

H. H. WARNER.

WRENCH.

APPLICATION FILED JAN. 26, 1909.

950,584.

Patented Mar. 1, 1910.

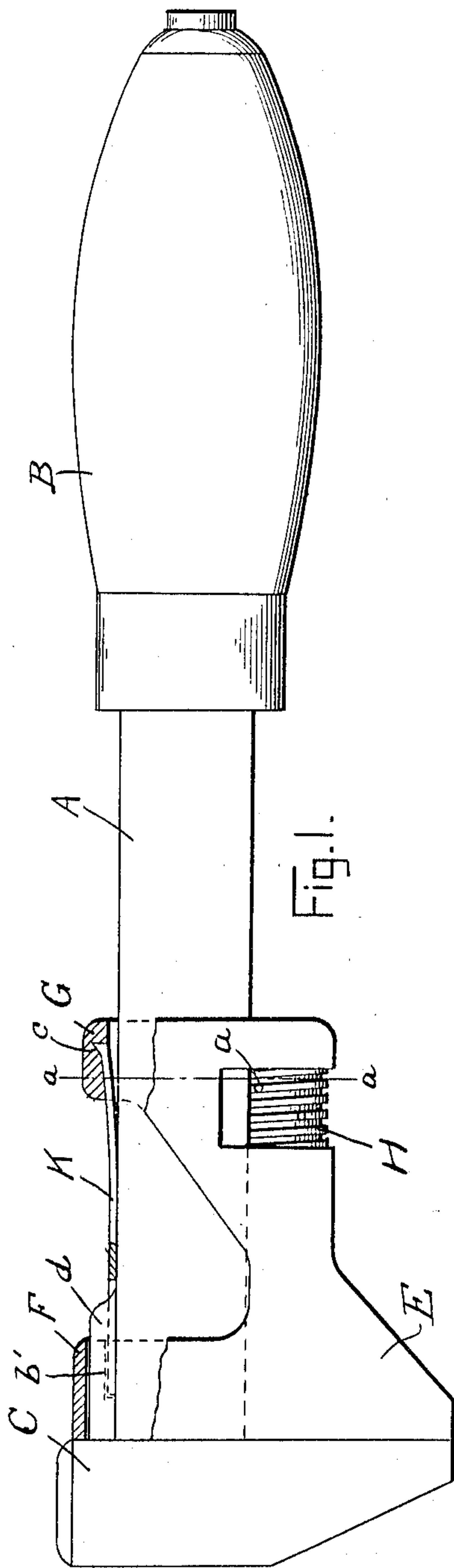


Fig. 1.

