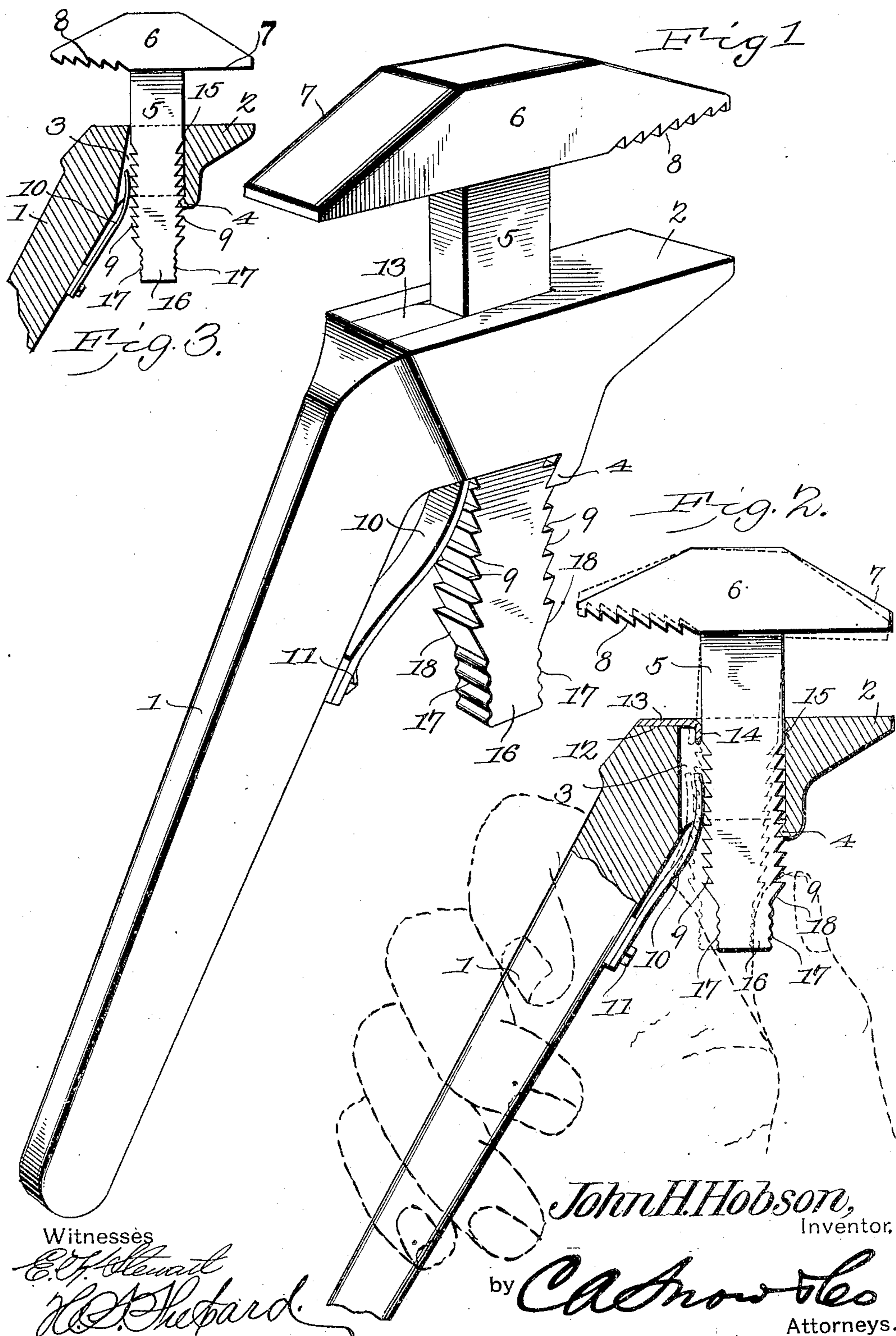


No. 807,618.

PATENTED DEC. 19, 1905.

J. H. HOBSON.  
WRENCH.

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Witnesses

*E. J. Stewart*  
*H. D. Shepard*

*John H. Hobson,*

Inventor,

by

*C. A. Snow & Co.*

Attorneys.

# UNITED STATES PATENT OFFICE.

JOHN H. HOBSON, OF MATTOON, ILLINOIS.

## WRENCH.

No. 807,618.

Specification of Letters Patent.

Patented Dec. 19, 1905.

Application filed April 11, 1905. Serial No. 254,932.

*To all whom it may concern:*

Be it known that I, JOHN H. HOBSON, a citizen of the United States, residing at Mattoon, in the county of Coles and State of Illinois, have invented a new and useful Wrench, of which the following is a specification.

