

J. C. BEEKS.
Wrench.

No. 229,359.

Patented June 29, 1880.

Fig. 1.

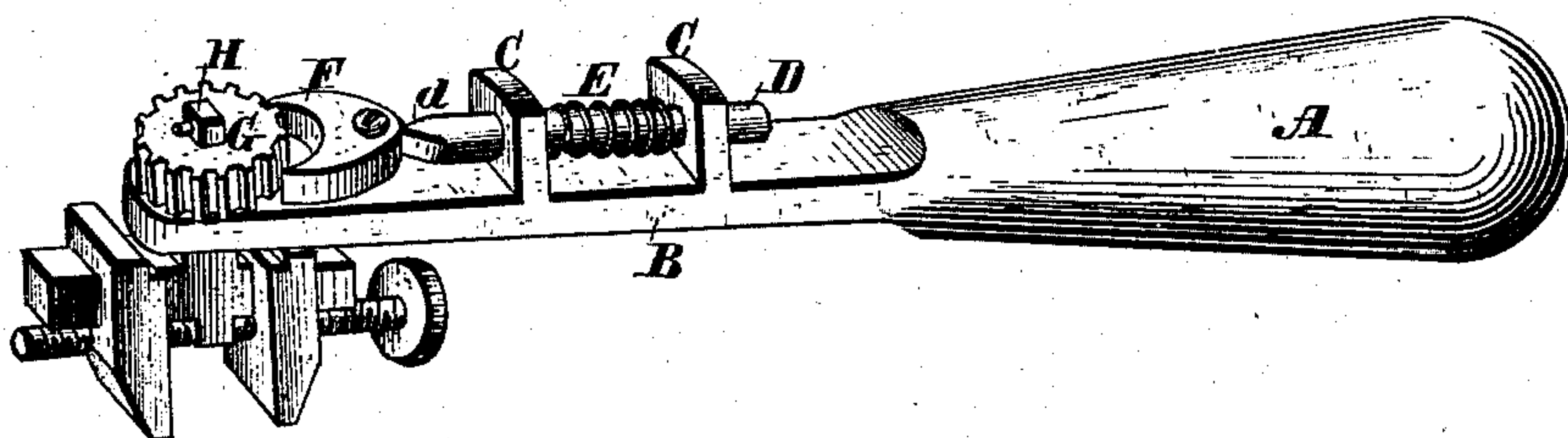


Fig. 2.

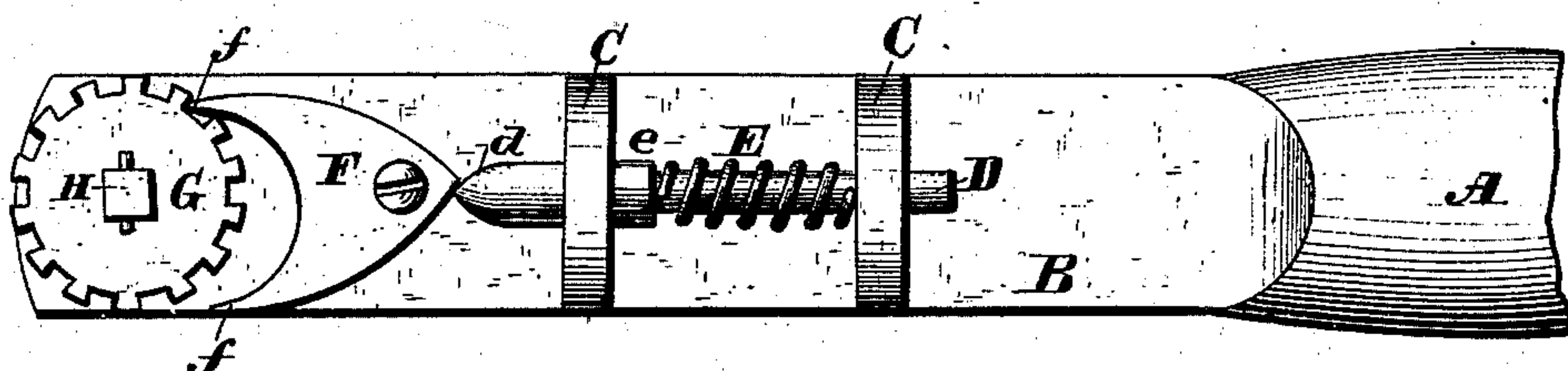


Fig. 3.

