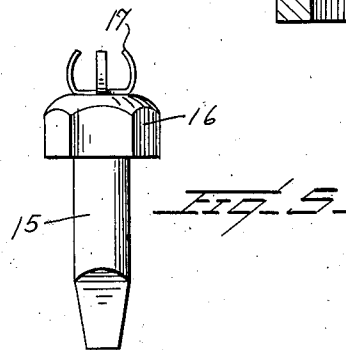
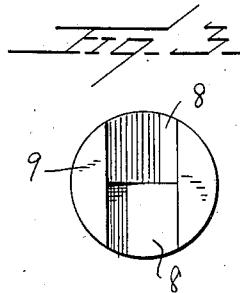
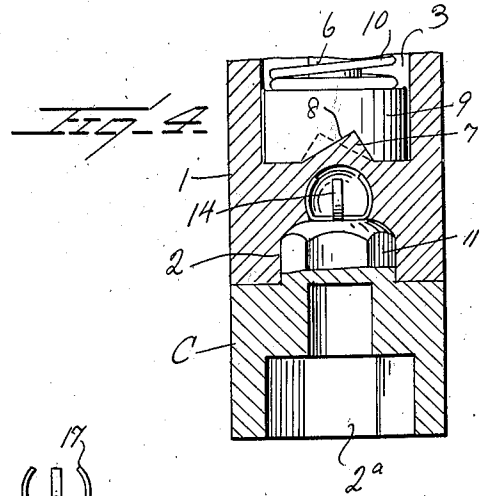
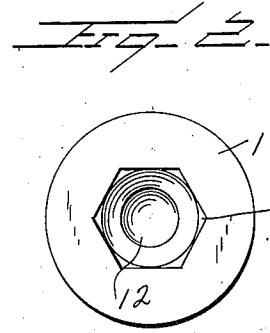
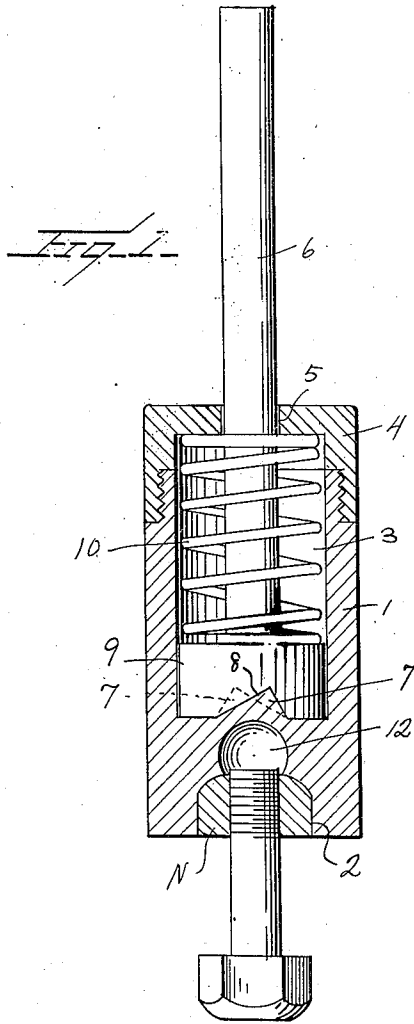


C. C. LE CHOT,
 RATCHET SOCKET WRENCH.
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1,328,087.

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RATCHET SOCKET-WRENCH.

1,328,087.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES C. LE CHOT, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented certain and useful Improvements in Ratchet Socket-Wrenches, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to certain improvements in ratchet socket wrenches, and it is an object of the invention to provide a novel and improved device of this general character whereby nuts and screws may be brought to uniform tightness without breaking the nut or twisting the bolt or screw.

Another object of the invention is to provide a novel and improved device of this general character wherein a ratchet is yieldingly held in engagement with the socket whereby said ratchet and socket are caused to rotate in unison and whereby said ratchet and socket have independent movement one relative to the other when the nut or the like has been brought to desired tightness.

20 The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved ratchet socket wrench whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

35 The novel features of my invention will hereinafter be definitely claimed.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein:

40 Figure 1 is a view partly in section and partly in elevation illustrating a wrench constructed in accordance with an embodiment of my invention and engaged with a nut;

Fig. 2 is a view in elevation of the working end of the body as herein disclosed;

Fig. 3 is a view in elevation of the working face of the head of the shank, as herein included;

Fig. 4 is a fragmentary view partly in section and partly in elevation illustrating a supplemental chuck adapted for use in connection with my improved wrench, and,

55 Fig. 5 is a view in elevation illustrating an attachment whereby my improved device

can be employed in connection with screws or the like.

