M. QUINT.

SOCKET WRENCH.

APPLICATION FILED DEC. 17, 1920.

1,392,220.

Patented Sept. 27, 1921

Fig. 1.

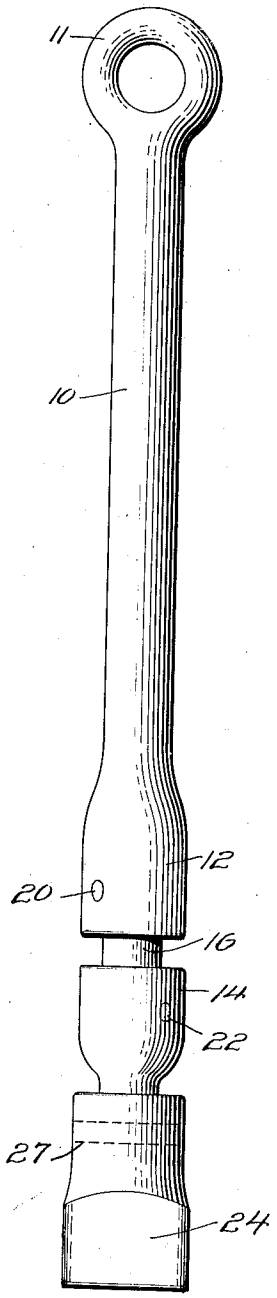


Fig. 2.

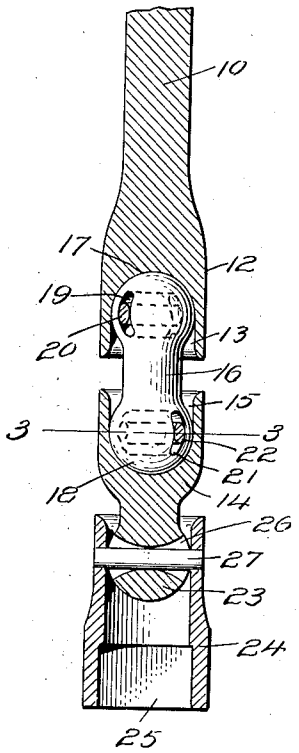


Fig. 3.

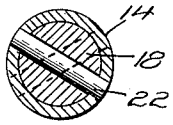


Fig. 4.

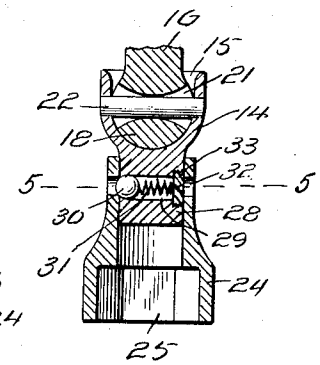
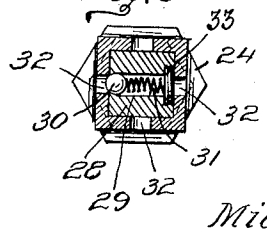


Fig. 5



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SOCKET-WRENCH.

1,392,220. Specification of Letters Patent. Patented Sept. 27, 1921.

Application filed December 17, 1920. Serial No. 431,450.

To all whom it may concern:

Be it known that I, MICHAEL QUINT, a citizen of the United States, residing at Hays, in the county of Ellis and State of Kansas, have invented certain new and useful Improvements in a Socket-Wrench, of which the following is a specification.

This invention relates to wrenches of the socket class, and has for one of its objects to improve the construction and increase the utility and efficiency of devices of this character.

Another object of the invention is to provide a socket wrench having a flexible handle or stock of improved construction to enable the head or socket to be applied to nuts in cramped or otherwise inaccessible localities.

Another object of the invention is to provide a device of this character including an adjustable socket adapted to fit a hexagonal nut from either angle to provide means whereby the wrench may be applied to the nut in cramped localities regardless of the position of the nut.

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.

Figure 1 is a side elevation of the improved implement.

Fig. 2 is a longitudinal sectional view of a portion of the implement.

