

Oct. 9, 1945.

M. J. DE GRAW

2,386,444

WRENCH

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Fig. 1.

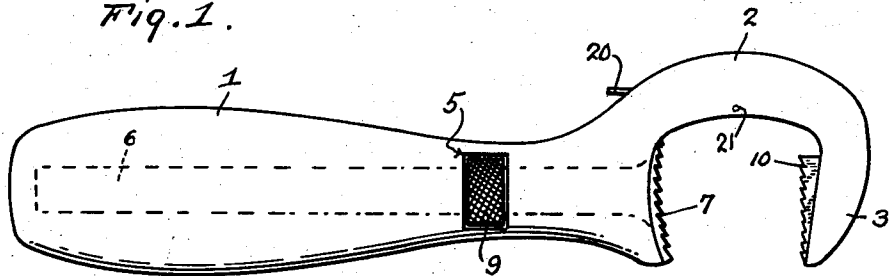


Fig. 2.

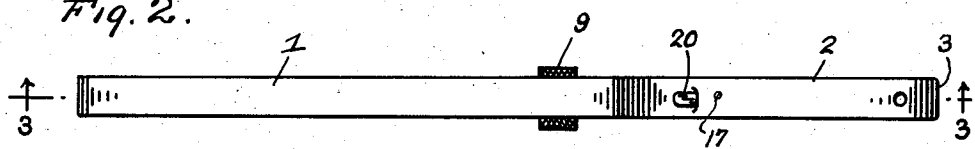


Fig. 3.

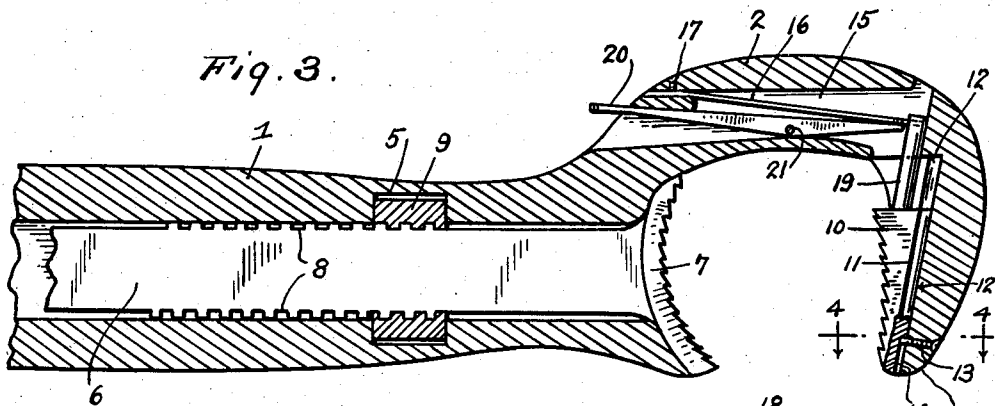


Fig. 4.

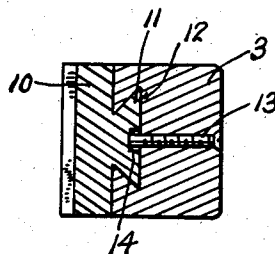
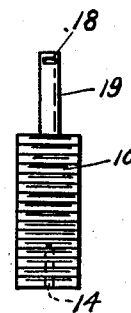


Fig. 5.



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WRENCH

Moroni J. De Graw, Boise, Idaho

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1 Claim. (Cl. 81-179)

My invention relates to improvements in wrenches of the self-gripping type, the principal object in view being to provide a simply constructed, inexpensive wrench of few parts for gripping round work, such as bolts, pipe, and which will tighten against the work under operation of the wrench in one direction and release the work under operation in the opposite direction, all with a ratchet-like action.

Other and subordinate objects are also comprehended by my invention, all of which, together with the precise nature of my improvements, will be readily understood when the succeeding description and claim are read with reference to the drawing accompanying and forming part of this specification.

In said drawing:

Figure 1 is a view in side elevation of my improved wrench in its preferred embodiment,

Figure 2 is a view in edge elevation,

Figure 3 is a view in longitudinal section taken on the line 3-3 of Figure 2 and drawn to an enlarged scale,

Figure 4 is a view in transverse section taken on the line 4-4 of Figure 3 and drawn to a further enlarged scale, and

Figure 5 is a view in elevation of the complementary jaw.

