(No Model.)

J. W. SULLIVAN.

NUT WRENCH.

No. 459,072. Patented Sept. 8, 1891.

Fig 1

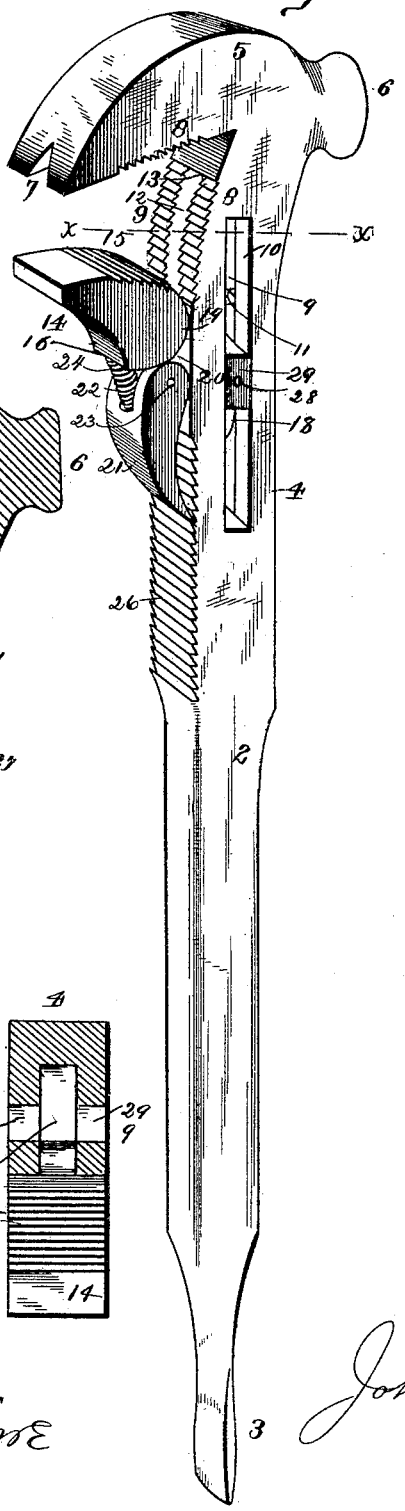

Fig 2

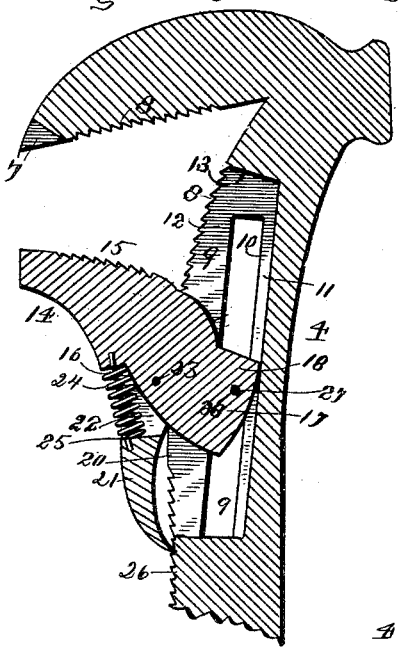

Fig 3

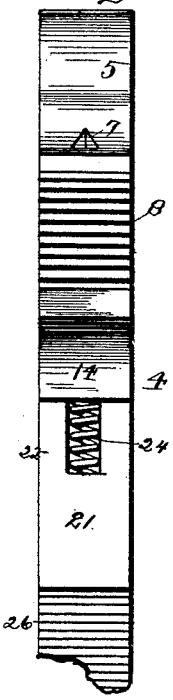

Fig 4

Witnesses

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UNITED STATES PATENT OFFICE.

JOHN W. SULLIVAN, OF STANBERRY, MISSOURI.

NUT-WRENCH.

SPECIFICATION forming part of Letters Patent No. 459,072, dated September 8, 1891.

Application filed June 3, 1890. Serial No. 354,130. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. SULLIVAN, a citizen of the United States, residing at Stanberry, in the county of Gentry and State of Missouri, have invented certain new and useful Improvements in Nut-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 relates to sliding-jaw nut-wrenches and also to a combined nut-wrench and a rigid-jaw pipe-wrench; and the object sought to be accomplished is to produce a more simple, useful, convenient, and effective device than has heretofore been known.

With these ends in view my invention consists in certain peculiarities of construction and combinations of parts more fully described hereinafter, and pointed out in the claims.

Referring to the accompanying drawings, Figure 1 represents a perspective view of my complete device; Fig. 2, a longitudinal section; Fig. 3, a top view, and Fig. 4 a transverse section through line $x\ x$ of Fig. 1.

