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UNITED STATES PATENT OFFICE.

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WRENCH.

939,879.

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To all whom it may concern:

Be it known that I, LAWSON G. VAN ORMER, a citizen of the United States of America, residing at Trafford, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Wrenches, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to wrenches, and the objects of my invention are, first, to provide a quick acting wrench having a novel adjustable jaw that can be quickly adjusted to grip an object to be rotated; second, to provide a strong and durable wrench wherein the use of screw threads and nuts are dispensed with for moving the adjustable jaw of a wrench; and third, to provide a wrench of the "monkey" wrench type that will withstand the rough usage to which wrenches are subjected.

I attain the above objects by providing the adjustable jaw of the wrench with a novel mechanism for gripping the shank of a wrench and holding the same while the wrench is being manipulated to rotate a nut or similar object.

The detail construction entering into my invention will be hereinafter described and then specifically claimed.

Referring to the drawings:—Figure 1 is an elevation of the wrench partly broken away and partly in section, illustrating the adjustable jaw locked in engagement with the shank of the wrench, Fig. 2 is a similar view illustrating the adjustable jaw unlocked relative to the shank of the wrench, Fig. 3 is a cross sectional view of the wrench taken on the line $x-x$ of Fig. 2, and Fig. 4 is a front elevation of a portion of the wrench.

In the accompanying drawings, 1 designates a shank having a fixed jaw 2 on one end provided with a gripping surface 3, and the opposite end of the shank 1 is reduced to form a handle rod 4 for a handle 5, which is retained upon the handle rod 4 by a nut 6. The front edge of the shank 1 is provided with teeth 7 of a length less than the width of the front face of the shank 1, as best shown in Fig. 4 of the drawings.

Prior to mounting the handle 5 upon the handle rod 4, a slidable jaw 8 is placed upon the shank 1, said jaw having a longitudinal recess 9 to receive the shank 1, also a gripping surface 10 adapted to confront the grip-

ping surface 3 of the jaw 2. The jaw 8 is recessed, as at 11, and provided with openings 12 and 13 for a mechanism adapted to grip the teeth 7 of the shank 1. In the recess 11 is located a member 14 which is pivotally mounted upon a pin 15 arranged transversely of the recess 11 and carried by the jaw 8. The lower end of the member 14 is provided with a socket 16 for a cylindrical rib 17, carried by the outer end of a pawl 18, said pawl having a tooth 19 adapted to engage the teeth 7 of the shank 1. The pawl 18 is recessed, as at 20, to engage a pin 21 arranged transversely of the recess 11 adjacent to the opening 12, said pin being carried by the jaw 8. The pawl 18 adjacent to the recess 20 is apertured, as at 21^a, and fixed in said aperture is the end of a coil spring 23 which is connected to the projection 24 near the outer end of the member 14.

Located in the opening 13 of the jaw 8 is a transverse pin 25 for an eccentrically mounted cam 26 having thumb pieces 27, 27' for shifting the cam 26 and moving the pawl 18.

The mechanism just described, including the elements 14, 18, 23 and 26 are retained within the recess 11 and the openings 12 and 13 by a plate 28 secured to the jaw 8 by rivets or screws 29, said plate being cut away, as at 30 to provide clearance for the upper part of the jaw 8 embracing the gripping surface 10.

As shown in Fig. 1 of the drawings, the tension of the spring 23 retains the pawl 18 normally in engagement with the shank 1 of the wrench, with said pawl positioned at an angle relative to the member 14 and the pin 21 engaging in the recess 20 of the pawl. When the thumb piece 27' of the cam 26 is pressed until said thumb piece impinges upon the outer edge of the jaw 8, the pin 21 serves functionally as a fulcrum for the pawl 18, while the outer portion of said pawl is forced toward the shank 1, moving the inner end of the member 14 toward said shank, consequently the projection 24 of said member is carried outwardly and the spring 23 is placed under greater than the normal tension, as shown in Fig. 2 of the drawings. This movement of the thumb piece 27' causes the cam 26 to move the pawl 18, substantially into alinement with the member 14 forming practically a rigid connection between said pawl and member, un-

til such time as the cam 26 is returned to its normal position by pressing upon the thumb piece 27'.

In the operation of the wrench a half-way movement of the cam 26 forces the pawl 18 inwardly and the tooth 19 toward the inner end of the wrench. With the cam in this position it is impossible for the wrench to slip.

It is thought that the operation of the wrench will be understood without further description, and while in the drawings forming a part of this application there is illustrated a preferred embodiment of my invention, I would have it understood that the detail construction thereof can be varied or changed as to shape, proportion and manner of assemblage without departing from the spirit of the invention.

Having now described my invention what I claim as new, is:—

1. In a wrench, the combination with a toothed shank having a fixed jaw, and a detachable handle, of a jaw slidably mounted upon said shank and having a longitudinal recess to receive said shank, said jaw being recessed and provided with two openings, a member pivotally mounted in said recess, a pawl loosely connected to the lower end of said member, and having a tooth for engaging said toothed shank, a coil spring connecting said pawl with the outer end of said member, a pin arranged transversely in said recess for limiting the movement of said pawl, a cam pivotally mounted in one of

said openings for moving said pawl and placing said spring under greater than the normal tension, a double thumb piece carried by said cam and adapted to engage the outer edge of said jaw for retaining the tooth of said pawl out of engagement with said shank, and a plate secured upon said jaw for retaining said member within said recess and said jaw in engagement with said shank, substantially as described.

2. In a wrench, the combination with a toothed shank having a fixed jaw, and a detachable handle, of a jaw slidably mounted upon said shank, said jaw having a recess formed therein, a member pivotally mounted in said recess, a pawl loosely connected to said member and having a tooth adapted to engage said toothed shank, a coil spring connecting the outer end of said member with said pawl for retaining the tooth of said pawl in engagement with said toothed shank, a pin carried by the movable jaw and engaged by said pawl, and a pivoted cam mounted in said jaw for moving said pawl out of engagement with said shank and placing said spring under greater than the normal tension, said pin acting as a fulcrum for said pawl during said operation, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

LAWSON G. VAN ORMER.

Witnesses:

MAX H. SROLOVITZ,

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