This invention relates to wrenches; and it is an important object of the present invention to provide simple and improved means whereby the wrench may be readily converted from a nut-wrench to a pipe-wrench, and vice versa, and to insure a tight grip of the wrench-jaws in each application of the wrench.

A further object of the invention is to enable the convenient adjustment of the movable jaw by the employment of one hand only, leaving the other hand free for any desired purpose.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a perspective view of a wrench embodying the features of the present invention and adjusted for use as a pipe-wrench. Fig. 2 is a side elevation of the wrench, parts being broken away to show the adjustable connection between the fixed jaw and the shank of the movable jaw, with the movable jaw set for use as a nut-wrench. Fig. 3 is a view similar to Fig. 2 and upon a smaller scale, illustrating a modification.

Like characters of reference designate corresponding parts in the figures of the drawings.

The present wrench includes a straight stock or handle 1, having an integral fixed jaw 2 projecting laterally at one side only of the handle from one terminal thereof and set at an angle of about forty-five degrees to the handle. The outer or forward face of the jaw is flat, and a passage 3 intersects the front and back of the jaw at substantially right angles to the front face thereof, the sides of the passage being smooth and substantially parallel. At the rear end of the outer wall of the passage the jaw is provided with an inwardly and downwardly inclined integral tooth

4, which extends for the entire width of the jaw. A stem 5 works endwise through the passage 3 and is provided at its forward end with a transverse head 6, projecting at opposite sides of the stem, with one end 7 having a flat rear face to form a nut-engaging jaw and the other end portion 8 having its rear face inclined and toothed to form a pipe-engaging jaw. The front and back edges of the stem are provided with integral ratchet-teeth 9 for individual engagement with the fixed tooth 4 of the jaw 2, so as to hold the movable jaw at any point of adjustment with respect to the fixed jaw. The passage 3 is somewhat wider than the stem 5, so as to permit lateral play of the stem, there being a leaf-spring 10 secured at its lower end to the rear side of the handle, as at 11, with its upper free portion bowed into the passage and terminating short of the top thereof, with said free bowed terminal frictionally bearing against the adjacent toothed edge of the stem 5 to yieldably hold the opposite toothed edge thereof in engagement with the fixed tooth 4. In the front face of the fixed jaw 2 and at its inner end there is a dovetailed groove or seat 12, intersecting the passage 3 and the inner end of the fixed jaw, and in this groove there is fitted a spring 13, which is dovetailed in cross-section to snugly fit the groove and has its inner free end portion 4 bowed downwardly into the passage 3, so as to bear against the adjacent edge of the stem 5, and thereby supplement the spring 10.

From the foregoing description it will be understood that the stem 5 is yieldably held in engagement with the fixed tooth 4 and may be withdrawn through the passage 3 by forcing the stem laterally against the springs 10 and 13 to disengage its teeth from the fixed tooth 4, whereupon the stem may be withdrawn from the fixed jaw, reversed, and then returned into the passage, thereby to bring either of the jaw portions 7 and 8 into cooperative relation with the outer end portion of the fixed jaw 2.

When it is desired to adjust the movable jaw toward or away from the fixed jaw, the handle 1 is grasped in the palm of the hand and the thumb pressed inwardly against the outer side of the adjacent terminal of the stem 5, thereby tilting the stem upon the outer edge 15 of the front wall of the passage 3 against the pressure of the springs 10 and 13, whereby the teeth 9 at the outer side of the stem 5 will be disengaged from the fixed

tooth 4, and then by pressing the thumb forwardly upon the stem the latter will be moved forwardly to any desired extent. Upon relieving the pressure of the thumb from the stem the springs will immediately snap the stem back into engagement with the tooth 4, and the stem thereby becomes again locked in its adjusted position. The stem may likewise be drawn rearwardly through the passage to bring the movable jaw closer to the fixed jaw. To facilitate this adjustment of the movable jaw, the rear end portion 16 of the stem is reduced and roughened or serrated at its opposite edges, as indicated at 17, whereby the adjacent terminal teeth 18 of the two series of teeth 9 constitute shoulders against which the thumb may press when moving the stem forwardly through the passage 3.

A very important feature of the present invention resides in the employment of the two springs 10 and 13 with their free ends lying entirely within the passage 3 so as to be housed thereby and prevented from being struck and injured by external objects. Furthermore, the spring 13 closes the forward end of the passage 3 between the stem 5 and the inner or rear wall of the passage, so as to prevent the lodgment of foreign matter therein, which would interfere with the tilting and adjustment of the stem, while at the same time this spring supplements the spring 10 in maintaining the stem in substantial parallelism with the outer wall of the passage without offering material resistance to the tilting of the stem for adjusting the same.

