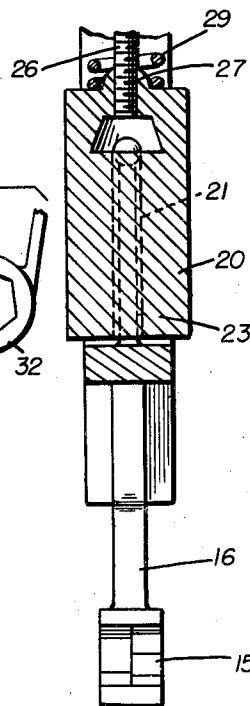
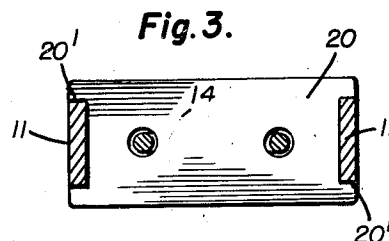
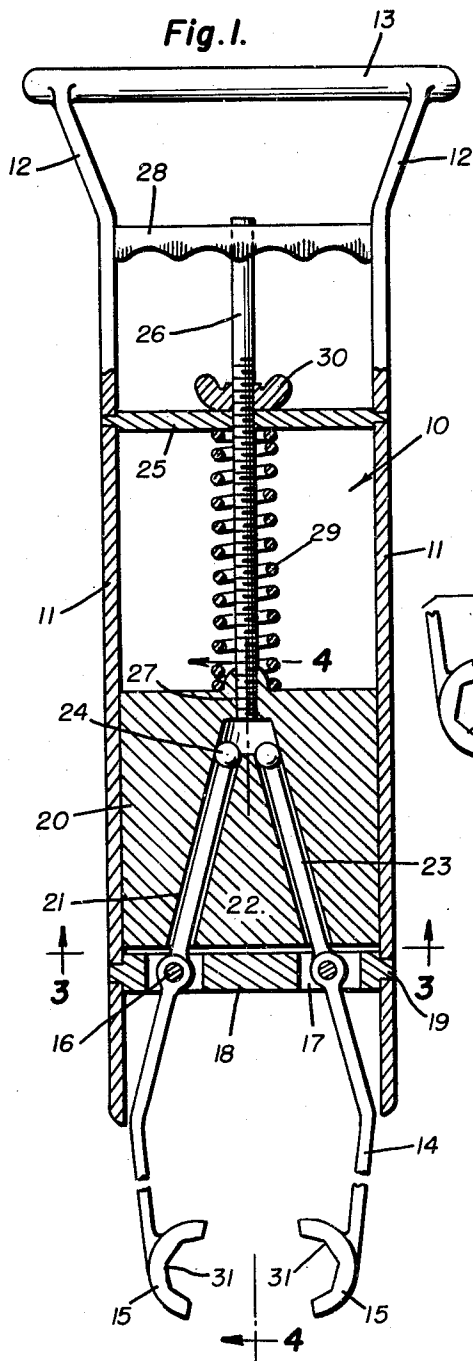


J. DONAHUE
WRENCH HAVING MANUALLY-CLOSED
SPRING-OPENED PIVOTED-JAWS

2 Sheets--Sheet 1

Filed Dec. 10, 1946



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Jan. 10, 1950

J. DONAHUE
WRENCH HAVING MANUALLY-CLOSED
SPRING-OPENED PIVOTED-JAWS

2,493,949

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2 Sheets-Sheet 2

Fig. 2.