Fig. 3 is a transverse section on the line line 3—3 of Fig. 2.

Fig. 4 is a sectional detail illustrating a modification in the construction.

Fig. 5 is a transverse section on the line 5—5 of Fig. 4.

The improved implement is designed more particularly for use upon nuts in cramped or otherwise inaccessible locations, and comprises a stock or handle portion 10 having means for forcible rotation, such as an eye 11 to receive a turning rod or the like. At its other end the stock 10 is enlarged as shown at 12 to provide for a semi-globular cavity or socket 13.

Spaced from the socketed end of the stock 10 is an intermediate member 14 having a semi-globular socket 15 substantially like the socket 12 and facing the same. Extending between the sockets 13 and 15 is a coupling link 16 having globular terminals 17 and 18 fitting respectively in the sockets 13 and 15, as shown in Fig. 2.

The globular terminal 17 is provided with a transverse slot 19 through which a pin 20 extends and riveted or otherwise secured at its ends in the walls of the enlargement 12, while the globular terminal 18 is provided with a similar transverse slot 21 through which a pin 22 extends and riveted or otherwise secured in the adjacent walls of the intermediate coupling member 14.

The slots 19 and 21 are preferably arranged with their longitudinal axis at angles to each other, as indicated, to increase the flexibility between the parts.

By this arrangement the three parts 10, 12 and 14 are united by a universal or ball and socket joint, which permits a large degree of lateral adjustment of the socket portion of the improved implement.

At its lower end 23 the intermediate member 14 is of globular outline and fits in the cylindrical bore of a head member 24, the latter having a nut engaging socket 25 at its free end.

The globular terminal 23 is provided with a transverse aperture 26, enlarged at the ends, to receive a transverse pin 27 riveted or otherwise secured at the ends in the adjacent walls of the member 24.

By this means the head member 24 is free to swing upon the pin 27 within the range of the enlarged ends of aperture 26.

The cavity 25 is designed to engage over a nut, and conforms in outline thereto, and may be formed to fit any size or shape of nut.

In Fig. 4 the improved device is shown a slight modification consisting in substituting a square terminal 28 for the globular terminal 23 of the member and forming the interior or bore of the head member 24 correspondingly square to receive the same.

Formed through the squared portion 28 is an aperture 29 to receive a ball 30 and spring 31, the ball receiving end of the aperture being restricted, as shown in Fig. 4, to hold the ball in place while at the same time permitting a portion of the ball to protrude for engagement in socket apertures 32 in the adjacent walls of the member 24.

The aperture 29 is closed at the end opposite to the ball by a threaded plug 33 to provide for the insertion of the ball and spring.

The socket 25 for the nut in the head

member 24 as shown in Figs. 4 and 5 is hexagonal, to engage over a hexagonal nut.

The squared portion 28 is thus held by friction only in the member 24, and can be removed by applying a pulling force applied to either or both of the members 24 or 14, and partly rotated and coupled with another of the sockets 32.

By this means the hexagonal socket 25 may be engaged with either of two positions of the nut.

It sometimes occurs that a hexagonal nut is disposed so close to a stationary part of the structure in which the bolt with which it is engaged is placed, that the socket 25 can be engaged therewith only in one position, and the detachable and adjustable socket shown in Figs. 4 and 5 enables the operator to so dispose the socket that it can be easily adapted to the position of the nut.

The improved implement is simple in construction, can be inexpensively manufactured, and adapted to nuts of various forms and sizes without material structural change except to vary the sizes and shapes of the socket 25 and head member 24.

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 claimed invention may be made in the construction without departing from the principle of the invention or sacrificing any of its advantages.

I claim:

An implement of the class described comprising a stock member having a semi-globular socket in one end, a nut engaging portion having a semi-globular socket in one end, pins extending respectively through the sockets, and a link member having semi-globular terminals engaging in said sockets, said link member having transverse slots at reverse angles to the longitudinal axis of the link and through which the pins extend.

In testimony whereof, I affix my signature hereto.

MICHAEL QUINT.