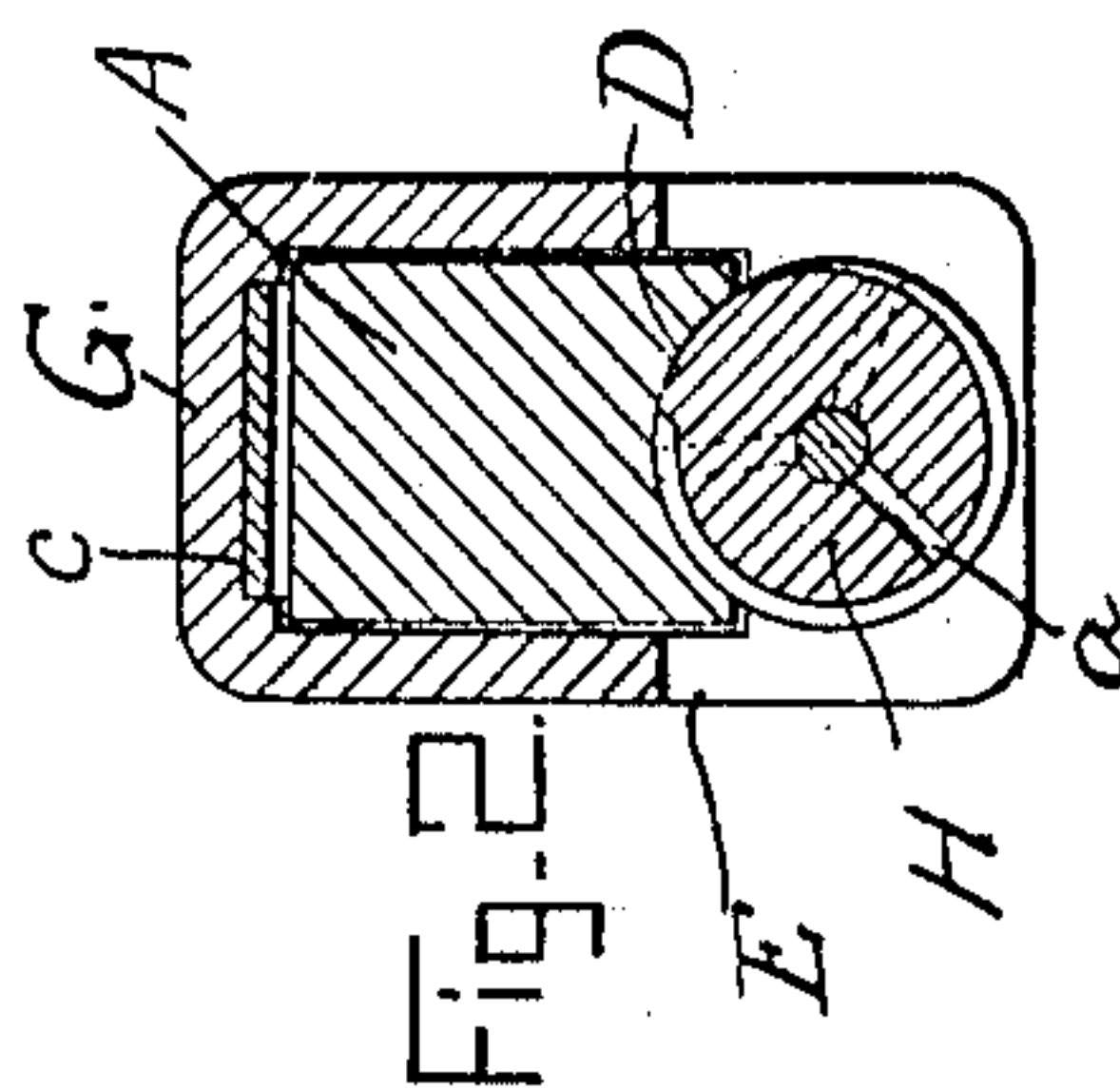


Fig. 2.

