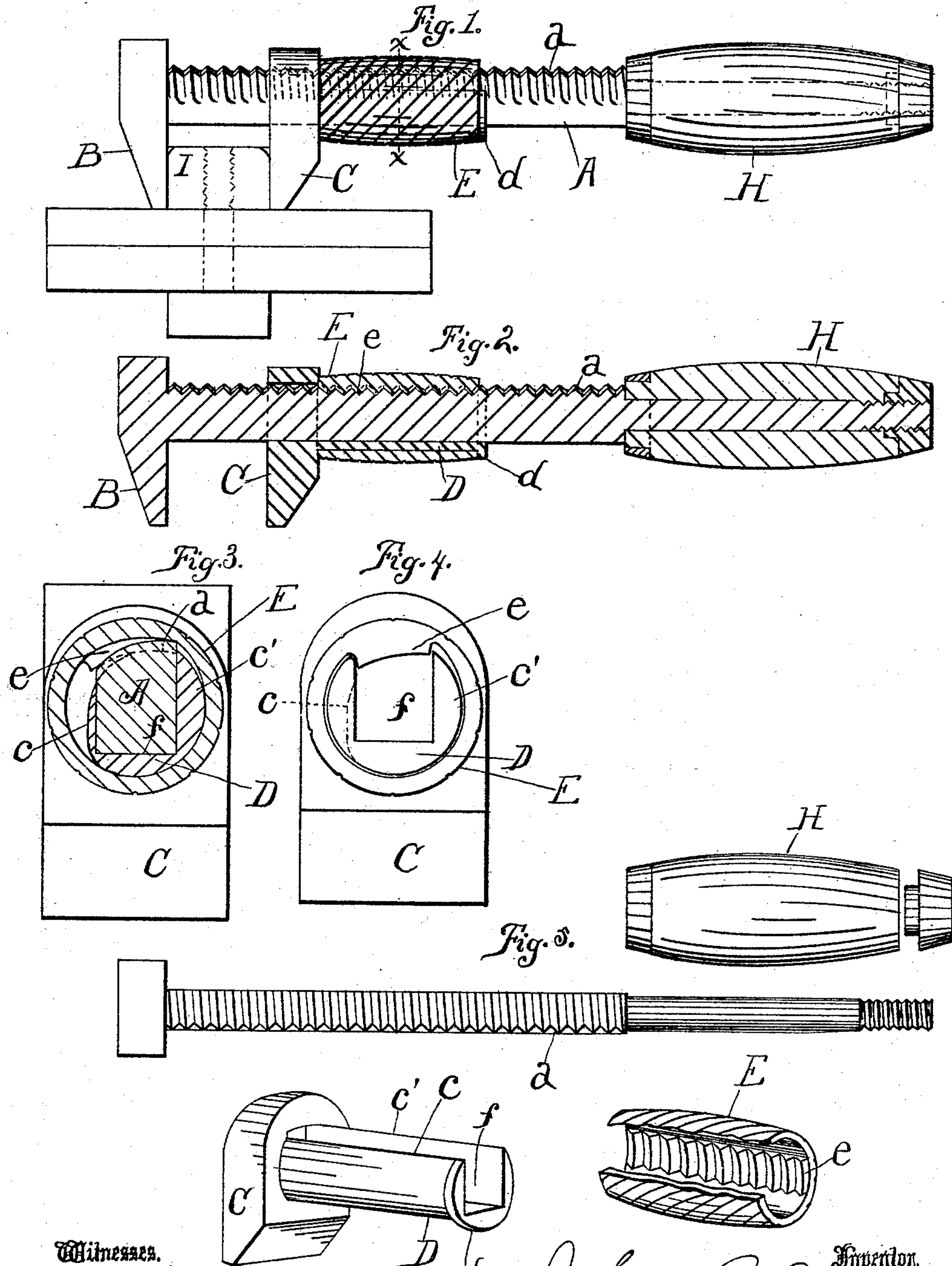


(No Model.)

J. A. BARKER.
WRENCH.

No. 495,577.

Patented Apr. 18, 1893.



Witnesses.
M. M. Lee.
J. M. Townsend

Inventor.
John A. Barker
by Hazard Townsend
his atty.

UNITED STATES PATENT OFFICE.

JOHN A. BARKER, OF PASADENA, CALIFORNIA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 495,577, dated April 18, 1893.

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To all whom it may concern:

Be it known that I, JOHN A. BARKER, a citizen of the United States, residing at Pasadena, in the county of Los Angeles and State of California, have invented a new and useful Improvement in Wrenches, of which the following is a specification.

My invention relates to that class of wrenches in which a movable jaw is mounted upon a bar or lever having one or more sides of its perimeter plain and having another side of its perimeter threaded to receive the threads of a locking nut which secures the jaw in place upon the bar.

One object of my invention is to cheapen the construction and increase the convenience of operation, also to so construct the wrench that the different parts can all be cast of malleable iron and put together without machine work.

Another object of my invention is to so construct the wrench that the sliding jaw can be moved freely back and forth upon the bar of the wrench and when the jaws are clamped upon the nut to be turned, the movable jaw and its shank will also be clamped firmly upon the bar so as to relieve the screw threads from all liability of being jammed, bruised or broken by the strain upon the jaw.

The accompanying drawings illustrate my invention.

