C. P. CULBERTSON.

WRENCH.

APPLICATION FILED JAN. 8, 1915.

1,151,088.

Patented Aug. 24, 1915.

2 SHEETS—SHEET 1.

Fig. 1.

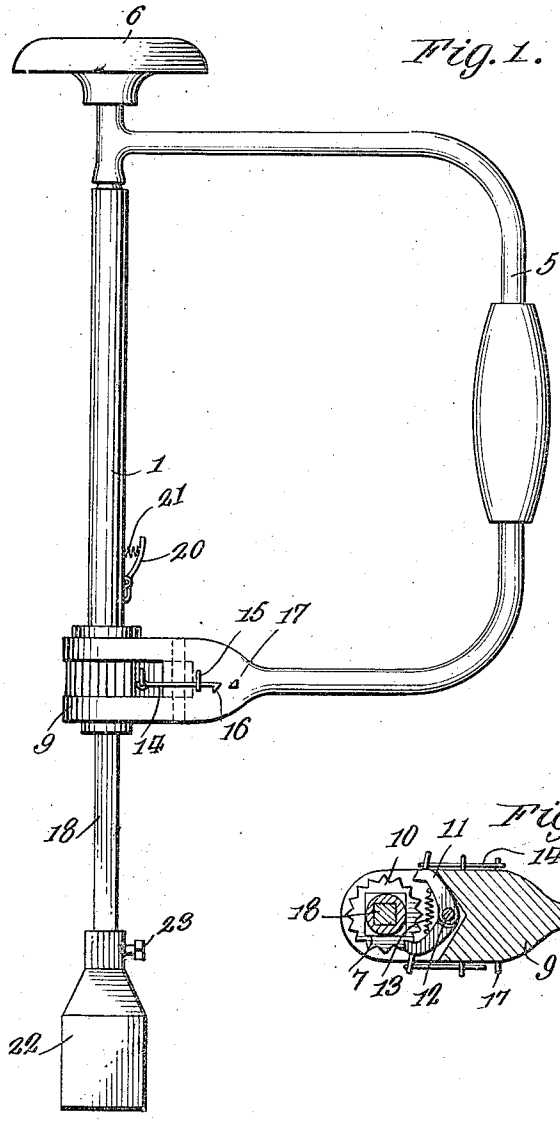


Fig. 3.

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2 SHEETS—SHEET 2.

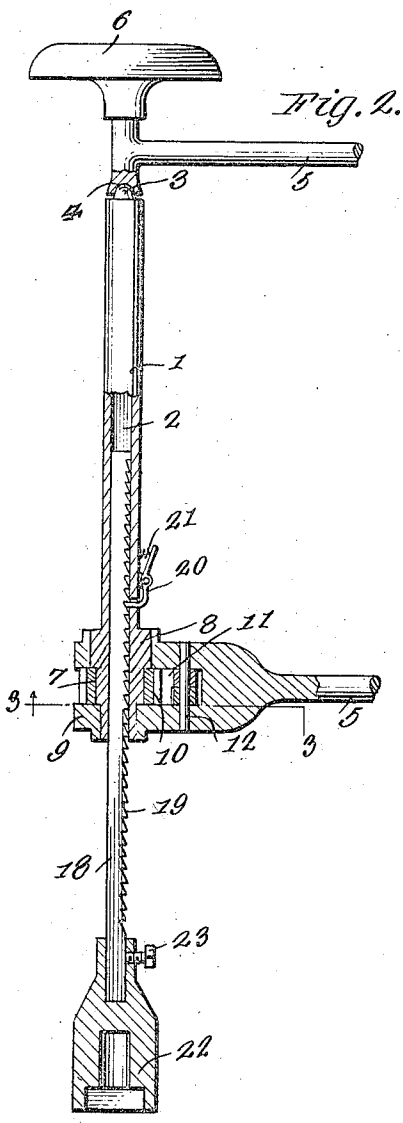


Fig. 2.

Fig. 4.

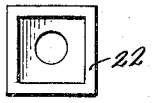
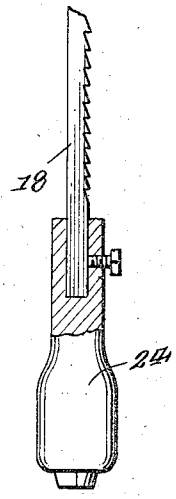


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES P. CULBERTSON, OF BAY CITY, TEXAS.

WRENCH.

1,151,088. Specification of Letters Patent. Patented Aug. 24, 1915.

Application filed January 8, 1915. Serial No. 1,173.

To all whom it may concern:

Be it known that I, CHARLES P. CULBERTSON, a citizen of the United States, residing at Bay City, in the county of Matagorda and State of Texas, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to wrenches and more particularly to that class of wrenches termed ratchet wrenches.

The primary object of the invention is to provide a wrench so constructed that the same may be efficiently employed in places which are inaccessible to the ordinary wrench.

Another object of the invention is to provide a ratchet gear which can be quickly adjusted so as to render the wrench operable for either tightening or loosening the nut and to provide novel means for holding the wrench in said adjusted position.

