Jan. 12, 1926. 1,569,117

E. R. CARPENTER

WRENCH

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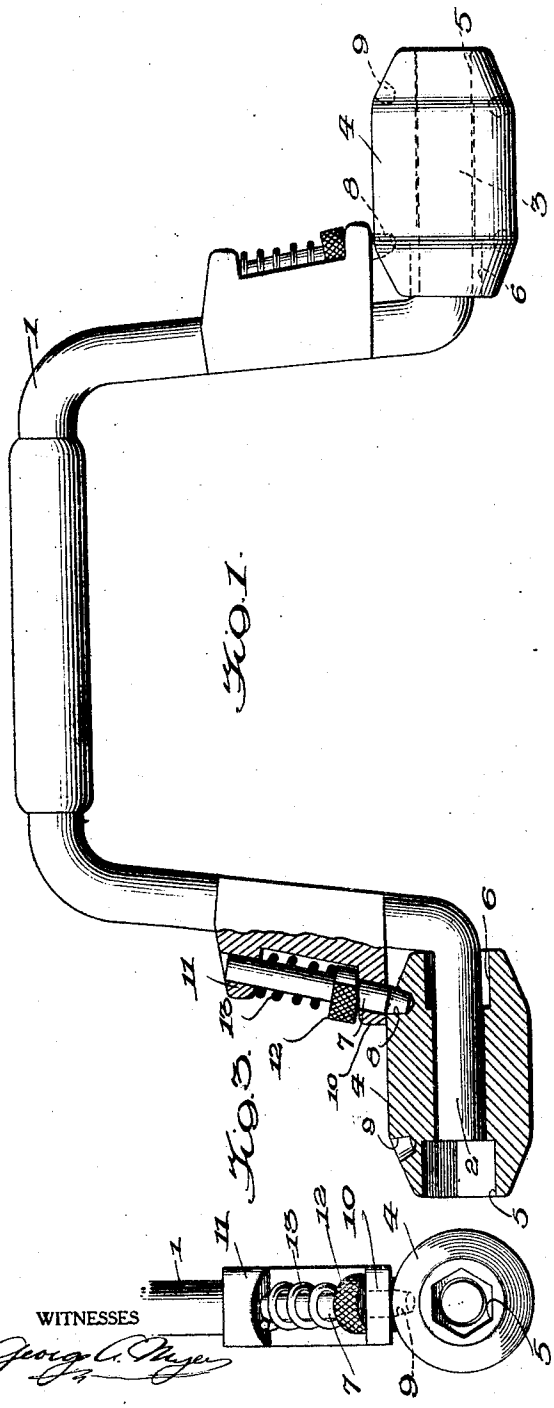


Fig. 1.

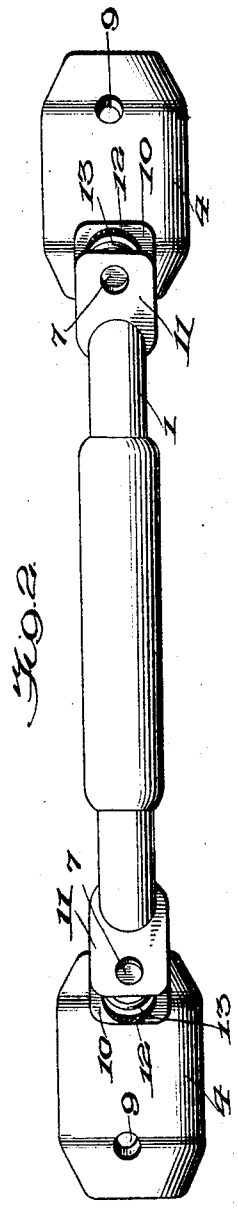


Fig. 2.

Fig. 3.

WITNESSES

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UNITED STATES PATENT OFFICE.

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WRENCH.

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To all whom it may concern:

Be it known that I, EUGENE R. CARPENTER, a citizen of the United States, and resident of Ansonville, in the county of Anson and State of North Carolina, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

My invention relates generally to improvements in wrenches, more particularly to improvements in wrenches of the type having a socket for engaging with a nut, bolt head or like element, and it consists in the combinations, constructions and arrangements herein described and claimed.

An object of the invention is to provide a wrench of the character described which affords facilities for turning nuts or like parts of the same size or of a plurality of different sizes within a considerable range selectively or successively speedily and easily.

A further object of the invention is the provision of a wrench of the character described having sockets for engaging nuts or like parts of more than one size without any adjustment of the parts of the wrench being required and for engaging nuts or like parts of a relatively great number of different sizes with but slight and quickly effected adjustment of relatively few parts of the device being required.

Other objects and advantages will be apparent from the following description, considered in conjunction with the accompanying drawings, in which

Figure 1 is a side elevation of a wrench embodying the invention with portions thereof shown broken away and other portions shown in section,

Figure 2 is a plan view of the wrench, and

Figure 3 is a fragmentary end elevation of the wrench.

