J. E. BONNETT.

WRENCH.

APPLICATION FILED AUG. 24, 1920.

1,381,786. Patented June 14, 1921.

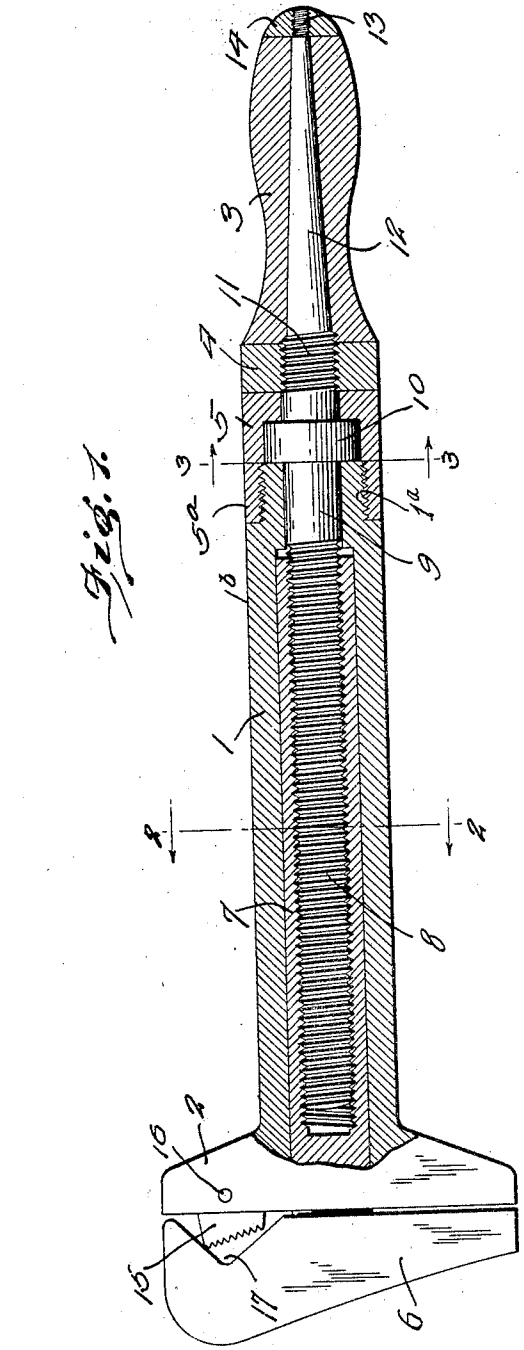


Fig. 1.

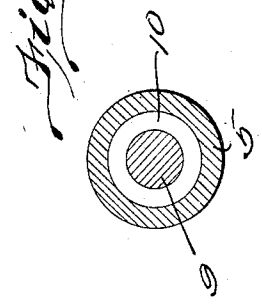


Fig. 3.

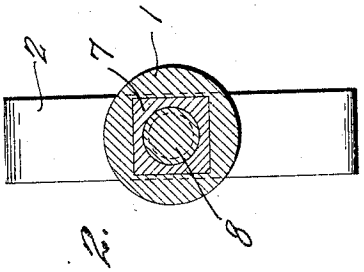


Fig. 2.

Witness

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WRENCH.

1,381,786. Specification of Letters Patent. Patented June 14, 1921.

Application filed August 24, 1920. Serial No. 405,692.

To all whom it may concern:

Be it known that I, JOE E. BONNETT, a citizen of the United States, residing at Troy, in the county of Gilmer and State of West Virginia, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to wrenches of the type known as general purpose wrenches and to the class in which the movable jaw is adjusted by the rotation of the handle.

The object of the invention is to so construct a wrench of this character that it may be used in dirty, sandy, muddy places without effect by said elements on the adjusting and operating parts of the wrench, said parts being completely protected against such elements and the weather.

Another object is to provide a clean smooth body and handle having no corners or projections such as would inconvenience the user.

With these and other objects in view, the invention consists in certain novel features of construction as hereinafter shown and described and then specifically pointed out in the claim and in the drawings illustrative of the preferred embodiment of the invention.

In the accompanying drawing:

Figure 1 is a longitudinal section partly in side elevation of a wrench embodying this invention.

Fig. 2 is a transverse section taken on the line 2—2 of Fig. 1, and,

Fig. 3 is a similar view taken on the line 3—3 of Fig. 1.

