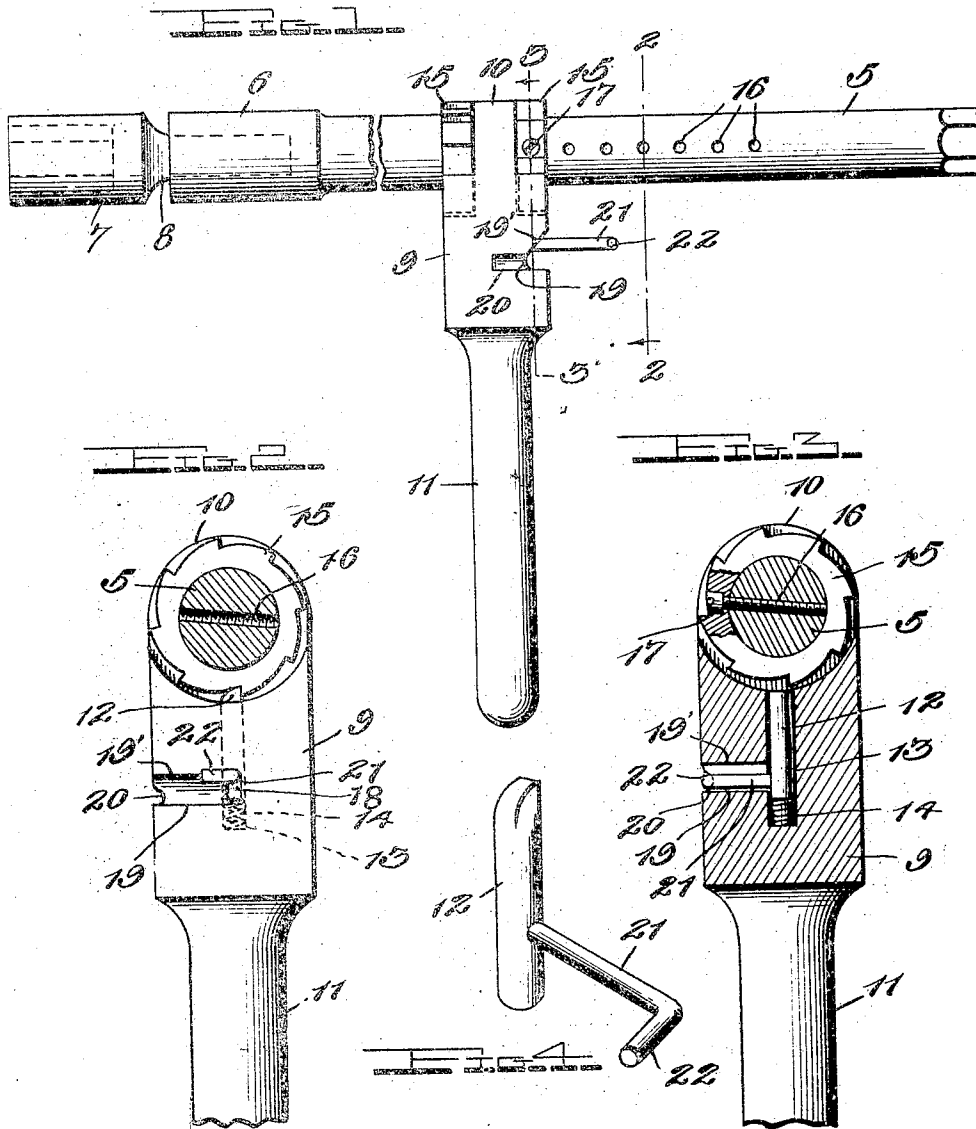


C. O. OSHA & H. L. DOUGLAS.
 RATCHET WRENCH.
 APPLICATION FILED JULY 24, 1912.

1,053,432.

Patented Feb. 18, 1913



Inventors

C.O. Osha and
 H.L. Douglas,

Witnesses

Chas. L. Cristaer,
 A. B. Norton.

By

Watson E. Coleman,
 Attorney

UNITED STATES PATENT OFFICE.

CLARENCE O. OSHA, OF RANDOLPH, AND HORACE L. DOUGLAS, OF CRAFTSBURY,
VERMONT.

RATCHET-WRENCH.

1,053,432.

Specification of Letters Patent.

Patented Feb. 18, 1913.

Application filed July 24, 1912. Serial No. 711,359.

To all whom it may concern:

Be it known that we, CLARENCE O. OSHA and HORACE L. DOUGLAS, citizens of the United States, residing at Randolph and Craftsbury, respectively, in the counties of Orange and Orleans, respectively, and State of Vermont, have invented certain new and useful Improvements in Ratchet-Wrenches, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to ratchet wrenches and has for its primary object to provide a device of this character of simple, durable and inexpensive construction and which is of great convenience in practical use.

Another and more specific object of the invention resides in the provision of a body bar, a handle loosely mounted upon said bar, and ratchets longitudinally adjustable upon the bar on opposite sides of the handle, said handle carrying pawls to coact with said ratchets, whereby the body bar may be rotated in opposite directions.

A further object of the invention is to provide a ratchet wrench having a pair of spring pressed pawls mounted in its body, and means for retaining said pawls in their inoperative position.

With the above and other objects in view as will become apparent as the description proceeds, the invention consists in certain constructions, combinations and arrangements of parts that we shall hereinafter fully describe and claim.

For a full understanding of the invention reference is to be had to the following description and accompanying drawings in which—

Figure 1 is a side elevation of a ratchet wrench embodying the present invention; Fig. 2 is a section taken on the line 2—2 of Fig. 1; Fig. 3 is a section taken on the line 3—3 of Fig. 1; Fig. 4 is a detail perspective view of one of the pawls.

