

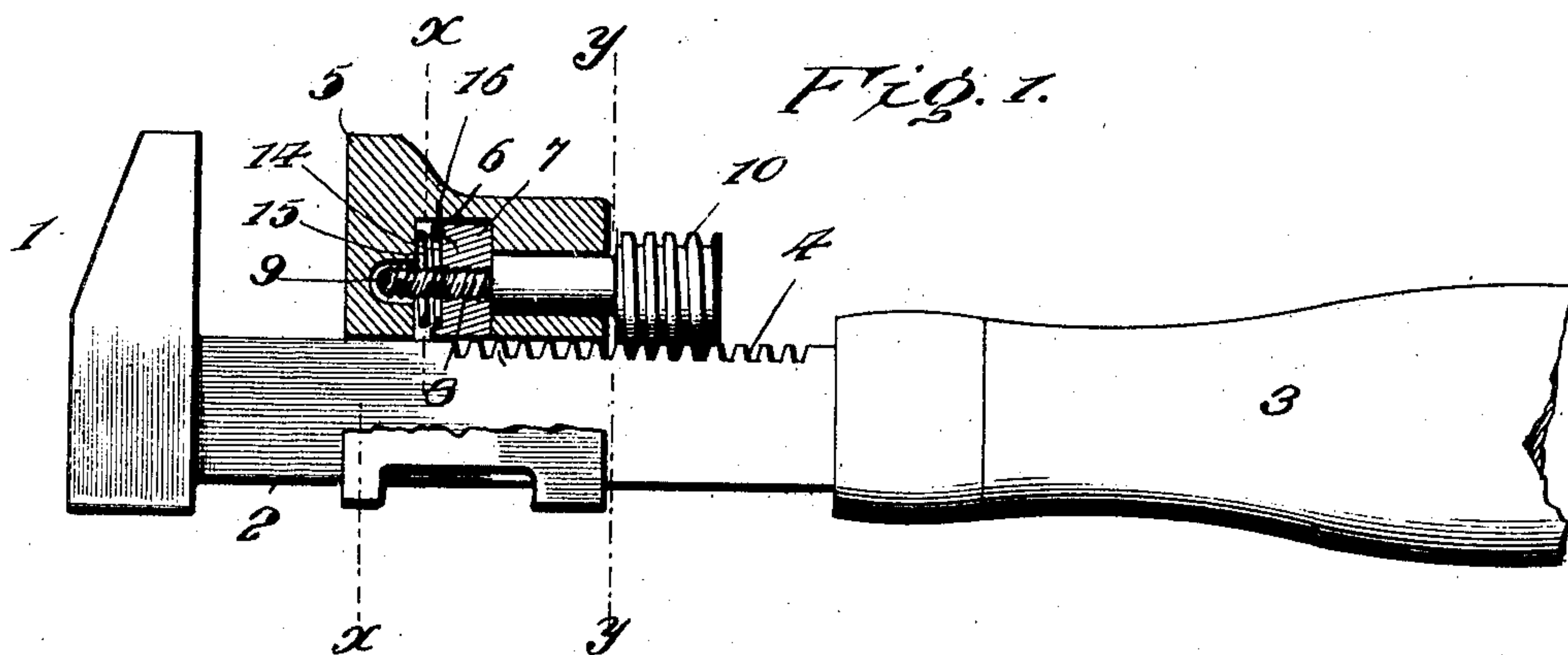
No. 822,790.

PATENTED JUNE 5, 1906.

