

W. HUCAL.  
 WRENCH.  
 APPLICATION FILED DEC. 13, 1916.

1,219,316.

Patented Mar. 13, 1917.

Fig. 1.

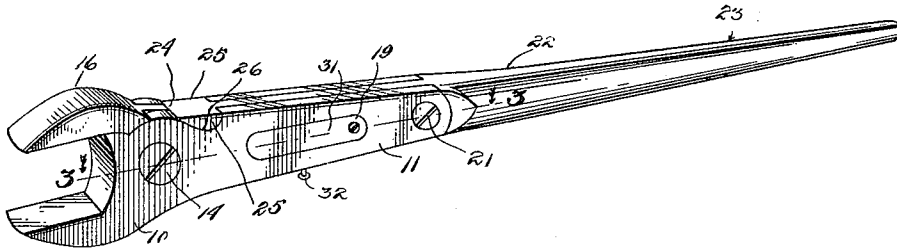


Fig. 2.

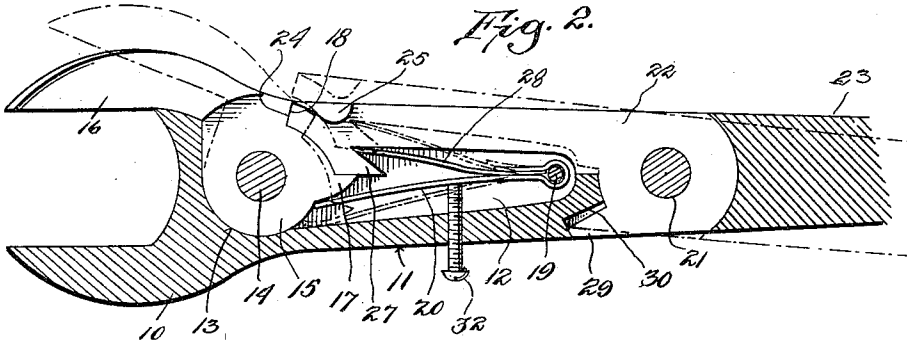


Fig. 3.

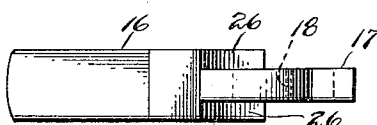
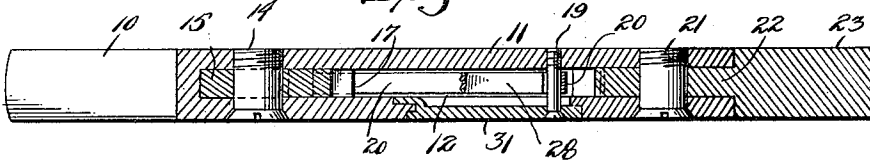


Fig. 4.

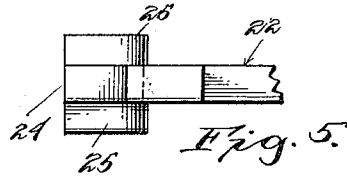


Fig. 5.

Witness

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# UNITED STATES PATENT OFFICE.

WASYL HUCAL, OF VEGREVILLE, ALBERTA, CANADA.

## WRENCH.

1,219,316.

Specification of Letters Patent.

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### *To all whom it may concern:*

Be it known that I, WASYL HUCAL, a subject of the Emperor of Austria-Hungary, residing at Vegreville, in the Province of Alberta and Dominion of Canada, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to wrenches and has special reference to a novel form of ratchet wrench arranged to alternately grip and release a nut or bolt according as the wrench is moved in one direction or the other.

The principal object of the invention is to improve the general construction of wrenches of this description.

A second important object of the invention is to provide an improved construction of oscillating jaw and locking means therefor in a wrench of this description.

A third object of the invention is to provide an improved construction of wrench which can be quickly and readily shifted from one gripping position on a nut to a second such position.

With the above and other objects in view, as will be hereinafter apparent the invention consists in general of certain novel details of construction and combinations of parts hereinafter fully described, illustrated in the accompanying drawing, and specifically claimed.

In the accompanying drawing, like characters of reference indicate like parts in the several views, and:—

Figure 1 is a perspective view of a wrench constructed in accordance with this invention.

Fig. 2 is a longitudinal sectional view partly in elevation, one position being shown in full lines and a second in dotted lines.

Fig. 3 is a section on the line 3—3 of Fig. 1.

Fig. 4 is a detail edge view of the oscillating jaw.

