

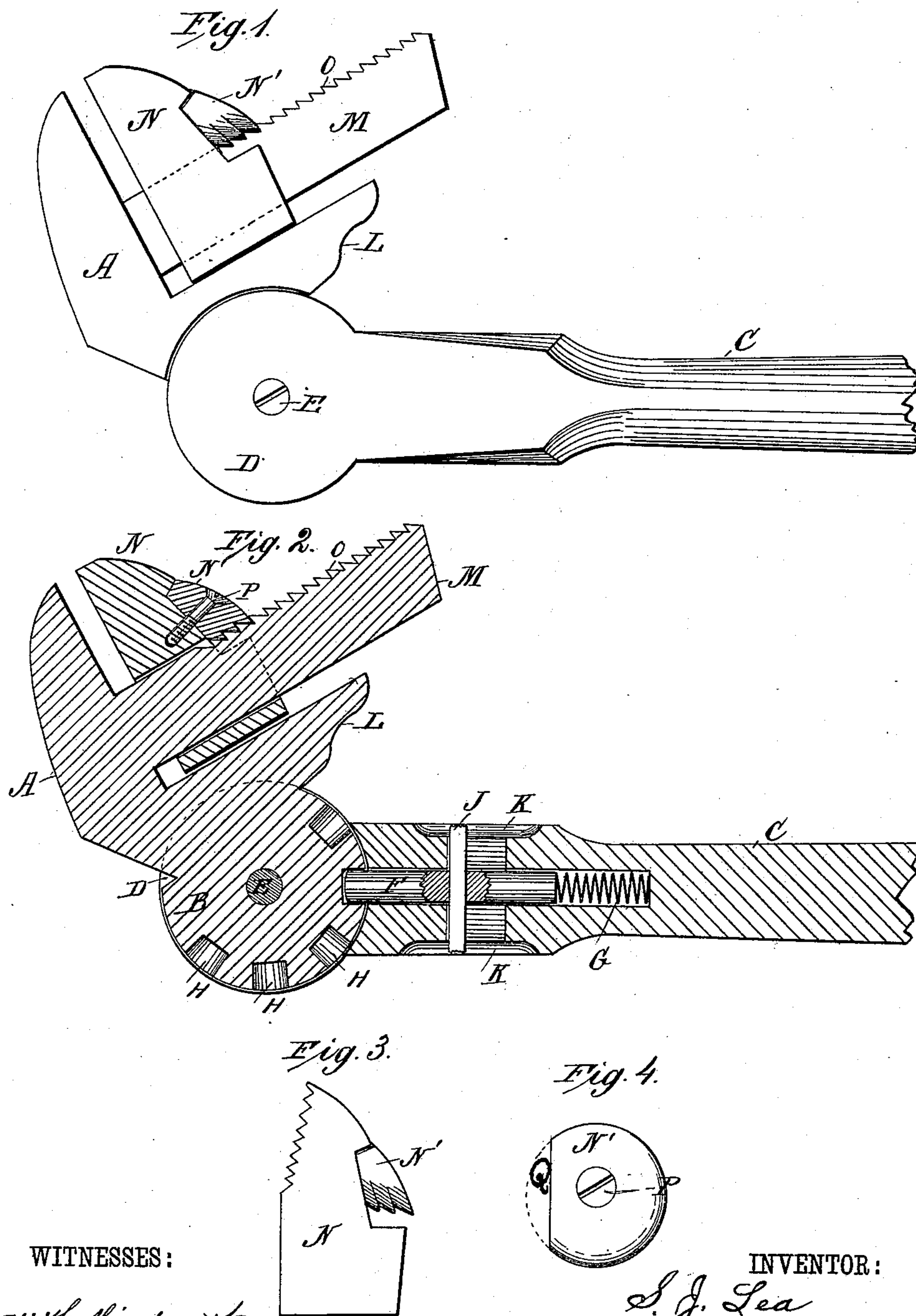
(No Model.)