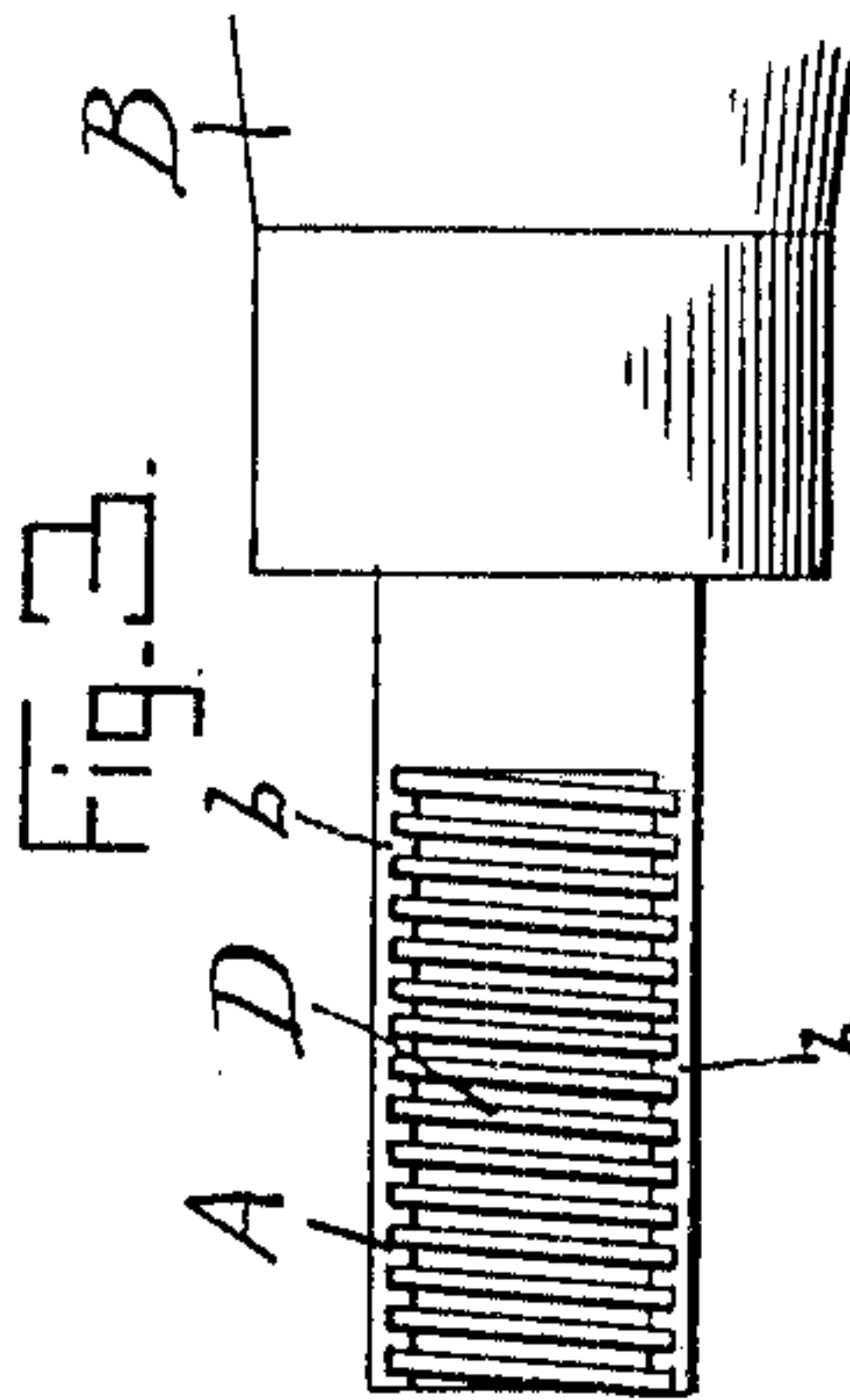


Fig. 3.

