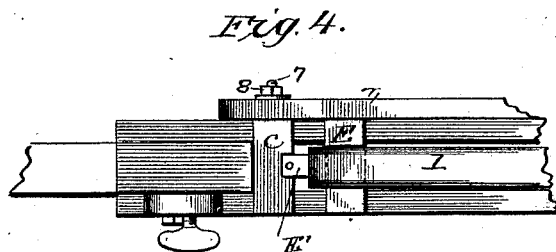
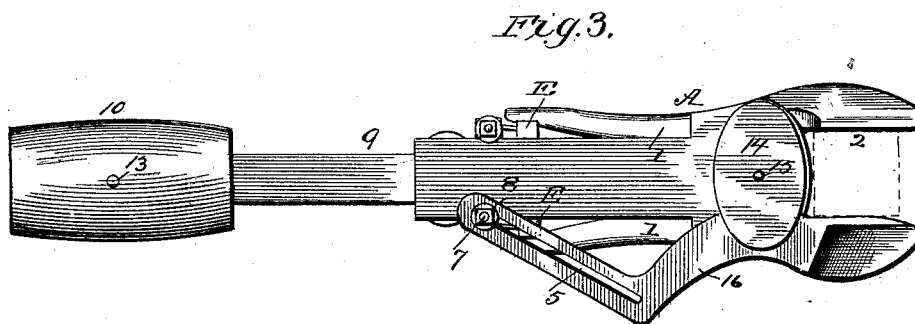
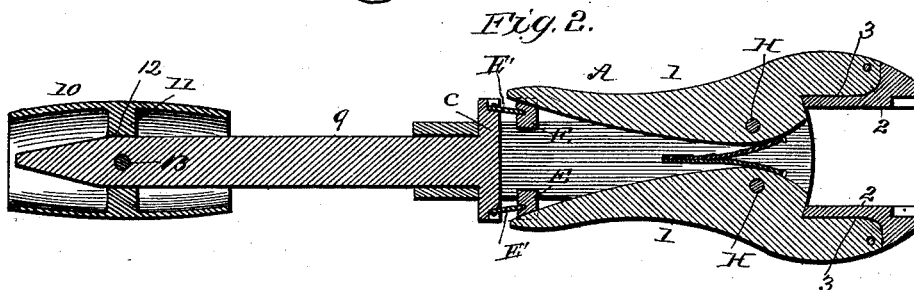
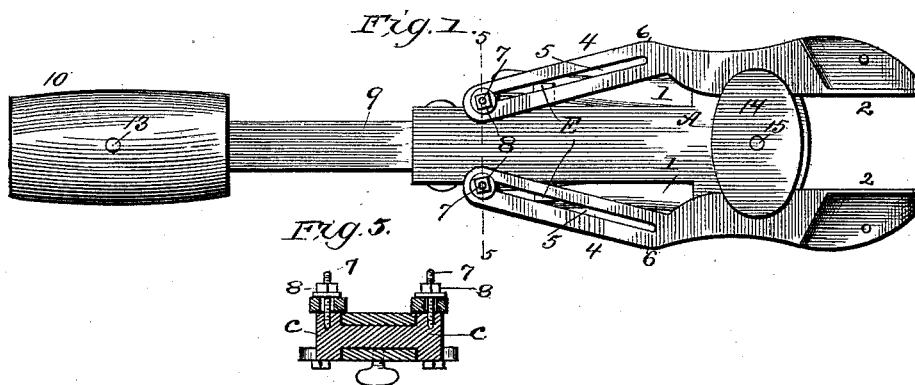


(No Model.)

J. TOMLINSON, Sr.  
WRENCH.

No. 422,662.

Patented Mar. 4, 1890.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOSEPH TOMLINSON, SR., OF FOLSOM, CALIFORNIA.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 422,662, dated March 4, 1890.

Application filed August 2, 1889. Serial No. 319,578. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH TOMLINSON, Sr., a citizen of the United States, residing at Folsom, in the county of Sacramento and State of California, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

My invention consists in a new and useful improvement on the wrench patented by me March 5, 1889, No. 398,989, as will be hereinafter fully described and claimed, whereby the jaws of the wrench are caused to open and close parallel to each other. By this arrangement the parties using the wrench need not be so particular in placing the nut to be moved in the right place between the jaws, as the jaws will close square upon a nut placed anywhere between them.