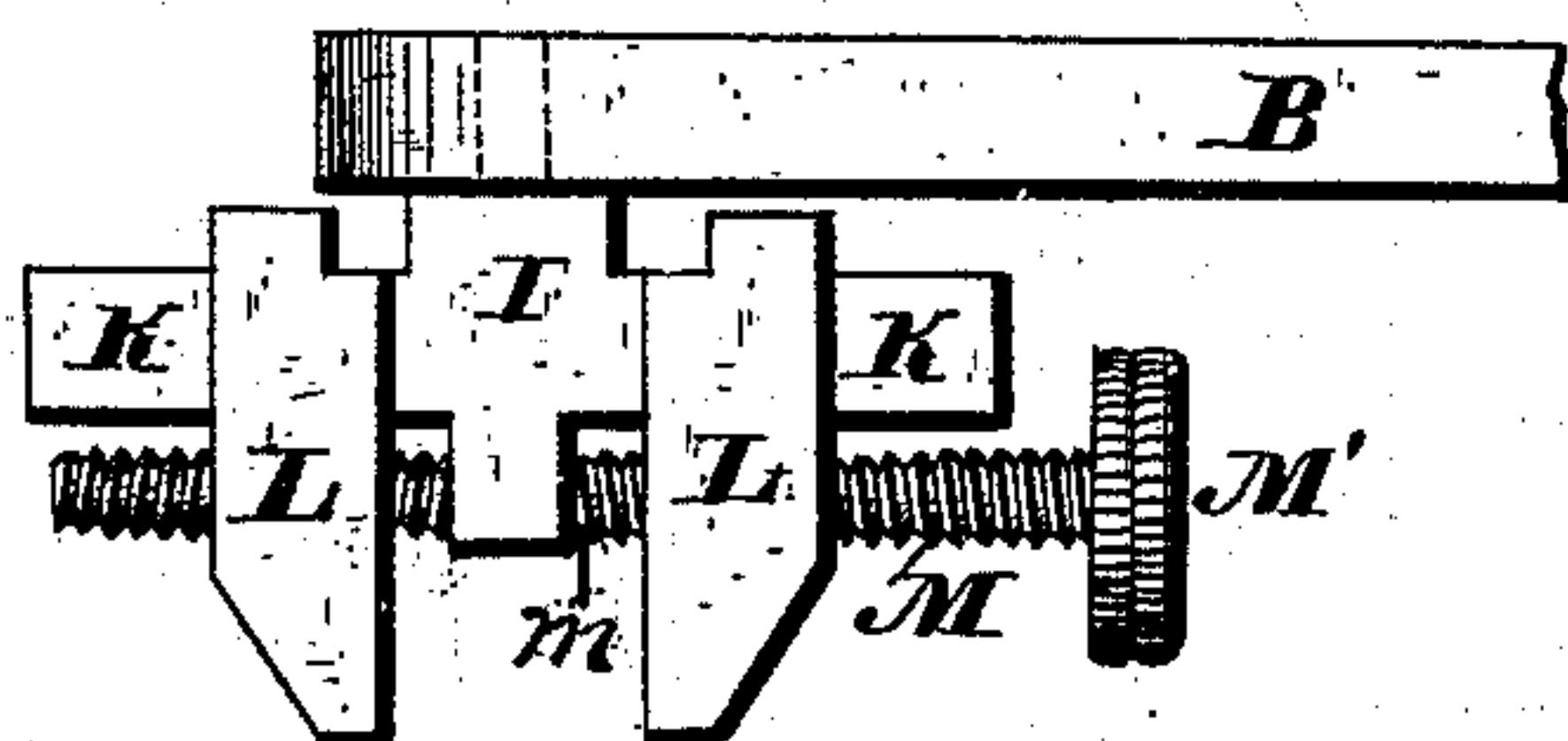
