

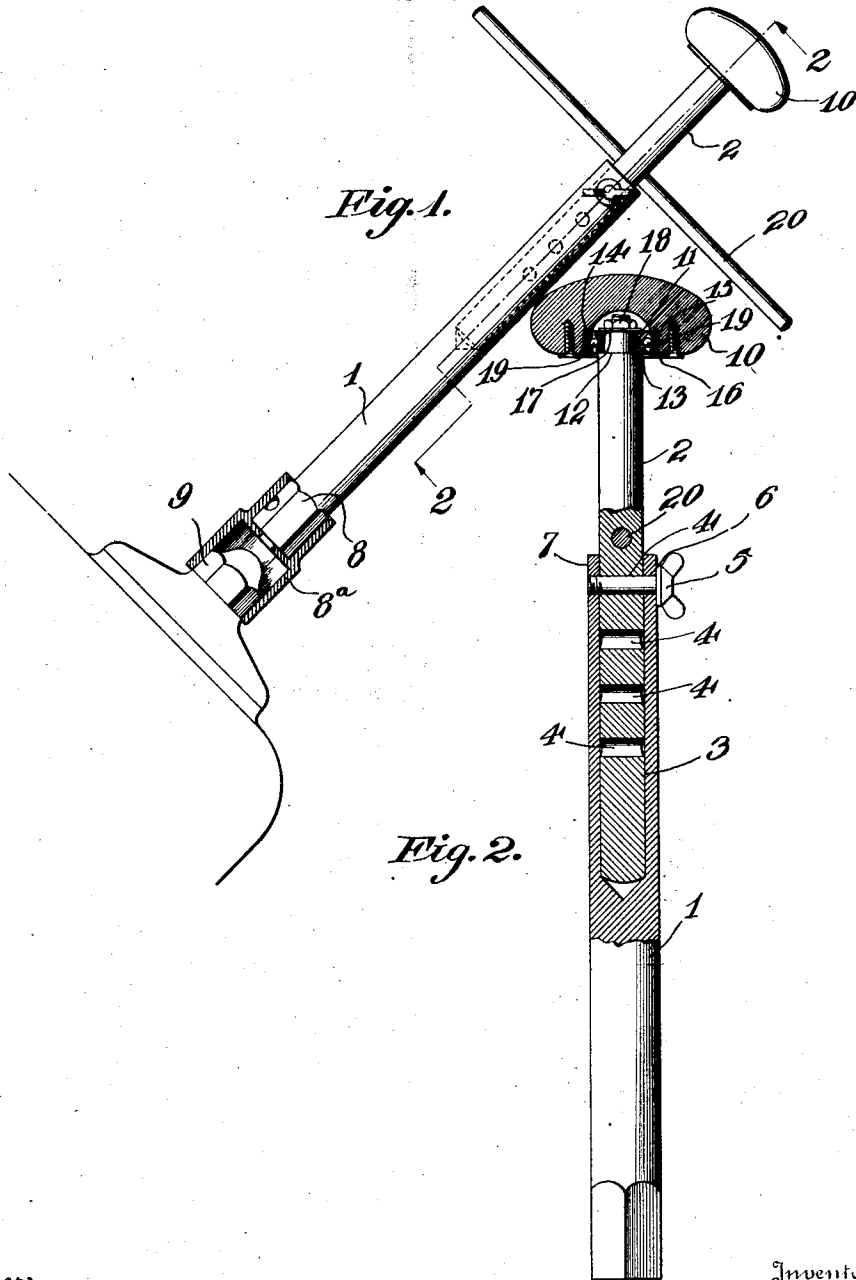
Aug. 9, 1927.

J. N. FITZGERALD, JR

1,638,252

SOCKET WRENCH

Filed Aug. 14, 1924



Witnesses:

Virgil L. Mares
George A. Griss

Inventor

Joseph N. Fitzgerald, Jr.

By Joshua P. Hottel

His Attorney

UNITED STATES PATENT OFFICE.

JOSEPH N. FITZGERALD, JR., OF RIDLEY PARK, PENNSYLVANIA.

SOCKET WRENCH.

Application filed August 14, 1924. Serial No. 731,936.

My invention relates to socket wrenches and is especially designed for use in the removal and replacement of automobile cylinder heads or in turning bolts not readily accessible.