Referring to the accompanying drawings, Figure 1 is a plan view of my improved wrench. Fig. 2 is a horizontal section thereof. Fig. 3 is a plan view of a modification. Fig. 4 is a detail side view. Fig. 5 is a cross-section on the line 5 5, Fig. 1.

The same numerals and letters of reference indicate corresponding parts in all the figures.

The parts designated by letters of reference are those shown, described, and claimed in my patent, No. 398,989, above referred to, and I will therefore not describe them in detail.

On the transverse pins H in the body A are pivoted the levers 1 1 of the form shown, the inner ends of these levers fitting in the outer recesses of the spring-blocks E, which are connected to the recessed ends of the bar-heads c by the springs E'. The points or outer ends of the levers 1 fit and are pivoted in recesses 3, opening into the backs of the clamping-jaws 2. The jaws 2 are extended down at one side, forming lever-arms 4, the lower half of these arms being inclined in, as shown, from the point 6, and formed with the longitudinal slots 5.

The lever-arms 4 of the wrench-jaws extend down to the head c of the sliding bar 9, and the head c has at each end a threaded pin 7, these pins passing through the longitudinal slots 5 of the arms 4 and having each a small washer and a nut 8 on their ends to hold the

pins in the slotted arms as the sliding bar is moved.

The outer end of the sliding bar 9 is preferably secured in the handle 10, which is formed hollow, except at its center, where a transverse partition 11 is left, having a rectangular opening 12, through which the end of the bar 9 passes, and is secured therein by a transverse bolt 13. This handle 10 does not interfere with a brace being applied to the end of the bar 9, as owing to its open or hollow ends the brace can be applied without removing the handle.

It will be seen that in operation as the bar 9 is pushed in the body A, while the blocks E separate the rear ends of the pivoted levers 1 1, and through their forward ends close the clamping-jaws together, the pins 7 of the bar-head c, sliding in the longitudinal slots 5 of the inclined rear halves of the jaw-arms 4, will move the lower arms in toward each other, so as to keep the face of the jaws 2 always parallel with each other. This is the great feature of my improvement, that the meeting faces of the jaws of the wrench always open and close parallel with each other. When the bar 9 is drawn out to open the jaws, the pins 7 operate to move the lever-arms 4 apart as their jaws 2 are separated by the levers 1.

The side arms 4 of the jaws are made sufficiently strong to steady and brace the jaws against any side strain.

A plate 14 is removably secured by a screw 15 to the side of the body A, extending over the jaw-arms 4 and serving as a guide and brace-plate for the same. The same object of keeping the jaws parallel in their movements can be effected by using one pivoted or swinging jaw 16, and only one lever and jaw having the slotted arm, as shown in Fig. 3, in which case the lower slotted half of the jaw-arm is inclined in at a far more acute angle, as clearly shown in the said view, and the bar-head c has only the one pin 7 for that arm.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a wrench, the combination, with the wrench-body and the sliding bar having the cross-head provided with the pins 7, of the

levers pivoted in the body and pivoted at their forward ends in the recessed jaws and the jaws having the rear recesses, and the side arms formed with the inclined slots, substantially as set forth.

5 2. In a wrench, the combination, with the wrench-body and the sliding bar having the cross-head provided with the pins 7, of the levers pivoted in the body and pivoted at  
10 their forward ends in the recessed jaws; springs normally pressing the forward ends of the levers apart, and the jaws having the rear recesses and the side arms formed with the inclined slots, substantially as set forth.

15 3. In a wrench, the combination, with the

wrench-body, the sliding bar having the cross-head provided with the pins 7, and the recessed blocks connected to the cross-head by the springs, of the levers pivoted in the body and pivoted at their forward ends in the recessed jaws, springs normally pressing the forward ends of the levers apart, and the jaws having the rear recesses and the side arms formed with the inclined slot, substantially as set forth.

JOSEPH TOMLINSON, SR.

Witnesses:

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