

July 8, 1924.

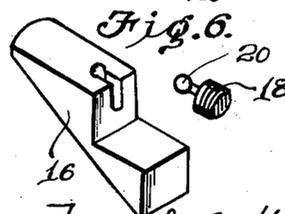
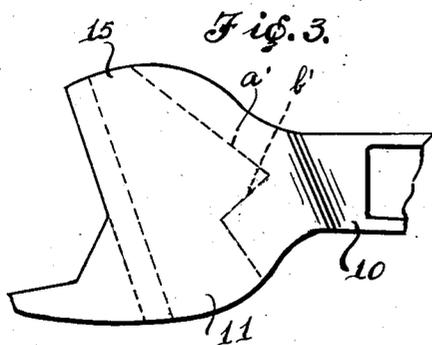
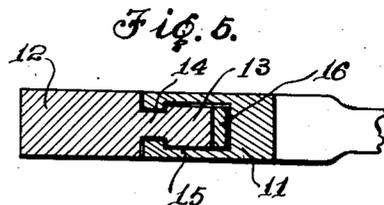
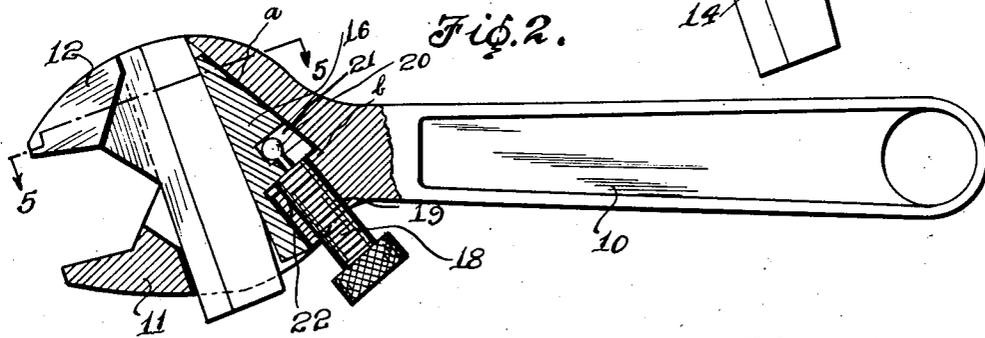
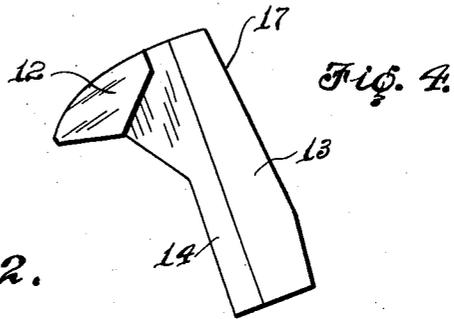
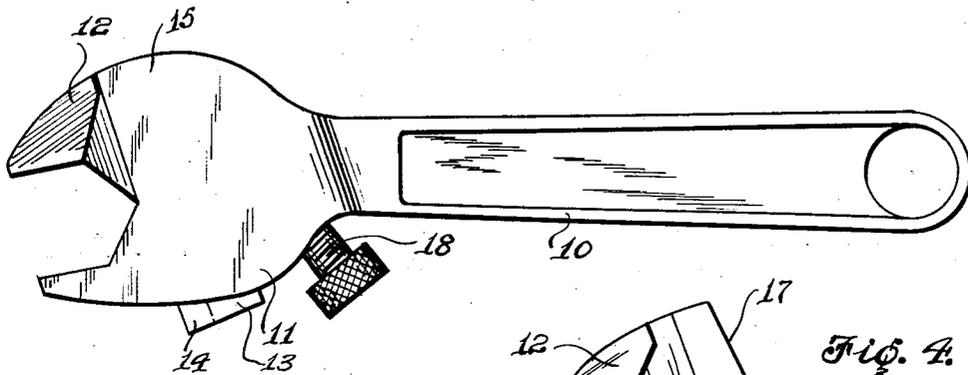
1,500,310

F. C. HACHENEY

WRENCH

Filed July 16, 1923

Fig. 1.



Inventor

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By

UNITED STATES PATENT OFFICE.

FRANK C. HACHENEY, OF JOHN DAY, OREGON.

WRENCH.

Application filed July 16, 1923. Serial No. 651,923.

To all whom it may concern:

Be it known that I, FRANK C. HACHENEY, a citizen of the United States, residing at John Day, Grant County, in the State of Oregon, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

My invention relates to wrenches and more particularly to wrenches of the open end type having a movable jaw and the main object of the invention is to provide such and similar wrenches with means whereby the movable jaw may be adjusted to enable the wrench to be used with nuts, bolts, and the like, of different dimensions, and to hold the jaw, after adjustment, rigidly and firmly in position so as to withstand more than ordinary wrench turning stresses.

In the past, attempts have been made to provide wrenches with suitable holding means for the slidable jaw, but such attempts have not been altogether successful, and wrenches having movable jaws have been more or less unsatisfactory by reason of the movement of the jaw due to wrench turning stress after adjustment of the jaw for the particular bolt or nut for which the wrench is to be used. My invention has for its main purpose to obviate the defects of wrenches heretofore known and to provide a wrench which may be quickly and accurately adjusted to the work for which it is intended, and when once adjusted to remain as originally intended and not to be disturbed from adjustment by the stress incident to its application to the work. In overcoming the movement of the jaws relatively to each other incident to wrench turning stress, the rounding of the heads of the bolts or nuts is thus prevented and undue wear of the wrench is reduced to a minimum.