Corresponding and like parts are referred to in the following description and designated in the accompanying drawings by like reference characters.

Referring in detail to the drawing 5 designates a cylindrical bar which is provided upon one end with a socket 6 to receive the rectangular shank 8 of an extension member 7, said extension member being provided with a socket of octagonal or other

polygonal shape in cross section whereby the device may be applied to nuts of the various forms.

The body 9 of the wrench is provided with a reduced extension 10 having an opening 60 to loosely receive the body bar 5. The wrench is also provided with a suitable handle 11 whereby the same may be turned around said bar. In the body of the wrench extending inwardly from the shoulder in the rear and on each side of the reduced portion 10 thereof the longitudinally movable spring pressed pawls 12 are arranged, said pawls being disposed in sockets or recesses 13. Coil springs 14 are arranged in said recesses to bear against the inner ends of the pawls and normally act to force the same outwardly. The outer ends of these pawls are beveled for engagement with the oppositely disposed teeth of the ratchets 15 which are arranged upon the body bar 5 on opposite sides of the reduced extension 10 of the body of the wrench. The bar 5 is provided with a longitudinal series of threaded openings 16 to receive the fastening screws 17 whereby the spaced ratchets 15 and the wrench may be longitudinally adjusted upon said body bar.

The body 9 of the wrench is provided with the longitudinal slots 18 on opposite sides thereof which open into the sockets or recesses 13. Laterally disposed grooves or channels 19 are formed in the face of the wrench and communicate at their inner ends with these slots. The outer ends of said grooves are extended as at 20 for a slight distance upon the face of the body 9 of the wrench which is disposed in a plane at right angles to the face of the slot 18. To each of the movable pawls 12 a pin 21 is secured or may be formed integrally therewith. These pins, when the pawls are in operative engagement with the ratchets 15 are disposed for movement in the slots 18. In order to dispose the pawls in their inoperative positions, the operator forces the pins 21 inwardly in the slots 18 until they are disposed opposite to the grooves 19. The pawls are then rotated so that the pins will lie in the grooves 19. The ends of these pins are disposed at a right angle as indicated at 22 and are adapted to be received in the grooves 20. It will be observed with reference to Fig. 2 that one of the walls of the grooves 19 is beveled as at 19'. This inclined wall

of the groove enables the pin 21 to be readily engaged by the fingers to move the pin out of said groove and dispose the same for movement in the slot 18. The end portion 22 of the pin bearing against the wall of the groove 20 against which it is forced by the spring 13 effectually prevents accidental or unintentional outward movement of the pin 21 from the body of the wrench. In this manner the pawl is securely held in its inoperative position.

In the use of our improved wrench, the ratchets 15 and the body of the wrench are adjusted upon the bar 5 to the proper position whereby the operator is enabled to manipulate the wrench handle. This longitudinal adjustment is particularly desirable in the use of the device for removing or tightening bolts or nuts of automobiles or similar vehicles. After the parts have been properly adjusted, the operator moves one of the ratchet engaging pawls and secures the same in its inoperative position in the manner above described. The other pawl engaging the teeth of one of the ratchets locks the wrench upon the body bar when the wrench handle is moved in one direction, whereby the bar is rotated. In order to reverse the rotation of the bar it is of course understood that the other of the pawls is disposed in engagement with the other ratchet while the first pawl is secured in its inoperative position in the body of the wrench.

From the foregoing it will be seen that we have produced a double acting ratchet wrench which is of comparatively simple construction, strong and durable in practical use and may be produced at comparatively small cost.

It will be obvious that the various parts may be readily assembled in position and easily and quickly adjusted in the manner set forth.

The device is also susceptible of a great many minor modifications in the form, proportions and arrangement of the elements employed without departing from the essential features or sacrificing any of the advantages thereof.

Having thus described the invention, what is claimed is:

1. The combination with a body bar, of a wrench having an extension loosely

mounted upon said bar, ratchets arranged upon the bar upon opposite sides of said extension, said bar having a longitudinal series of threaded openings, screws to be threaded in said openings to adjustably secure the ratchets upon the bar, and spring pressed pawls mounted in the wrench to coact with said ratchets whereby the body bar may be rotated in either direction.

2. The combination with a body bar, of a wrench having a rectangular body portion provided with a reduced extension loosely mounted upon said bar, spaced ratchets fixed upon the body bar on opposite sides of said extension, said wrench body having longitudinal sockets, pawls mounted in said sockets to engage the ratchets, springs arranged in the sockets and normally acting to force the pawls into engagement with the ratchets, said wrench body having longitudinal slots communicating with said sockets, pins fixed to the pawls and movable in said slots, said body bar having grooves in its opposite faces to receive said pins whereby the pawls are held in their inoperative position.

3. The combination with a body bar, of a wrench loosely mounted upon said bar and having a rectangular body portion, spaced ratchets fixed upon the bar, the body of said wrench having longitudinal sockets, pawls arranged in said sockets, springs engaging the pawls and normally forcing the same into engagement with the ratchets, said wrench body having longitudinal slots communicating with said sockets and provided in its opposite faces at the inner ends of said slots with laterally extending grooves, the other faces of the wrench body also having grooves therein communicating with the first named grooves, and pins fixed to said pawls to move the pawls inwardly in the sockets to an inoperative position, said pins being adapted to be received in said first named grooves and having angularly bent ends to engage in the latter grooves.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses.

CLARENCE O. OSHA.
HORACE L. DOUGLAS.

Witnesses:

W. S. DU BOIS,
J. B. CHANDLER.