Numerous devices have been devised for this purpose. The chief objections to those which have obtained a foot-hold upon the market is that their operation is laborious and slow and that they are not readily adjustable to provide different lengths of stem.

The objects of my invention are to provide a socket wrench which may be easily and rapidly operated and which may be easily and quickly adjusted to provide different lengths of stem.

These objects, and other advantageous ends which will be described hereinafter, I attain in the following manner, reference being had to the accompanying drawing in which

Fig. 1 is an elevational view of a wrench embodying my invention, the socket member being shown in section; and

Fig. 2 a view partly in elevation at right angles to the view shown in Fig. 1 and partly in section on line 2—2 of Fig. 1.

The stem is made in sections 1 and 2, section 1 having in its outer end a bore 3 adapted to telescopically receive the inner end of section 2 which is provided with a series of transverse bores 4 adapted to receive an adjusting bolt 5 taking through a transverse bore 6 in the outer end 7 of section 1. Section 1 has the usual hexagonal or other angular head 8 adapted to take into and actuate a socket member 8^a adapted to fit over the head of a bolt 9. At its outer end section 2 carries a knob 10 rotatably mounted thereon. In the form shown, section 2 has a reduced part 11 forming a shoulder 12 upon which one section 13 of a ball-race is supported, the other section 14 being mounted in a shouldered recess 15 in knob 10 and supported by an annular plate 16 loosely embracing stem section 2 and secured to the knob by screws. Race section 13 is held in position by a washer 17 and a nut 18 threaded on the reduced end of stem section 2, and the sections carry balls 19. A hand-bar 20 of substantial length takes through and is fixed to stem section 2.

In operation, for removing a cylinder head, the stem is actuated by the hand-bar to loosen the bolts after which the stem is held in position by the knob and may be

spun around with great speed by means of the hand-bar. In replacing the head, when the stem is in position, it may be held in place by the knob and the hand-bar and stem spun around as before until the nut tightens when it may be driven home by use of both hands upon the hand-bar.

The wrench is far more speedy in operation than any of the devices heretofore used and saves both time and labor.

While I have described my invention as taking a particular form, it will be understood that the various parts may be changed without departing from the spirit thereof, and hence I do not limit myself to the precise construction set forth, but consider that I am at liberty to make such changes and alterations as fairly come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A wrench including a stem comprising sections telescoping with one another, means for holding the stem sections in adjusted longitudinal positions relatively to one another, a hand-bar fixed to the stem and extending from opposite sides thereof, a knob rotatably mounted on one end of the stem, and a nut-engaging part on the other end.

2. A wrench including a stem comprising sections telescoping with one another, means for holding the stem sections in adjusted longitudinal positions relatively to one another, a hand-bar fixed to the stem and extending at right angles therefrom, a knob rotatably mounted on one end of the stem, an angular portion formed on the other end of the stem, and a nut-engaging socket fitting the angular portion.

3. A wrench including a stem section having a longitudinal bore, a second stem section fitting in the bore and adapted to slide longitudinally thereof, means for holding the stem sections in adjusted positions relatively to each other, a knob rotatably mounted on one of the sections, a nut-engaging part on the other end of the other section, and a hand-bar fixed to one stem section and extending from opposite sides thereof.

4. A wrench including a lower section, a nut-engaging part on the lower end of the lower section, said section having a longitudinal bore in its upper end, an upper section fitting in the longitudinal bore and having a series of transverse bores therethrough,

a bolt passing freely through the wall at one side of the longitudinal bore and threaded to the wall at the other side of said bore and adapted to pass through either of the transverse bores to hold the upper section in adjusted position, a hand-bar fixed to one of the sections, and a knob rotatably mounted on the free end of the upper section.

5. A wrench including a lower section, a nut-engaging part on the lower end of the lower section, said section having a longitudinal bore in its upper end, an upper section fitting in the longitudinal bore and having a series of transverse bores therethrough,

a bolt passing freely through the wall at one side of the longitudinal bore and threaded to the wall at the other side of said bore and adapted to pass through either of the transverse bores to hold the upper section in adjusted position, a hand-bar fixed to the upper section and extending from the opposite sides thereof, and a knob rotatably mounted on the free end of the upper section.

In testimony whereof I have signed my name to this specification.

JOSEPH N. FITZGERALD, JR.