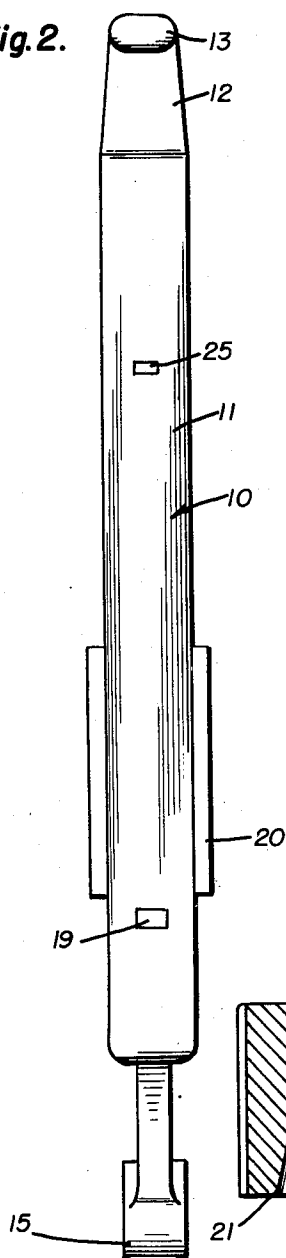


Fig. 5.

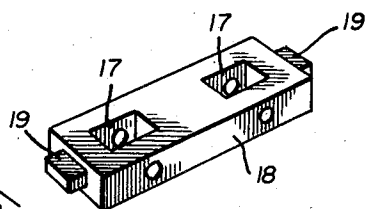
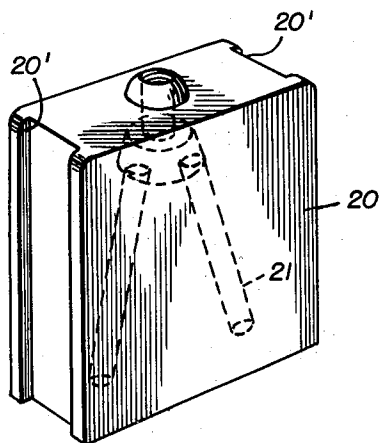
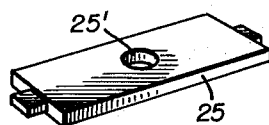


Fig. 6.

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UNITED STATES PATENT OFFICE

2,493,949

WRENCH HAVING MANUALLY CLOSED
SPRING-OPENED PIVOTED JAWS

Joseph Donahue, Shamokin, Pa.

Application December 10, 1946, Serial No. 715,157

1 Claim. (Cl. 81-78)

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The invention relates to a gripping tool or wrench, and more especially to a manually operable, pivoted jaw, grapple-type wrench for tightening small-nuts or the like.

A primary object of this invention is to provide a hand grip, pivoted jaw wrench in which the gripping jaws are manually closed and spring opened and which can be readily extended into restricted places for engaging a piece of work so that the wrench can be manipulated with ease and dispatch.

A still further object of the invention is the provision of a wrench which is simple in construction, and efficient in operation, strong, durable, readily and easily handled, self-adjusting, portable, possessed of few parts, light in weight, and inexpensive to manufacture.

With these and other objects in view, the invention consists in the features of construction, and combination and arrangement of parts, as will be hereinafter more fully described and illustrated in the accompanying drawings, which disclose the preferred embodiment of the invention, and pointed out in the claims hereunto appended.

In the accompanying drawings:

Figure 1 is a side elevation, partly in section, of a wrench constructed in accordance with the invention.

Figure 2 is a side elevation thereof.

Figure 3 is a sectional view taken approximately on the line 3-3 of Figure 1 looking in the direction of the arrows.

Figure 4 is a fragmentary sectional view taken approximately on the line 4-4 of Figure 1, looking in the direction of the arrows.

Figure 5 is an exploded perspective view showing adjuncts of the wrench removed therefrom.

Figure 6 is a vertical sectional view through the jaw opening and closing slide of the wrench.

Figure 7 is a fragmentary exploded side view of the jaws of the wrench slightly modified from those shown in Figure 1.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings in detail, the wrench constituting the present invention, comprises an elongated, rigid open shank frame 10 having spaced elongated straight side members 11, which are disposed in parallel relation to each other and provided with laterally flared divergent terminal portions 12 united with a cross handle bar 13 at one end of frame 10. Projected through the other opposite open end of this frame 10 are opposed swingable or movable jaw arms 14 having

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at their outer ends work-engaging jaws 15. The arms 14 are mounted for swinging movement on pivots 16 fitted in apertures 17 formed in a cross bearing 18 secured at 19 in the members 11 of frame 10 inwardly of the open end of the latter.