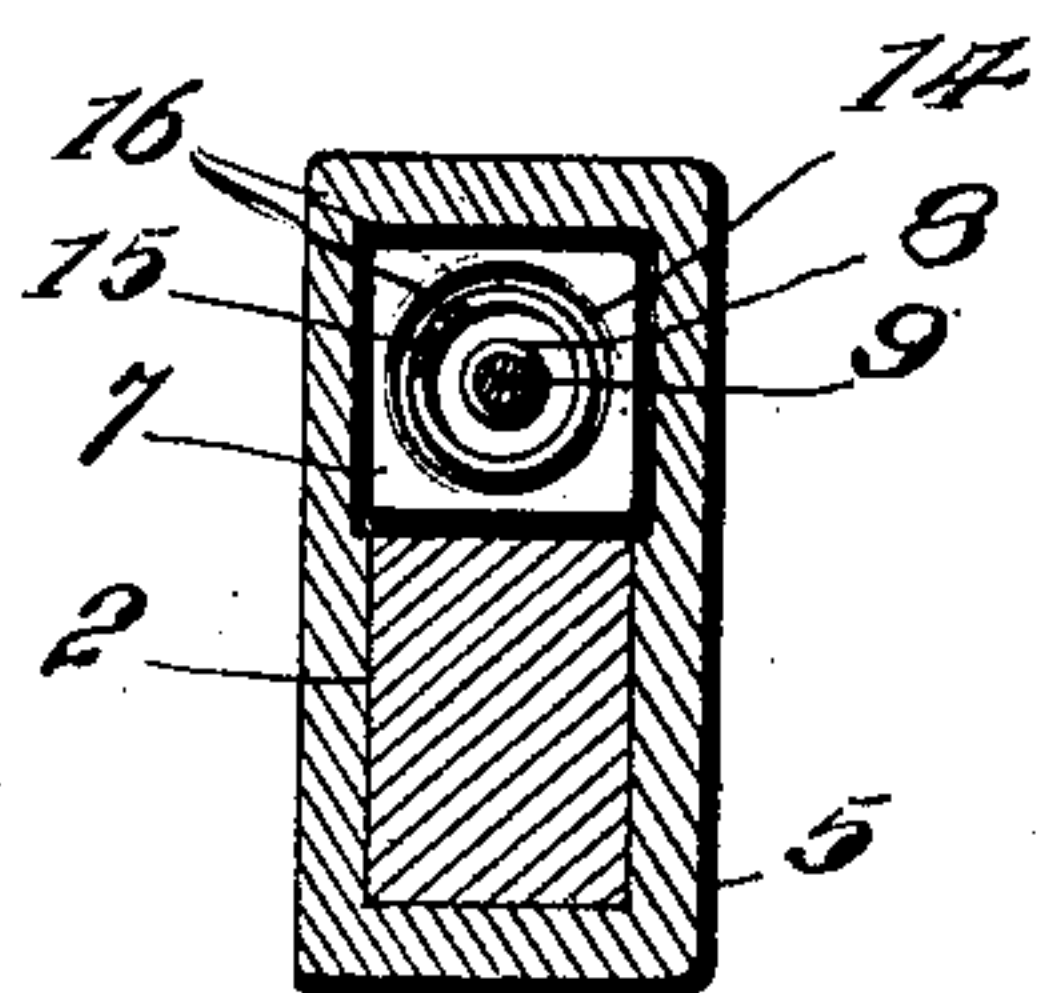
J. T. URBACH.

WRENCH.