As disclosed in the accompanying drawings, 1 denotes a cylindrical member of desired dimension, and which is provided in one end face with a socket 2 to receive the work, such as a nut N. The opposite end portion of the member 1 is provided with a pocket or chamber 3 open at its outer end, and which is adapted to be closed by the cap 4. The cap 4 at its axial center is provided with an opening 5 through which is disposed an elongated shank 6. The exterior end portion of the shank 6 is adapted to be engaged with any suitable source of power for rotating the same.

The base or inner end of the pocket or chamber 4 is provided with a ratchet 7 having its side walls in convergence with the angle of convergence as desired. The ratchet 7 is adapted to snugly fit within a notch 8 formed in the opposed face of a head 9 carried by the inner end portion of the shank 6. The side walls of the notch 8 are arranged on substantially the same angle of inclination as the side walls of the ratchet 7 so that under normal conditions the member 1 will rotate in unison with the shank 6.

The head 9 is normally maintained in locking engagement with the member 1 through the instrumentality of the expansible member 10 interposed between the cap 4 and the head 9. As herein disclosed the expansible member 10 comprises a coil spring encircling the shank 6.

During the working operation the expansible member 10 maintains the member 1 and the shank 6 in locking engagement until the resistance offered by the work is sufficient to overcome the tension of the expansible member, whereupon the shank 6 will rotate independently of the member 1. By this means a series of nuts or the like may be applied with uniform tightness, and with the breaking of the nut or twisting of the bolt or screw avoided.

The strength or tension of the expansible member 10 determines the tightness of the work, and for which reason said member 10 is readily removed so that it can be replaced with a similar member of either greater or less strength or tension.

In order that the member 1 may be employed in connection with work of different sizes a chuck C may be employed with the socket 2 therein for the work of a size

either larger or smaller than the socket 2 in the member 1. This chuck C is provided with a shank 11, which is snugly located within the socket 2, so that said chuck C
5 may be properly engaged or coupled with the member 1.

The base of the socket 2 is provided with a recess or pocket 12, substantially spherical in form, and which is adapted to receive the
10 spring members or fingers 14, carried by the outer end of the shank 11 whereby the chuck C is effectively maintained in applied position.

In practice it is my intention to provide a
15 plurality of chucks C with the sockets therein of different sizes.

When it is particularly desired to employ my improved device in connection with screws or the like I employ a shank 15 of a
20 character similar to a screw driver and which is provided at one end with a head 16 adapted to snugly fit within the socket 2, and the outer face of the head 16 is provided with the spring members or arms 17,
25 adapted to engage within the recess or pocket 12 to maintain the shank 15 in working position.

From the foregoing description, it is thought to be obvious that a ratchet socket
30 wrench constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated and it will also be obvious that my
35 invention is susceptible of some change and modification without departing from the principles and spirit thereof and for this reason I do not wish to be understood as limiting myself to the precise arrangement
40 and formation of the several parts herein

shown in carrying out my invention in practice except as hereinafter claimed.

I claim:

1. A wrench of the class described comprising a socket member provided with a
45 compartment, an operating shank extending within the compartment, said shank and a wall of the chamber being provided with a ratchet interlock and yieldable means for normally maintaining said interlock. 50

2. A wrench of the class described comprising a socket member having a chamber in an end portion, an operating shank extending within said chamber, a ratchet interlock between a wall of said chamber and
55 shank for holding said shank against rotation and an expansible member coacting with the shank and the first named member for normally maintaining said ratchet interlock. 60

3. A wrench of the class described comprising a socket member having a chamber in an end portion, an operating shank, extending within said chamber, a ratchet interlock between a wall of said chamber and
65 shank for holding said shank against rotation, and an expansible member coacting with the shank and the first named member for normally maintaining said ratchet interlock, said expansible member comprising
70 a coil spring encircling the shank.

4. In combination with a wrench including a body provided with a socket, the base portion of the socket being provided with a recess substantially spherical in form, and
75 a member snugly fitting within the socket and provided with spring members to extend within the recess to maintain said member in applied position.

CHARLES C. LE CHOT.