Within the frame 10 between the side members 11 thereof next to the bearing 18 is a jaw actuating slide or head 20 which has formed therein an inverted substantially V-shaped runway 21 separated by an intermediate web 22 and engaged in runway 21 are the actuator lever ends 23 of the arms 14 for the jaws 15. The lever ends 23 are formed with bearing terminals 24 for contacting the runways 21, as best seen in Figure 1 of the drawings. Block 20 is provided with guide channels 25 engaging side members 11.

Within frame 10 between the side members 11 thereof and inwardly with respect to the slide 20 is a cross guide strut 25 having a central aperture 25' therein for a plunger rod or stem 26 which at the threaded portion 27 thereof is connected to the slide or head 20. The plunger rod or stem at the end next to the handle 13 is connected to a hand gripping piece 28 which is slidably fitted in the side members 11 of the frame 10, so that the fingers of an operator of the wrench can manipulate piece 28 on grasping of the handle bar 13 whereby the slide 20 can be shifted in frame 10 for opening and closing the jaws 15.

Surrounding the portion 27 of stem 26 between slide 20 and the guide 25 is a coiled expansion spring 29, abutting the slide or head 20, there being a wing nut 30 adjustably fitting the portion 27 and contacting the opposite side of the guide 25, as best seen in Figure 1 of the drawings.

The purpose of this spring and nut is to permit the operator to maintain the grip of the device held between the jaws 15 in the event he desires momentarily to release his grasp on members 28 and 13. Obviously the wing nut may be tightened to any desired degree for this purpose.

Thus the jaws 15 under the action of spring 29 will be shifted to open position.

In Figure 1 of the drawings, jaws 15 are illustrated with octagon-shaped work-engaging faces 31, while in Figure 7 the work-engaging faces 32 are of substantially hexagonal shape. Obviously the jaws can be of any other desirable shape with respect to the work-engaging faces thereof.

In the operation of the wrench as hereinbefore described an operator thereof merely presses upon the piece 28 and in this manner the jaws 15 are closed with respect to each other for gripping engagement with a nut or piece of work, and there-

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after, on release of the piece 28 these jaws under the action of the spring 29 will automatically open.

From the foregoing it will now be seen that there is herein provided a device accomplishing all the objects of this invention, and others, including many advantages of great practical utility and commercial importance.

As many embodiments may be made of the inventive concept, and as many modifications may be made in the embodiment herein shown and described it is to be understood that all matter herein is to be interpreted merely as illustrative and not in a limiting sense.

What is claimed is:

A hand grip wrench comprising a frame including a pair of guides, a support fixed to the frame, a pair of gripping jaws pivotally carried by the support, actuating arms carried by said gripping jaws, an actuating block slidably carried by said guides, inverted substantially V-shaped runways provided in said block slidably engaging said actuating arms, a hand gripping member slidably carried by said guides, a centrally apertured cross member secured to said frame

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intermediate the hand gripping member and the actuating block, a rod secured to said hand gripping member and said block and slidable through the aperture provided in the cross member, and a spring about said rod abutting said cross member and said block and normally urging the gripping jaws in spread position.

JOSEPH DONAHUE.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

15 Number	Name	Date
588,110	Hoeft	Aug. 10, 1897
716,202	De Ford	Dec. 16, 1902
760,582	Taylor	May 24, 1904
1,056,478	Westfield	Mar. 18, 1913
20 1,204,208	Thull	Nov. 7, 1916
1,282,044	Chouvaldjy	Oct. 22, 1918
1,496,619	Bole	June 3, 1924
1,742,767	Hughes	Jan. 7, 1930
2,240,556	Eide	May 6, 1941