

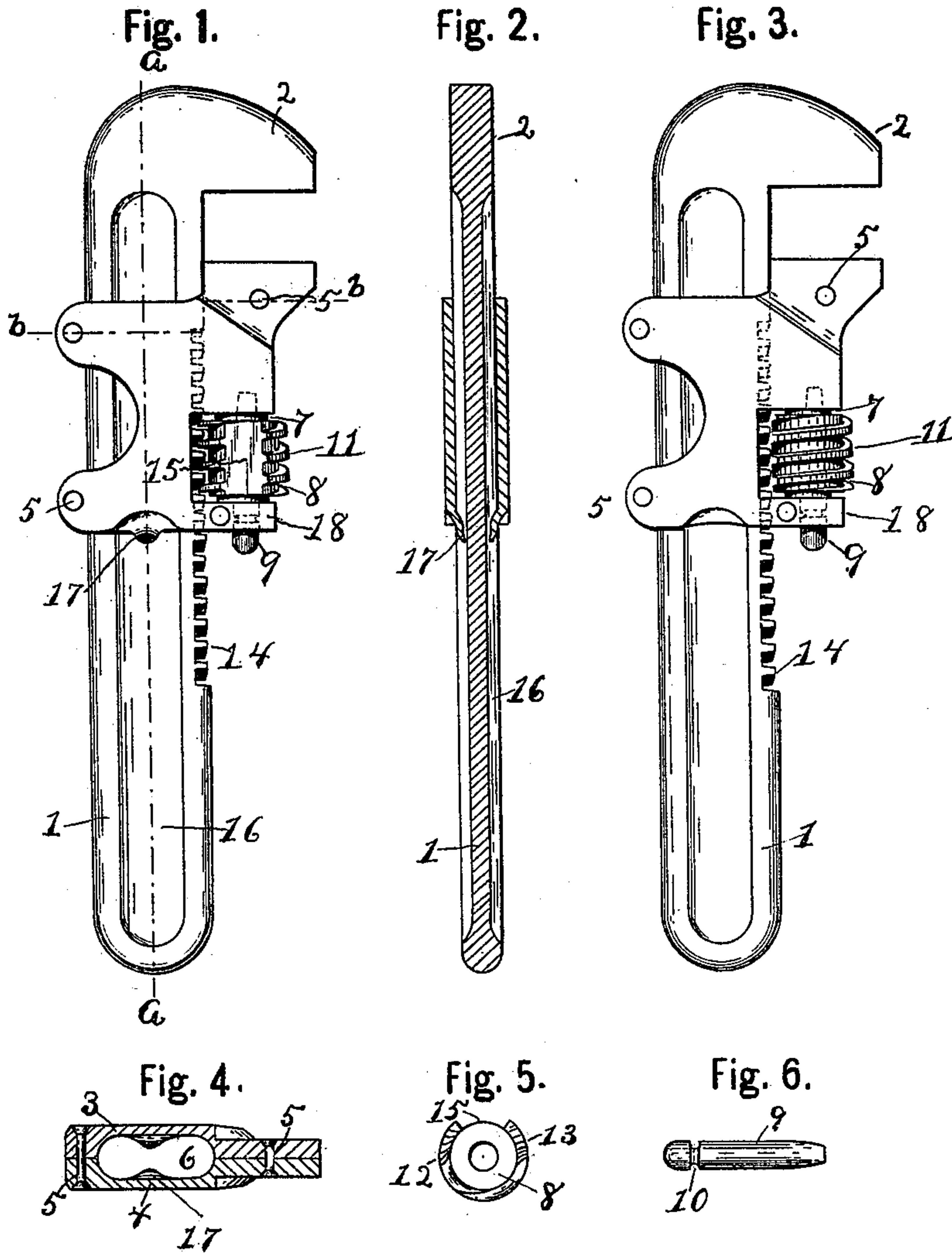
No. 637,375.

Patented Nov. 21, 1899.

S. DAVIDSON.  
WRENCH.

(Application filed Oct. 10, 1898.)

(No Model.)



Witnesses,  
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# UNITED STATES PATENT OFFICE.

SAMUEL DAVIDSON, OF BUFFALO, NEW YORK.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 637,375, dated November 21, 1899.

Application filed October 10, 1898. Serial No. 693,151. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL DAVIDSON, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

My invention relates to an improved wrench; and the main object is to provide means for freeing or disengaging the screw-nut, pivotally mounted upon the movable jaw, from the toothed edge of the wrench-shank to allow free longitudinal movement of the movable jaw thereon without removing the screw-nut from its pivotal adjustment or changing its position with respect thereof.

It also relates to certain details of construction, all of which will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 represents a side elevation of my improved wrench, the screw-nut having its peripheral threads in engagement with the toothed edge of the shank. Fig. 2 represents a longitudinal section on or about line *a a*, Fig. 1. Fig. 3 represents a side elevation of my improved wrench, with the reduced or unthreaded portion of the screw-nut in proximity to the toothed edge of the shank to allow free longitudinal movement of the movable jaw with respect to the shank. Fig. 4 represents a section through the movable jaw on or about line *b b*, Fig. 1. Fig. 5 represents a detached end view of the screw-nut, illustrating the double formation of the peripheral screw-threads. Fig. 6 is a detached side elevation of the pivotal pin.

