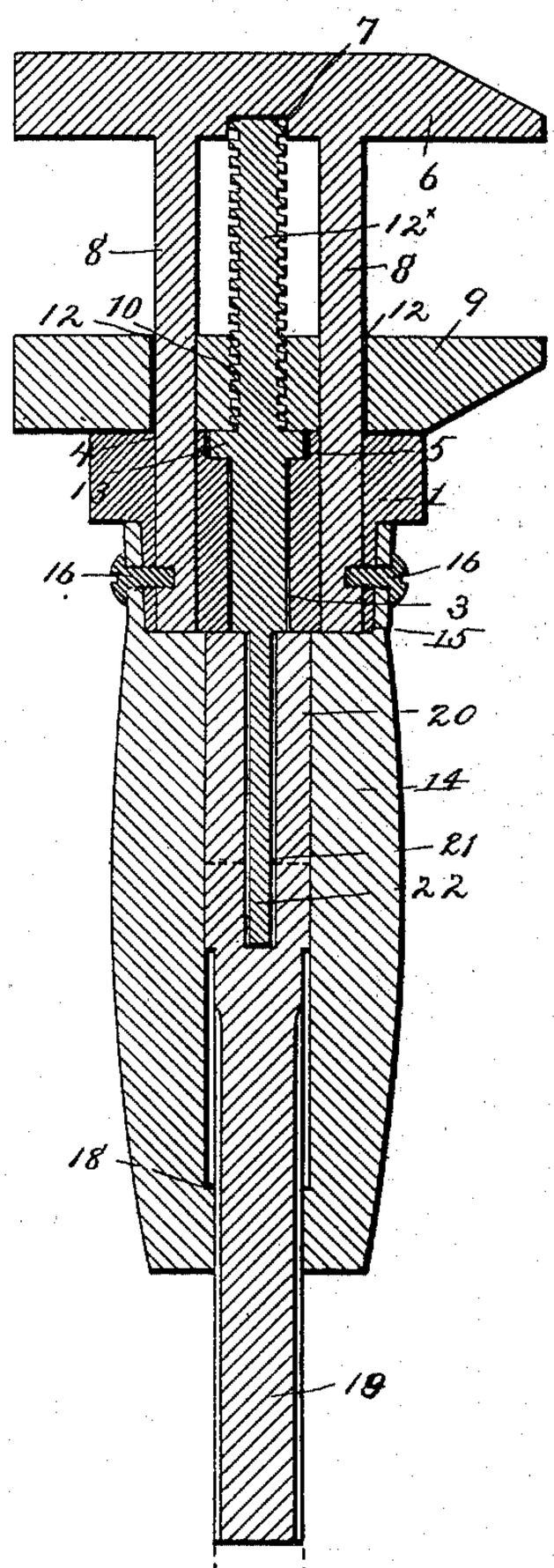


FIG. 3.

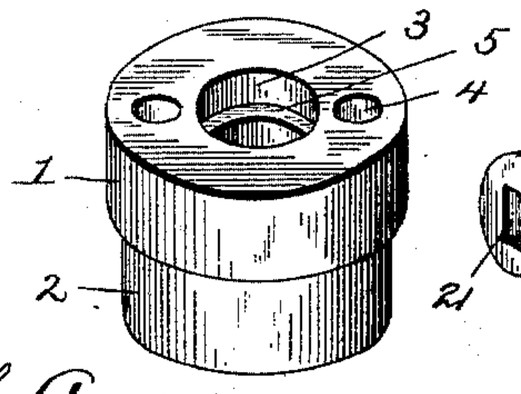
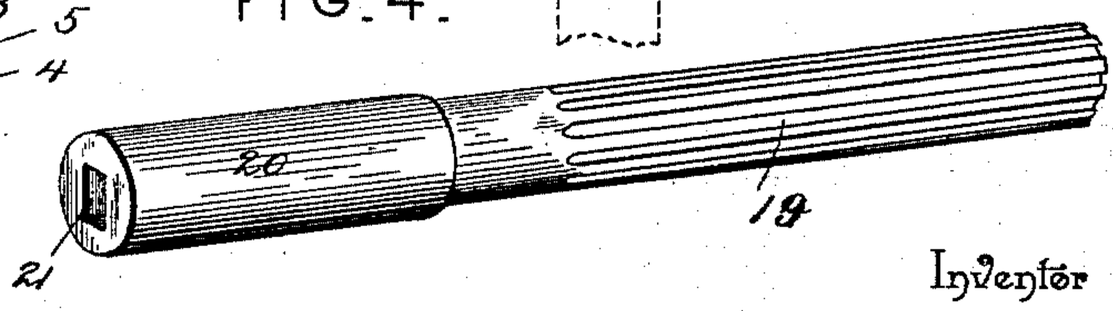


FIG. 4.



Witnesses

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JAMES C. JOHNSON, OF CONCORD CHURCH, WEST VIRGINIA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 483,222, dated September 27, 1892.

Application filed February 18, 1892. Serial No. 421,997. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. JOHNSON, a citizen of the United States, residing at Concord Church, in the county of Mercer and State of West Virginia, have invented a new and useful Wrench, of which the following is a specification.

