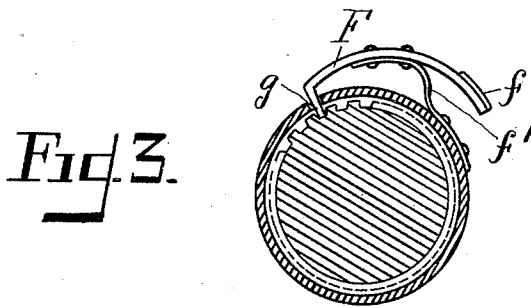
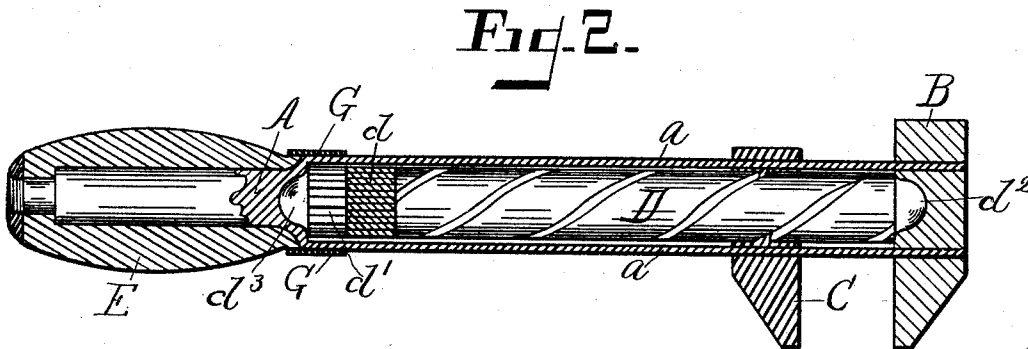
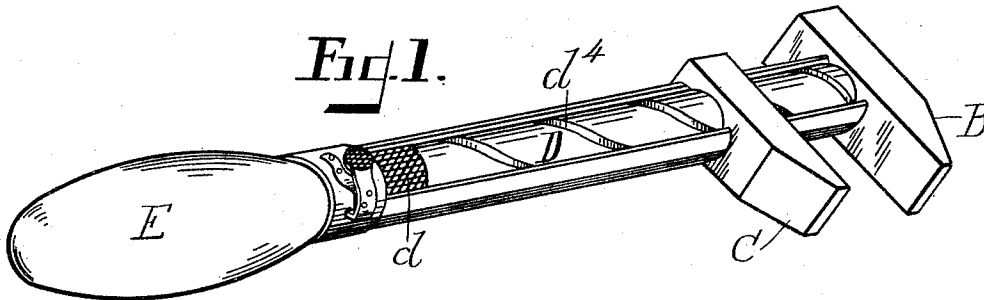


(No Model.)

A. K. LOVELL.
WRENCH.

No. 476,767.

Patented June 7, 1892.



WITNESSES

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UNITED STATES PATENT OFFICE.

ALBERT K. LOVELL, OF JACKSON, MICHIGAN.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 476,767, dated June 7, 1892.

Application filed September 25, 1891. Serial No. 406,823. (No model.)

To all whom it may concern:

Be it known that I, ALBERT K. LOVELL, a citizen of the United States, residing at Jackson, county of Jackson, State of Michigan, have invented a certain new and useful Improvement in Wrenches; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to wrenches, and is designed to provide a wrench having a sliding jaw, in combination with means for locking the jaw in any desired position. To accomplish this object I employ a frame-work consisting of the fixed jaw, a handle, and two parallel bars connecting the jaw and handle, and a spirally-grooved shaft mounted within the frame, and a sliding jaw mounted on the parallel bars and engaged with the shaft in such a manner that the sliding of the jaw will revolve the shaft, and that when the shaft is held the movable jaw becomes stationary.

In the drawings, Figure 1 is a perspective of my wrench. Fig. 2 is a vertical section of the frame and jaws, showing the spirally-grooved shaft and method of engaging the frame with the handle. Fig. 3 is a cross-section showing the method of locking the revolvable shaft.

