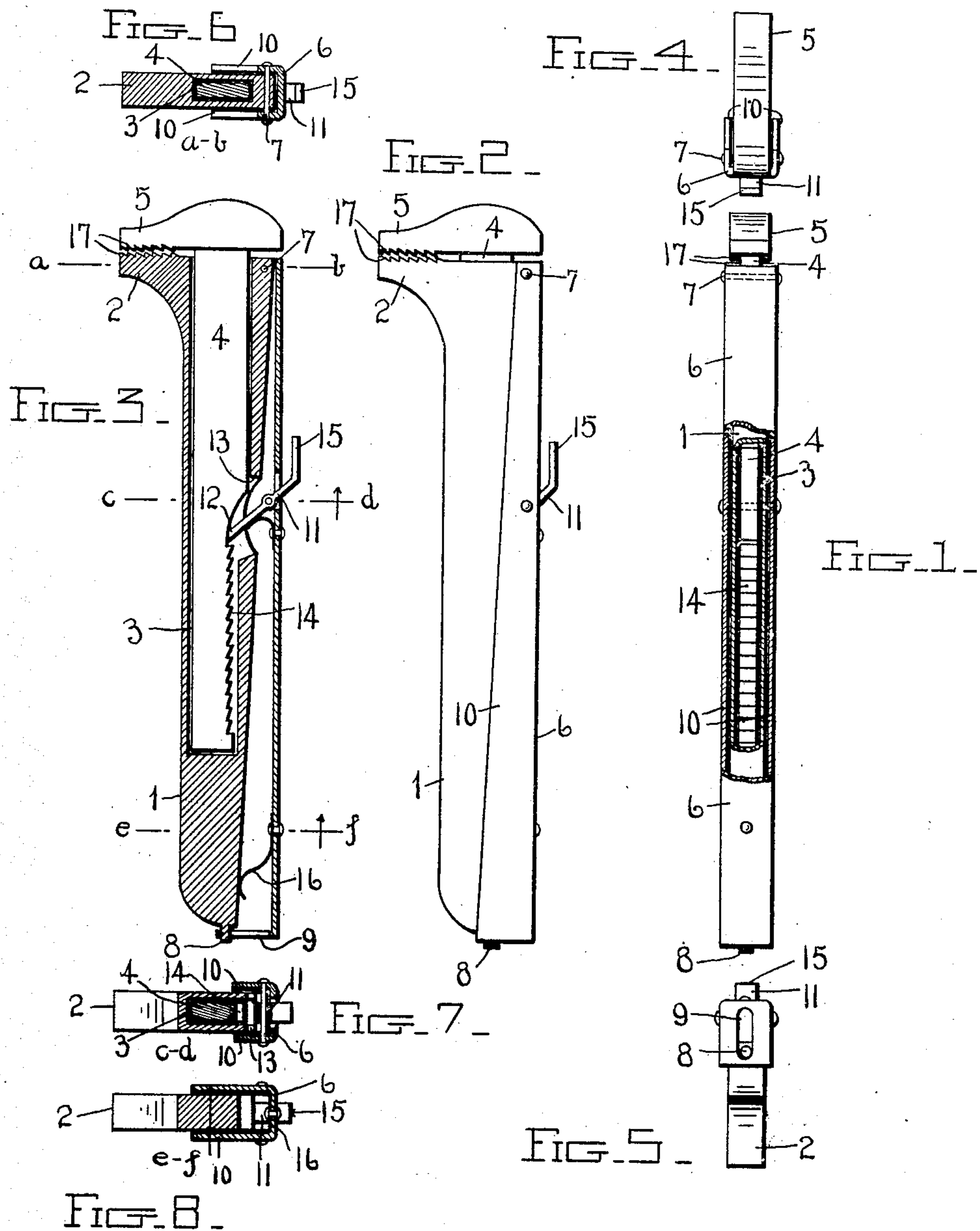


R. Q. WARREN.  
WRENCH.

APPLICATION FILED JAN. 9, 1908.

916,510.

Patented Mar. 30, 1909.



WITNESSES:

L. B. James  
M. T. Miller.

INVENTOR

Robert Q. Warren

BY

*Charles Chandler*  
ATTORNEYS



# UNITED STATES PATENT OFFICE.

ROBERT Q. WARREN, OF EAST ORANGE, NEW JERSEY.

## WRENCH.

No. 916,510.

Specification of Letters Patent.

Patented March 30, 1909.

Application filed January 9, 1908. Serial No. 409,977.

