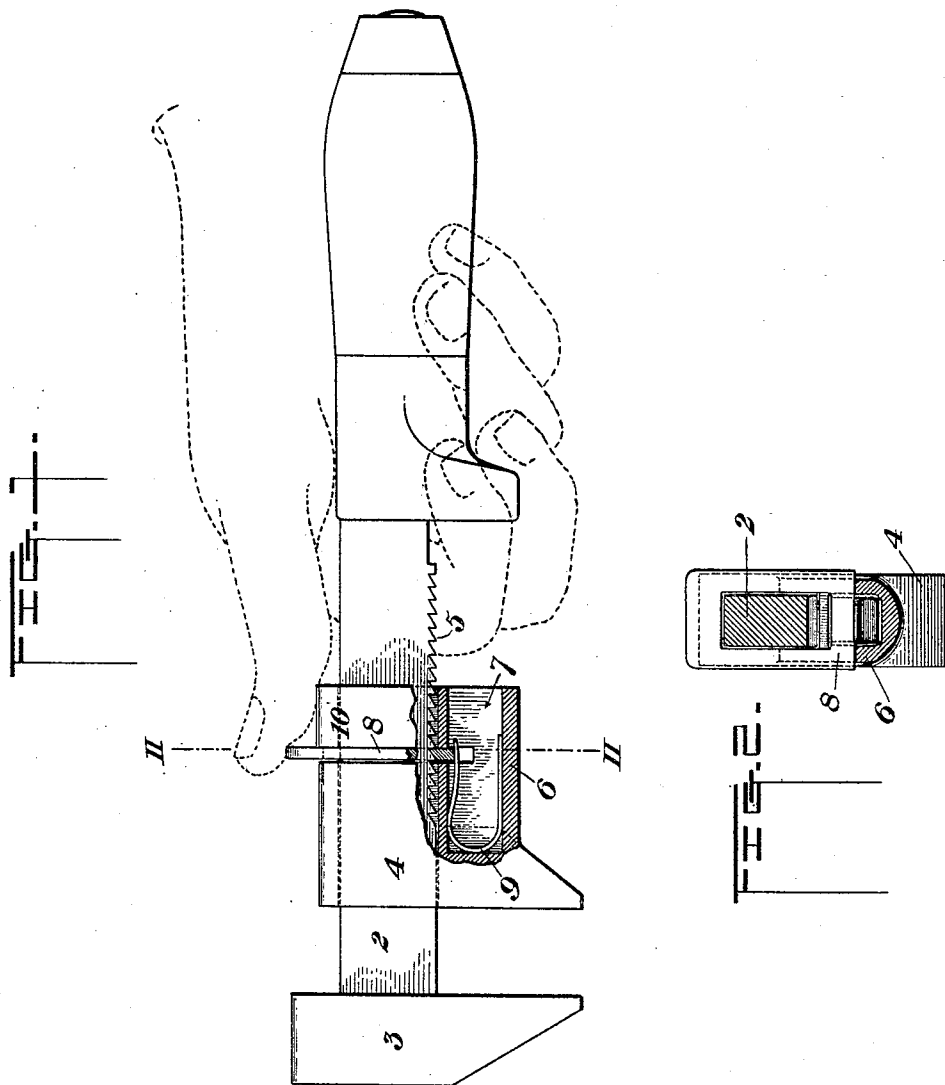


(No Model.)

H. COOPER.
WRENCH.

No. 496,190.

Patented Apr. 25, 1893.



Witnesses
James Meighan
H. M. Cooper

Inventor
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UNITED STATES PATENT OFFICE.

HARRY COOPER, OF TORONTO, ASSIGNOR OF TWO-THIRDS TO THOMAS M. BOAL AND JOSEPH ROBERTSON, OF STEUBENVILLE, OHIO.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 496,190, dated April 25, 1893.

Application filed October 10, 1892. Serial No. 448,308. (No model.)

To all whom it may concern:

Be it known that I, HARRY COOPER, of Toronto, in the county of Jefferson and State of Ohio, have invented a new and useful Improvement in Wrenches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view, partly in section, illustrating a wrench made in accordance with my invention. Fig. 2 is a vertical cross-section on the line II—II of Fig. 1.

My invention is an improvement on that class of wrenches in which there is combined with a stationary jaw or head, a longitudinally-movable jaw held adjustably by pawl and ratchet mechanism, and its object is to provide a better, more convenient and a more easily adjusted wrench than has been known heretofore.

In the drawings, 2 represents the shank of the wrench, having at the end a fixed jaw 3, and has mounted thereon a sliding-jaw 4. One side of the shank is provided with a series of ratchet teeth 5. The movable jaw 4 has a sleeve 6, having a recess or cavity 7, slotted to permit the projection into it of a pawl 8, made preferably of oblong annular form. The sleeve 6 and the pawl fit around the shank as shown in Fig. 1, so that part of the pawl projects as a thumb-piece at the back of the shank, and the inner end portion of the pawl is normally held against the ratchet teeth by means of a spring 9, which fits with-

in the socket 7, and bears against the pawl. When the pawl is in engagement with the ratchet teeth, the jaw 4 is locked from backward motion on the shank of the wrench. Because of the bearing of the pawl at one side against a collar 10 of the sleeve 6, the pawl is not apt to be broken. If the pawl be pushed in by the thumb so as to disengage it from the ratchet teeth, the movable jaw may be slid back on the shank and readjusted in position, the ratchet teeth at all times permitting its forward motion toward the other jaw.

Modifications may be made in the form and construction of the parts within the scope of my invention as herein broadly defined, since

What I claim is—

In a wrench, a shank having a fixed jaw, and provided on its inner side with ratchet teeth, a movable jaw set on the shank, and movable thereon toward and from the fixed jaw, a pawl carried by the movable jaw, encircling the shank, fitting the ratchet teeth on the inner side of the shank, and having a thumb-projection on the outer side of the shank, and a spring, inclosed by the movable jaw and normally keeping the pawl in engagement with the ratchet-teeth; substantially as described.

In testimony whereof I have hereunto set my hand this 6th day of October, A. D. 1892.

HARRY COOPER.

Witnesses:

T. M. BOAL,
H. H. FICKES.