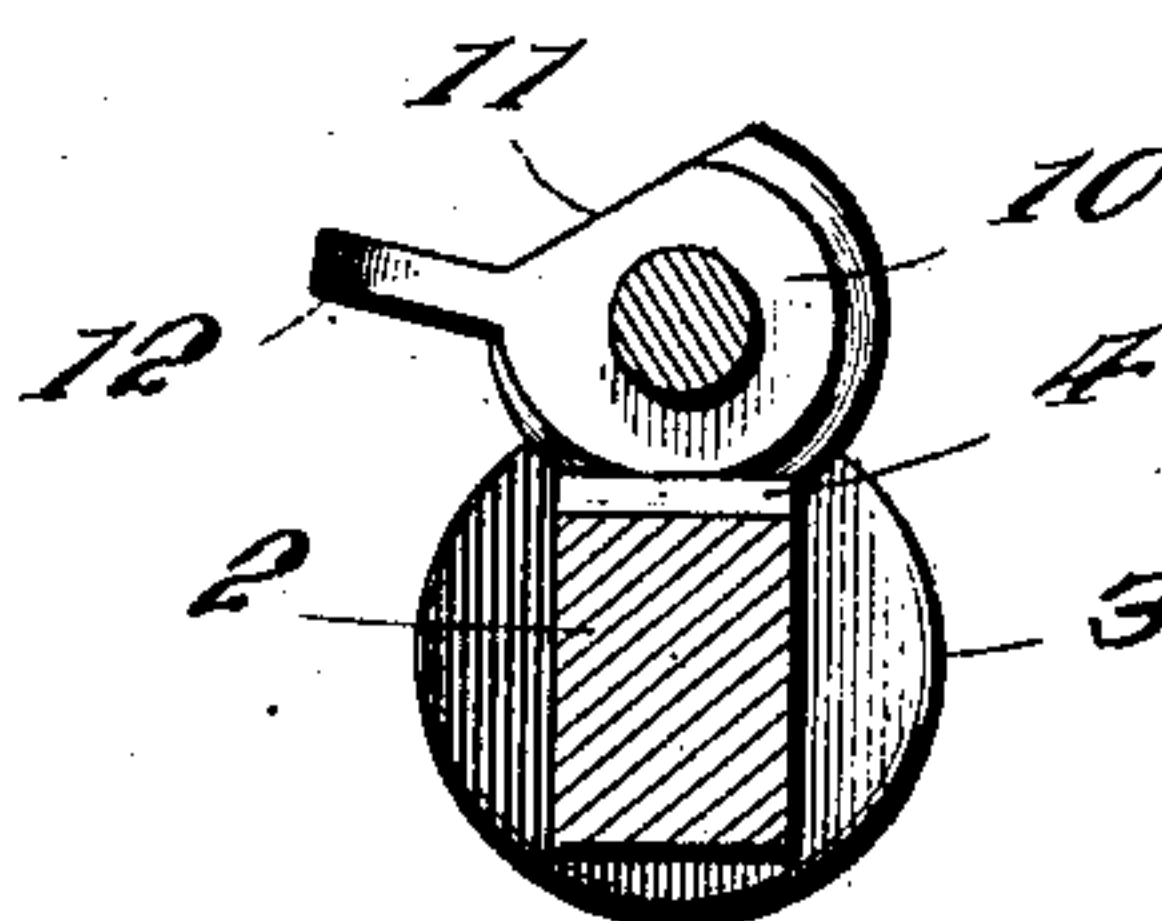
APPLICATION FILED SEPT. 28, 1905.