The body of a wrench embodying the invention comprises a substantially U-shaped handle portion 1 having outturned oppositely extending aligned end portions 2 and 3 respectively, each of which carries a removable tubular socket member 4. Each tubular socket member 4 has the bore thereof enlarged and suitably formed at its opposite ends to provide sockets 5 and 6 respectively. Each socket 5 and 6 is adapted to engage with a nut, not shown, or like element of hexagonal or other non-circular contour in cross section. The end portions 2 and 3 of the body of the wrench are equal in length and each is of less length than the socket member 4 that is supported thereon, being adapted to extend through the socket in the inner end of the socket member and in the bore of the socket member to the plane of the inner or bottom wall of the socket in the outer end of the socket member.

Each socket member 4 can be releasably held in place on the end portion 2 or 3 on which it is disposed by the engagement of a spring pressed locking pin 7 with a recess 8 or 9 in the outer wall of the adjacent or inner end portion of the socket member, each locking pin 7 being axially movable in aligned openings in spaced guiding and retaining lugs 10 and 11 respectively with which each arm of the U-shaped handle portion of the body of the wrench is provided, the lugs 10 and 11 being rigid with the handle portion of the body and extending outwardly from the handle arm on which they are carried in overlying relation to the outwardly turned end portion 2 or 3 of that particular arm of the handle. The arrangement is such that the aligned openings of the lugs 10 and 11 will be in alignment with the recess 8 or 9 at the adjacent end of the underlying socket member when that socket member has been moved on the supporting end portion 2 or 3 of the body of the wrench until the inner end of the socket member abuts the adjacent arm of the handle of the wrench and the socket member has been turned about the axis of the supporting end portion 2 or 3 until the recess in the outer wall of the inner end portion of the socket member is in line with the openings in the lugs 10 and 11.

The locking pin 7 is provided with a finger piece 12 on the portion thereof that is located between the lugs 10 and 11. The finger piece 12 may be knurled on its outer face as shown, and may be conveniently manipulated by means of the finger of a hand by which the wrench handle is held to effect axial movement of the locking pin to and from position to engage with a recess in the outer wall of the inner end portion of the underlying socket member 4. The finger piece also serves as a stop for engaging with the adjacent lug 10 to limit the axial movement of the locking pin in one direction in the aligned openings of the lugs 10 and 11

and for engaging with an expansion spring 13 which is disposed in encircling relation to the locking pin between the lug 11 and the finger piece 12, whereby the locking pin is urged continuously toward position to engage with the underlying socket member 4 and is held against displacement from the openings of the lugs 10 and 11.

The sockets 5 and 6 of each socket member 4 are of different sizes and the sockets 5 and 6 at opposite ends of each socket member may be and preferably are of different sizes than the corresponding sockets of the other socket member that is carried by the body of the wrench at a given time. In the drawings, the socket members are shown in position on the end portions 2 and 3 with the sockets 6 proximate to the arms of the handle portion of the body of the wrench and the end portions of the socket members which are provided with the recesses 8 innermost or in other words, in position to permit engagement of the locking pins 7 with the recesses 8 to hold the socket members against movement relatively to the end portions of the body of the wrench. However, it will be understood that each socket member 4 may be reversed on its supporting end portion of the body of the wrench so that the recess 9 will be in position to be engaged by the adjacent locking pin 7 and the socket 6 will be outermost and in position to be placed in engagement with a nut or like part. The respective socket members 4 which are supported on the end portions 2 and 3 of the body are interchangeable and other socket members which differ from the socket members 4 that are exhibited in the drawings only in that the sockets at the opposite ends thereof are different in size from those which are shown can be secured in place on either of the portions 2 or 3 to adapt the wrench for use in turning a nut or like part of any given size within a considerable range.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood. The device is grasped and arranged with the socket at either of its opposite ends of the body thereof in engagement with a nut or like part. The handle of the device then is turned in the manner of a brace to effect turning of the nut or like part. Since the sockets at opposite ends of the body of the device are of different sizes, the device can be used for turning nuts or like parts of two different sizes without any adjustment of the parts of the device being required. The device can be adapted for use quickly and easily merely by reversing the socket members end to end on the supporting end portions of the body of the device. If nuts of still different sizes are to be turned, socket members provided with sockets adapted to engage nuts of such sizes can be secured on the end portions of the body of the device in place of the like socket members which were previously placed thereon, this adjustment to be effected quickly and easily without the use of any tools.

I claim:

A device of the character described comprising a substantially U-shaped handle having an outturned end portion at one end of an arm thereof, said arm having spaced lugs extending laterally thereof in transverse alignment with said outturned end portion, said lugs having aligned openings formed therethrough, a locking pin slidable in said openings and movable toward and away from said outturned end portion, a stop on said locking pin located between said lugs for limiting the movement of the latter in the openings of the lugs, an expansion spring encircling said locking pin and disposed between said stop and one of said lugs for urging said locking pin toward said outturned end portion, and a tubular socket member adapted to be disposed on said outturned end portion and having a recess in its outer wall adapted to be engaged by said locking pin when said socket member is in a certain position on said outturned end portion, whereby said socket member will be releasably held against movement relatively to said handle, said stop on the locking pin having a roughened outer face for engagement with a finger of the hand of an operator of the device.

EUGENE ROY CARPENTER.