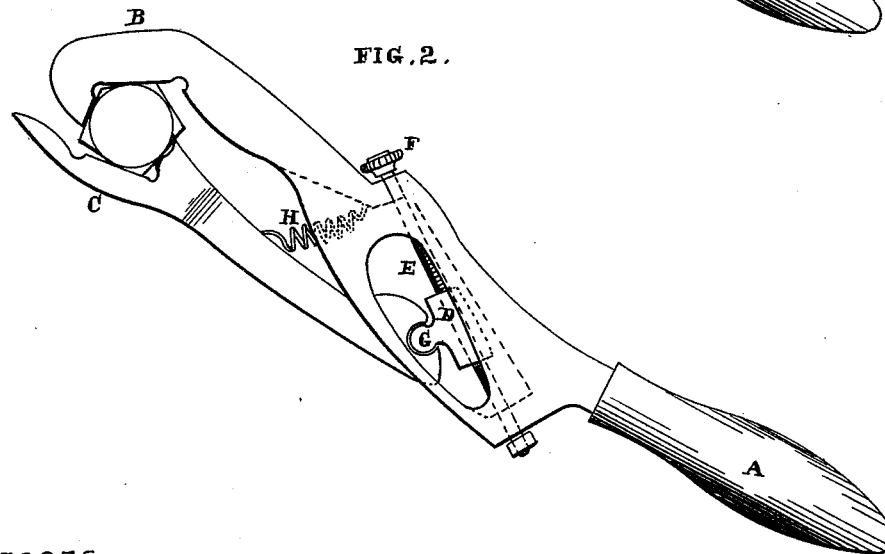
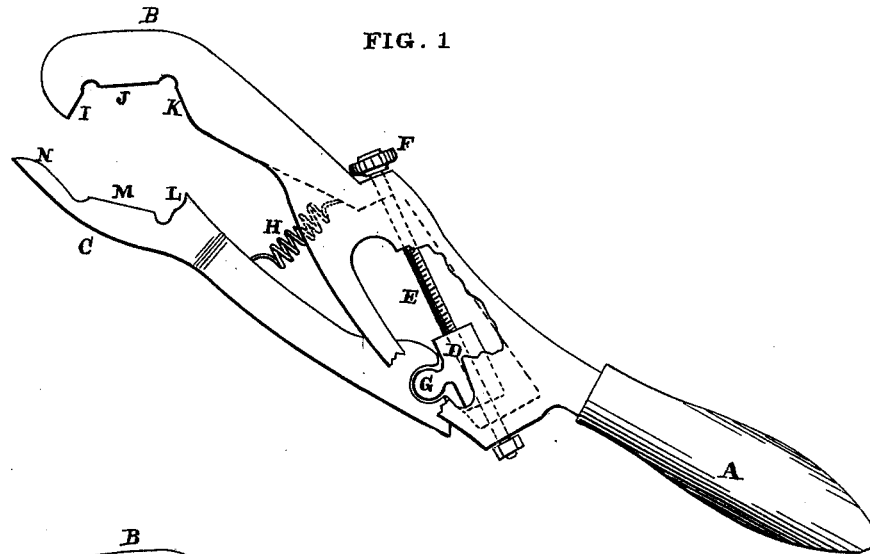


A. JACKSON.
Wrench.

No. 220,076.

Patented Sept. 30, 1879.



Witnesses

Frank A. Brooks
Geo. H. Strong

Inventor

Andrew Jackson
By Devey & Co.

UNITED STATES PATENT OFFICE.

ANDREW JACKSON, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO JOHN J. DUNN, OF SAME PLACE.

IMPROVEMENT IN WRENCHES.

Specification forming part of Letters Patent No. **220,076**, dated September 30, 1879; application filed June 21, 1879.

To all whom it may concern:

Be it known that I, ANDREW JACKSON, of the city and county of San Francisco, and State of California, have invented an Improved Universal Wrench; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to an improved universal wrench; and it consists of a novel combination, with other devices, of a stationary and a movable jaw, the moving ends of which are separated or closed in a line diagonal to the handle by means of a screw which actuates a movable nut. The movable jaw is hinged to this nut so as to open or close at will, and is kept closed by a spring.

My invention also consists in certain details of construction, whereby any form of nut or pipe may be seized and turned, all as will be hereinafter fully described.

Figure 1 is a view of my wrench with the jaws separated. Fig. 2 is a view with the jaws closed, showing the manner of holding a nut or pipe.

A is the handle of my wrench. B is the fixed jaw, which is secured to the handle, and C is the movable jaw.

Between the handle and the gripping end of the fixed jaw is formed a space for the reception of the slide-nut D, to which the movable jaw is hinged, and within which the screw E, which moves the nut, turns. This space and guide are formed diagonally with the line of the handle, so that the movable jaw may not only be carried back from the fixed jaw, but outward from it at the same time.

The screw E passes through both ends of the case within which the nut moves, being journaled therein, and it has a milled head, F, upon one end by which to turn it and cause the nut to move along the screw. The nut has a sort of cylindrical projection, G, formed upon its upper side, and a similar groove in the end of the movable jaw fits upon this projection, serving as a socket, about which the jaw turns in opening and closing. A spring, H, which may be flat or spiral, and either in front or behind, serves to keep this jaw closed upon the stationary one, so that although it may readily be opened to receive any size of

nut or pipe, it will always be closed upon it by the spring.

The shape of the jaws is peculiar. The fixed jaw has a depression formed in its end, with the three faces, I J K, as shown, while the movable jaw has the faces L and M and a projecting lip, N, which extends over the end of the fixed jaw, so as to rest upon it when closed. The outer end of this lip turns up so that the jaw will be readily opened by simply pressing it against the nut or pipe.

The faces I and L stand opposite each other, and are the ones which do the principal part of the work. If found desirable, these two jaws may be made of steel and fitted upon the body of the wrench, as shown. The angle of the jaw L, which does the principal part of the work, is grooved out or curved, so as to give it a biting-edge, as shown, and this will take a firm hold of round pipe, and will enable the jaws to fit a square, hexagonal, or other form of nut and turn them.

The particular shape of the opening formed by the faces I J K L M in the jaws is such that the two opposing jaws I and L will always take a firm hold of and clamp the sides of any shaped nut, or a round bolt or pipe, and the stronger the turn the closer the gripe. By placing the milled head F at the inner or handle end of the screw E, it may be easily worked by the thumb of the hand holding the wrench.

The tool is simple, easily and rapidly fitted to any nut, bolt, or pipe, and has few parts to become broken or get out of order.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The fixed jaw B, with its diagonally-moving slide D, having the movable jaw C hinged to it, in combination with the screw E, journaled in the ends of the box, and turning in the nut formed within the slide D, whereby the jaw C is adjusted, with relation to the jaw B, substantially as and for the purpose herein described.

2. The jaw C, having its rear end hinged to the slide D upon the jaw B, so that it may be moved to and fro, and at the same time opened and closed with reference to the jaw B,

said jaw C being provided with the projecting lip N and the spring H, substantially as and for the purpose herein described.

3. The combination of the fixed and movable jaws B and C with the uniting adjustable slide D, the jaw B having the inclined faces I J K, and the jaw C having the inclined face M and grooved or curved face L, the faces I and L of the jaws being arranged opposite each other, whereby said jaws are

adapted to seize and turn any form of nut or pipe, substantially as herein shown and described.

In witness whereof I have hereunto set my hand.

ANDREW JACKSON.

Witnesses:

S. H. NOURSE,

FRANK A. BROOKS.