April 8, 1924. 1,489,458

W. PETERSEN

WRENCH

Filed Jan. 5, 1923

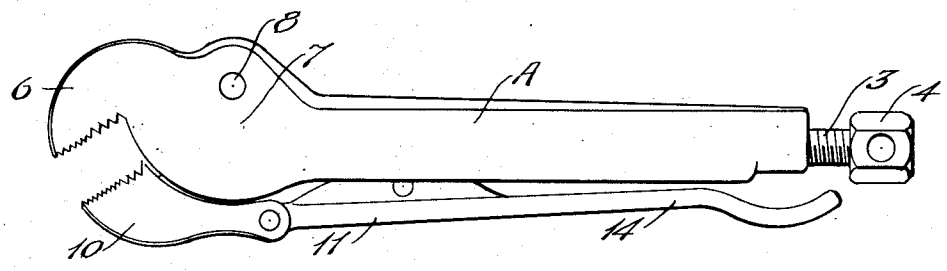


Fig. 1.

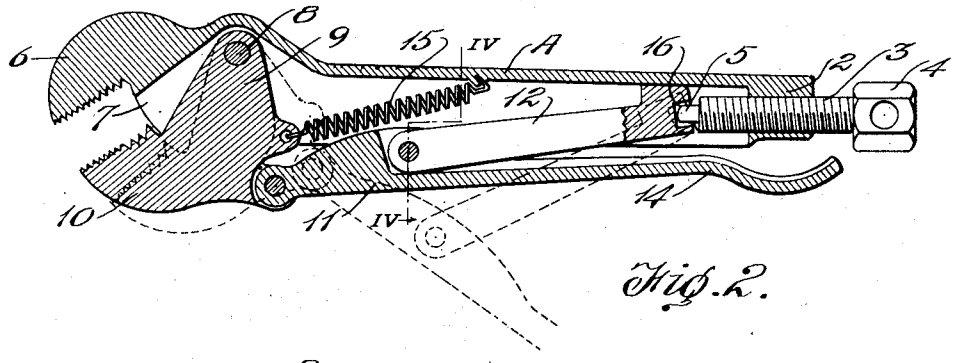


Fig. 2.

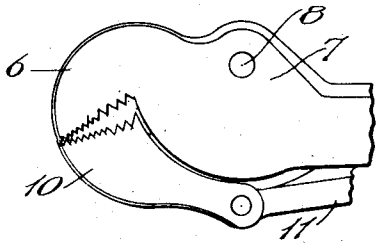


Fig. 3.

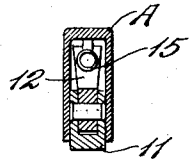


Fig. 4.

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UNITED STATES PATENT OFFICE.

WILLIAM PETERSEN, OF DE WITT, NEBRASKA, ASSIGNOR OF ONE-HALF TO JULES A. SIBE, OF DE WITT, NEBRASKA.

WRENCH.

Application filed January 5, 1923. Serial No. 610,831.

To all whom it may concern:

Be it known that I, WILLIAM PETERSEN, a citizen of the United States, residing at De Witt, in the county of Saline and State of Nebraska, have invented certain new and useful Improvements in Wrenches, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to certain improvements in wrenches and it is an object of the invention to provide a device of this general character having novel and improved means whereby the same can be employed with equal facility as pliers and which can also be employed in substantially the same manner as a ratchet wrench and also as a pipe wrench.

Another object of the invention is to provide a novel and improved device of this general character comprising a stationary jaw and a movable jaw together with means for shifting the movable jaw relative to the stationary jaw.

It is also an object of the invention to provide a novel and improved device of this general character comprising a stationary jaw and a movable jaw together with an articulated lever associated with the movable jaw for adjusting the same relative to the stationary jaw, one of the sections of the articulated lever being extended to provide an operating handle.

Another object of the invention is to provide a novel and improved wrench embodying a stationary jaw and a movable jaw together with operating means for the movable jaw wherein a retractable member is associated with said operating means for urging the movable jaw in a direction away from the stationary jaw.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved wrench whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of my invention will hereinafter be definitely claimed.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein:—

Figure 1 is a view in side elevation illustrating a wrench constructed in accordance with an embodiment of my invention;

Figure 2 is a longitudinal sectional view taken through the device as illustrated in Figure 1 with certain of the parts in elevation;

Figure 3 is a fragmentary elevational view showing the jaws relatively adjusted for use as pliers; and

Figure 4 is a cross sectional view taken substantially on the line IV—IV of Figure 3.

As disclosed in the accompanying drawings, A denotes an elongated handle member of channel formation but having its outer end portion 1 closed as at 2, said end portion having threaded axially therethrough a shank 3. The outer end portion of the shank 3 is provided with a head 4 whereby said shank may be conveniently adjusted. The inner end portion of the shank 3 is provided with a point 5 for a purpose to be hereinafter more particularly referred to.