As embodied in Fig. 3 of the drawings, it will be noted that the spring 13 may be omitted, in which event the forward end of the passage 3 is just wide enough to permit of endwise movement of the stem 5 through the passage, the rear end of the passage of course being wide enough to permit of the necessary tilting of the stem upon the front wall of the passage at the point 15 to disengage the teeth 9 from the fixed tooth 4. With this arrangement the stem can be worked back and forth by pressure of the thumb upon the rear terminal 16 of the stem, as hereinbefore described for the form of wrench shown in Figs. 1 and 2.

Having fully described the invention, what is claimed is—

1. A wrench comprising a handle, a rigid jaw carried by the handle and provided with a passage extending entirely through the jaw perpendicular to the work-engaging face, a tooth rigid with the handle, a cooperating jaw having a shank mounted and longitudinally slidable within the passage and provided with a series of notches arranged for engagement with the rigid tooth, a spring bearing against and arranged to hold the shank in constant contact with one side of the passage, and a spring bearing against and arranged to hold the shank in yieldable engagement with the tooth.

2. A wrench comprising a handle, carrying an angularly-disposed rigid jaw and provided with a passage extending entirely through the jaw perpendicular to the work-engaging face, a tooth rigid with the handle and within the passage, a cooperating jaw having a shank mounted and longitudinally slidable within the passage and provided with a series of notches arranged for engagement with the tooth, a spring secured to the handle and bearing against and arranged to hold the shank in constant contact with one side of the passage, and a spring secured to the handle and bearing against the shank within the passage and arranged to hold the shank in yieldable engagement with the tooth.

3. A wrench comprising a handle having a fixed jaw projected at one side thereof and provided with a passage intersecting the front and back of the jaw, a movable jaw having a stem adjustable endwise through the passage, a spring carried by the back of the handle and projected into the passage to bear against the stem and yieldably maintain the same in engagement with the outer wall of the passage, and another spring carried by the front of the fixed jaw and closing the front open end of the passage between the inner wall thereof and the stem with the free end of said spring bearing against the stem.

4. A wrench comprising a handle having a fixed jaw projected at one side thereof and provided with a passage intersecting the front and rear of the jaw, the front face of the jaw being provided with a groove intersecting the inner end of the jaw and the adjacent wall of the passage, a movable jaw having a stem adjustable endwise through the passage, a spring carried by the back of the handle with its free end projected into the passage and bearing against the stem to hold the same in yieldable engagement with the outer wall of the passage, and another spring fitted in the groove of the front of the fixed jaw with its inner free end closing the front end of the passage between the inner wall thereof and the stem and also bearing against the stem to supplement the first-mentioned spring.

5. A wrench comprising a handle having a fixed jaw projected at one side thereof and provided with a passage intersecting the front and rear of the jaw, the rear open end of the passage being provided with a transverse tooth at the front wall thereof, the front face of the jaw being provided with a groove intersecting the inner end thereof and the inner wall of the passage, a movable jaw having a stem adjustable endwise through the passage and provided with a series of teeth for engagement with the tooth of the fixed jaw, a leaf-spring secured to the back of the handle with its free end projected into the passage and bearing against the adjacent edge of the stem to yieldably maintain the teeth thereof in engagement with the tooth of the fixed jaw, and

a spring fitted in the groove in the front of the fixed jaw with its inner free end closing the front end of the passage between the inner wall thereof and the stem and bearing  
5 against the latter, the stem capable of being tilted upon the front end of the outer wall of the passage against the pressure of the springs to disengage the teeth of the stem from the tooth of the fixed jaw to permit endwise ad-  
10 justment of the stem.

6. A wrench comprising a handle having a fixed jaw projected at one side thereof and provided with a passage intersecting the front and rear of the jaw, the front face of the jaw  
15 being provided with a recess intersecting the passage, a movable jaw having a stem adjustable endwise through the passage, a spring seated in the recess with its free end projected across the passage into frictional engagement

with the adjacent side of the stem to hold the  
latter in engagement with the opposite wall  
of the passage and closing the front end por-  
tion of the passage between the stem and the  
adjacent wall of the passage, and another  
spring carried by the back of the handle and  
25 projecting inwardly through the rear open end of the passage into engagement with the adjacent side of the stem to yieldably force the latter into engagement with the opposite  
wall of the passage.

In testimony that I claim the foregoing as  
my own I have hereto affixed my signature in  
the presence of two witnesses.

JOHN H. HOBSON.

Witnesses:

EMERY ANDREWS,  
MABEL BENTEN.