E. C. AND W. H. THOMPSON.

WRENCH.

APPLICATION FILED MAY 20, 1919.

1,396,387. Patented Nov. 8, 1921.

Fig. 1

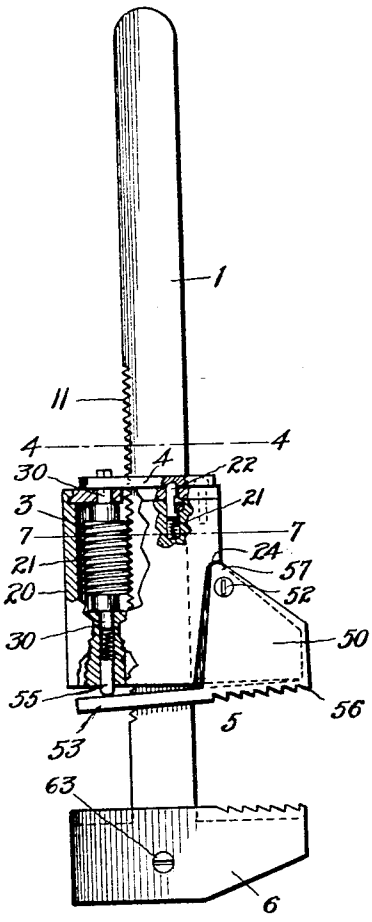


Fig. 2

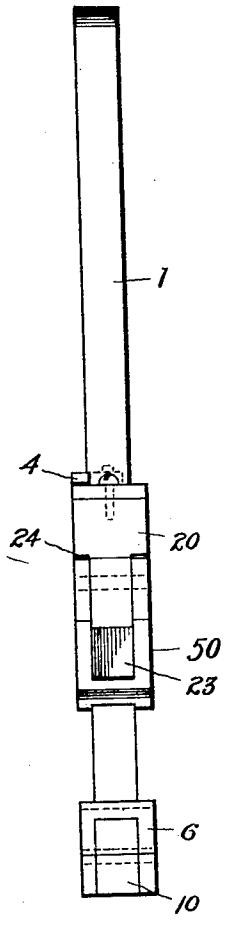


Fig. 3

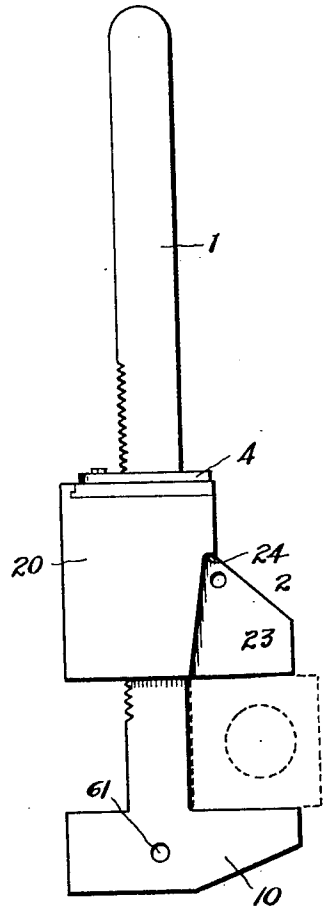


Fig. 4

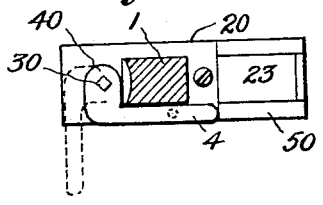


Fig. 5

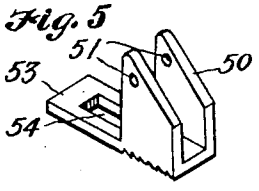


Fig. 6

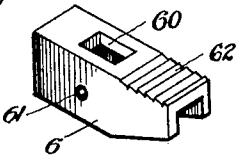
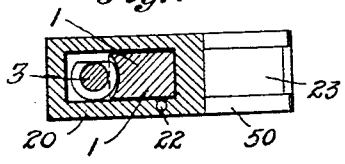


Fig. 7



Inventor

EDWARD C. THOMPSON

WILLIAM N. THOMPSON

By Reynolds & Cook.

Attorneys

UNITED STATES PATENT OFFICE.

EDWARD CARLTON THOMPSON AND WILLIAM HULBERT THOMPSON, OF SEATTLE, WASHINGTON, ASSIGNORS OF ONE-FOURTH TO ROBERT McNAIR AND ONE-FOURTH TO CHARLES H. LONG, BOTH OF SEATTLE, WASHINGTON.

WRENCH.

1,396,387. Specification of Letters Patent. Patented Nov. 8, 1921.

Application filed May 20, 1919. Serial No. 298,512.

To all whom it may concern:

Be it known that we, EDWARD C. THOMPSON and WILLIAM H. THOMPSON, citizens of the United States, and residents of the city of Seattle, county of King, State of Washington, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

Our invention relates to wrenches and consists of a wrench which is provided with means whereby it may be adapted for use with an ordinary monkey wrench or pipe wrench, and also with means whereby it may be quickly adjusted for different sizes.

The object of our invention is to provide a wrench which is quickly adjustable for different sizes, and one in which the means for holding the jaws of the wrench as adjusted shall be strong, easily operated and not likely to become disarranged.

A further object of our invention is to provide removable face pieces for the jaws, one of these to be movable in such a way that in the operation of the wrench it will automatically increase the grip as the wrench is turned.