In the several figures, A is the frame, the inner end or shank *a* being arranged to attach to the handle in any suitable manner, preferably being provided with an extension through the handle and having a thread on the extreme end to receive a nut on the outside of the handle. The side bars of the frame *a* extend the length of the wrench and are riveted into the stationary head B. This portion of the frame I desire to make concave on the inside to embrace the shaft D. This shaft is mounted in bearings at each end, one in the stationary jaw at *d*² and the other in the shank at *d*³. The shaft itself is free to revolve in the frame and is provided on the inner end with a tooth portion *d'* to receive the detent F, provided when entered in the teeth to lock the shaft and prevent its revolving. This detent I show in Fig. 3 as mounted on a spring *f'*, riveted to the ferrule G and adapted to

have an offset portion drop through the opening *g* in the ferrule and engage the teeth of the shaft. The detent F is raised out of engagement with the shaft by placing the thumb or finger on the portion *f*. The inner portion of the shaft next to the toothed portion is provided with serrations *d*, whereby the shaft may be revolved with the thumb or fingers, when necessary.

On the frame is mounted the sliding jaw C, having an interior thread or guide engaging with the spiral grooves on the shaft. This jaw is free to slide up and down on the bifurcated portion of the frame, and when so moved revolves the shaft D, and when the shaft is locked by the detent F the head C is held in the position at which it is placed when the shaft is locked. The shank of the frame *a* is provided with a reduced portion *a*² and a threaded portion *a*³ to receive the nut *e* on the end of the handle and hold the shank in the handle, a construction common to tools of this kind.

To operate the wrench, the thumb or finger is placed on the thumb-piece *f* and the detent raised out of engagement with the toothed portion of the shaft and the head C moved into the desired position, and then the detent released and permitted to engage again with the tooth portion and lock the shaft, which holds the head C firmly in position.

I would have it understood that the details of the construction may be varied, the essential features being the spirally-grooved revolvable shaft for holding the sliding head. Any method may be employed for locking the shaft, either by suitable means in or on the movable jaw itself or on the inner end of the frame, as shown by me, though I prefer the construction shown as being one in which the wrench may be held and unlocked with one hand, leaving the other free to move the jaw and engage it with the work. I would also have it understood that the movable head might be mounted on a sliding shaft spirally grooved with a nut adapted to revolve and provided with a locking device; but I do not show such construction in the drawings, as I do not use or prefer that construction.

What I claim is—

1. In a wrench, the combination of a stationary jaw, a sliding jaw, a spirally-grooved

shaft engaged with and rotated by said sliding jaw, and means for locking said shaft, whereby the sliding jaw is held in any desired position, substantially as described.

5 2. In a wrench, the combination of a stationary jaw, a sliding jaw, a spirally-grooved shaft engaged with and rotated by said sliding jaw and provided with a toothed portion at one end, and a detent engaging with said
10 tooth portion, substantially as described.

3. In a wrench, a frame, a stationary jaw riveted to the end of said frame, a revoluble spirally-grooved shaft mounted in the stationary jaw and the shank of said frame, a
15 sliding jaw on said frame engaged with and rotating said shaft, and means for locking said shaft, substantially as described.

4. In a wrench, the combination of a stationary jaw, a spirally-grooved shaft engaged
20 with and rotated by said sliding jaw and pro-

vided with a serrated portion, whereby the same may be revolved by the hand, and means for locking said shaft, substantially as described.

5. In a wrench, the combination of a frame 25 having interior concave portions, a stationary jaw attached to the end of said frame, a revoluble spirally-grooved shaft mounted between the side bars of said frame and revolving in said concave portion, a head sliding on said
30 frame engaged with and rotating said shaft, and means for locking said shaft, substantially as described.

In testimony whereof I signed this specification in the presence of two witnesses.

ALBERT K. LOVELL

Witnesses

JOS. H. JOHNSON,
F. L. LOVELL.