My invention relates to wrenches, the objects in view being to provide a cheap and simple wrench the jaws of which may be readily adjusted and forced together to grip rods, bolts, and the like, as well as nuts, whereby the wrench is better adapted for operation as such, and also is capable of serving as a hand-vise for bench use.

Other objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a side elevation of a wrench constructed in accordance with my invention. Fig. 2 is a longitudinal section of the same, the screw-operating rod being shown extended by dotted lines. Fig. 3 is a detail in perspective of the metal plug. Fig. 4 is a similar view of the feed-screw-operating rod.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 designates a metal plug, preferably elliptical in cross-section, and having its exterior reduced at its lower end to form a tenon 2. The plug is provided with a central opening 3, and at each side of the same with a cylindrical opening 4, the central opening having its upper end countersunk to form a seat 5.

6 designates the upper or fixed jaw of a wrench, and the same is provided at its middle and upon its under side with a countersunk bearing 7, and at each side thereof there depend from the jaw plain cylindrical rods 8. These rods may be made integral with the jaw or separate therefrom, as may be desired. The movable jaw 9 is of a shape similar to that of the fixed jaw, is provided with a central threaded perforation 10, which aligns with the countersunk bearing 7, and at opposite sides of the same is provided with plain perforations 12, through which loosely pass the two guide-rods 8, the lower ends of the rods passing through and being secured within the perforations 4 of the plug 1.

$12^{\times}$ designates the feed-rod the upper end of which bears in the countersunk bearing 7, and the threaded portion of which passes through and engages the threads of the perforation 10, formed in the jaw 9. Immediately below the threaded portion the rod is provided with an annular boss 13, which takes bearing in the countersunk seat 5 of the plug 1, the lower portion of the feed-rod passing through and beyond the opening 3 in the plug. The handle 14 is longitudinally bored, being provided at its upper end with a mortise 15, fitting the reduced portion 2 of the plug, screws 16 being passed through the wall of the mortise into the plug and lower ends of the guide-rods 8. Below the mortise the handle has its bore reduced, and at its lower extremity is still further reduced, forming an annular shoulder 18.

19 designates a cylindrical rod the upper portion of which is provided with a cylindrical head 20, shorter than the bore of the handle and adapted to loosely fit the same and prevented from withdrawal by coming in contact with the before-mentioned shoulder 18 at the lower end of the handle. The head 20 is provided with a rectangular socket 21, adapted to loosely receive the lower rectangular end 22 of the feed-rod, upon which said head slides. The rod 19 below the head 20 is roughened to form a suitable grasp, and when drawn outwardly from the lower end of the handle exposes sufficient length for a convenient hand-hold, whereby the rod may be turned and the feed-rod manipulated.

This completes the construction of the wrench, whose operation is as follows: The rod 19, being slightly longer than the handle, projects beyond the inner end of the same, and may be manipulated between the thumb and forefinger of the operator, so as to adjust the jaws for different sizes of nuts. Such adjustment will be readily understood in that rotation of the rod 19 causes the feed-rod to rotate, and thus the sliding jaw is moved upon its guides 8 to or away from the fixed jaw. In case it is desired to tightly grip the wrench upon the nut or to employ the wrench as a hand-vise for holding small articles—such as nails, bolts, rivets, pins, &c.—the rod 19 is drawn out, so that the head bears against the shoulder 18, and thus a sufficient length of the rod 19 is exposed to accommodate the en-

tire hand of the operator, who may thus exert his strength to clamp the jaws tightly upon the object.

From the foregoing description, in connection with the accompanying drawings, it will be seen that I have provided a wrench of great simplicity, strength, and durability, one in which the jaws may be adjusted with great facility and dispatch, and may be employed as an efficient hand-vise for gripping small articles and working upon the same at the bench.

Having described my invention, what I claim is—

1. In a wrench, the combination, with the hollow handle, the guide-rods extending therefrom, the fixed jaw supported at the upper ends of the guide-rods, and the movable jaw mounted for reciprocation on said guide-rods, of a feed-screw passing through the movable jaw and journaled in the fixed jaw and handle and having its lower end extending into the latter, and an operating-rod for the feed-screw, mounted for reciprocation and rotation within the handle and for reciprocation and non-rotation upon the lower end of the feed-screw, said rod being adapted to be drawn out beyond the handle to form a hand-grip for rotating the feed-rod, substantially as specified.

2. In a wrench, the metal plug reduced at its lower end and provided with a central and opposite side bores, combined with the hollow handle having its upper end fitting the lower reduced end of the plug and its lower extremity provided with an internal shoulder, the rod fitting within the shoulder and provided at its upper end with an enlarged head having a squared socket and fitting the bore of the handle, the fixed jaw, the guide-rods extending from the same into the side openings of the plug, the movable jaw mounted on the guide-rods, and the feed-rod threaded in the perforation of the movable jaw and at its lower end squared and fitting the socket of the rod, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JAMES C. JOHNSON.

Witnesses:

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BETTIE M. HOLROYD.