July 2, 1929. R. G. RAWLINGS 1,719,310

SPEED WRENCH

Filed Oct. 14, 1926

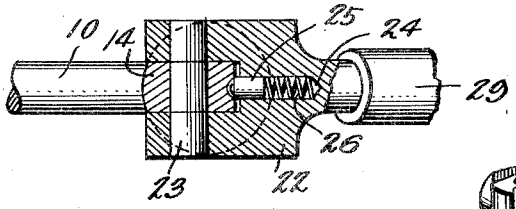


Fig. 4.

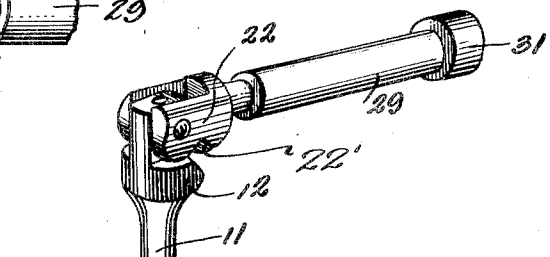


Fig. 2.

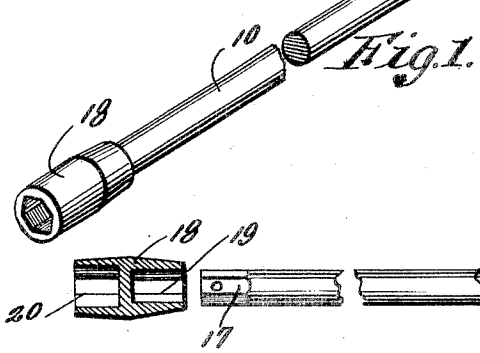
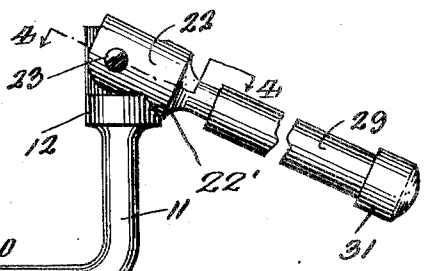


Fig. 1.



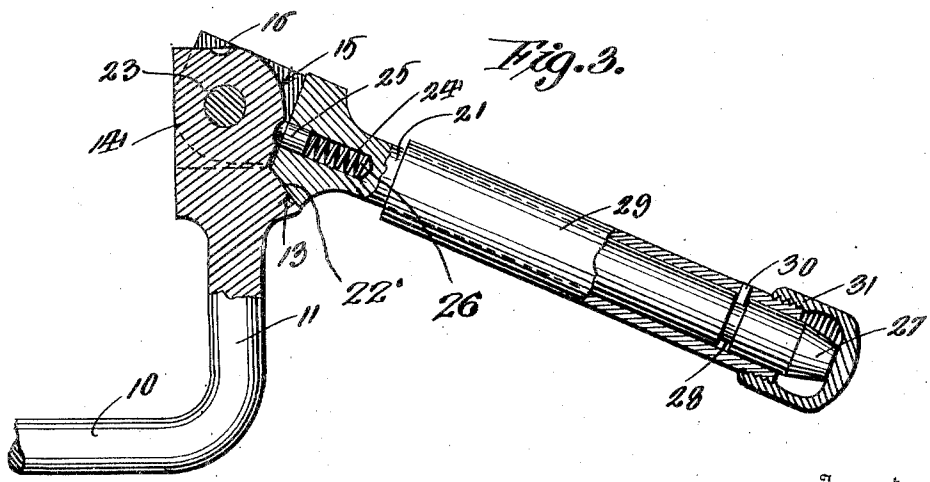


Fig. 3.

WITNESSES

Guy M. Spring

Inventor

ROLAND G. RAWLINGS

By Richard B. Owen Attorney

Patented July 2, 1929. 1,719,310

UNITED STATES PATENT OFFICE.

ROLAND G. RAWLINGS, OF ONTARIO, CALIFORNIA.

SPEED WRENCH.

Application filed October 14, 1926. Serial No. 141,607.

The present invention relates to improvements in wrenches and has particular reference to an improved socket wrench.

An important object of the invention is the provision of a socket wrench of angular formation and designed to facilitate the connection of bolts and nuts.

A further object of the present invention is the provision of a socket wrench of angular construction which will permit convenient connection of bolts and the like in spaces ordinarily inaccessible.

A still further object of the invention is the provision of a socket wrench of the above character which may be adjusted to provide increased leverage for tightening or loosening bolts or nuts.

Still another object of the invention is the provision of a socket wrench of the above character which is simple and durable of construction, efficient for the purpose intended and which can be manufactured at a low cost.

Other objects and advantages of the invention will become apparent as the description progresses.

In the accompanying drawings forming a part of this specification and in which like reference characters are employed to designate corresponding parts throughout the same:

Figure 1 is a perspective view of the modified form of wrench comprising my invention,

Figure 2 is a side elevational view of the same partially in section,

Figure 3 is an enlarged side elevational view of the wrench showing the pivoted joint and handle structure partially in section,

Figure 4 is a top plan view of the joint partially in section.