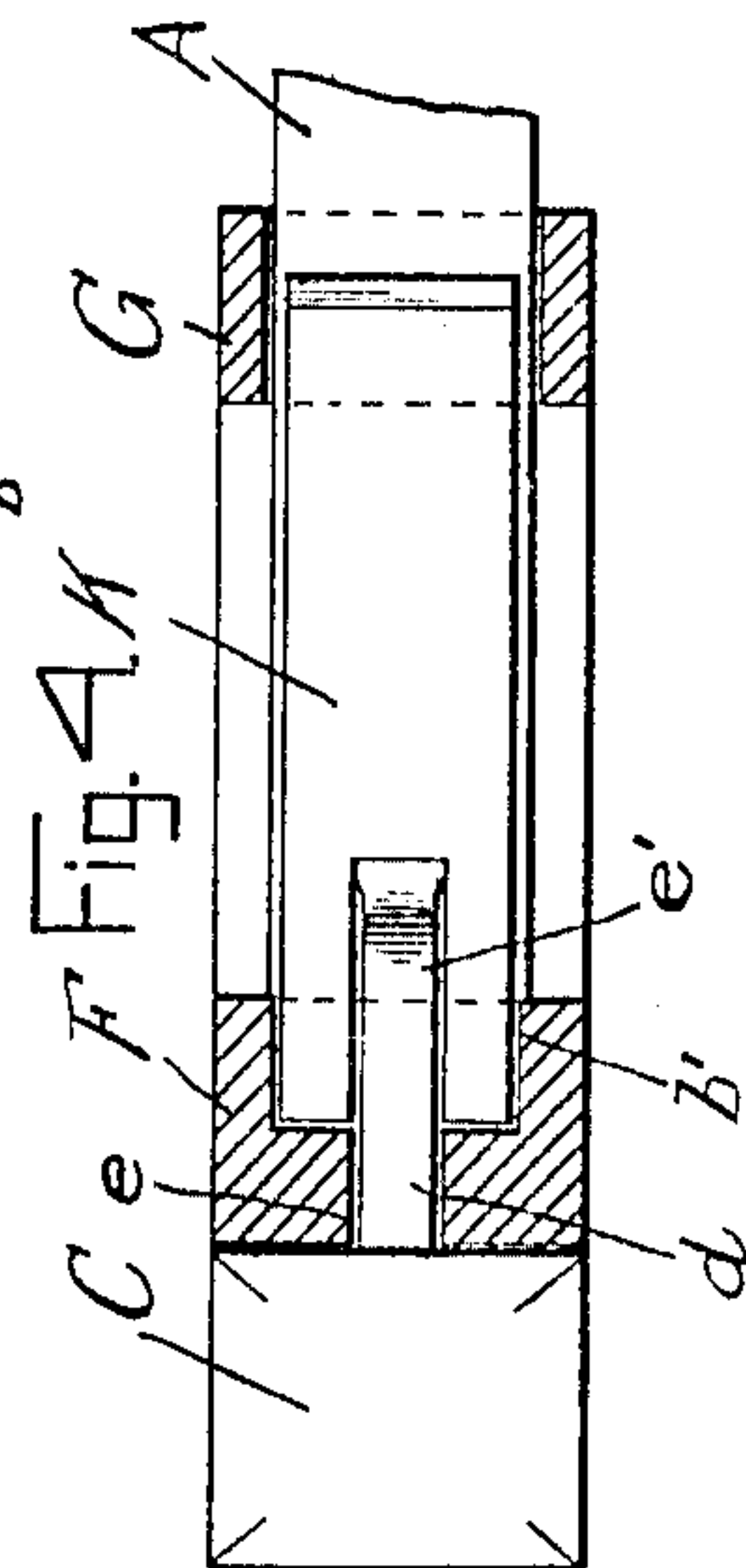


Fig. 4.

Witnesses

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WRENCH.

950,584.

Specification of Letters Patent.

Patented Mar. 1, 1910.

Application filed January 26, 1909. Serial No. 474,244.

To all whom it may concern:

Be it known that I, HENRY H. WARNER, a citizen of the United States, residing at Tacoma, in the county of Pierce and State of Washington, have invented certain new and useful Improvements in Wrenches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in wrenches, and is directed more particularly to that type of wrench which provides for a rapid adjustment of the movable jaw.

An object of my invention is to provide a wrench, the movable jaw of which may be quickly adjusted to the desired position, and at the same time be susceptible of use as a screw vise wrench.

Another object of my invention is to provide a means for holding the movable jaw against movement, so that the wrench may be employed effectively as a vise in order to hold the work in one position.

Various forms of rapidly adjustable wrenches have been devised, somewhat similar in a general aspect to my construction, but they have possessed certain objectionable features which I overcome by certain novel changes. First among these, is the arrangement of the screw threads on the stem of the wrench, in such a manner that they are not subject to injury, when used in the usual manner. Second, I employ a flat-threaded nut carried by the movable jaw, and positioned for engagement with the protected threads upon the stem. Third, I provide a simple but effective means for securely retaining the adjusting nut in the desired position, the same being held absolutely against slightest movement in either direction. Fourth, a great advantage lies in obtaining the combination of results already mentioned in a single wrench, which comprises a small number of parts, is extremely simple from a manufacturing standpoint, and practicable in its use.

