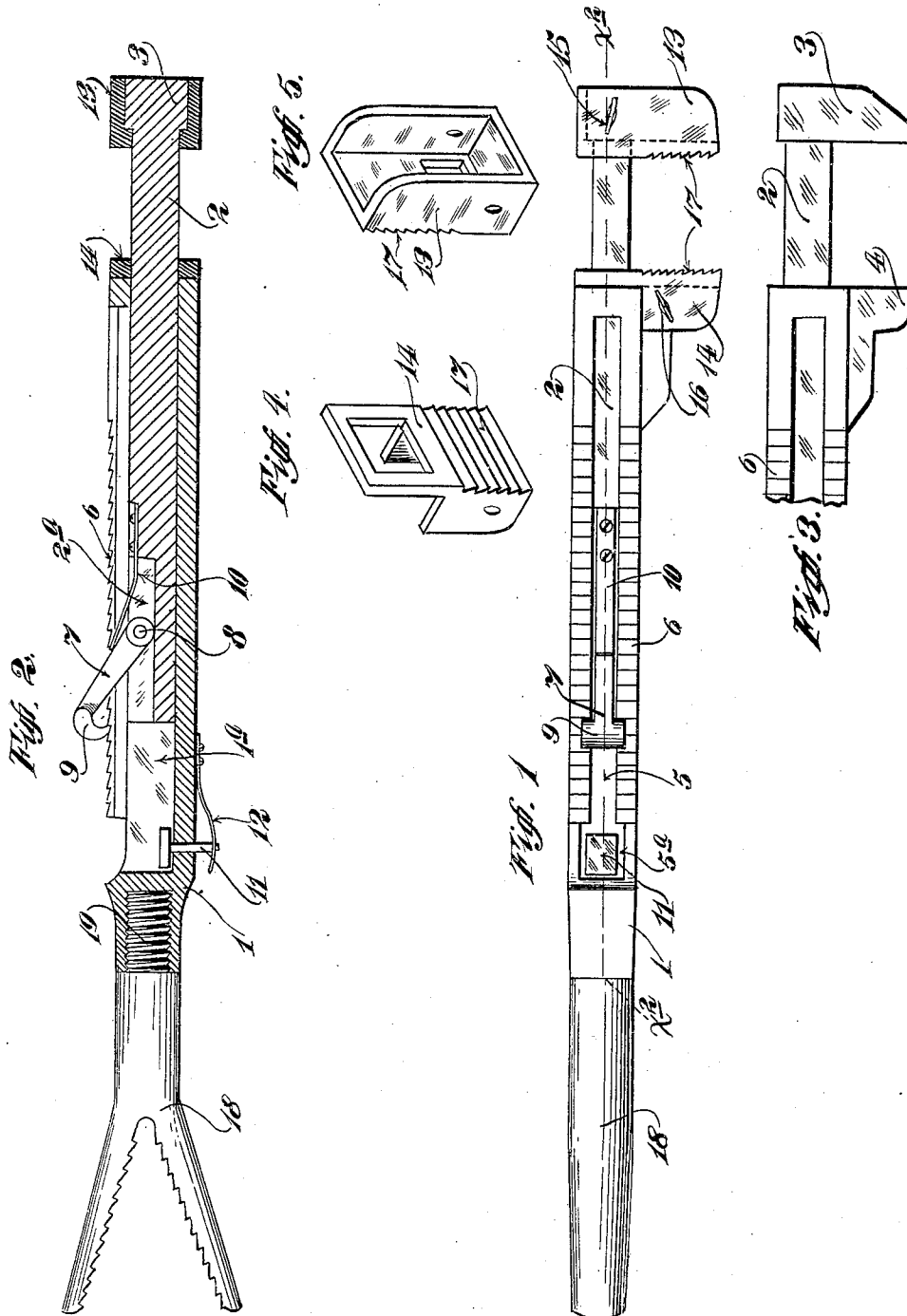


J. O. JOHNSON.
COMBINATION WRENCH.
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932,136.

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Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN O. JOHNSON, OF GRANTSBURG, WISCONSIN.

COMBINATION-WRENCH.

932,136.

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To all whom it may concern:

Be it known that I, JOHN O. JOHNSON, a citizen of the United States, residing at Grantsburg, in the county of Burnett and State of Wisconsin, have invented certain new and useful Improvements in Combination-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.

My invention has for its object to provide an improved combination wrench, and to this end, it consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings: Figure 1 is a plan view of the improved wrench; Fig. 2 is a view chiefly in section on the line $x^2 x^2$ of Fig. 1, with some parts left in full; Fig. 3 is a plan view, showing one end portion of the wrench; and Figs. 4 and 5 are perspective views, showing in detail the so-called supplemental wrench jaws.