Referring to the drawings, wherein for the purpose of illustration are shown a preferred and modified form of the invention, the numeral 10 generally designates the shank or body of the preferred form of wrench, this body being preferably formed of round metallic bar and having one end bent at right angles to provide an angular arm 11. The upper end of the arm 11 is provided with a head including a circular shoulder 12 having a flattened face 13. Projecting vertically upward from the center of the shoulder is a substantially rectangular ear 14 having the rear portion rounded as at 15 and provided with transverse opening. This ear is also provided with a pair of indentations 16, one formed on the upper central portion of the ear and another at the lower rear portion. The forward end of the shank 10 is formed to provide non-circular, preferably hexagonal end portion 17 for detachable engagement with a socket sleeve 18. This socket sleeve is of standard construction having a non-circular recess 19 formed in one end for snug engagement with the non-circular portion of the shank 17 and a similar recess 20 of any desired dimension formed in its forward extremity. This latter recess being adapted for engagement with the heads of bolts or nuts.

Pivotally connected with the body of the pin and adapted for rotary movement of the wrench is a handle structure composed of a cylindrical handle bar 21 provided at its forward end with an enlarged head 22 recessed transversely to provide a fork and provided with a flat face 22′ and also provided adjacent its forward end with aligned openings adapted to be arranged in alinement with the opening formed in the ear 14 and connected by a pivot pin 23. A longitudinal bore 24 is formed in the handle bar and receives a slidable round headed lug 25. This lug is normally urged to an outwardly extended position by means of a compression spring 26, the outer rounded end of the lug being slidably actuated about the rounded contour of the ear 14 and engageable with the indentations 16 to set the handle member in suitable angular position with respect to the main shank 10. At this point it will be understood that the handle member 21 may be adjusted to the position shown in Figures 2 and 3 of the drawings in which position the flat face 22′ of the head 22 will abut against the flattened face 13 of the shoulder 12 thus limiting the movement of the handle member in this direction, and it will also be evident that when the handle member is swung to its other position or in other words to extend from the arm 11 in alinement therewith, the inner end of the fork in the head 22 of the handle member will abut against the outer end of the ear 14 thus limiting the swinging movement of the handle member to this position. As clearly shown in Figure 3, the outer extremity of the handle rod 21 is tapered to form a conical end piece 27 while an annular groove 28 is formed adjacent to said outer end.

This construction is devised to permit convenient connection of a rotatable handle casing composed of a longitudinal tubular sleeve

29 adapted to be loosely and rotatably fitted upon the shank rod 21 having a transverse opening in which is snugly fitted a pin 30. This pin projects inwardly so as to engage the groove 28 thereby permitting convenient rotary movement of the sleeve 29 but preventing longitudinal displacement thereof. The outer end of the sleeve 29 is exteriorly screw threaded so as to receive thereon an end cap 31 threadedly mounted on the sleeve and rotatable therewith. This provides a conveniently rotatable handle casing which will greatly facilitate the rotary action of the wrench. Thus the handle structure can be swung from a position at right angles to the shank to a high speed position with the handle disposed at an acute angle with the shank.

In the operation of the preferred form of wrench, the initial movement of the bolt or nut and continuing major movement is accomplished by arranging the wrench handle in a rearwardly projected angular position with respect to the main body 10, whereby a crank like movement is imparted to the wrench for rapid rotation thereof. In this position the bar 21 is arranged at an acute angle with respect to the shank or body 10 for convenient rotary operation of the wrench. The final tightening movement is made by swinging the handle member in a right angular position relative to the main body in alignment with the arm 11 in which position the lug 25 will engage the outer indentation 16 and afford greater leverage although the speed of the wrench will be lessened but the leverage materially increased so that the bolt or nut may be efficiently secured. It is thus apparent, that a wrench combining speed of movement adjustably to produce increased leverage is obtained. An essential feature of the construction resides in the ease and rapidity with which the wrench may be converted from a high speed socket wrench to a socket wrench of substantial leverage merely involving the swinging of the handle from its angular rearwardly directed position through an arc of approximately 110 degrees to a position at right angles to the main body.

It is understood that the form of my invention herewith shown and described is to be taken as the preferred example of the same and that various changes as to the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. In a wrench of the class described, a body portion having one end adapted to engage a socket member, an arm extending from the other end of the body in angular relation thereto, a head on the head of said arm and having a flattened face on the side remote from the socket engaging end of the body, an ear projecting from the head in the plane of the body and arm, a handle having a forked end engaging said ear and pivoted thereto, the inner end of the fork and end of the ear constituting cooperating engaging surfaces to limit the movement of the arm in one direction, the forked end of the handle having a flattened surface engageable with the flattened face of the head to limit movement of the handle in the opposite direction.

2. In a wrench of the class described, a body portion having one end adapted to engage a socket member, an arm extending from the other end of the body in angular relation thereto, a head on the end of said arm and having a flattened face on the side remote from the socket engaging end of the body, an ear projecting from the head in the plane of the body and arm, a handle having a forked end engaging said ear and pivoted thereto, the inner end of the fork and end of the ear constituting cooperating engaging surfaces to limit movement of the arm in one direction, said fork further having a flattened surface engageable with the flattened face of the head to limit movement of the handle in the opposite direction, and cooperating means on the ear and the handle for locking the handle in either of said positions.

In testimony whereof I affix my signature.

ROLAND G. RAWLINGS.