With these and other objects in view, my invention, in its preferred embodiment, includes the construction hereinafter set forth in detail, pointed out in the claim, and disclosed in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved

form of wrench with parts broken away. Fig. 2 is a sectional view on the line *a a* of Fig. 1. Fig. 3 is a view in elevation of the bottom of the wrench stem, and Fig. 4 is a top plan view of the wrench, partly in section.

Referring more particularly to the drawings, in which like reference characters refer to corresponding parts in the several views, A designates the stem, provided with a handle B.

C designates the stationary jaw, mounted on the stem A.

E represents the movable jaw, arranged for adjustment upon the stem A. As shown, the movable jaw E is provided with collars F and G, which surround and engage the stem A. The movable jaw E is cut away at its rear lower portion, and a nut H is suitably journaled in such cut-away part of the jaw.

The stem A is milled out on its underside to form a flat thread D, which is under-cut throughout, and protected on both sides by the uncut edges *b* of the stem. Thus a flat surface is presented on the stem, and there is little chance for the thread to be bent or broken by coming in contact with any hard object. The nut H is provided with a similar flat thread, adapted to cooperate with the thread on the stem. The collar G serves to inclose substantially the nut H and protect the thread thereon against damage or destruction. Arranged at regular intervals, around the nut H, and diagonally thereon, are openings *a* for a purpose to be mentioned hereinafter.

Formed centrally, on the top of the stem A, and adjacent the jaw C, is a reinforcing block *d*, which abuts the base of jaw C and braces it so as to withstand greater strain, and thus add materially to the life of the wrench. The collar F is cut-away at *e*, to engage the sides of the block *d*. A leaf-spring K is provided, with a cut-away portion *e'* for accommodating the block *d*, the ends of the spring adjacent said cut-away portion engaging in recesses *b'* formed in the collar F. The other end of the spring K is held in the notch *c* on collar G. The spring is seated on the upper face of stem A, and acts normally to raise the jaw E, and hold the nut in engagement with the stem.

When it is desired to adjust the wrench, the movable jaw is pressed down at its rear

end, against the pressure of the spring, which action throws the nut out of mesh, and allows rapid adjustment of the movable jaw in either direction as desired. If after such
5 rapid adjustment, it is found that there is still a little lost motion between the wrench and the nut, upon which it is operating, the adjusting nut H may be turned slightly to force the movable jaw a little farther in the
10 desired direction, and take up such lost motion.

In case it is desired to employ the wrench as a screw vise, the openings *a* come into play, and by inserting a punch, or ordinary
15 nail, in one of said openings, it will hold the nut tightly against movement, and therefore hold the movable jaw in one position relative to the stationary jaw and obviate any relative movement whatsoever of the
20 parts. By arranging a series of these openings diagonally around the nut, I am able to operate the wrench effectually as a vise, at any position of the nut, the different relative positions of the openings permitting me

to obtain always an operative and holding 25 point.

What I claim and desire to secure by Letters-Patent is:

In a wrench, the combination with a stem having a stationary jaw mounted thereon, a 30 flat under-cut thread on the lower face of the stem, said stem being uncut at its edges adjacent to the threaded portion, a bracing-block secured to the stem at a point adjacent to the base of the stationary jaw, a movable 35 jaw yieldably mounted on the stem, a collar carried by said movable jaw and recessed to receive the bracing-block, and a leaf-spring bifurcated at one end to engage said bracing-block and seated in recesses in the collar on 40 either side of said bracing-block.

In testimony whereof, I affix my signature, in the presence of two subscribing witnesses.

HENRY H. WARNER.

Witnesses:

ALLEN C. MASON,
WM. J. MEADE.