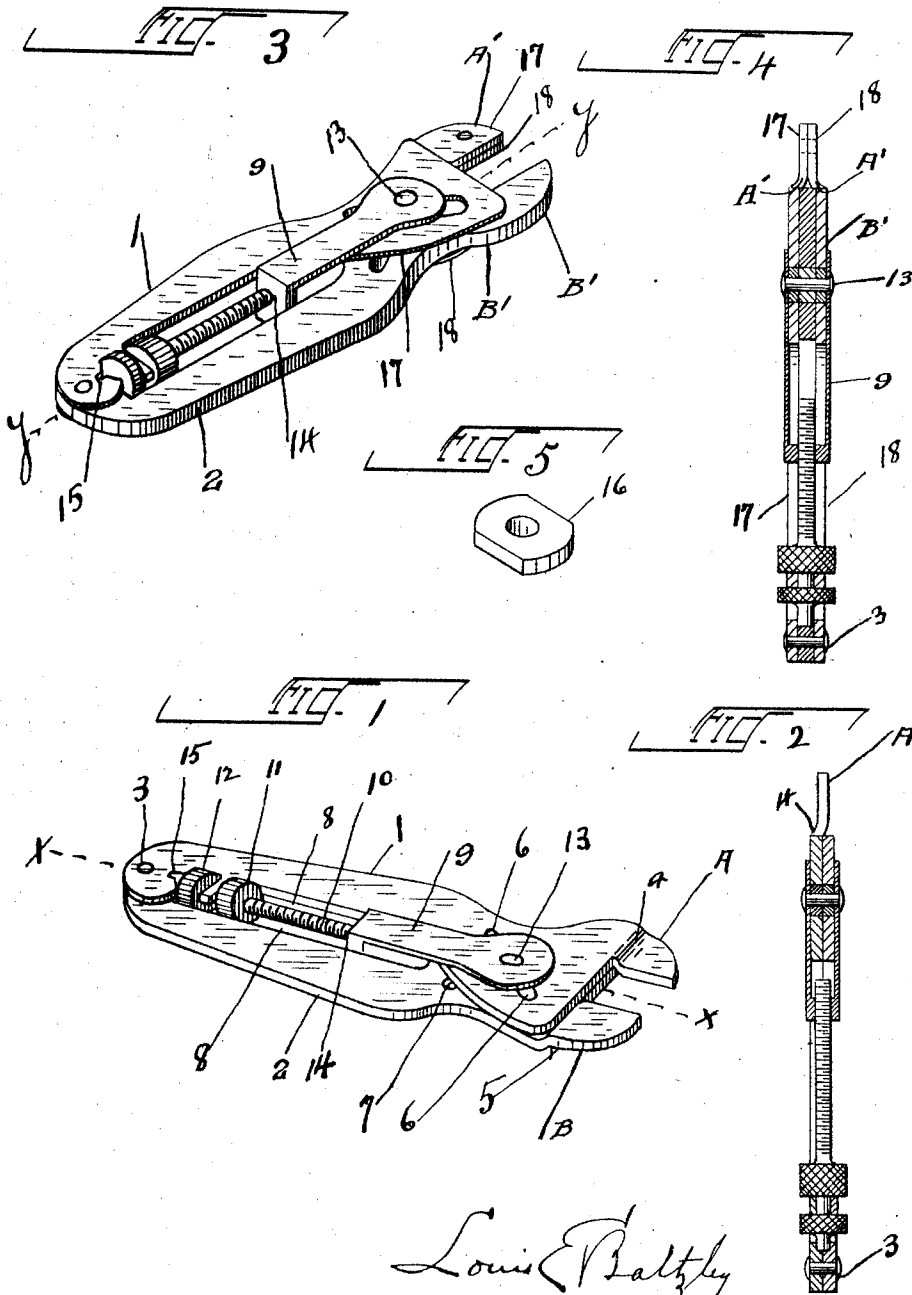


L. E. BALTZLEY,
ADJUSTABLE WRENCH.
APPLICATION FILED MAR. 19, 1918.

1,415,914.

Patented May 16, 1922.



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UNITED STATES PATENT OFFICE.

LOUIS E. BALTZLEY, OF BLOOMFIELD, NEW JERSEY.

ADJUSTABLE WRENCH.

1,415,914.

Specification of Letters Patent. Patented May 16, 1922.

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To all whom it may concern:

Be it known that I, LOUIS E. BALTZLEY, a citizen of the United States, and resident of Bloomfield, in the county of Essex and State of Jersey, have invented certain new and useful Improvements in Adjustable Wrenches, of which the following is a specification.