The opposite end portion of the handle A is provided with a stationary jaw 6 herein disclosed as having its working face disposed on an angle of approximately 22½ degrees with respect to the handle A. The portion 7 of the handle A immediately adjacent to the jaw 6 is transversely enlarged and the outer or free edges of the side walls of said enlarged portion 7 are arcuate and disposed on a curvature concentric to the pivot member or pin 8.

The member or pin 8 is supported by the side walls of the portion 7 of the handle A and bridges the space therebetween. This pin or member 8 is also freely disposed through an inwardly directed wing or flange 9 carried by the movable jaw 10. The wing or flange 9 fits substantially snug between the side walls of the portion 7 of the handle A while the under surface of said jaw 10 at opposite sides of the wing or flange 9 has close contact with the outer arcuate edges just hereinbefore referred to.

The working face is disposed on such angle that when the movable jaw 10 is at the limit of its movement toward the stationary jaw 6 the outer ends of said jaws 6 and 10 are in contact with the opposed working faces of said jaws disposed inwardly by divergence. By this relative arrangement of the working faces of the jaws 6 and 10 the tool is capable of being readily and conven-

iently used as pliers. The working faces of the jaws 6 and 10 are also roughened in a conventional manner to facilitate their gripping action when the tool is employed as a wrench.

The inner end portion of the movable jaw 10 has pivotally engaged therewith a section 11 of an articulated lever, said lever comprising two sections the second section 12 being adapted to extend within the handle A and have contact with the inserted end of the shank 3. The pivoted end portion of the section 11 of the articulated lever is extended to provide an operating handle 14. Upon pressure being imposed upon the lever and with the section 12 in contact with the inserted end of the shank 3 the movable jaw 10 will be forced toward the stationary jaw 6 whereby the work may be effectively gripped between said jaws.

Engaged with the wing or flange 9 of the movable jaw 10 at a point outwardly of the pivot member or pin 8 is an end portion of the retractible member 15, herein disclosed as a coil spring, the opposite end portion of said member 15 being suitably enchored to the handle A. This retractible member or spring 15 provides means whereby the jaw 10 is automatically moved into open position so that my improved tool may be employed with substantially the same convenience and the effectiveness as a ratchet wrench.

By moving the shank 3 inwardly or outwardly of the handle A the fulcrum for the section 12 of the articulated lever may be adjusted as the necessities of practice may prefer and whereby the jaw 10 may be adjusted relative to the jaw 6 in accordance with the work and which adjustment may be made as desired and to the closest possible degree.

It has been fully demonstrated in practice that my improved tool can be engaged with the work with the grip of a vise and particularly when the operating handle 14 has been swung outward and the handle A is beyond center and the shank 3 adjusted to further force the jaw 10 into engagement with the work interposed between the jaws 6 and 10.

The outer or free end of the second section 12 of the articulated lever is provided with a pocket or recess 16 which receives the point 5 provided at the inner or inserted end of the shank 3. By this means the section 12 is maintained in effective engagement with the shank 3 and more especially during a working operation.

From the foregoing description it is thought to be obvious that a wrench constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that my invention is susceptible of some change and modification without departing from the principles and spirit thereof and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice except as hereinafter claimed.

I claim:

1. A tool of the class described, comprising, in combination, a handle provided with a stationary jaw, a movable jaw, means for pivotally connecting the movable jaw, an articulated lever having one section pivotally engaged with the movable jaw, a member adjustable longitudinally of the handle and with which the second section of the articulated lever is adapted to contact, and automatic means for moving the movable jaw in a direction away from the stationary jaw.

2. A tool of the class described comprising a handle member of channel formation provided with a stationary jaw, one end portion of the handle member being closed, a shank threaded through said closed end portion of the handle member, a movable jaw carried by the handle member for coaction with the stationary jaw, an articulated lever having one end portion pivotally connected with the movable jaw, a second section of the lever being adapted to have contact with the inserted end of the shank, the first section of the lever being extended to provide an operating handle, and means within the handle member and coacting with the movable jaw for automatically moving the movable jaw in a direction away from the stationary jaw.

3. A tool of the class described comprising a handle member of channel formation provided with a stationary jaw, one end portion of the handle member being closed, a shank threaded through said closed end portion of the handle member, a movable jaw carried by the handle member for coaction with the stationary jaw, an articulated lever having one end portion pivotally connected with the movable jaw, a second section of the lever being adapted to have contact with the inserted end of the shank, the first section of the lever being extended to provide an operating handle, and a retractile member secured to the movable jaw and to the handle, said retractile member operating to automatically move the movable jaw into open position.

In testimony whereof I hereunto affix my signature.

WILLIAM PETERSEN.