Jan. 21, 1930. E. H. PETERSON ET AL 1,744,413

SOCKET WRENCH TOOL

Filed July 5, 1929

Fig. 1

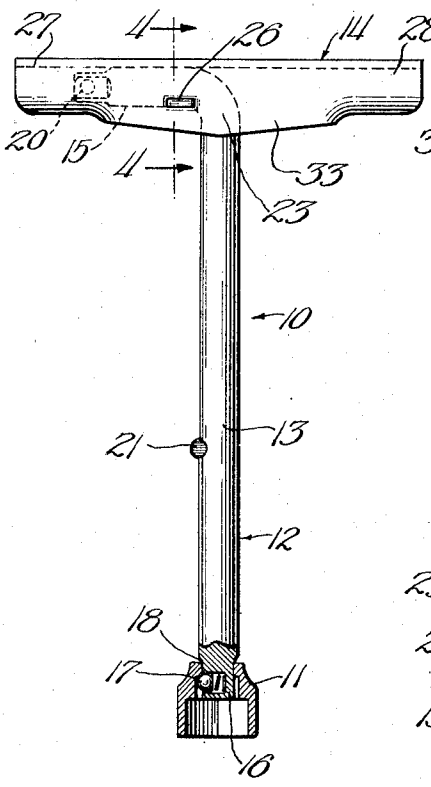


Fig. 3

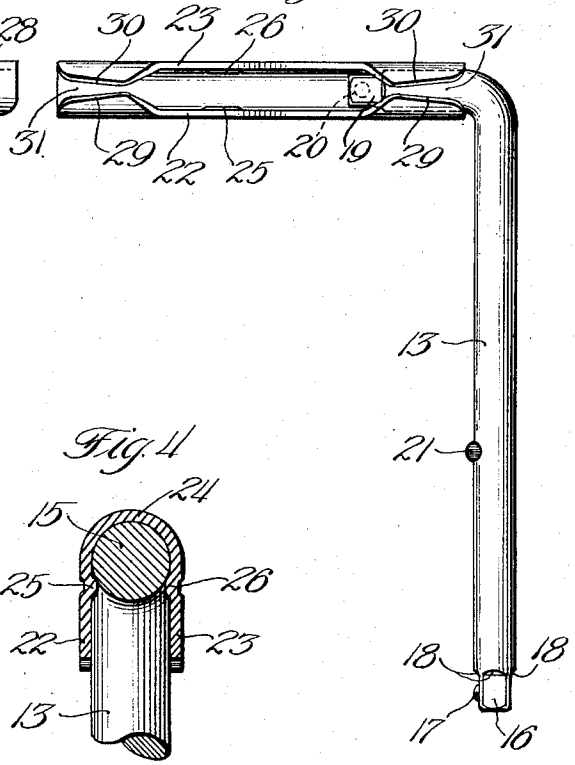
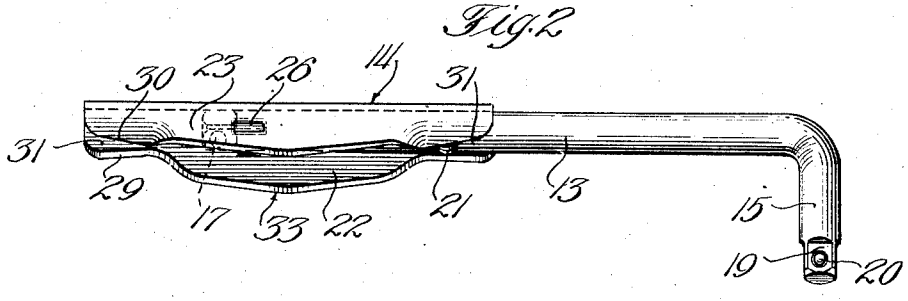


Fig. 4

Fig. 2



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UNITED STATES PATENT OFFICE

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SOCKET-WRENCH TOOL

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The present invention relates to socket wrench tools, and is particularly concerned with handles for use with socket wrenches.

One of the objects of the invention is the provision of an improved socket wrench handle, which is capable of use with a socket wrench or other similar tools, in a plurality of different ways, providing maximum leverage or maximum length of the tool as desired by the user.

Another object of the invention is the provision of a socket wrench handle, comprising a pair of separable parts, including a grip and a shaft, which may be combined to form a T-shaped wrench handle or L-shaped handles of various sizes to suit the convenience of the operator, and to permit access to parts not otherwise accessible.

Another object is the provision of a handle of the class described, the parts of which may be made to fit snugly and firmly with a minimum expenditure of time and labor, so that there is no danger of slippage between the parts of the tool, which might injure the user.

Other objects and advantages of the invention will be apparent from the following description and from the accompanying drawings in which similar characters of reference indicate similar parts throughout the several views.

Referring to the single sheet of drawings accompanying this specification:

Fig. 1 is a side elevational view of a socket wrench tool assembly, with the parts assembled to form a T-shaped handle;

Fig. 2 is a similar view looking from the side and bottom of the handle to illustrate the tool as assembled to form an L-shaped handle of greatly increased leverage;

Fig. 3 is a view similar to Fig. 1, showing a modified assembly of the same elements, forming an L-shaped tool with a shank of considerable length and greater leverage than that of Fig. 1;

Fig. 4 is a sectional view taken on the plane of the line 4—4 of Fig. 1.