Figure 1 is a side view of my wrench gripped upon a nut. Fig. 2 is a vertical longitudinal mid-section of the wrench. Fig. 3 is a transverse section on line $x-x$ Fig. 1. Fig. 4 is an end view of the sliding jaw and the locking or clamping nut detached from the wrench bar. Fig. 5 shows the several parts separate. The locking nut is partially broken away to expose the interior.

My invention consists in the combination of a bar A having an unthreaded side and having the fixed jaw B at one end thereof arranged to project from the unthreaded side of the bar and having the opposite side of the bar provided with segmental spiral cam threads a ; a movable jaw C provided with the shank D grooved to receive and arranged to fit upon the unthreaded side of the bar and provided at the end with the nut-retaining projection d and having the outside of one of the walls c of the groove chambered to

receive the segmental thread e of the locking nut E; and the locking nut E which is fitted upon and surrounds the bar and shank and is provided with internally arranged segmental threads e adapted to be chambered against the wall c and adapted to engage the segmental spiral cam threads a of the bar so that when the locking nut is rotated to force the segmental threads into engagement with each other the effect will be to both force the sliding jaw toward the fixed jaw and at the same time force the shank against the bar and clamp the two firmly together.

In practice the several parts may be constructed by any desirable mode of manufacture but they are adapted to be cast of malleable iron and then the finished castings can be put together without difficulty by first placing the locking nut upon the shank in the manner indicated in Fig. 4. Then the nut is turned to the left to withdraw the segmental threads from above the groove f in the shank, thus leaving a free passage for the bar into the groove. When the bar has been passed through the groove, the handle H is secured in place and the wrench is ready for operation. The segmental threads of the nut being chambered against the thin wall c , the sliding jaw with its locking nut is free to slide back and forth upon the bar.

To use the wrench the sliding jaw is slid forward until the nut to be turned, (indicated by I in Fig. 1) is clamped between the two jaws. Then the locking nut is turned to the right, thus causing the segmental spiral threads of the locking nut to engage the segmental spiral cam threads of the bar, thus forcing the jaw toward the nut and at the same time drawing the shank firmly against the bar and binding it to the bar; the pressure of the sliding jaw is thus sustained by the engaging plain faces of the bar and shank and by the threads of the bar and locking nut which are in contact with each other, and thus all danger of bruising the threads is avoided. The cam form of the segmental threads adapts the device for use even when the threads become much worn, for the reason that the tendency is continually to take up the wear when the locking nut is tightened. The wall c' of the shank is of such thickness as to practically fit the cylindrical

bore of the locking nut upon that side so that if the threads fit each other too loosely they will be prevented from passing out of engagement with each other, for the reason
 5 that the thick wall c' will serve as a stop to prevent the segmental thread of the locking nut from passing too far.

When the locking nut is turned it forces the movable jaw forward against the nut to be
 10 turned and the nut is clamped so tight thereby that the wrench will sustain itself as indicated in Fig. 1 and this is true whether the wrench be above the nut as shown in said Fig. 1 or beneath the nut. The friction of the cam
 15 threads secures the jaw against accidental displacement whether the wrench is upon the nut or not and the jaw cannot be moved until the locking nut is rotated to the left, thus relieving the engagement of the threads.

20 The nut retaining projection d prevents the nut from slipping off from the shank when the shank is in place on the bar.

Now, having described my invention, what I claim as new, and desire to secure by Letters
 25 Patent, is—

1. The wrench set forth consisting in the combination of the bar having an unthreaded side and having the fixed jaw at one end thereof arranged to project from the un-
 30 threaded side of the bar and having the opposite side of the bar provided with segmental spiral cam threads; the movable jaw provided with the shank grooved to receive and arranged to fit upon the unthreaded side
 35 of the bar and provided at the end with the nut retaining projection d and having the outside of one of the walls of the groove chambered to receive the segmental thread of the locking nut; and the locking nut fitted upon
 40 and surrounding the bar and shank and provided with internally arranged segmental threads adapted to be chambered against the wall of the groove and adapted to engage the

segmental spiral cam threads of the bar, so that when the locking nut is rotated to force
 45 the segmental threads into engagement with each other the effect will be to both force the sliding jaw toward the fixed jaw and at the same time force the shank against the bar and clamp the two firmly together.
 50

2. The combination of the bar having an unthreaded side and having the fixed jaw at one end thereof arranged to project from one side of the bar and having the opposite side of the bar provided with segmental cam
 55 threads; a movable jaw provided with a shank grooved to receive and arranged to fit upon the unthreaded side of the bar and having the outside of one of the walls of the groove chambered to receive the segmental threads
 60 of the locking nut; and the locking nut fitted upon and surrounding the bar and shank and provided with internally arranged segmental threads adapted to be chambered against the wall of the shank and adapted to engage the
 65 segmental cam threads of the bar.

3. The combination set forth of the bar provided with segmental cam threads; a sliding jaw having its shank arranged to slide along
 70 such bar and a locking sleeve encircling such shank and provided with segmental internal threads arranged to engage the cam threads on the bar to clamp the shank of the sliding jaw against the bar when the sleeve is rotated
 75 in one direction and to release the shank therefrom when the sleeve is rotated in the other direction, whereby the sleeve and jaw may be moved along the bar and locked, and the wear of the threads will be taken up by
 80 the cam shape of the threads upon the bar and the sleeve locked upon the bar thereby.

JOHN A. BARKER.

Witnesses:

JAMES R. TOWNSEND,
 ALFRED I. TOWNSEND.