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PATENTED FEB. 19, 1907.

W. L. CHRYSLER & J. W. KAYS.

WRENCH.

APPLICATION FILED MAR. 30, 1906.

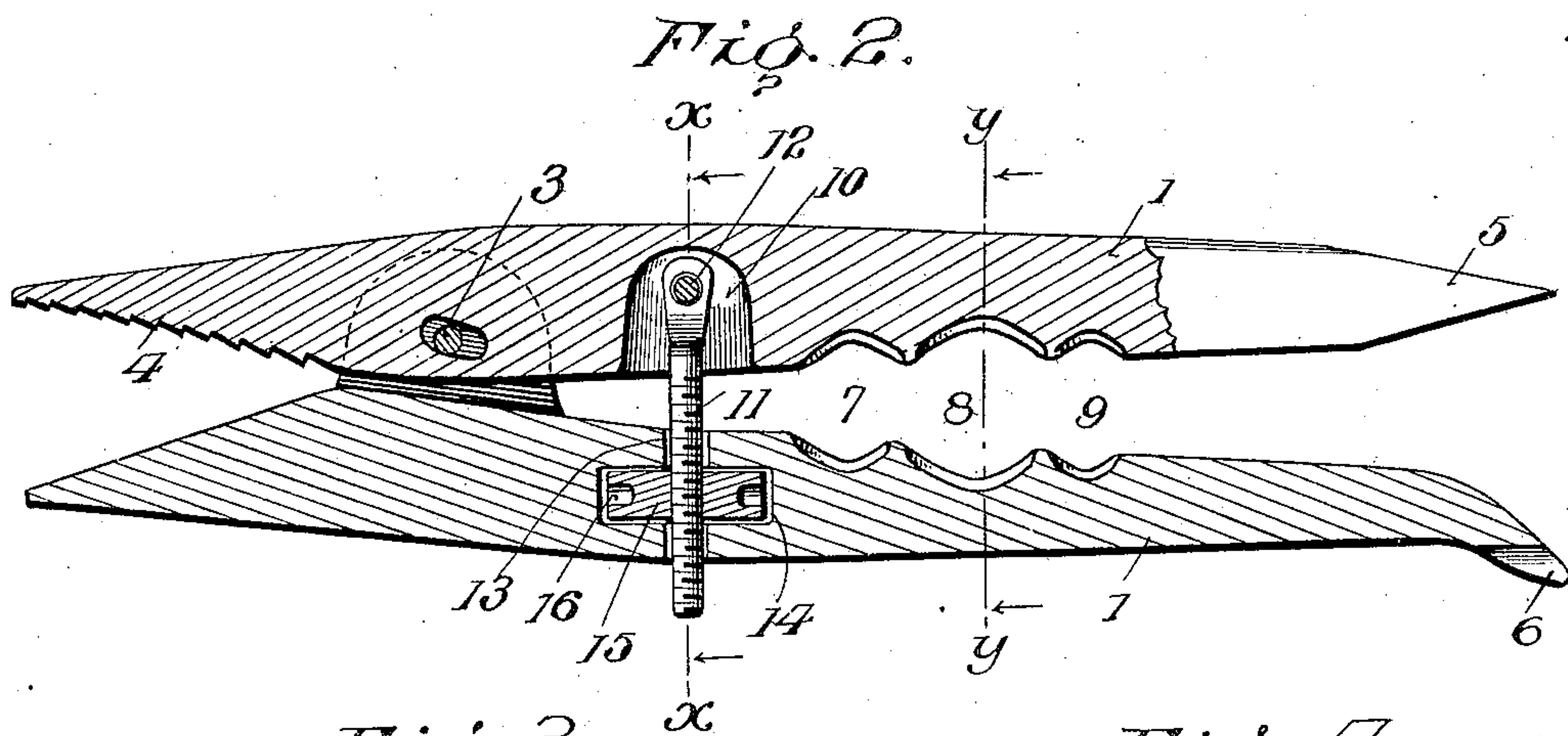
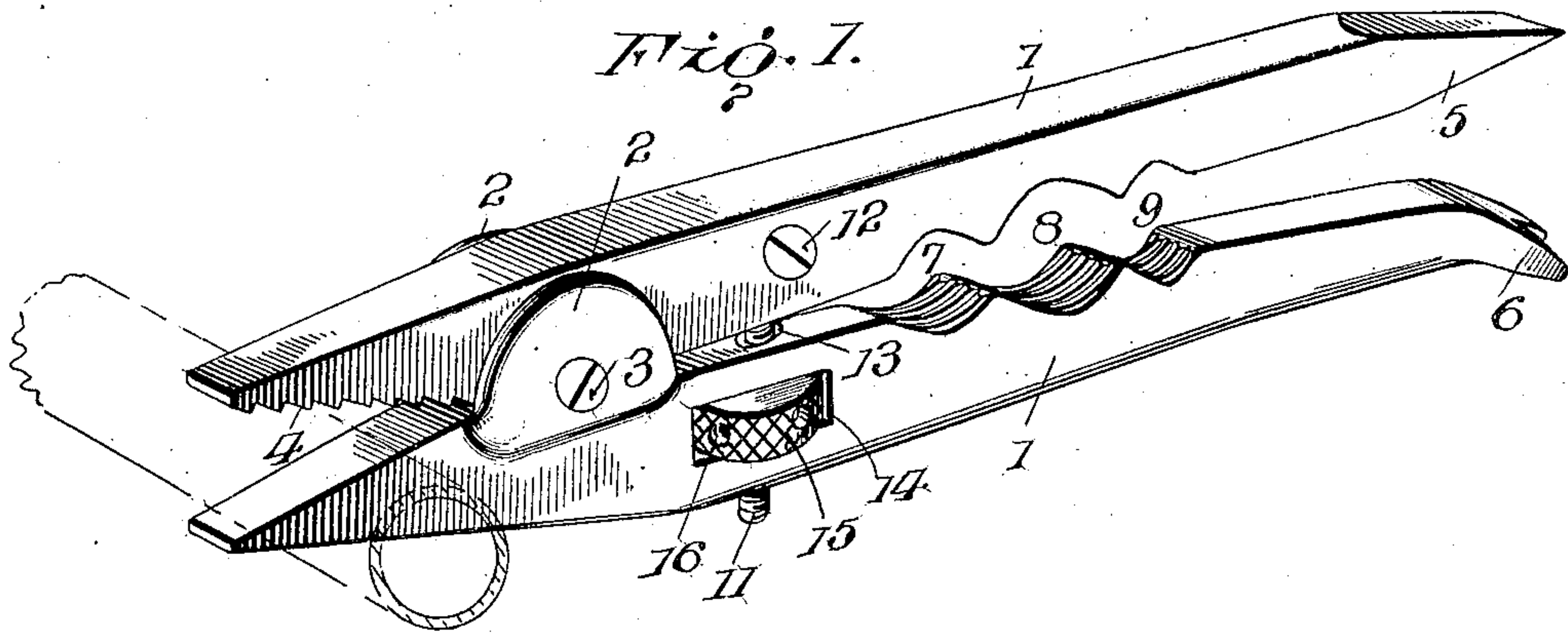