Referring to Fig. 1, 10 indicates the socket wrench assembly in its entirety, and the embodiment chosen to illustrate the invention includes an ordinary wrench socket 11, and a handle, including a shaft 13 and a grip 14. The handle 13 may be used with all types of wrenches and is not limited to a socket wrench of the particular type shown.

In the present embodiment, the shaft 13 comprises an elongated cylindrical member having a laterally bent end 15, and while a cylindrical handle is most conveniently constructed from ordinary metal stock, it should be understood that the present invention is not limited to the particular shape of the stock used, and in some embodiments of the invention, the cross-sectional shape of the shaft may take other forms, provided the grip is modified correspondingly.

The lower end of the shaft 13 in Fig. 1 is provided with a non-circular formation 16, having a spring pressed ball 17 for engagement in a complementary recess in the socket 11, and the formation of the non-circular end 16 provides shoulders 18 which determine the final position of the shaft in the socket 11. The opposite end of the shaft 13 is likewise provided with a non-circular formation 19 and a spring pressed ball 20, and the shaft 13 is preferably provided with a lug 21 located on the same side of the shaft as the laterally bent end 15, and formed by pressing out a portion of the shaft 13.

The grip 14 comprises a sheet metal member, the central portion 33 of which is bent to substantially U-shape, having downwardly extending flanges 22, 23 joined by a yoke 24 of substantially cylindrical shape. The flanges 22 and 23 are provided with inwardly pressed protuberances 25 and 26, giving the interior of the U-shaped portion 33 the conformation shown in Fig. 4, which is substantially complementary to the laterally bent end 15 of the shaft. That is, at the plane 4—4, the grip 14 embraces the end 15 of shaft 13 over more than half the circumference, thereby retaining the grip on the shaft. The protuberances 25 and 26 are preferably, but not necessarily, elongated protuberances formed by the use of a tool having an edge of greater length than width, so that the protuberances extend longitudinally of the cylindrical shaft end 15.

The grip 14 preferably has its ends 27 and 28 bent to substantially cylindrical form with the adjacent edges 29 and 30, forming a slot 31 of tapering width at each end. The cylindrical ends 27 and 28 may thus be made complementary shape to the shaft 13, so that either end of the shaft 13 may be placed in one of the cylindrical ends 27 and 28 of the grip to form the tools shown in Figs. 2 and 3.

When the parts are assembled as shown in Fig. 2, the lug 21 is adapted to be wedged into the slot 31 between the edges 29 and 30, firmly securing the grip 14 on the shaft 13, and the engagement of the protuberances 25 and 26 with other cylindrical parts of the shaft 13 aids in providing a snug and firm fit of the grip on the shaft. If desired, the shaft may be provided with another lug or nib 32 located to engage in the slot 31 when the parts are assembled as shown in Fig. 3.

The length of the U-shaped portion 33 of the grip 14 is such that the laterally bent end 15 of the shaft may be inserted in the grip, clearing the protuberances 25, 26, after which the grip 14 is slid to the right on shaft 13 to the position of Fig. 1.

The flanges 22 and 23 preferably extend downward on the shaft 13, engaging the sides of the shaft and positively preventing rotation or play of the grip on the laterally bent end 15, and the protuberances 25, 26, fit firmly and snugly against the bent end 15 of the shaft to hold the grip 14 on the shaft. The extreme end 15 also engages in the cylindrical portion 27 of the grip 14 in Fig. 1.

It will thus be observed that the present invention is adapted to be used as a T-shaped handle or as an L-shaped handle of a great leverage, or it may be used as an L-shaped handle having greater leverage than the T-shaped handle, but having a greater length of shank than the L-shaped handle shown in Fig. 2.

The present construction is capable of permitting access to parts of machinery which are not otherwise accessible, and due to the particular construction and combination of elements, it is capable of manufacture with a minimum expenditure of material and labor, so that it may be produced at a cost within the means of a vast number of purchasers.

While we have illustrated a preferred embodiment of our invention, many modifications may be made without departing from the spirit of the invention, and we do not wish to be limited to the precise details of construction set forth, but desire to avail ourselves of all changes within the scope of the appended claims.

Having thus described our invention, what we claim is new and desire to secure by Letters Patent of the United States, is:

1. In a socket wrench assembly, the combination of a handle comprising two separable parts including a shaft having a laterally bent end, and a handle, said handle comprising a sheet metal member having a U-shaped central portion and substantially cylindrical end portions to receive said shaft, said cylindrical end portions having tapering slots formed therein to receive a lug carried by said shaft.

2. A socket wrench handle comprising a shaft having a laterally bent end with a non-circular formation to engage a tool, a grip comprising a sheet metal member having a cylindrical portion with a tapering slot, a lug carried by said shaft and adapted to be wedged in said slot when said shaft is assembled with said handle, and inwardly pressed protuberances carried by said grip for engaging opposite sides of said shaft at a point spaced from said lug.

3. A socket wrench handle comprising a shaft having a laterally bent end portion, and a non-circular wrench engaging portion, and a grip for said shaft comprising a metal member having a substantially cylindrical formation at its end and having another portion with a substantially U-shaped cross section forming an opening for the insertion of said shaft, one end of said shaft being slidably received in said cylindrical end portion and said grip having inwardly pressed formations spaced from said cylindrical formation to engage another part of said shaft.

In witness whereof, we hereunto subscribe our names this 29th day of June, 1929.

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