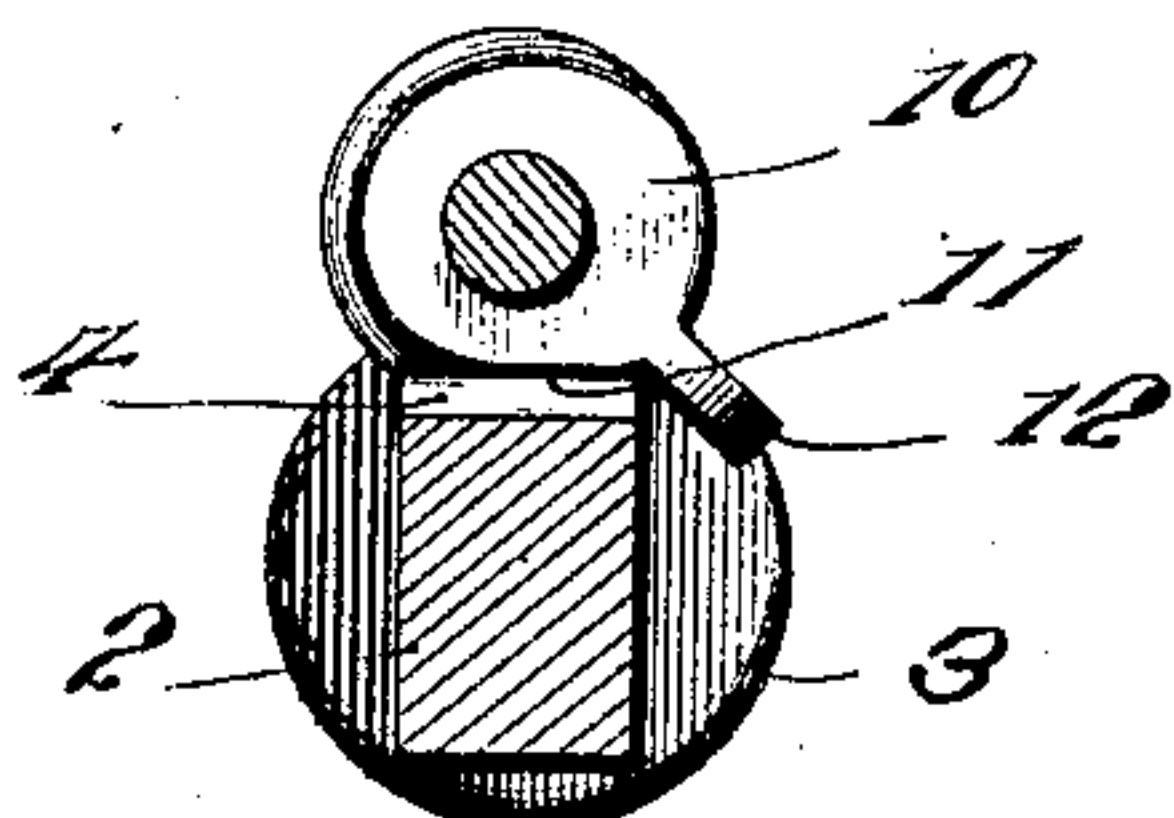
*Fig. 2.*



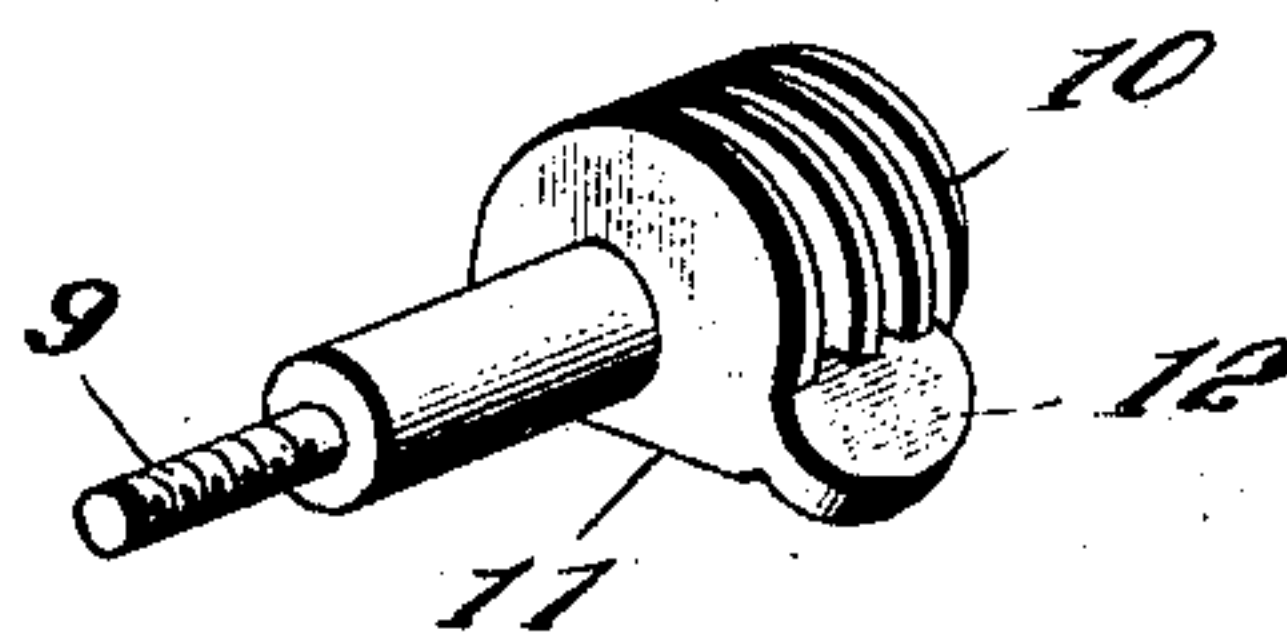
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



