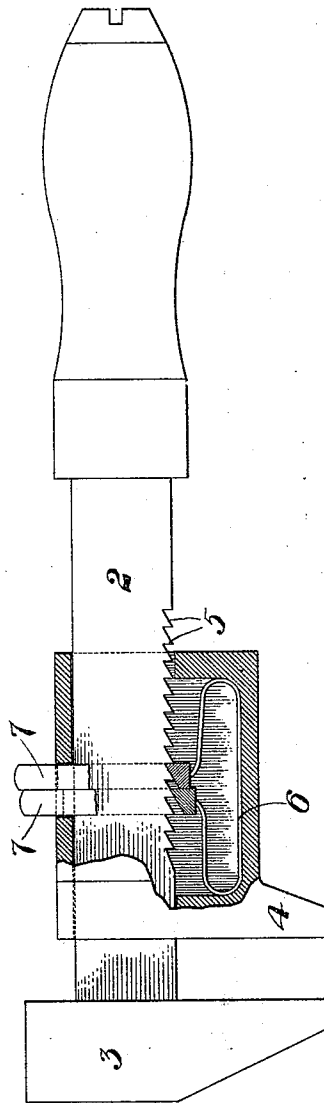


(No Model.)

H. COOPER.
WRENCH.

No. 512,159.

Patented Jan. 2, 1894.



WITNESSES

H. M. Corwin
W. W. Swartz

INVENTOR

Harry Cooper
by his attorneys
H. Baxwell & Sons

UNITED STATES PATENT OFFICE.

HARRY COOPER, OF TORONTO, ASSIGNOR OF TWO-THIRDS TO JOSEPH ROBERTSON, OF STEUBENVILLE, OHIO.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 512,159, dated January 2, 1894.

Application filed September 6, 1893. Serial No. 484,928. (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 drawing, forming part of this specification, which represents a side view, partly in section, of a wrench made in accordance with my invention.

My invention relates to that class of wrenches wherein a longitudinally movable jaw is held by pawl and ratchet mechanism, and its object is to obtain a closer adjustment of the jaw and a more secure hold therefor.

To that end it consists in a wrench having two or more pawls spaced a greater distance apart than the ratchet teeth upon the shank of the wrench, and provided with thumb projections for working them as well as in the construction and arrangement of the parts as hereinafter more fully described and summarized in the claims.

In the drawing, in which similar numerals indicate corresponding parts, 2 represents the shank of a wrench, having the stationary head or jaw 3, and the movable jaw 4. Upon one side of the shank is a series of ratchet teeth 5, the edges of which are in this case spaced one-eighth of an inch apart. The lower portion of the movable jaw consists of a hollow case, through which the shank 2 passes. In this case is held the spring 6, which presses against the two pawls 7 and forces them into contact with the ratchet teeth. These pawls fit around the shank as shown, and the rear portions thereof project through a slot in the case at a convenient

point for the application of the thumb of the operator. The bearing edges of these pawls are spaced apart three-sixteenths of an inch or one and a half times as far as the ratchet teeth, so that when one pawl is in engagement the next pawl rests upon the middle portion of the next tooth. The pawls move in contact with each other, and as the jaw 4 is pushed upwardly the pawls engage the teeth alternately, thus giving twice as close an adjustment as when one pawl is employed. By pressing with the thumb upon both pawls, the jaw may be retracted, and upon releasing the pawls one of them engages one of the ratchet teeth, thus readjusting the jaw.

More than two pawls may be employed if desired, and the pawls may be spaced at various distances apart without departure from my invention, since

What I claim is—

1. The combination with a wrench, having ratchet teeth upon its shank, of a movable jaw having pawls whose working edges are spaced a greater distance apart than the edges of the ratchet teeth, said pawls having rear thumb projections substantially as described.

2. A wrench, having ratchet teeth upon its shank, and a movable jaw having spring-pressed pawls sliding in contact with each other, and having their working edges spaced a greater distance apart than the edges of the ratchet teeth; substantially as described.

In testimony whereof I have hereunto set my hand.

HARRY COOPER.

Witnesses:

L. W. PERKINS,
H. H. FICKE.