S. J. LEA.

WRENCH.

No. 330,594.

Patented Nov. 17, 1885.



WITNESSES:

W. W. Hollingsworth
W. X. Stevens.

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UNITED STATES PATENT OFFICE.

SAMUEL J. LEA, OF CHATTANOOGA, TENNESSEE.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 330,594, dated November 17, 1885.

Application filed June 26, 1885. Serial No. 169,893. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL J. LEA, a citizen of the United States, residing at Chattanooga, in the county of Hamilton and State of Tennessee, have invented certain new and useful Improvements in Wrenches, of which the following is a description.

This invention relates to that class of wrenches which are used for turning screw-nuts upon bolts, and for screwing pipe and fittings together or apart; and its object is, first, to readily adapt the jaws of the wrench to stand at any desired angle relatively to the handle, so that the wrench may be used to turn set-screws between the arms of pulleys, and in other places difficult of access; secondly, to adapt the wrench to be quickly set for different sizes of nuts or pipe, and to be readily changed from a pipe-wrench to a nut-wrench.

To this end my invention consists in the construction and combination of parts forming a wrench, hereinafter described or claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of my wrench, a portion of the handle broken away. Fig. 2 is a central vertical section of the same. Fig. 3 shows a modification of the removable jaw, and Fig. 4 is an end elevation of the wrench-screw.

A represents the fixed jaw of the wrench, provided with a disk-shaped extension, B, from its back L, to enter and be held by the handle C. This extension is snugly fitted between cheek-pieces D of the handle C, and is journaled on a strong central pivot, E, to be tipped to the right or left through an arc of about a half-circle, and it may be fixed at certain angles relatively to the handle by means of a detent, F, which is projected by a spring, G, radially into holes H in the periphery of the extension. The detent is provided with a cross-bar, J, which extends laterally to the sides of the handle through slots therein, where finger-grooves K enable the bar to be taken by the ends and retracted when it is desired to free the wrench to set it at a different angle with the handle. The back L forms

a right angle with the jaw A, and a bar, M, extends from this jaw parallel with the said back.

N is the movable jaw, made either with a straight face parallel with the jaw A, as in Fig. 1, for general use, or with an angular toothed face, as in Fig. 3, for pipe-work. This jaw is fitted to slide freely both upon the bar M and the back L, whereby the strain upon the bar is somewhat relieved.

N' is a short section of a screw journaled upon the back of the movable jaw to adjust and fix the same by engaging the thread of the screw with teeth O in the upper side of the bar.

In using wrenches the tendency is to spread the jaws apart at their ends. To resist this tendency, I place the screw at such an angle as to form a brace to the jaw by pivoting the screw on a stud, P, which is inclined forward toward the bar. To fit the stud at this angle and the teeth O at the same time, I make the screw conical. To permit the jaw to be quickly slid forward or backward along the bar, I cut away a segment from one side Q of the screw. When this side is turned toward the bar, the screw-threads are disengaged, and the jaw is free to be slid along or to be removed for exchanging jaws. The pitch of the screw-thread is such that the remaining segment of thread will advance the jaw a space nearly equal to one tooth, by which means the wrench may be nicely adjusted to fit upon a nut of any size. The head of the handle is finished cylindrically, and fits neatly under a shoulder formed in the back L by counterboring down to each face of the disk, by which means the wrench is made very strong and durable.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a wrench, the combination, with a jaw fixed at a right angle to and upon a bar transversely notched in its outer face, of a jaw fitted to slide on the said bar, and provided with a stud on its back inclining forward toward the bar, and a conical screw journaled on the said stud, the threads of the screw adapted to engage the said notches

in the bar, substantially as shown and described.

2. The combination of a transversely-notched wrench-bar, a jaw fitted to slide
5 thereon, and having a stud projecting from its back at an angle diverging from the said bar, and a conical segmental screw journaled upon

the stud and adapted to engage the said notches in the bar, substantially as shown and described.

SAMUEL J. LEA.

Witnesses:

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