Inventor

J. T. Urbach

Witnesses

*Louis H. Schmidt.*

By

*W. A. Racy, Attorney S.*



# UNITED STATES PATENT OFFICE.

JOHN T. URBACH, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-EIGHTH  
TO MAREEN M. DUVALL, OF BALTIMORE, MARYLAND.

## WRENCH.

No. 822,790.

Specification of Letters Patent.

Patented June 5, 1906.

Application filed September 28, 1905. Serial No. 280,494.

*To all whom it may concern:*

Be it known that I, JOHN T. URBACH, a citizen of the United States, residing at Baltimore, State of Maryland, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

The object of my invention is to provide an improved construction of wrench which will be durable and efficient in operation and in which the movable jaw is so mounted with relation to the fixed jaw that a quick and "nice" adjustment of the parts may be effectively made with a minimum manipulation of the adjusting-screw.

The invention consists, essentially, of a wrench embodying a fixed jaw having a toothed shank and a movable jaw slidable upon said shank, said movable jaw being provided with an adjusting-screw mounted to travel bodily with the jaw. This adjusting-screw is provided at one end with an actuating-nut designed to mesh with the teeth of the shank and provided with a smooth or unthreaded surface, whereby a quick adjustment may be effected by pressing such surface to the teeth of the shank, the spindle of said actuating-nut extending into the movable jaw, which latter is provided with an interior recess in which a supplementary or auxiliary adjusting block or nut is mounted, said latter nut having a loose motion to a certain degree within the movable jaw and being provided with an annular recess at one end in which a spring is situated so as to allow a slight degree of lost motion to the movable jaw whereby it may be adjusted nicely and compensate for any irregularities in the nut or other article to be clamped.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a side elevation of my improved wrench, the movable jaw being shown partly in section. Fig. 2 is a transverse section on the line  $x x$  of Fig. 1. Figs. 3 and 4 are transverse sections on the line  $y y$  of Fig. 1, these views showing the adjusting-nut in two different positions. Fig. 5 is a detail perspective view of the adjusting-nut and its spindle.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The movable jaw 1 is preferably integral with its shank 2, and the latter is provided at one end with any form of handle 3 and is provided with pitched teeth 4 along one edge. The movable jaw 5 is mounted to slide upon the shank of the fixed jaw and is provided adjacent the toothed edge 4 with an interior downwardly-opening recess 6, which constitutes a housing for the preferably rectangular adjusting-block 7. The adjusting-block 7 is of such size with relation to the length of the housing that it will have a certain amount of play therein longitudinally. The adjusting-block 7 is interiorly screw-threaded, as indicated at 8, and mounted to turn within it in engagement with its screw-threads is a threaded spindle 9, which has bearing in the end of the movable jaw and which carries at its rear end a main adjusting-nut 10. This latter is provided with threads around a portion of its surface designed to engage with the teeth 4 of the shank 2, and it is also provided with a smooth or plane surface 11, so that when such surface is presented to the teeth 4 the movable jaw may be slid bodily forward or backward to effect a quick adjustment of the two jaws with relation to each other. The adjusting-nut 10 is provided with a finger-piece 12 at one side, whereby it may be conveniently turned and manipulated.