The reference-figure 2 indicates the handle of the tool, on one end of which is formed a screw-driver 3. 4 is the body portion, and 5 the head or rigid jaw, at the back of which is formed a knob 6, to be used as a hammer, and a notch 7 is also made in its end and employed as a nail-extractor. The jaw 5 extends back at an acute angle to the body portion 4 and, together with it, constitutes an ordinary rigid-jaw pipe-wrench, the adjacent faces of these parts being provided with serrations or teeth 8, those of the part 5 slanting toward the crotch and those of the part 4 away from it. Through this body portion 4, at about its middle, extends transversely an elongated slot, opening, or way 9, which runs nearly the length of said part 4, and is provided in the center of its bottom wall 10 with a lengthwise groove 11, and in its top wall is made a longitudinal slot 12, in alignment with this groove and opening up through the top of the body portion. A deep groove 13 is also made in the front wall of the chamber 9 and connects groove 11 and slot 12.

The sliding jaw consists of the head 14, having the width of the body portion 4 and provided with a serrated face 15 and a curved back side 16, from the center of which extends a shank or standard 17, which engages the slot 12, its base or shoe 18 traveling in the groove 11. The rounded shoulders 19 on each side of the shank 17 bear and rock upon the plain surfaces 20 at the middle of the top face of the body portion, and said shank extends rearwardly from the head 14, having curved edges. The pawl 21 has a bifurcated end 22, inclosing the shank 17 back of the rounded shoulders 19 and pivoted to said shank by pin 23, and this pawl is actuated by the spring 24, located between the arms of the bifurcated portion 22 and bearing at one end against the back side 16 and at the other end against the back wall 25 of the opening in the end 22 of the pawl, thus acting to force the latter down upon the body portion 4. The upper surface of the latter is provided with a suitable rack 26, engaged by the pawl to hold the sliding jaw at the desired position.

Through the middle of the base or shoe 18, where it crosses the opening 9, a perforation 27 is made, and a transverse pin or bolt 28 extends through this perforation and also through the slot 9, blocks 29 being placed in the opposite ends of said bolt and traveling in the opposite parts of the way 9, respectively. These parts are all loose in the bolt 28, and hence the latter constitutes a pivot.

The preferred construction of my device having been set forth, I will now proceed to describe its operation. The use of the article as a pipe-wrench will be apparent, and has been previously explained. When it is to be employed as a nut-wrench, the operator places his thumb and forefinger on opposite sides of the body portion in engagement with the blocks 29, respectively, and upon pushing upon the latter they will be slid forward in the way 9, and thus carry with them the sliding jaw up against the nut, the spring-pawl engaging the rack to hold the parts in position. Now it will be seen that the spring 24 will also act to throw the head 14 to an upright position, and hence the rear end of the base or shoe 18 of the standard 17 up out of the groove 11; but the rigid jaw 5 extends back at an angle to the body portion, and therefore to have the nut held squarely the head 14 of the sliding jaw must also assume the same angle. It

will be obvious that the top part of this head will first come in contact with the nut, and upon further sliding the blocks 29 forward in the way 9 the face 15 will be thrown squarely up against the nut, the jaw turning on its pivot 23 to allow this to take place and the shoe 18 being pushed down into the groove 11. No binding of the parts will be caused, however, by the shifting of the sliding jaw, although the oblong blocks fit snugly in the way 9, because, as has been previously stated, the transverse pin or bolt 28 constitutes a pivot on which the jaw can turn without causing the blocks to be wedged in the way 9, as said blocks are also loose on the bolt. When the tool is not in use, the sliding jaw can be shoved up square against the rigid jaw 5, with the forward portion of the shank engaging the groove 13, in the front wall of the opening 11, and thus the parts arranged in compact adjustment for packing, shipping, &c.

It is evident that many slight changes which might suggest themselves to a skilled mechanic could be resorted to without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the precise construction herein shown; but,

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

1. In a wrench, the combination of a body portion having a longitudinal recess, groove, or way provided with elongated side slots or openings, a rigid jaw projecting from said body portion, a jaw sliding in said longitudinal way and provided with guides traveling in said side slots, to which guide the jaw is pivoted, and a pawl-and-ratchet mechanism for holding said jaw at the desired adjustment, as set forth.

2. In a nut-wrench, the combination of a body portion having a transverse elongated opening and a lengthwise slot through one wall of the same and a groove in the opposite wall, a rigid jaw projecting from said body portion, a sliding jaw projecting through said slot and said groove, blocks connected to it and traveling in said elongated opening, and a pawl hinged to the sliding jaw and engaging a suitable rack, substantially as and for the purpose described.

3. A combined pipe and nut wrench consisting of a body portion provided with a transverse elongated opening and a lengthwise slot through the wall of the same, a rigid jaw projecting from the body portion at an acute angle thereto to form the pipe-wrench, a sliding jaw engaging said slot, devices, substantially as described, traveling in said transverse elongated opening, a pivot-pin connecting these devices and said sliding jaw through said opening, and a spring-actuated pawl pivoted to said jaw and engaging a suitable rack, substantially as described.

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

JOHN W. SULLIVAN.

Witnesses:

T. B. CAMBRON,

O. E. SMOTHERS.