Fig. 3.

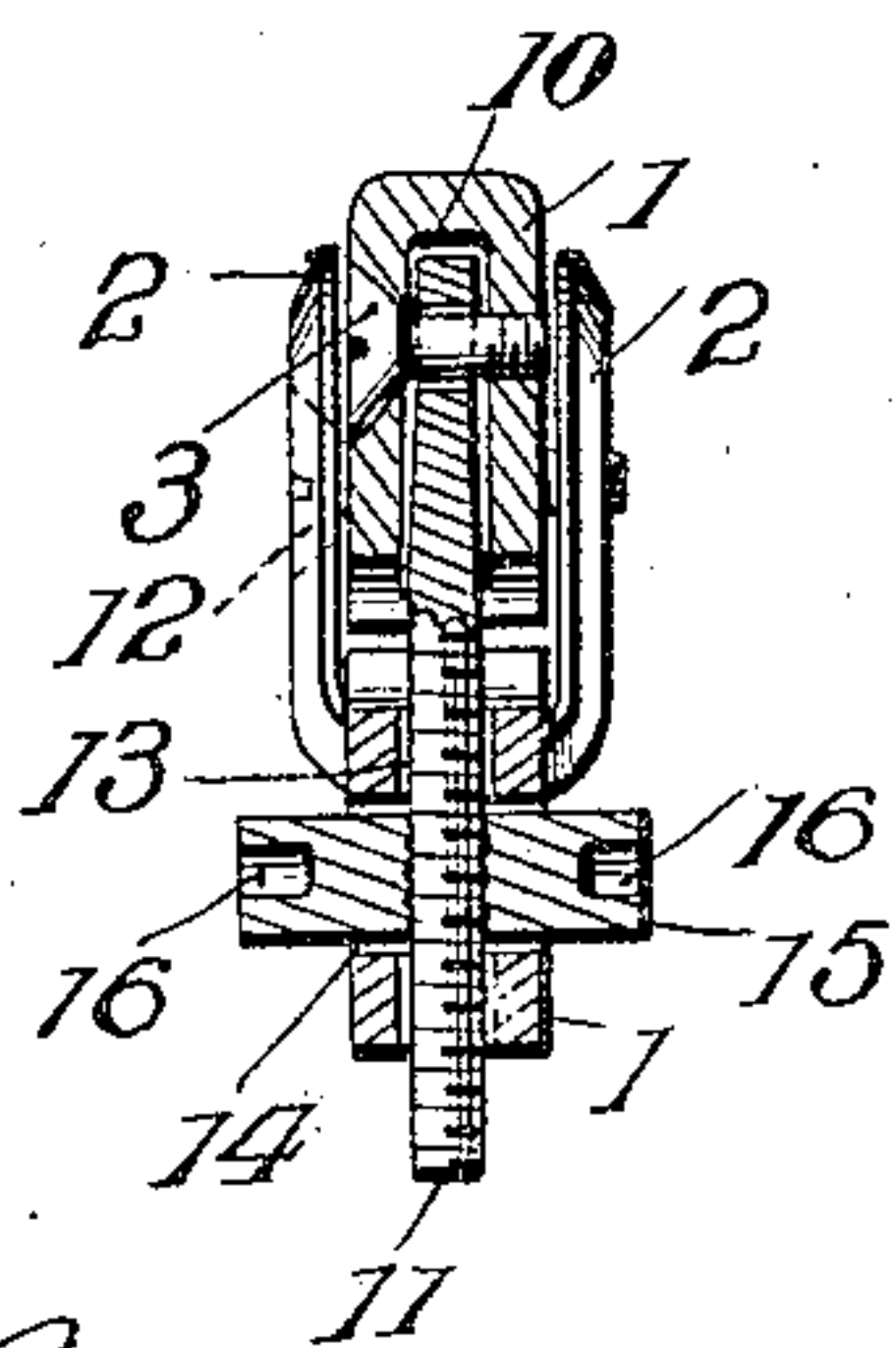
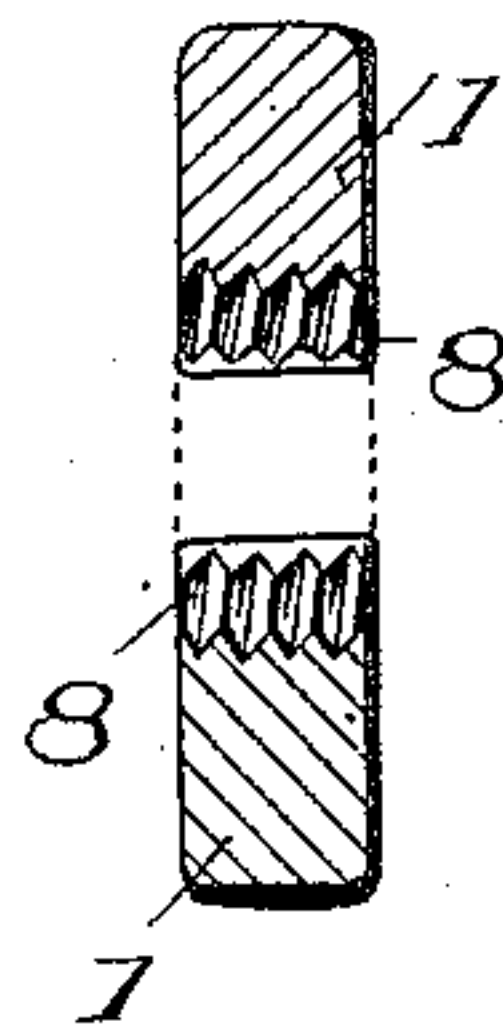


Fig. 4.



Witnesses

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# UNITED STATES PATENT OFFICE.

WILLIAM L. CHRYSLER AND JOSEPH W. KAYS, OF EUGENE, OREGON; SAID  
CHRYSLER ASSIGNOR OF ONE-HALF OF HIS RIGHT TO SAID KAYS.