*To all whom it may concern:*

Be it known that I, ROBERT Q. WARREN, a citizen of the United States, residing at East Orange, in the county of Essex, State of New Jersey, have invented certain new and useful Improvements in Wrenches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has relation to ratchet wrenches, and it has as its object the provision of a wrench that can be quickly adjusted, that will not slip, that will afford a tight grip on the object being operated upon, and that will "let go" the instant the stress on the bar is relaxed.

The invention comprises in its construction a handle-bar equipped with a stationary jaw, and having a longitudinal socket, a sliding ratchet edged bar equipped with a jaw, said jaw being adapted to slide in said longitudinal socket; and a pivotally held lever cap or cover for the handle-bar which carries a pawl engaging the ratchet on the sliding bar, the said pawl extending through an opening in the handle-bar, and a spring for returning the lever cap to normal position.

The drawings hereto annexed show a wrench embodying the invention, and they with the characters of reference marked thereon are to be referred to as a part thereof.

Of the drawings—Figure 1 is a top view, a part being represented as broken away. Fig. 2 is a side view. Fig. 3 is a longitudinal sectional elevation. Fig. 4 is a front elevation. Fig. 5 is a rear elevation. Fig. 6 is a transverse section on the line *a b*, Fig. 3. Fig. 7 is a transverse section on the line *c d*, Fig. 3. Fig. 8 is a transverse section on the line *e f*, Fig. 3.

Similar characters of reference designate similar parts or features on all of the views.

In the drawings, 1 designates the handle-bar, that is provided on its forward end with a fixed jaw 2, and has a longitudinal opening or socket 3 in which the ratchet bar 4 is adapted to slide, the latter bar having a jaw 5 on its forward end to coöperate with the jaw 2.

6 designates a cap-lever having the sides 10 covering the upper portion of the handle-bar, and pivoted by means of the pin 7 to the handle-bar and extending a little beyond

the rear end of the bar which is provided with an ear 8, that extends through a slot 9 formed in the end of the cap-lever, so as to guide the lever. The cap lever is provided on its under side with suitable ears shown in Figs. 3 and 8, between which is pivoted a pawl 11, the lower arm 12 of which extends through an access opening 13 in the handle-bar 1, and engages the ratchet-teeth 14 formed on one edge of the handle-bar. The upper end 15 of the pawl 11, which extends through an opening in the cap lever 6, projects forward in the plane of the said lever, and there is a spring 16 interposed between the handle-bar and the cap lever at the rearward end to hold the lever and handle separated, as shown in Fig. 3.

When it is desired to disengage the pawl 11 from the ratchet teeth 14 the upper end portion 15 thereof may be simply depressed on the handle-bar, when the jaws may be separated by drawing the handle-bar back to the desired extent, then the object to be operated upon can instantly have the jaws closed upon it by alternately pressing upon and releasing the cap-lever to advance the rack bar 4. The greater the energy exerted on the handle-bar the tighter will be the grasp of the jaws. Teeth 17 are formed on the jaws so that the wrench can operate on round, square or other form of surfaces, as desired. After the jaws are adjusted on an object, by grasping the cap-lever and handle-bar and pressing them together, the jaws will tighten on the object between them; and the instant the grip is released on the handle the spring will operate on the cap-lever to release the pawl and the jaws will instantly let go. The outer end 15 of the pawl is in such position that the thumb of the hand may be readily placed thereon when it is proposed, as is usual, to operate the wrench by one hand.

While I have shown the various parts in the form I at present propose to have them, it is to be understood that they may be varied mechanically in form and construction without departing from the general nature or spirit of the invention.

The device is particularly adapted for work on an automobile and bicycle, though of course it is not confined to said uses.

What is claimed is—

1. In a wrench, the combination of the handle-bar having a longitudinal opening and provided with a jaw, of the sliding



ratchet-bar arranged in said opening and provided with a jaw, a cap lever arranged over the handle-bar and pivoted at its forward end thereto, and a pawl pivoted to the cap lever, said handle lever and cap lever having each an opening for the pawl to extend there-through to engage the ratchet teeth and to be engaged by the thumb of the hand.

2. A wrench, having in combination, a  
10 handle bar provided with a jaw and a longitudinal socket having an access opening, a ratchet bar having a jaw slidably held within

said socket, a lever pivoted at one end to said handle bar, a pawl carried by said lever projecting through said access opening to engage said ratchet bar, and a spring normally forcing said lever in one direction.

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

ROBERT Q. WARREN.

Witnesses:

FREDERIC L. JOHNSON,  
DAVID M. ELM.