With the above and other objects in view, as will hereinafter appear, I have devised a wrench of the open end type having a movable jaw and provided with a device for quickly and accurately adjusting the space between the jaws, and when once adjusted, to hold said jaws in properly spaced relation until the jaws are again adjusted for other work.

For a complete understanding of the in-

vention reference is to be had to the following description and the accompanying drawings in which:

Fig. 1 is a side elevational view of the wrench;

Fig. 2 is a view similar to Fig. 1 but showing the head of the wrench in section;

Fig. 3 is a side view of the fixed head of the wrench;

Fig. 4 is a similar view of the movable head of the wrench;

Fig. 5 is a sectional view on the line 5—5 of Fig. 2; and

Fig. 6 is a perspective view of the locking device for the movable head.

Referring to the drawings in detail, the reference character 10 designates the handle or shank of the wrench having the head 11 integral therewith and the head or jaw 12 movable laterally of the fixed head or jaw 11.

The movable jaw 12 comprises the head portion proper and the shank portion 13 of which a part 14 is of reduced width, as shown more clearly, by Figs. 4 and 5. The fixed head 11 has a pocket 15 which is shaped as shown by the dotted lines in Fig. 3, the pocket being also clearly shown in Fig. 2. This pocket 15 receives the shank portion 13 of the movable jaw 12 and acts as a guide for the sliding relation between the two jaws, and also receives the tapering locking key 16 which cooperates with the tapered side 17 of the shank 13 to hold the jaw 12 in adjusted position. In this connection it will be noted that the shank 13 and the key 16 taper in the same direction, and the purpose for this arrangement will hereinafter appear. As a means for operating the locking key 16 and holding the same in place, there is provided a screw 18 which is in threaded engagement with the base 19 of the head 11 and has a ball point 20 which is received in the recess 21 of the key 16. It will be noted that the sides a and b of the key 16 are at right angle to each other, and likewise the outlining walls a' and b' of the pocket 15 are at right angles. The shoulder 22 of the operating screw bears on the surface b of the key 16 and the turning force of the screw 16 when operated to move the key into locking engagement with the shank 13 is transmitted

by contact of the shoulder 22 with the surface *b*, the ball point 20 serving only to permit the operating screw to withdraw the key 16 from engagement with the shank 13 of the movable head 12.

The construction and manner of operating the wrench are apparent from the above description. To space the jaws of the wrench for work of a given size, it is necessary only to loosen the locking key 16, to set the slidable jaw 12 at the desired distance, and then to move the key 16 into firm engagement with the shank 13. The shank 13 may have a scale on both sides thereof so that the movable jaw may be adjusted for a given size bolt head, nut, or the like. It will be understood that while the wrench has been shown with but one head, it may have two heads, as is obvious.

By reason of the uni-directional taper of the shank and locking key, greater wrench turning stresses serve to hold the movable jaw more rigidly and firmly in position, and by reason of the right angular relation of the sides *a* and *b* of the locking key, the force transmitted through turning the operating screw acts to hold the key more firmly in position. It will be noted that no springs are employed and the number of parts comprising the wrench are few and of simple construction. The wrench is of great strength and may be used for work that would require a wrench of a much larger size if of a different type. The manner of manipulating the wrench is very simple, and because of the ease of manipulation and adjustment and the rigidity of the jaws after adjustment, the wrench may be employed where previously only wrenches with fixed jaws were suitable, and it is therefore entirely practicable and desirable to obviate the need for a plurality of wrenches of different sizes of the type having fixed jaws. Other advantages will be apparent from the disclosure and the use of the wrench in practice.

While I have shown the best embodiment of the invention, it is understood that certain changes may suggest themselves in view of this disclosure, but all such changes are to be considered as part of this invention

which is to be limited only within the scope of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent of the United States is:

1. A wrench comprising a fixed member and a slidable member, said fixed member having a guide opening and a recess therein, said slidable member having a shank received in said guide opening, said recess having two walls at right angles to each other and one of said walls provided with a screw threaded opening, a tapered locking key cooperating with said shank for holding said slidable member in rigid adjusted position and having two faces at right angles to each other to cooperate with the right angular walls of the recess, and a screw operating member passing through said opening in the wall of the recess and connected to said locking key, whereby the key is adjusted to locking position by sliding over the other of said right angular walls of the recess.

2. A wrench comprising a fixed member and a slidable member, said fixed member having a guide opening and a recess therein, said slidable member having a tapered shank slidable in said guide opening, said recess having two walls at right angles to each other and one of said walls provided with a screw threaded opening, a tapered locking key cooperating with said tapered shank to hold said slidable member in rigid adjusted position and having two faces at right angles to each other to cooperate with the right angular walls of the recess, and a screw operating member passing through said opening and connected to said locking key whereby the key is adjusted to locking position by sliding over the other of said right angular walls of the recess, said screw being diagonally disposed to the long axis of said tapered shank.

In witness whereof, I hereunto affix my signature.

FRANK C. HACHENEY.

Witnesses:

GEORGE W. WILSON,
AGNES V. WILSON.