A further object is to provide an extensible socket carrying bar so that the wrench may be lengthened when occasion arises, and to provide a catch or dog for locking the bar in any adjusted position.

With these and other objects in view, the invention consists in the novel features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings, and claimed.

In the drawings:—Figure 1 is a side elevation; Fig. 2 is a vertical section; Fig. 3 is a transverse section on the line 3—3 of Fig. 2; Fig. 4 is an end elevation of one of the socket members; and Fig. 5 is a detail view of another form of socket member.

Referring to the drawings by numerals, 1 designates a standard which is circular in shape and provided with a polygonal bore 2 which extends approximately throughout the length thereof. At its upper end, this standard is provided with a knob or projection 3 which is adapted to be inserted within a recess 4 formed upon a downwardly struck portion of a crank arm 5, a breast rest 6 being secured to a second projection formed upon the crank arm 5 and alined with the extension 4 for a purpose which is obvious. At its lower end the standard 1 is provided with a squared boss 7 and directly above this boss is an enlarged rounded portion 8. The lower end of the crank arm 5 is enlarged and bifurcated as at 9 to form upper and lower arms, the arms of the said bifurcated portion having bores formed therein, the bore of the upper arm being slightly larger than the bore of the lower arm, which bores are adapted to be inserted over the portion 8 and the lower terminal end of the standard 1 respectively, a ratchet wheel 10 having first been inserted between the arm of the bifurcated portion so as to permit the squared portion of the standard 1 to be moved into engagement with the corresponding squared bore of the ratchet wheel upon insertion of the lower end of the standard within the bores of the bifurcated arm.

A pair of pawls 11 are adapted to be engaged with the teeth of the ratchet wheel to impart turning movement to the standard 1 upon rotation of the crank arm. These pawls are pivotally mounted upon a pin 12 which extends through the arms of the bifurcated portion, a coil spring 13 being connected between the pawls in order to normally hold both of the same in engagement with the ratchet wheel 10. Pivotally mounted to each of the pawls is a catch member 14 which extends through an eye 15 upon the outer face of the enlarged portion 9 and has a projection 16 formed upon the free end thereof for engagement with a lug 17 formed upon the outer face of the portion 9 in order to lock either of the pawls out of engagement with the ratchet wheel 10 and provide for turning the standard in either direction.

A rod 18, of a cross section corresponding to the cross section of the bore 2, is slidably arranged in the said bore, has teeth 19 formed upon one edge thereof, and is adapted to be held in any adjusted position within the bore by means of a dog 20 which is pivotally mounted upon the outer face of the standard and has a portion thereof extending through a slot in the standard and adapted to engage any one of the teeth 19, a spring 21 being disposed between the opposite arm of the dog and the standard in order to normally hold the dog in its engaging position.

A socket 22 is detachably secured to the lower end of the rod 18 by means of a set screw 23, the lower portion of the socket being provided with a nut engaging recess for a purpose which is obvious.

If desired, any number of attachments

may be provided for the lower portion of the rod 18, one of said attachments being illustrated as at 24, in Fig. 5.

From the foregoing description it will be seen that the standard is free to turn within the crank 5 when the pawls are out of engagement with the ratchet wheel, because of the pivotal connection between the parts 3 and 4 and by providing circular faces upon which the bores of the bifurcated lower end of the crank arm are adapted to rotate. It will be further seen that upon releasing any one of the catches 14 from its engagement with the lug 17 and turning the crank in a direction for said released pawl to engage the ratchet wheel 10, the standard 1 will consequently be turned in the same direction and will, because of the polygonal engagement between the rod 18 and bore 2, cause said bar to be turned therewith and therefore turn an object with which the socket is engaged.

From the foregoing description taken in connection with the accompanying drawings it is thought that the construction and operation of the device will be clearly understood and while I have herein shown and described one specific form of my invention I do not wish to be limited thereto, except for such limitations as the claims may import.

What is claimed is:—

1. A wrench comprising a standard having a polygonal bore formed therein, a bar slidably arranged within said standard, said standard having a squared portion formed thereon, an enlarged rounded portion formed on said standard adjacent said squared portion, a bifurcated arm having openings formed therein, one of said openings adapted to engage said rounded portion, other of said openings adapted to engage the lower end of said standard, a ratchet wheel journaled on said squared portion and disposed between said bifurcations, and means to rotate said wheel.

2. A wrench comprising a standard, a bar slidably arranged within said standard, a dog to lock said bar within said standard, a ratchet wheel carried by said standard, pawls associated with said ratchet, catches pivotally connected with said pawls to lock said pawls out of engagement with said ratchet, and means to rotate said ratchet.

3. A wrench comprising a hollow standard, a bar slidably arranged within said standard, teeth formed on said bar, a dog for engagement with said teeth, a ratchet wheel carried by said standard, pawls associated with said ratchet, catches pivotally connected with said pawls, means to rotate said ratchet, lugs carried by said means, said catches adapted to be engaged with said lugs to lock said pawls out of engagement with said ratchet.

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

CHARLES P. CULBERTSON.

Witnesses:
I. N. BARBER,
JAS. P. MASON.