My invention relates to adjustable wrenches. Wrenches in accordance with my invention may be made of any desired size. The small sizes thereof are flat and are well adapted to be carried in the pocket, and can be readily and quickly adjusted, and are especially useful in connection with automobiles, for adjusting the numerous small nuts thereof which require frequent attention.

A wrench in accordance with my invention comprises a pair of side members pivotally connected at one end and having jaws formed integrally therewith at the opposite end. In the preferred embodiment of the invention, the pivoted members are provided with slots inclined relative to one another and the wrench is operated to open and close the jaws by a screw actuated yoke provided with a pin passing through both of said slots.

In the drawings, Fig. 1 is a perspective of one form of the wrench, the side members and jaws, integral therewith, being composed of two metal stamping or forgings. Fig. 2 is a vertical section of the wrench shown in Fig. 1 taken on the line $x-x$, Fig. 1. Fig. 3 is a perspective of a modified form of wrench, one side member of which is made of two pieces of stamped metal, and the other side member of a single piece to work between the two pieces of the opposite member. Fig. 4 is a vertical section of the wrench shown in Fig. 3 taken on the line $y-y$, Fig. 3. Fig. 5 is a perspective view of a washer.

For pocket use the wrench is made as flat as possible, which result is best achieved in the form of the invention shown in Fig. 1, where but two stampings from the same dies form the right and left members with the jaws integral therewith. A is the right jaw and B the left jaw, and the members 1 and 2 extend therefrom and are pivoted together at 3. The jaw A is slightly offset at 4 to bring it to the central line of the wrench, and the jaw B is offset at 5 in the opposite direction

to bring it to the central line, so that both jaws occupy the same plane. An oblique slot 6 is cut entirely through the member 1, and a slot 7, oblique in the opposite direction, is cut through the member 2.

The members 1 and 2 are so shaped as to form an opening 8 between them, to provide space to mount the opening and closing mechanism therein, preferably consisting of the yoke 9, the screw 10, and the thumb nuts 11 and 12. A pivot pin 13 connects the arms of the yoke 9 and passes through the slots 6 and 7. Screw means are provided for actuating the yoke. In the form shown the lower end of the yoke has a threaded hole 14 to receive the screw 10. The lower end of the screw is seated to revolve in the recess 15. The thumb nuts 11 and 12 are preferably made integral with the screw, but may be made separately and driven on or otherwise made rigid with the screw. I preferably provide washers 16, Fig. 5, with flat sides, to slide in each of the slots 6 and 7 to reduce the wear on the sides of the slots.

The wrench shown in Fig. 3 is the same as that of Fig. 1, except, that, for the purpose of greater strength, one of the side members A' with its integral jaw is made of two pieces of metal, 17 and 18, and arranged so that the slotted portions of the other side member B' work between the parts 17 and 18. In this construction the side member composed of the two parts 17 and 18 is about equal in total thickness to the other side member. A washer 16 preferably operates in each of the slots in the parts 17 and 18, and a thicker washer in the slot of the middle piece.

In operation, turning of the screw to the right pulls the yoke 9 inwardly, which, by means of the pivot pin 13 operating through the oblique or relatively inclined slots 6 and 7, opens the jaws A and B. Turning the screw to the left pushes the yoke and pivot pin outwardly and closes the jaws. As the screw is irreversible the jaws remain solidly in adjusted positions. The adjusting screw being near the end furthest from the jaws can be readily turned to tighten or loosen the wrench without taking the jaws off the nut.

It is to be understood that the forms illustrated are for the purpose of affording an

understanding of my invention only, and that changes and modifications may be resorted to within the scope of my claims, by which the invention is defined.

5 What I claim is—

1. A wrench comprising two members provided with substantially parallel opening jaw pieces at one end, one of said members being formed of a single thickness of metal and the other member made of two similar pieces for the single piece member to operate therebetween, said members being pivoted together near the ends thereof remote from the jaws, and said members being provided with slots near said jaws and inclined relative to one another, a yoke with pivot to operate in said slots, and a screw, one end of which is seated at the pivotal end of said members and the other end of said screw

arranged to cooperate with the yoke to open and close the jaws. 20

2. A wrench composed of two members provided with jaws, one of which members includes a two-part portion with the other member therebetween, said members having relatively inclined slots toward their jaw ends, and said members being pivotally connected in the neighborhood of the ends thereof remote from the jaws, and screw actuated means located between the jaws and the pivoted connection and including a yoke and a pin passing through said slots to open and close the jaws. 25 30

Signed at Bloomfield, in the county of Essex and State of New Jersey, this 18th day of February, A. D. 1918. 35

LOUIS E. BALTZLEY.