E. E. THOMAS.

COMBINATION WRENCH.

APPLICATION FILED JAN. 16, 1917.

1,344,101.

Patented June 22, 1920.

Fig. 2.

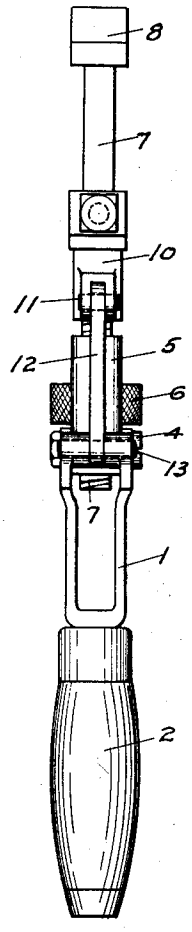
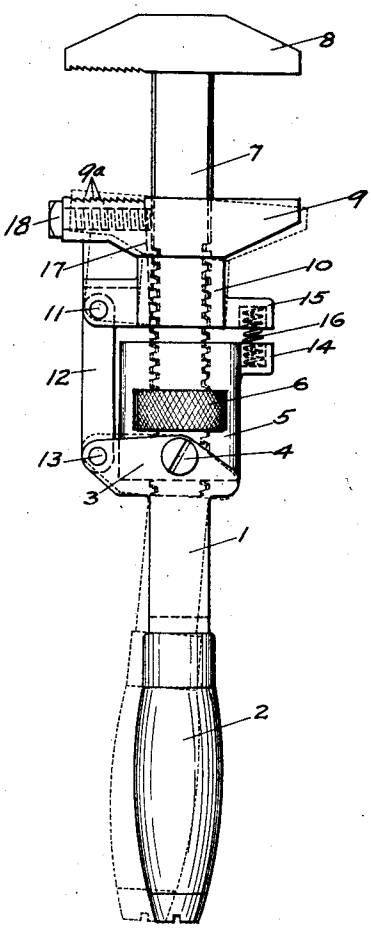


Fig. 1.



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UNITED STATES PATENT OFFICE.

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COMBINATION-WRENCH.

1,344,101. Specification of Letters Patent. Patented June 22, 1920.

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To all whom it may concern:

Be it known that I, EDWIN E. THOMAS, a citizen of the United States, residing in the city of Portland, county of Multnomah, and State of Oregon, have invented certain new and useful Improvements in Combination-Wrenches, of which the following is a specification.

My invention relates to that class of combination wrenches adapted for use either as a nut wrench or as a pipe wrench.

One of the principal objects of my invention is to provide in a combination wrench, of the character referred to, a tilting or rocking combination jaw, together with a bodily movable combination jaw having an operating screw stem and nut, whereby to effect a better biting engagement with the pipe when said wrench is used as a pipe wrench. Another object of my invention is to provide in a wrench, of the character referred to, means for positively rocking or tilting said tilting jaw during the operation of said wrench when used as a pipe wrench, with means for yieldingly holding said jaw in its normal position when not in use as a pipe wrench.

Other objects and advantages of my invention will be apparent from the following description of one practical embodiment thereof, shown for purposes of illustration on the accompanying sheet of drawings, in which,—

Figure 1 is a side elevation; and

Fig. 2 is an edge view thereof.

Referring now in detail to the drawings, my invention as here embodied comprises a handle 1, provided at its lower end with a hand grip 2, and at its upper end with a connecting portion 3, by means of which, and a bolt, or screw, 4, it is pivotally connected to a hollow bearing member 5, through which is mounted an operating nut 6, having a threaded engagement with the screw stem 7, of a movable combination jaw 8. A combination jaw member 9, having the neck or body portion 10, is supported directly above the hollow bearing member 5, and is pivotally connected at one side, as at 11, by means of a link 12, to the connecting portion 3, as at 13. Said combination jaw 9, is constructed to allow the screw stem 7 of the jaw 8, to pass therethrough. The hollow bearing member 5, is provided at one side with a pocket-lug portion 14, in alinement with a similar pocket-lug portion 15, formed on the body 10, of the jaw 9. A comparatively stiff, coiled spring 16, has its opposite ends seated in said pocket-lug portions 14 and 15, as clearly shown in Fig. 1.