The adjusting-block 7 presents its lower face to the toothed edge 4 of the shank and slides thereover as the movable jaw is slid back and forth. The block is provided in the end adjacent the fixed jaw with an annular recess 14, and within said recess there is mounted a spring 15, designed to hold the movable jaw forward with respect to the adjusting-block in its housing and being designed to be pressed into the annular recess 14 when the movable jaw is forced into engagement with a nut or the like, and said recess thereby forming a protecting means for the spring and preventing it from being mashed or otherwise injured, the shoulders formed by the annular rim 16 around the recess 14 abutting under such conditions against the adjacent portion of the movable jaw, as will be evident by reference to the



drawings. The pitch of the threads on the spindle 9 corresponds in the present instance to the pitch of the threads on the adjusting-nut 10, although it is evident that my invention is not limited to this exact arrangement, and in the present instance such threads are pitched so that an approximate half-turn of the adjusting-nut and the consequent half-turn of its spindle 9 will likewise effect an advance of the adjusting-block 7 with respect to the spindle and the consequent advance of the movable jaw a distance equal to what it would travel if the adjusting-block were not provided and the actuating or adjusting nut 10 were given a complete revolution.

In the operation of the device the adjusting-nut 10 is manipulated so as to bring its smooth or plane surface 11 in registry with the toothed edge 4 of the shank, and the movable jaw may be thus quickly shifted to effect a gross adjustment thereof with respect to the fixed jaw. Then to effect a nice adjustment of the parts the adjusting-nut 10 is given a half-turn in the advance direction, and this will result in said nut and the parts to which it is attached being advanced somewhat farther along the shank and at the same time turning of the adjusting-nut 10, and the consequent rotation of its spindle 9 will effect an advance to a similar degree of the movable jaw 5 upon the spindle through the instrumentality of the adjusting-block 7. It will thus be seen that two degrees of movement are provided, one of the adjusting-nut 10 with respect to the toothed edge 4 of the shank and another with respect to the adjusting-block on the spindle 9. In this manner a nice adjustment of the movable jaw may be quickly effected by a minimum of rotation of the parts.

While my invention is here shown and described as embodied in a wrench construction, it is manifest that it is also applicable to vises and other clamps without departing in any wise from the scope of the invention.

Having thus described the invention, what is claimed as new is—

1. A wrench comprising a fixed jaw and a toothed shank, a movable jaw mounted to slide on said shank and provided with an interior housing, an adjusting-block mounted in said housing and having longitudinal play therein, a spindle threaded in said block and provided with an adjusting-nut meshing with said teeth, and a spring in said housing interposed between one end of the block and

the adjacent portion of the movable jaw and designed to press the movable jaw toward the fixed jaw.

2. A wrench comprising a fixed jaw and a toothed shank, and a movable jaw mounted to slide on said shank and provided with an interior housing opening on the teeth of the shank, an adjusting-block having play in said housing and provided with a lower surface designed to ride over the toothed edge of the shank, a threaded spindle mounted in said block and provided with an adjusting-nut meshing with said toothed edge, and a spring in said housing interposed between the end of the block and adjacent portion of the movable jaw and designed to press the movable jaw toward the fixed jaw.

3. A wrench comprising a fixed jaw and a shank having a toothed edge, a movable jaw mounted to slide upon said shank and provided with an interior housing, a rectangular adjusting-block mounted to move longitudinally in said housing and provided with a threaded bore, a spindle working in said bore and provided with an adjusting-nut meshing with said toothed edge, the said spindle being mounted in an end of the movable jaw and having a limited longitudinal movement therein said nut being provided with a smooth surface whereby the movable jaw and its parts may be slid bodily along the shank, and a spring in said housing interposed between that end of the block which is adjacent the fixed jaw and the adjacent portion of the movable jaw.

4. A wrench comprising a fixed jaw and a shank having a toothed edge, and a movable jaw mounted to slide on said shank and provided with an interior housing, an adjusting-block mounted to move longitudinally in said housing and provided with a recess in one end and also provided with a threaded bore, a spindle working in said bore and provided with an adjusting-nut meshing with said toothed edge, and a spring in said housing between the end of the adjusting-block and the adjacent portion of the movable jaw, said spring being designed for accommodation in the said recess when the block is forced up against the adjacent portion of the movable jaw.

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

JOHN T. URBACH. [L. S.]

Witnesses:

J. D. YOAKLEY,  
W. N. WOODSON.