Fig. 5 is a view of the inner face of the end of the handle lever.

In carrying out the embodiment of the invention herein illustrated there has been provided a fixed jaw 10 having a shank 11, the shank being slotted as at 12. The forward end of the slotted portion is rounded as at 13 concentric of the bolt holes for the pivot 14 and this rounded portion receives

the reduced end 15 of the movable or oscillatory jaw 16. The rear end of this movable jaw is provided with a lug 17 and substantially at right angles to this lug is a shoulder 18 for purposes hereinafter set forth.

Mounted on a pin 19 passing through the slot 12 is a leaf spring 20 which bears beneath the lug 17 and normally holds the fixed and movable jaws in parallel position although, under certain conditions the movable jaw may oscillate.

It will be obvious that when the jaws are parallel they will grasp the opposite faces of a proper sized nut or bolt head any if held parallel will turn the bolt if the wrench be turned. It will also be obvious that permitting the jaws to spread by the oscillation of the jaw 16 away from the jaw 10 will permit the wrench to rotate about the nut or bolt head.

Passing across the rear end of the slot 12 is a pivot bolt 21 whereon is pivoted a lever 22 having a handle 23. The forward end of this lever is reduced to fit the slot 12 and at the extreme forward end is provided an abutment 24 which fits against the shoulder 18 when the parts are in the position shown in full lines in Fig. 2. Furthermore, this extremity is provided with laterally disposed shoulder lugs 25 which fit notches 26 in the shank 11 in said full line position.

On the inner face of this lever is provided an undercut lug 27, the undercut portion providing a seat for a leaf spring 28 secured to the spring 20 and urging this forward end inward to full line position.

Furthermore, the pivotal portion of the lever 22 is provided with a stop lug 29 which engages in a stop notch 30 when the parts are moved to dotted line position and thereby prevents too great movement of the handle lever 22.

Access may be had to the interior of the slot 12 by removing a closure 31 and the spring may have its tension adjusted by means of an adjusting screw 32 in the usual and obvious manner.

In operation, the wrench is applied to the nut or bolt head in such position that the forward end of the handle lever will swing into the slot 12 when the wrench is moved to screw the nut in the desired direction. The wrench is then moved through a quarter turn if the nut or bolt head be squared or through a sixth turn if hexagonal. During this movement the square end of the lever

will rest behind the shoulder of the oscillating jaw and thus lock it from movement with respect to the fixed jaw. After this movement has been accomplished the handle is swung in the opposite direction. The first effect of this is to disengage the squared end from behind the shoulder of the oscillating jaw and leave the latter free to move. As movement of the handle continues the shank will also be swung back and the jaws will spread and permit movement past the angles of the nut or bolt head. When in position to grip the next pair of nut faces or flats the motion of the handle is again reversed. The springs will now throw the oscillating jaw into parallelism with the fixed jaw and the squared end of the lever behind the shoulder for a fresh step in the movement of the nut.

There has thus been provided a simple and efficient device of the kind described and for the purpose specified.

It is obvious that many minor changes may be made in the form and construction of the invention without departing from the material principles thereof. It is not therefore desired to confine the invention to the exact form herein shown and described but it is wished to include all such as properly come within the scope claimed.

Having thus described the invention, what is claimed as new, is:—

1. In a wrench, a fixed jaw having a shank, an oscillating jaw pivoted to the shank to move into and out of parallelism with the

fixed jaw, a handle lever pivoted to the shank and having a squared end, a lug on said oscillating jaw behind which said squared end rests to lock the oscillating jaw against movement away from the fixed jaw, a spring urging the oscillating jaw into parallelism with the fixed jaw, a second spring urging said squared end inward to rest behind the shoulder, and cooperating means on the shank and handle lever to limit movement of said lever in one direction.

2. In a wrench, a fixed jaw having a shank, an oscillating jaw pivoted to the shank to move into and out of parallelism with the fixed jaw, a handle lever pivoted to the shank and having a squared end, a lug on said oscillating jaw behind which said squared end rests to lock the oscillating jaw against movement away from the fixed jaw, a spring urging the oscillating jaw into parallelism with the fixed jaw, a second spring urging said squared end inward to rest behind the shoulder, cooperating means on the shank and handle lever to limit movement of said lever in one direction and interlocking means on the shank and forward end of the lever to take the strain against the squared end of said lever.

In testimony whereof I affix my signature in the presence of two witnesses.

WASYL HUCAL.

Witnesses:

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ELIZABETH BARRY.