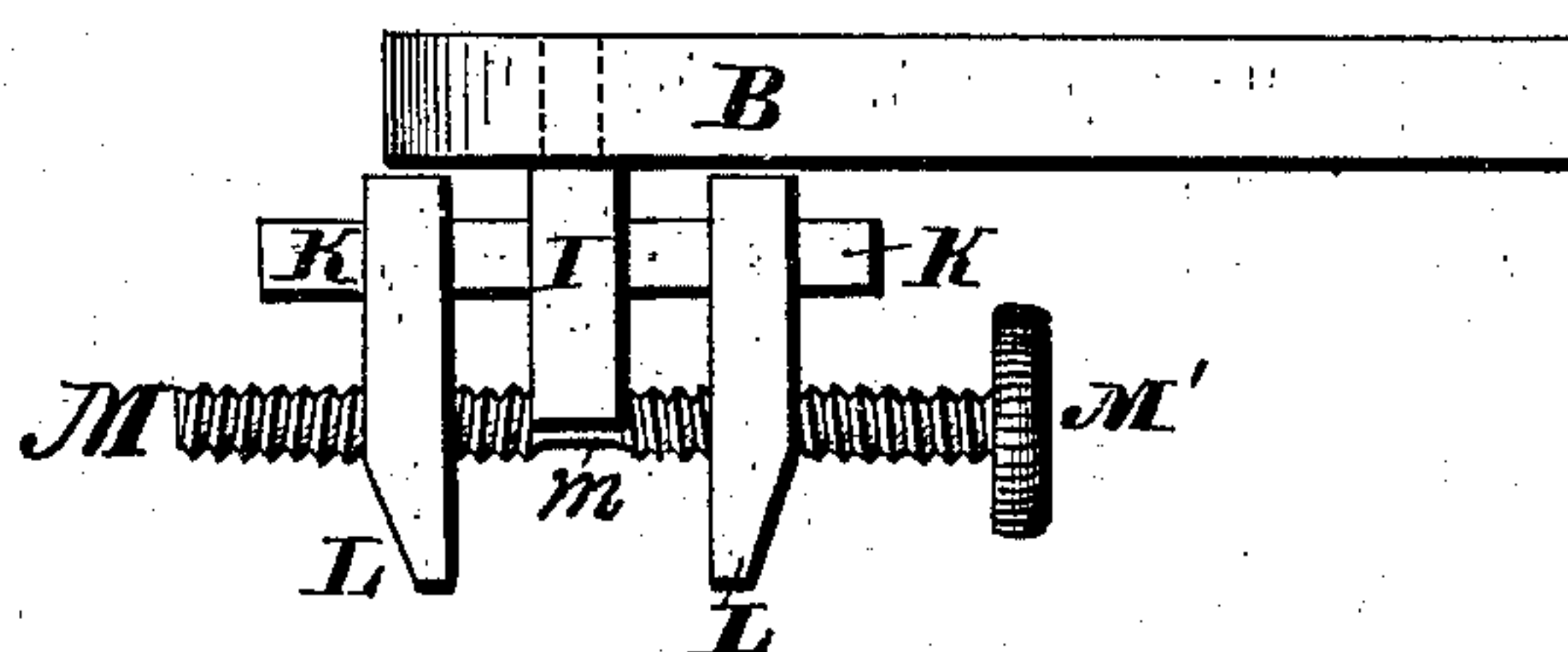