The passageway through the jaw 9, formed to receive the screw stem 7, is slightly tapered toward its upper end, as indicated by the broken line 17. The object of this is to allow said jaw 9, to be automatically tilted from its position, as indicated in full lines, to its position as indicated in dotted lines, Fig. 1, when used as a pipe wrench. This tilting or rocking movement of the jaw 9, is accomplished by a slight pivotal movement of the hand grip 2, on its pivot bolt 4, as indicated in dotted lines, and the connecting link 12.

In order to accomplish this tilting or rocking movement of the jaw 9, however, a screw bolt 18, must be unscrewed a few turns out of the portion of the jaw 9, which is provided with the teeth 9^a. This tilting movement of the jaw 9, increases the efficiency of the wrench when used as a pipe wrench, for it affords a certain leverage connection between the jaw 9 and the hand grip 2, whereby said jaw 9, is rocked or tilted slightly in a way which gives a more effective bite on the pipe on which the wrench is used. The spring 16, operates normally to hold the parts yieldingly in their normal positions, as shown in full lines, even though the screw bolt 18 may be turned out slightly to permit of the rocking movement of the jaw 9, when it is to be used as a pipe wrench.

When the wrench is used as a nut wrench, said screw bolt 18, is screwed inwardly until its inner end has a bearing on the stem 7 of the movable jaw 8, thus holding the jaw 9, against any rocking movement.

I am aware that changes in details can be made in my wrench as here embodied, without departing from the spirit thereof, and I do not, therefore, limit my invention to these details, except as it may be limited by the hereto appended claims.

I claim:

1. In a wrench of the character referred to, in combination, a handle, a movable combination jaw having a screw stem, an operating nut therefor, a tilting combination jaw through which said screw stem passes, operating connections between said tilting jaw and said handle, whereby movement of the

handle sidewise operates to tilt said tilting jaw relative to said movable jaw, and means for locking said tilting jaw against tilting movement.

2. In a wrench of the character referred to, in combination, a handle, a movable combination jaw having a screw stem normally alined with said handle, an operating nut therefor, a tilting combination jaw through which said screw stem passes, operating connections between said tilting jaw and said handle, whereby movement of the handle sidewise operates to tilt said tilting jaw relative to said movable jaw, and means for yieldingly holding said tilting jaw in a normal untilted position.

3. A combination wrench of the character referred to comprising a body with opening therethrough, an adjustment nut seated therein, a handle element movably connected therewith, a movable jaw having a screw stem passing through said body, said adjustment nut, and into said handle, a tilting combination jaw mounted on said stem above said body and yieldingly connected therewith at one side, a link connecting said tilting jaw at its other side with said handle, whereby it can be tilted by the movement of said handle, and means for locking said tilting jaw against tilting movement, substantially as described.

4. In a wrench, a body having a handle pivoted thereto, an extensible jaw having a stem extending through said body, an operating nut held in said body on said stem, a tiltable jaw carried on said stem and having a link connection with said handle on one side of said stem and having a resilient connection with said body on the opposite side of said stem, as set forth.

5. In a wrench, a body, a handle pivoted thereto, a movable jaw having a stem extensibly supported in said body, means for extending and retracting said movable jaw, said stem being in normal alinement with said handle, a tiltable jaw carried by said stem adjacent to said body, a link connecting one side of said tiltable jaw with said handle, and means for cushioning the opposite side of said tiltable jaw against said body, as set forth.

Signed at Portland, Multnomah county, Oregon, this 2nd day of January, 1917.

EDWIN E. THOMAS.

In presence of—
I. M. GRIFFIN,
J. C. STRENG.