## WRENCH.

No. 845,030.

Specification of Letters Patent.

Patented Feb. 19, 1907.

Application filed March 30, 1906. Serial No. 308,956.

*To all whom it may concern:*

Be it known that we, WILLIAM L. CHRYSLER and JOSEPH W. KAYS, citizens of the United States, residing at Eugene, in the county of Lane and State of Oregon, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

The object of our invention is to provide an improved wrench; and the invention consists in certain constructions, arrangements, and combinations of parts hereinafter fully described, and particularly pointed out in the appended claim.

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 perspective view of our improved tool. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is a transverse section on the line X X of Fig. 2. Fig. 4 is a transverse section on the line Y Y of Fig. 2.

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 members 1 of our improved wrench are pivotally connected together near one end by means of preferably integral ears 2, projecting from one member and embracing the other member, and a pivot-stud 3, inserted through said ears. Both members near one end are provided with beveled surfaces whereby jaws are constituted, one of said surfaces being smooth and the complementary surface provided with transverse serrations 4. The members 1 at the other side of said pivot constitute handles, one of which is tapered at its extremity, as shown at 5, to form a device for spreading keys or as a screw-driver, while the extremity of the other handle portion is bent outwardly and has a recess at its edge to form a claw 6, which may be readily used for withdrawing keys from bolts or for drawing nails or tacks. Intermediate their extremities and the pivot 3 the handle portions of the members 1 are provided with a plurality of pairs of registering recesses in their opposing faces, (designated 7, 8, and 9.) These recesses are threaded, so that they may be used for cutting or re-

threading bolts. In the present instance three sizes of these cutting-dies constituted by said recesses are shown; but our invention is manifestly not limited to this number.

Between the cutting-dies 7, 8, and 9 and the pivot 3 one member is provided on its inner face with an elongated recess 10, in which an adjusting-rod 11 is mounted to rock on a pivot-stud 12. The adjusting-rod 11 is threaded, as shown, and extends freely through the opening 13 in the other member and into the transverse slot 14 therein, where it works within a preferably milled or knurled nut 15. The adjusting-nut 15 may be provided with a series of sockets 16 to receive a spanner or other suitable tool for turning the same and binding the jaws or the cutting-dies down upon the article to be operated upon.

As illustrated best in Fig. 2, it will be seen that the member 1 that is provided with the transverse serrations 4 is formed with an elongated slot receiving the pivot-pin 3. By this means said member is permitted to have a slight longitudinal play with respect to the other member, so that when the device is used as a pipe-wrench the two may be manipulate with a ratchet motion back and forth on the pipe, the teeth 4 sliding in one direction and biting in the reverse. It is manifest that this ratchet action is materially assisted by the construction of the elongated slot receiving the pivot-pin 3, and the consequent relative movement between the two members 1. This action is also assisted or permitted by means of the pivotal stud connection 12 between the adjusting-rod 11 and the member 1, which carries it, as it is evident that if such screw-rod were not hinged or pivoted the longitudinal movement provided by the elongated slot and pivot-pin 3 cannot be accomplished. By means of the correlated action between the exact arrangement by which the two members 1 are pivoted together in connection with the pivotal connection between the members and the actuating-rod the two members may be adjusted with their jaw ends at different inclinations to form different size openings to receive pipes of different diameters and to have a ratchet action on said pipes, as before mentioned.

From the foregoing description, in connection with the accompanying drawings, it will be seen that we have provided a wrench of



few and simple parts that are durable and also efficient in operation.

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

5 A tool of the character described, comprising two members provided with jaws designed to receive a pipe or the like, and said members being pivotally connected together, the pivot consisting of a pivot-stud carried by  
10 one member and the other member being formed with a longitudinally-elongated slot receiving said pivot-stud and providing for a limited longitudinal movement of one member with respect to the other member, one of  
15 said members being provided with a recess 10 and the other member having an opening extending therethrough in alinement with said

recess, and a transverse slot communicating with said opening, a pivot-stud 12 secured to one of said members within the said recess 20 thereof, a threaded actuating-rod pivotally mounted on said stud and extending through the opening in the other member, and an actuating-nut mounted in the transverse slot of said last-named member and operatively receiving the said actuating-rod, as and for the 25 purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM L. CHRYSLER.

JOSEPH W. KAYS.

Witnesses:

L. M. TRAVIS,

J. W. ZIMMERMAN.