Further objects of our invention will be disclosed by a study of the drawings and the following description.

The drawings show a wrench embodying our invention in which a preferred form of construction has been used.

Figure 1 is a side view of the wrench showing a portion of the supporting sleeve of the inner jaw broken away to show the operating mechanism of the wrench.

Fig. 2 is an edge view of the wrench from the side of the main operating jaws.

Fig. 3 is a side view of the wrench showing the facing members of the jaws removed, in which condition the wrench is suitable for use only as an ordinary monkey wrench.

Fig. 4 is a section on the line 4—4 of Fig. 1.

Figs. 5 and 6 show perspectives respectively of the inner and outer jaw face plates.

Fig. 7 is a section taken on the line 7—7 of Fig. 1.

The handle bar 1 has the outer jaw 10 rigidly secured to or formed as an integral part thereof. The inner jaw 2 has an enlarged base which is provided with a hole for the passage of the shank 1. This constitutes a slide or sleeve 20 which may move freely back and forth upon the shank or handle bar when the securing mechanism has been released. This part 20 of this inner jaw also has a recess 21 in its back side, which recess opens only toward the hole through which the handle bar 1 passes.

The outer or back edge of the handle bar is provided with teeth 11, these extending over a section of sufficient length to accommodate the adjustment range of the two jaws, so as to insure locking engagement of the threaded bar 3. This bar 3 is herein shown as a section of a round bar which is provided with threads and has the threads cut away at one side so that, when turned to bring this side toward the handle bar 1, there will be no locking engagement between the two. When the locking dog 3 is in this position the handle bar may be freely moved through the sleeve portion 20 of the inner jaw. In this manner quick adjustment of the wrench for different openings may be secured. The end of this recess which is toward the handle end of the wrench, is closed by a plate 25 which has a hole for the shank and is locked at one end to the sleeve part of the inner jaw, by an undercut or chamfer, as shown at 26 in Figs. 1 and 3. At its other end it is secured by a screw 27. It has a bearing for the outer journal of the locking dog or bar 3.

The ends of the locking dog 3 are provided with journals 30, which turn in recesses formed therefor in the body of the sleeve 20. One of the journals 30 which is toward the handle end of the wrench, projects and has secured thereto an operating handle 4. The outline of this is as shown in Fig. 4. The main body thereof has an offset head 40, which engages with the journal 30. The shank or handle member 4 lies along side of the wrench handle 1 and is preferably made of the same width as the thickness of the web which incloses the side faces of the handle bar 1.

In the body of the side portion of the sleeve 20 we have shown a recess 21 in which is placed a locking pin 22, which pin is urged outward by a spring placed at the bottom of the hole into which the pin 22 is placed. This is designed to project slightly and to enter a slight indentation formed on the inner surface of the handle 4 of the locking device, thus holding it in position and pre-

venting movement when a slight force is applied thereto.

The locking portion of the inner jaw is provided with a removable face member 5. This has two wing portions 50 which are each provided with a hole 51, toward its inner corner through which passes a pivot pin 52. The central or face section of this member has an extension 53, which has a hole 54 adapted to receive the handle bar 1. This extension 53 is normally acted upon by a spring pressed pin 55 so as to hold it slightly pressed outward from the adjacent face of the jaw 2. In consequence, when the wrench is placed upon a pipe and turned in such a way as to turn the pipe, the outer end 56 of the face will be rocked somewhat toward the outer jaw, thus tightening the grip of the wrench upon the pipe. The inner tips 57 of the wings 50 are preferably so placed that it bears against the shoulder 24 which is formed in the recess at the side of the jaw 21 which receives said wings. In consequence, the backward thrust of the facing plate 5 when the wrench is in use, is not taken entirely by the pivot pin 52, but is, to a considerable extent, taken by the engagement of the tip 57 with the shoulder 24.

The outer jaw 10 is also provided with a removable face plate 6. This face plate 6 is of U-shape in transverse cross section. It is shown in perspective in Fig. 6. It is provided with a hole 60, in the center web thereof, which receives the handle bar or shank; it is also provided with notches or teeth 62 when this is desired in order to enable it to securely grip the surface of a pipe. A small screw or bolt 63 entering the hole 61 formed therein and in the head of the wrench, secures them in position.

The above wrench is one which may be quickly adjusted to fit any size of nut or pipe. When so adjusted it will be securely held in this adjustment, without any tendency to shift while in use. The pivoted face plate 5 for the inner jaw, mounted to lock in the manner described, also provides a means whereby the act of operating the wrench causes it to grip more tightly. The removable face plates 5 and 6 make it possible to renew the working efficiency of the wrench at slight expense whenever these become worn out by substituting a new plate.

What we claim as our invention is:

A wrench having a shank carrying an outer jaw, an inner jaw movable along the shank, means carried by said inner jaw whereby it may be locked to the shank at adjusted positions, a facing member for the inner jaw having wings embracing the working end of the jaw and having pivotal and shoulder bearing support therewith at a point well back from its working face and adjacent to the edge of the shank, said facing member having a loop passing about the shank, the inner jaw having a spring receiving recess at the back side of and extending lengthwise of the shank, a spring in said recess, and a plunger in said recess acted upon by the spring and engaging the loop of the facing member to swing it outward.

Signed at Seattle, Washington, this 13th day of May, 1919.

EDWARD CARLTON THOMPSON.
WM. HULBERT THOMPSON.