Fig. 4.



Attest:

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UNITED STATES PATENT OFFICE.

JAMES C. BEEKS, OF FORT WAYNE, INDIANA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 229,359, dated June 29, 1880.

Application filed March 8, 1880. (Model.)

To all whom it may concern :

Be it known that I, JAMES C. BEEKS, a citizen of the United States, residing at Fort Wayne, in the county of Allen and State of Indiana, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

My invention relates to that class of ratchet-wrenches in which the jaws can be adjusted and set at different distances apart for nuts of various sizes, and in which these jaws are so applied to the handle of the wrench that they can be turned with the handle either to the right or left, or the handle turned independently of them, thereby admitting a nut to be turned any number of times without detaching said jaws from the nut.

In the drawings, Figure 1 is a perspective view of a ratchet-wrench constructed in accordance with my invention. Fig. 2 is a top or plan view of the same upon a larger scale. Fig. 3 is a detail showing the jaws, right and left screw, and the bar upon which the jaws slide made in one piece with the ratchet-spindle. Fig. 4 is a like view, which illustrates the bar upon which the jaws slide passed through the ratchet-spindle.

A designates the wrench-handle, which is either fitted to or made in one piece with the straight wrench-bar B. This bar is provided with bearings C C, through which a sliding latch-bolt, D, is arranged to work, the bearings being cast with or secured to the bar.

The sliding latch-bolt works in a right line which is parallel with the axis of the bar, and the wedge-shaped end *d* of the bolt is projected to some extent beyond the bearing which is the farthest removed from the handle end of the bar by means of a coiled spring, E, arranged to encircle a portion of the latch-bolt and to abut against one of the bearings C and a shoulder, *e*, upon the bolt, thus holding the bolt in such extended position. Pivoted upon the bar, in advance of the extended end of the bolt, is a right-and-left pawl-lever, F, which approximates to a heart shape, the portions *f* being, however, sharpened to form teeth to engage with a ratchet, G. The latch-bar is thrown forward by the spring, so as to act either against one or the other of the sides of this pawl, so that either one or the other of the

teeth of the pawl will be forced into engagement with the ratchet. This ratchet is rigidly secured upon a spindle, H, which is passed through the bar, the axial line of the bar being at right angles to the axis of the spindle.

That portion of the spindle which projects from the bar on its side which is opposite to the side on which the ratchet is arranged is enlarged, as at I, and through this enlarged part I is passed a short bar, K; or the spindle may be cast with arms, as shown in Fig. 3. This short bar K is rigidly fitted to the enlarged part I of the spindle, and this bar or the rigid arms are at all times in a plane which is parallel with the wrench-bar B.

The gripping-jaws L L are arranged to slide upon the short bar K, the intervening space between said gripping-jaws being determined by a right-and-left screw, M, having a milled head, M', and arranged to work through the jaws. This right-and-left screw passes through the jaws in advance of the short bar upon which they slide—that is to say, the screw is nearer to the outer ends of the jaws than the short bar. This arrangement insures a gripping power to the jaws which is greater than if the right-and-left screw passed through the jaws in rear of the bar upon which they slide. At the middle of the right-and-left screw M is formed a journal, *m*, which fits in a bearing formed in the end of enlarged part I of the spindle, thus retaining the screw in such position that the jaws L L will always approach and recede from the spindle-axis evenly.

The jaws, operating-screw, and short bar upon which the jaws are arranged to work constitute a rotary head, which rotates upon the axis of the center of power, and under this construction and arrangement the jaws set downward from the power, and at all times while the lever is being used they will occupy the same relation to the center of power and to the applied power.

Cheapness and simplicity are also other features which commend my invention; and, finally, the jaws may be brought so close together as to embrace the smallest nut, and the handle being at right angles to the rotary jaws, nuts can be gripped in places where it would be difficult to reach with the ratchet-wrenches as usually constructed.

In operating the wrench the jaws are adjusted at the required distance apart and the pawl adjusted in place by pushing back the latch-bar and turning the pawl so that the
5 latch-bar, when released, will act against one side of the pawl, and thus force one of its teeth into engagement with the ratchet. This locks the ratchet, and hence the head, comprising the jaws, the set-screw, the short bar, and the
10 enlarged part of the spindle, will be held against rotation upon the handle in one direction. Thus the handle may be vibrated and the nut unscrewed, as is usual in this class of wrenches, no further description of which is,
15 therefore, necessary.

What I claim is—

The combination, with the wrench-bar B, of the spindle H, having the extension I, pro-

vided with the guide-arms K K, the jaws L, sliding on said arms, the right-and-left screw 20 M, passing through said jaws, respectively, between their clamping ends and the guide-arms, and provided with the intermediate journal m, playing in a bearing in the end of the spindle-extension, the ratchet-wheel G, se- 25 cured upon the spindle H, and a reversible impelling-pawl arranged to drive the said wheel in both directions, substantially as described.

In testimony that I claim the foregoing I 30 have hereto set my hand this 2d day of January, 1880.

JAMES C. BEEKS.

Witnesses:

MAX WIRDLINGER,

PETER MORGANTHALET.