The wrench consists of two members, the main member, having a shank 1 and a fixed jaw 2 at one end thereof, and the movable jaw member, which is formed in two half portions 3 and 4. In my preferred construction the half portions are rigidly united by rivets 5, the inner surface of the half portions being leaded to provide a filling between the abutting edges for concealing the joint when the wrench is finished and also additionally securing the two portions together. The movable jaw is provided with an opening 6, through which the shank passes, and a depression 7 is cut in the under side thereof to provide a

space for the operating screw-nut 8, which is pivotally mounted upon the pin 9. This pin is mounted in openings in the movable jaw and is provided with a grooved or reduced portion 10, the purpose of which will appear farther on.

The nut 8 has double peripheral screw-threads, which preferably begin at diametrically opposite points from each other, as shown at 12 and 13, Fig. 5, thus affording a quicker lead and giving a greater longitudinal movement to the movable jaw with each revolution of the nut. These threads 11 extend diagonally around the periphery of the nut and a series of teeth 14 project downwardly from the under surface of the shank 1 and are arranged thereon so as to extend diagonally across the edge of the shank at substantially the same angle as the threads 11 extend around the periphery of the nut, thus providing for the easy engagement of the threads between the teeth and their free movement with respect to the same.

To enable the nut to be disengaged or freed from the teeth, I cut away a portion of the peripheral threads, thus leaving a reduced smooth-surfaced portion 15, which when turned opposite the teeth allows the movable jaw to be moved freely along the shank.

To prevent the removal of the movable jaw from the shank after it is placed thereon, the shank is provided with shallow longitudinal channels or grooves 16, which terminate near the ends of said shank, and the sides of the movable jaw are bent into said grooves, thus preventing its removal without interfering with its free longitudinal movement. This may be done as I have shown in Fig. 3, or a small projection 17 may be extended from the edge of the wrench and bent into the channels or grooves, as desired, the extensions being preferable, as they obviate all danger of the sides being pressed too far inwardly to prevent free longitudinal movement.

In assembling my improved device the two halves of the movable jaw are rigidly fastened together, as before described, the nut 8 is placed into the depression in the movable jaw, and the pivoted pin 9 is inserted in the openings in said jaw. Then the sides of the extension portion 18, through which the pin 9 passes, are pressed toward each other by



any well-known pressing device, thus forcing a portion of the metal of the sides into the grooved or reduced portion 10 and firmly securing the pin in place. The shank is now  
5 passed through the movable jaw, and the sides or extensions are bent into the grooves.

To quickly adjust the wrench to fit any desired article, the nut is revolved to free itself from the teeth, and the movable jaw is moved  
10 along the shank to the required point, and the nut is again revolved to again engage the threads with the teeth and move the movable jaw toward the fixed jaw sufficiently to grip the article.

15 I am aware that changes in the form and proportion of parts and in the details of construction of the device herein shown and described as the preferred embodiment of my invention may be made by a skilled mechanic  
20 without departing from the principle or sacrificing the advantages of my invention, and I therefore reserve the right to make such modifications and alterations as fairly fall within the scope of my invention.

25 I claim as my invention—

1. The combination with the main member, of a wrench having a fixed jaw, a longitudinal channel and a toothed edge, of a movable member supported thereon and formed in two  
30 portions, rivets for securing said portions together, an operating-nut having a mutilated thread mounted in said movable member and offset portions fitting in the channels, as set forth.

35 2. The combination with a main portion of a wrench having a toothed edge and longitudinal channels, of a movable portion supported thereon and having portions extending into said channels, and an opening, a piv-

otal pin inserted in said opening and having 40 a reduced portion into which the jaw portion is pressed to fasten the pin in place, a screw-nut pivotally mounted on said pin and engaging with the toothed edge and having a portion cut away to provide means for disen- 45 gaging said nut from said toothed edge, as set forth.

3. In a wrench the combination with the movable jaw portion, provided with an opening of a pivotal pin inserted in said opening 50 and having a reduced or grooved portion into which the sides of the jaw portion are pressed to secure the pin in place, as set forth.

4. In a wrench the combination with the main member having a series of teeth and 55 longitudinal channels, of a movable member mounted thereon and supporting a screw-nut in engagement with said teeth, means for disengaging said nut from said teeth without changing the pivotal position, to allow free 60 movement of the movable member, and portions bending from the movable member into the channels for limiting said movement to prevent its detachment from the main member, as set forth. 65

5. In a wrench, the combination with the shank of the main member, having longitudinal channels or grooves of the movable member mounted thereon, and having portions bent into said channels or grooves for 70 preventing the removal of said movable member from said shank without interfering with its free longitudinal movement thereon, as set forth.

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Witnesses:

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