In the embodiment illustrated the wrench constituting this invention comprises a hollow shank 1 polygonal in cross section on its interior and carrying at one end a fixed integral jaw 2 while on its other end is detachably mounted a handle 3. This handle 3 has a collar or nut 4 arranged between its inner end and the outer end of a collar 5 said collar 5 having an internally threaded sleeve or skirt 5^a which has threaded engagement with the reduced outer end or neck 1^a of the shank 1 as is shown clearly in Fig. 1. These parts when assembled preferably have their outer faces flush with each other to form an unobstructed body and handle. At the inner end of neck 1^a is a shoulder 1^b designed for a purpose hereinafter to be described.

A movable jaw 6 designed for coöperation with the jaw 2 has a hollow internally threaded stem 7 projecting at right angles from its clamping face and which has telescopic engagement with the hollow shank 1. The threaded chamber or bore of this stem 7 is closed at its jaw carrying end and open at its other end. This stem is also polygonal in cross section conforming in shape to the interior or bore of shank 1 so that said stem will have a sliding engagement with said shank and yet be held against turning relatively thereto. This hollow stem 7 is of a length substantially equal to the length of the bore of shank 1 and when the jaws are in closed position the free end of this stem terminates adjacent the shoulder 1^b of shank 1 as is shown clearly in Fig. 1.

A combined jaw adjusting screw and handle stem 8 has threaded engagement with the bore of the hollow stem 7 and the intermediate portion of this member is unthreaded and provided with an annular flange 10, the portion between said flange and the screw threaded portion being designed to rotate in the neck 1^a of the shank 1 while the inner face of the flange 10 abuts against the end of said neck and at its opposed face is engaged by the collar 5 being held thereby against longitudinal movement and yet permitted to rotate so that the turning thereof will operate to open and close jaw 6.

The member 8 tapers toward its rear end from flange 10 and said tapered portion 12 extends through the handle 3 and has secured to its outer end, shown threaded at 13, a nut 14. The nut 4 is engaged with a threaded portion 11 of the member 8 as is shown clearly in Fig. 1 and said nut coöperating with the nut 14 securely clamps the handle 3 to the member 8 so that when said handle is turned the member 8 will turn with it for actuating the jaw 6.

The fixed jaw 2 preferably has mounted on its clamping face a removable pipe and rod jaw 15 held in operative position on the jaw 2 by a removable pin 16. The movable jaw 6 has its clamping face recessed as shown at 17, said recess being positioned over the pipe jaw 15 and is designed to coöperate therewith for clamping securely a pipe or rod. As shown the recess 17 is V-shaped and the jaw 15 has its biting face serrated and inclined downwardly and inwardly to adapt it to more securely engage the pipe to be grasped.

From the above description it will be obvious that the operating parts of the movable jaw are completely housed within the hollow shaft 1, handle 3 and collar 5 and being connected as above described when the handle 3 is rotated it will also rotate the stem 8 which will impart a longitudinal movement to stem 7 and thereby adjust the jaw 6 relatively to jaw 2. It will also be observed that by constructing the wrench as above described the parts may be readily disassembled for cleaning, repairs or other purposes.

The preferred embodiment of the invention is disclosed in the drawings and set forth in the specification, but it will be understood that any modifications within the scope of the claim may be made in the construction without departing from the principle of the invention or sacrificing any of its advantages.

What I claim is:

In a wrench of the class described, a hollow shank comprising a body having a fixed jaw at one end and a reduced externally threaded neck at its other end, the bore of said shank body being polygonal in cross sections and that of the neck circular with a shoulder at the junction of said bore, a stem mounted to slide in said shank the cross section thereof conforming to that of the bore of said shank, said stem being provided with a jaw at one end to cooperate with the jaw on said shank and having a threaded bore closed at its jaw carrying end and opening through its other end, a combined jaw adjusting screw and handle stem having a portion at one end threaded to adjustably engage the bore of said hollow stem and an unthreaded portion mounted to rotate in said neck and equipped with an annular flange positioned to abut the rear end of said neck, a collar encircling said handle stem at the rear of said flange, encompassing said flange and provided with a sleeve having threaded engagement with said neck, and a handle secured to the rear end of said handle stem and connected so that the rotation of the handle will turn the stem and thereby adjust the movable jaw, said adjusting screw and handle shaft being completely housed throughout its entire length as well as the parts coöperating therewith.

In testimony whereof, I affix my signature hereto.

JOE E. BONNETT.