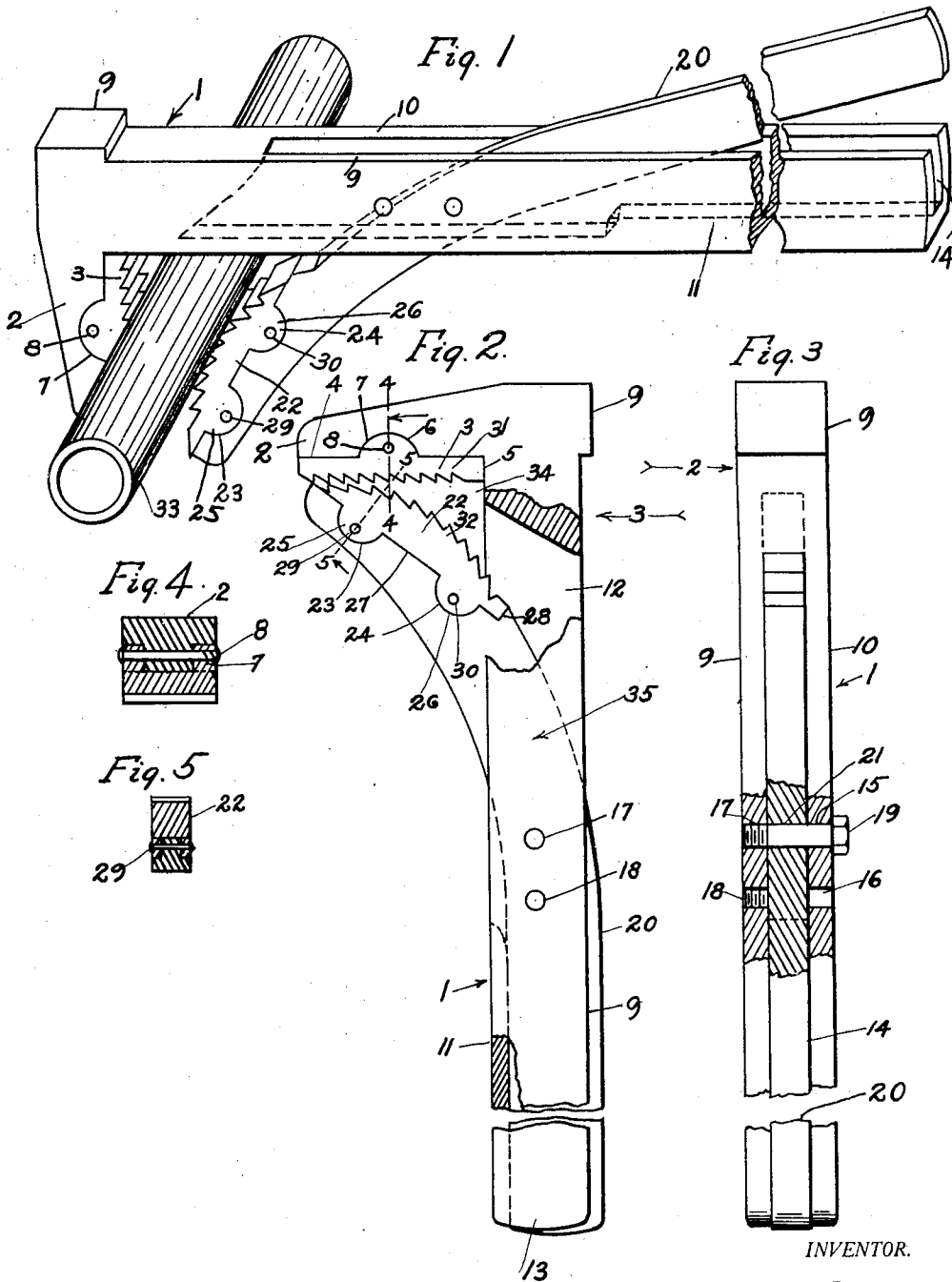


J. SHAFFER.
ADJUSTABLE PIPE WRENCH.
APPLICATION FILED DEC. 30, 1918.

1,346,983.

Patented July 20, 1920.



INVENTOR.
Joseph Shaffer
BY
Hazard & Miller
ATTORNEY.

UNITED STATES PATENT OFFICE.

JOSEPH SHAFFER, OF McKITTRICK, CALIFORNIA.

ADJUSTABLE PIPE-WRENCH.

1,346,983.

Specification of Letters Patent.

Patented July 20, 1920.

Application filed December 30, 1918. Serial No. 268,972.

To all whom it may concern:

Be it known that I, JOSEPH SHAFFER, a citizen of the United States, residing at McKittrick, in the county of Kern and State of California, have invented new and useful Improvements in Adjustable Pipe-Wrenches, of which the following is a specification.

This invention relates to adjustable pipe wrenches, and consists of the novel features herein shown, described and claimed.

My present invention is an improvement, or alternative form, of my adjustable pipe wrench invention shown in my Patent No. 1,276,274, dated August 20, 1918.