Referring to the drawing by numerals, my improved wrench, as shown, comprises a hollow handle 1 of any suitable design and a hook-shaped head 2 on one of the handles coplanar therewith and including a beak 3, extending transversely of the axis of the handle. The handle 1 forms therein a transversely rectangular, axial guideway 4 and is provided adjacent the head 2 with side slots 5 opening out of said guideway.

A bar-like shank 6 is fitted in the guideway 4 for endwise adjustment into and out of the head 2 to correspondingly adjust a plate-like jaw 7 fixed on one end of the shank and which is curved in the plane of the head 2 and provided with a ratchet toothed working face. Teeth 8 on the edges of the shank 6, and a knurled internally threaded nut 9 circumscribing the shank 6 and confined in the slots 5, to extend out of the same, provide for adjusting said shank 6.

Opposed to the jaw 7 is a complementary, elongated jaw 10 of bar-like form mounted in the beak 3 at the inner side thereof for endwise sliding movement in a common plane with the jaw 7. For mounting the same, said jaw is provided with a dovetailed, longitudinal guide rib 11 on one side thereof fitting in a correspondingly shaped, lon-

gitudinal guideway 12 in the inner face of the beak 3. The guideway 12 inclines inwardly of the head 2, transversely of the axis of the handle 1 and shank 6, and the jaw 10 is provided with a curved ratchet toothed working face, so that when the wrench is applied to a piece of work, such as a pipe, with the jaws 7, 10 gripping the same, and said wrench is turned in one direction, i. e., counter-clockwise, as viewed in Figures 1 and 3, said jaw 10 will tend to slide outwardly of the head 2 and be cammed by the guideway 10 into the work to tighten the grip of the jaws 7, 10 against the work. A set screw 13 in the beak 3 extending into a longitudinal slot 14 in the guide rib 11 limits such outward sliding of the jaw 10.

The head 2 is provided in the back thereof with a channel 15 parallel substantially with the handle 1 and opening at its front end into the guideway 12. A leaf spring 16 fixed at one end, as at 17, in said channel 15 is extended at its free end into a slot 18 provided in a post 19 extending from one end of the jaw 10 into said channel 15. The spring 16 tends to urge the post 18 and jaw 10 outwardly of the head 2 and thus, tighten the jaw 10 against a piece of work to which said jaws 7, 10 may be fitted approximately.

A bar-like jaw release lever 20 is pivoted, as at 21, in said channel 15 with one end bearing against the leaf spring 16 adjacent the free end of the same, and its other end extending rearwardly out of said channel 15 and head 2, and for manipulation toward the handle 1 by the thumb or finger of an operator to flex said spring in a direction causing the same to slide the jaw 10 inwardly of the head 2 into releasing position.

As will be clear, under turning of the wrench in opposite directions about a piece of work to which it is applied, the jaw 10 will grip and release the work with a ratchet-like action, and the wrench may be released from the work by merely pressing the release lever 20 with the thumb or finger.

The foregoing will, it is believed, suffice to impart a clear understanding of my invention without further explanation.

Manifestly, the invention, as described, is susceptible of modification without departing from the inventive concept, and right is herein reserved to such modifications as fall within the scope of the appended claim.

What I claim is:

In a wrench of the class described, a hollow handle forming an axial guideway therein, a hook-shaped head at one end of the handle into

which said guideway opens and embodying a beak traversing the axis of the handle, a shank in said guideway having a transverse elongated jaw fast on one end thereof within said head, said shank being slidable in said guideway to adjust said jaw toward and from said beak in the axis of the handle, an elongated bar-like jaw in said beak opposed to said first jaw and slidable endwise inwardly and outwardly of said head in an inclined guideway lengthwise of the first jaw, a spring in said head attached to said second jaw

and tending to slide the second jaw outwardly, and means in said head coacting with said spring to slide the second jaw inwardly comprising a lever pivoted in said head and extending out of the same at the back of the head with a forward portion engaging said spring, said second jaw being mounted in said beak to move toward the first jaw as an incident to sliding of the same outwardly of the head.

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