The main body portion 1 of the wrench is formed with a longitudinally extended rectangular seat 1^a, that receives a rectangular stem or bar 2, provided at its outer end with a nut engaging jaw or head 3. The body 1 is provided with a fixed jaw or head 4 for cooperation with the jaw 3. Also the wrench body 1 is formed with a longitudinal slot 5 that opens into the seat 1^a, but terminates short of the right hand end of the said body 1, directions being taken in respect to the drawings. At its other extremity, the slot 5 is enlarged at 5^a for a purpose which will presently appear. On each side of the slot 5, the body 1 is formed or provided with ratchet teeth 6. The stem 2 is recessed at 2^a to afford a seat for the inner end of a hook-like pawl or lock dog 7, that is pivotally connected thereto by a pin 8. This pawl 7 is provided with a transversely widened hook-like head 9 that is engageable with the ratchet teeth 6. A spring 10 secured at one end to the stem 2, yieldingly presses the pawl 7 downward into engagement with the ratchet teeth 6. A small lifting pin 11 works through the side wall of the body 1, and is provided with a head located within the seat 1^a. The outer end of

the pin 11 is connected to the free end of a leaf spring 12 that is secured to the back of the said body 1.

The device so far described is adapted for use as a monkey wrench, and its primary or fixed jaws are adapted to be engaged with a nut or bolt head. The head 9 of the lock dog 7 may be raised into an inoperative position when gripped by a finger and thumb, and when this is done, the stem 2 may be quickly moved from one extreme position to the other, or set in any intermediate position required to properly set the jaws 3 and 4. Even without raising the lock dog, the stem 2 may be slid so as to move the jaw 3 toward the jaw 4, but the said lock dog by engagement with the ratchet teeth 6, will hold the said jaws against separation while a bolt is being turned.

To adapt the wrench for use as a pipe wrench, the jaws 3 and 4 are provided respectively with supplemental detachable jaws 13 and 14, both of which have angular perforations through which the stem 2 is adapted to be passed when removed from the body member 1. The supplemental jaw 13 has flanges at its sides and at one end, that are adapted to embrace the jaw 3, and one of the side flanges thereof is provided with a set screw 15 for rigidly securing the said jaws 3 and 13 together. The jaw 14 is provided with side flanges that embrace the sides of the jaw 4, and one of the said side flanges is provided with a set screw 16 rigidly connecting the said jaws 4 and 14. Both of the supplemental jaws 13 and 14 are provided on their opposing faces, with serrations or teeth 17.

When the stem 2 is moved inward approximately to its extreme position, the head 9 of the lock dog 7 will drop through the end enlargement 5^a of the groove 5 into the seat 1^a, and the said stem 2, together with the said lock dog may then be withdrawn from the body member 1, so as to permit of the application or removal of the supplemental jaws 13 and 14. When the stem 2 is forced back into the seat 1^a, the head 9 of the lock dog will rest upon the head of the lifting pin 11, and by pressing inward on the spring 12, the said head 9 may be forced outward to a position where it may be readily engaged by a finger and thumb, and hence, easily replaced upon the ratchet teeth 6.

The alligator wrench 18 is provided with a threaded stem 19, that is adapted to be

screwed into a seat formed in the end of the body 1. This wrench 18 may be used when applied to the wrench body 1 or it may be detached and used to hold a pipe, for instance, while a collar or other coupling is being unscrewed therefrom, by the use of the main portion of the wrench.

A wrench of the kind above described will be found useful for a great many purposes, but is especially adapted for use in places where a large assortment of wrenches is not available.

What I claim is:

1. In a monkey wrench, the combination with a body portion and a stem working telescopically within the seat thereof, said body having a longitudinal slot and external ratchet teeth, of a spring pressed lock dog secured to said stem working through said slot and provided with a head engaging said ratchet teeth, the said body and stem having cooperating jaws.

2. In a monkey wrench, the combination with a body having a longitudinal stem seat, a longitudinal slot and ratchet teeth, said slot having an enlarged end, of a stem mounted to slide in said body, said body

and stem having cooperating jaws, a spring pressed lock dog carried by said stem, working in said slot, and provided with an enlarged hook-like head engaging said ratchet teeth, and which head is movable through the enlarged end and is removable from the said body with said stem.

3. In a monkey wrench, the combination with a body having a longitudinal slot and external ratchet teeth, said slot having an enlarged end, of a stem mounted to slide in said body, said body and stem having cooperating jaws, a spring-pressed lock dog carried by said stem, working through said slot, and provided with an enlarged hook-like head engaging said ratchet teeth, and which head is movable through the enlarged end and is removable from the said body with said stem, and a thumb piece operative on said head to force the same through the enlarged end of said slot.

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

JOHN O. JOHNSON

Witnesses:

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