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B. O. WADE

WRENCH

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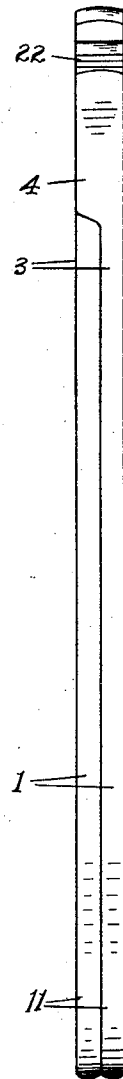
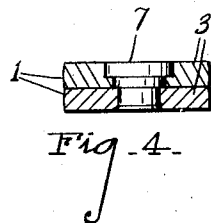
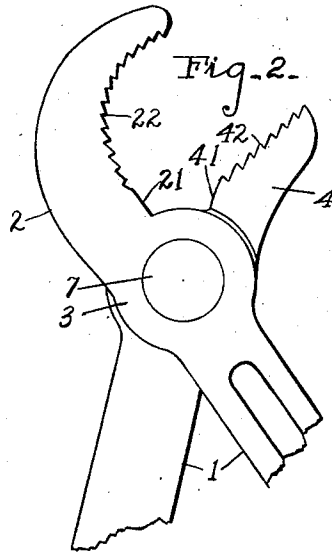
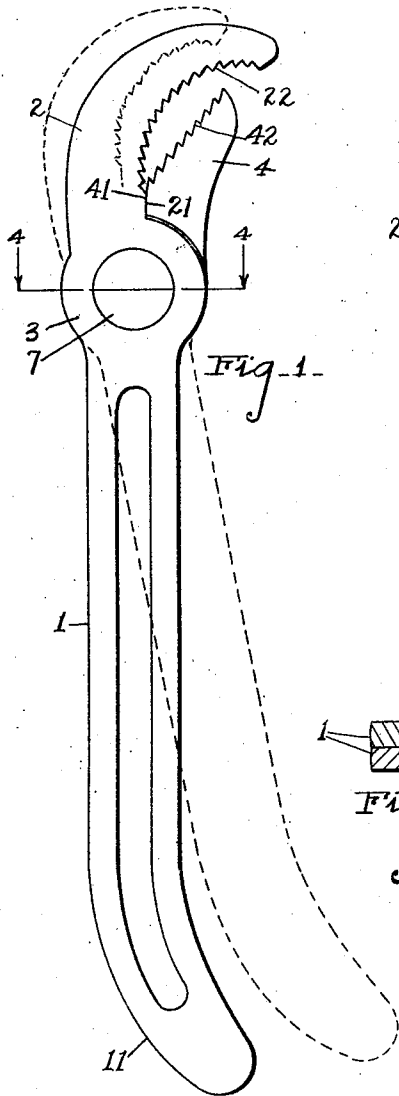


Fig. 3.

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## WRENCH.

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This invention relates to improvements in wrenches.

The objects of the invention are:

5 First, to provide an improved construction of toothed jaw wrench which is very convenient for manipulation and easy to operate.

10 Second, to provide in such a structure an improved form of jaws whereby small and large parts may be very readily grasped for manipulation.

15 Third, to provide such a wrench with improved pivot means.

Objects relating to details of construction and operation will appear from the detailed description to follow.

20 I accomplish the objects of the invention by the devices and means described in the following specification. The invention is defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is illustrated in the accompanying drawing, forming a part of this application, in which:

25 Fig. 1 is an elevation view of a wrench embodying the features of my invention, with one handle dotted in partially open position showing the relation of the handles thereof and the convenience for the hand of an operator.

30 Fig. 2 is a detail view of the jaws of the same in wide open position.

35 Fig. 3 is an elevation view taken from the right of Fig. 1, showing the halved relation of the handles to the jaws.

40 Fig. 4 is a detail sectional view taken on line 4-4 of Fig. 1, showing the form and arrangement of the shouldered riveted pivot.

In the drawing similar numerals of reference refer to similar parts throughout the several views, and the sectional view is taken looking in the direction of the little arrows at the ends of the section line.

45 The parts will be considered by their numerals of reference. The wrench is made up of a pair of pivotal members. The handles 1, 1 are precisely identical and terminate in the substantially identical curved portions 11, 11, conformed to the hand for convenient use and manipulation. 2 is the outer curved jaw having inwardly-engaging ratchet-shaped teeth 22 and terminating in a flat engaging portion 21 toward the flattened pivotal portion 3. The inner jaw 4 has outwardly projecting ratchet teeth 42 and a flattened inner portion 41 corresponding to

the flattened portion 21 of the outer jaw 2. The members are flattened at the pivot point 3 and are secured together by the countersunk shouldered riveted pivot 7 (see Fig. 4). 60 The riveted end is upset into a countersink by prick punch and made flush. The head of the rivet is countersunk into the jaw which turns upon it and is finished flat and flush. The jaws are very firmly held and are easy 65 to manipulate, the pivot being very free. This freedom of movement with the parallel disposition of the handles enables complete manual control so that the wrench can be handled for light pressure by the proper 70 manipulation with the fingers and can also be gripped and operated for heavy work as well, the same being completely under control for light pressure as well as heavy work.

75 Because the handles are curved and parallel to each other in the position indicated, they are readily manipulated by the fingers and when grasped by the hand of the operator present a smooth even surface in the palm of the hand, making a wrench which 80 can be used indefinitely without tiring the hand.

The jaws can be so effectively manipulated that the structure acts substantially like a ratchet wrench and will turn small rods or 85 comparatively large nuts with equal facility. The flat portion next the pivot enables the small wire and rods to be grasped and twisted, the advantage of which in a tool of this kind will be readily appreciated, 90 making its capacity from small wire to a rod or nut of the maximum size which it is capable of embracing.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A wrench comprising opposed pivotal members, with parallel handle bars which are identical in form and curved to one side toward the open side of said jaws, an outwardly curved overhanging jaw with inwardly projecting teeth and a flat inner part forming a stop, and an opposed inner jaw with outwardly projecting teeth and a flat inner part forming a stop cooperating therewith, as specified. 105

2. A wrench comprising opposed pivotal members, with parallel handle bars which are identical in form and curved to one side toward the open side of said jaws, an outwardly curved overhanging jaw with inwardly projecting teeth, and an opposed 110

substantially straight inner jaw with outwardly projecting teeth cooperating therewith, as specified.

3. A wrench comprising opposed pivotal members, with parallel handles which are identical in form and curved to one side transversely to the pivot, an outwardly overhanging jaw with inwardly projecting teeth, an opposed inner jaw with outwardly

projecting teeth cooperating therewith, and a shouldered countersunk riveted pivot flush with said jaws, whereby the position of the handles can be controlled manually for light pressure as well as heavy work, as specified.

In witness whereof I have hereunto set my hand.

BENJAMIN ORRIN WADE.