Figure 1 is a perspective showing an adjustable pipe wrench embodying the principles of my invention in use.

Fig. 2 is a side elevation of the wrench, parts being broken away and shown in section, the view being taken in the direction indicated by the arrow 2 in Fig. 3.

Fig. 3 is a rear elevation looking in the direction indicated by the arrow 3 in Fig. 2, parts being broken away and shown in section.

Fig. 4 is a cross sectional detail on the line 4-4 of Fig. 2.

Fig. 5 is a cross sectional detail on the line 5-5 of Fig. 2.

The main handle 1 is formed integral with the main jaw 2. The main jaw plate 3 fits against the inner face of the main jaw 2. The face line 4 of the main jaw is straight and at right angles to the face line 5 of the handle 1. Semicircular recesses 6 extend from the line 4 upon both sides of the jaw 2, and semicircular lugs 7 extend from the jaw plate 3 and fit loosely in the recesses 6. A pin 8 is inserted through the lugs 7 and through the remaining material of the jaw 2 to hold the jaw plate 3 securely in place. A hammer head 9 extends from the handle 1 at the opposite side from the main jaw 2 and in line therewith.

The handle 1 consists of two parallel members 9 and 10 spaced apart by an integral web 11, thus leaving a slot or passage 12 through the handle intermediate of its ends. The web 11 extends along the inner edges of the members 9 and 10 from their ends 13, thus leaving a recess 14 open at the back side between the ends of the members 9 and 10. Smooth bolt holes 15 and 16 are formed through the member 10, and screw threaded bolt holes 17 and 18 are formed through the member 9, so that the bolt 19

may be inserted through the opening 15 and screwed into the opening 17, or it may be inserted through the opening 16 and screwed into the opening 18. A swinging handle 20 fits in the recess 14 and has a smooth bolt hole 21 to receive the bolt 19, so that the handle may swing freely upon the bolt as a pivot. The handle 20 is curved and passes through the slot 12 into position to carry the swinging jaw plate 22 in opposition to the jaw plate 3. Semicircular recesses 23 and 24 are formed in the side faces of the inner end of the handle 20 to receive semicircular lugs 25 and 26 extending from the jaw plate 22. The outer face 27 of the jaw plate is straight except for the lugs 25 and 26, and the corresponding face of the handle is straight, there being a shoulder 28 at the end of the straight face upon the handle to engage the inner end of the jaw plate 22. Pins 29 and 30 are inserted through the lugs 25 and 26 and through the handle to hold the jaw plate 22 removably in place, so that when the jaw plate is worn, the pins may be driven out and a new plate substituted. In a like manner the pin or rivet 8 may be driven out and the jaw plate 3 removed and a new plate substituted.

The teeth or corrugations 31 upon the jaw plate 3 point toward the handle 1 upon inclined planes, and the teeth or corrugations 32 upon the jaw plate 22 point in the opposite direction, so that when a pipe 33 is held in the triangular space 34 between the handle 1 and the jaw plates 3 and 22 and the handle is operated in the direction of the arrow 35, the teeth 31 and 32 will grip the pipe, and when the handle is operated in the opposite direction, the teeth will slip upon the pipe.

The sizes of pipe which the wrench will grip will vary considerably by swinging the jaw plate 22 outwardly, the tooth face of the jaw being curved, and the space 34 may be still further varied in size by moving the bolt 19. The wrenches may be made in various sizes as required to fit any size of pipe from the smallest to the largest.

Especial attention is called to the fact that the lugs 7 fit closely in the recesses 6 so as to hold the jaw plate 3 from endwise motion and from shearing the pin 8, and in a like manner, the lugs 25 and 26 fit closely in the recesses 23 and 24 to hold the jaw plate 22 from endwise movement and prevent shearing the pins 29 and 30. The jaw plate

22 is also backed up by the shoulder 28. The movement of the handle 20 and the curvature of the face of the jaw plate 22 is such that the teeth 32 move to and from the corner formed by the junction of the jaw plate 3 with the handle 1, so that the wrench will grip any pipe within the limits of the triangular space 34 which may be formed by swinging the handle or moving the bolt 19.

Various changes may be made without departing from the spirit of my invention as claimed.

I claim:

15 An adjustable pipe wrench comprising, an L-shaped main member with its long arm or handle part of channel form, the said arm having a plurality of transverse perforations in the walls of the channel, the perforations in one wall being threaded and co-

axial with those of the other wall; a second rigid handle part having a straight portion to lie flat in the channel of the main member and being bodily curved outward and toward the short arm of the main member and cooperating therewith to form pincer jaws; the said second member having a pivot hole; and a pivot screw severally adjustable into any of the aligned perforations in the main handle forming part and passed through the perforation in the curved handle member whereby the straight portions of the handle members can be collapsed together in the unobstructed position of the jaws, said pivot providing for relative longitudinal adjustment of the handle members and separation of the jaws.

In testimony whereof I have signed my name to this specification.

JOSEPH SHAFFER.