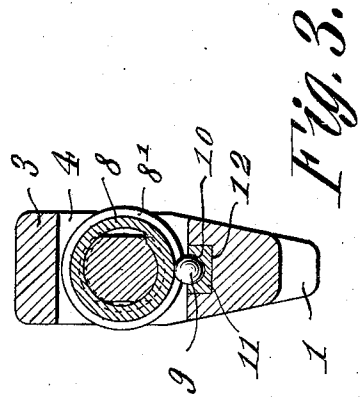
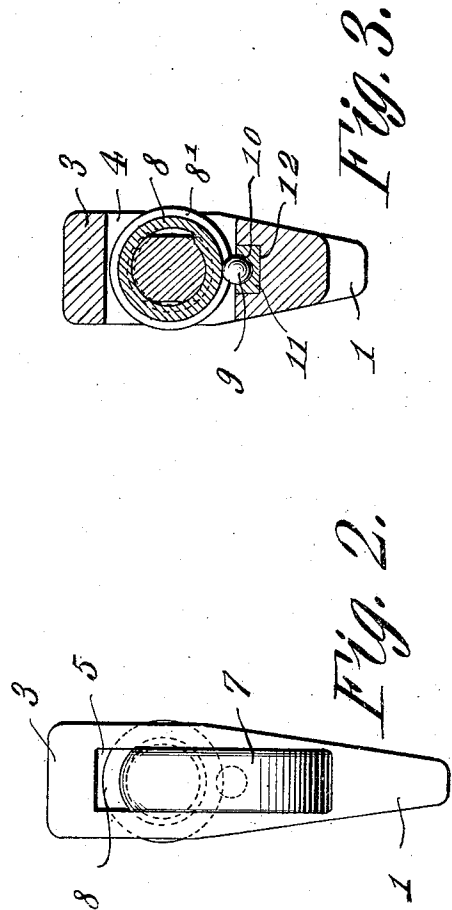
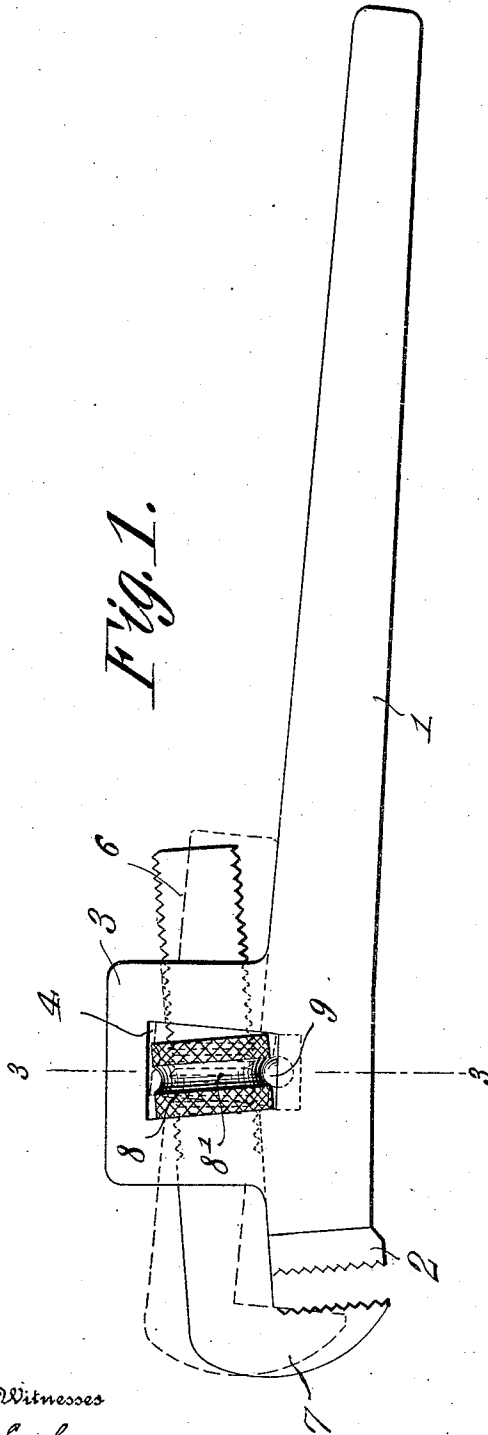


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WRENCH.

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937,562.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, PETER ANDERHOLM, a citizen of the United States, residing at Hibbing, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention consists of improvements in that type of wrenches comprising a relatively rigid jaw having mounted thereon a sliding jaw adapted for rocking movement as well as its sliding adjustment with relation to the rigid jaw.

The object of the invention is to provide an extremely simple construction of wrench of this type, the invention residing particularly in the peculiar mounting of the rocking jaw and the adjusting nut employed for effecting the slidable adjustment of said jaw.

For a full understanding of the invention, reference is to be had to the following detail description, and to the accompanying drawings, in which—

Figure 1 is a side elevation of a wrench embodying the invention; Fig. 2 is a front end view, and Fig. 3 is a section on the line 3—3 of Fig. 1.

Throughout the following detail description, and on the several figures of the drawings similar parts are referred to by like reference characters.

Referring to the drawings and specifically describing the present advantageous construction of wrench the numeral 1 denotes the shank or handle of the tool, which is provided at one end with a rigid or stationary jaw 2, and formed adjacent to said jaw is a laterally projecting head 3 having a transverse opening 4 therein. The opening 4 is wider at its outer portion than at its inner portion, and formed lengthwise of the head 3 is another opening 5 in which the threaded shank 6 of the movable jaw 7 is adapted to operate. The adjustment of the movable jaw 7 is effected by means of a nut 8 through which the shank 6 of said jaw passes, said nut being rotatable in the well known manner to slide the jaw 7 lengthwise of the shank 1 and toward and from the jaw 2. The rocking movement of the jaw 7, before referred to, is permitted because of the widened outer end portion of the opening 4,

said opening being thus formed to admit of a greater degree of movement of the outer portion of the nut 8 than is permitted with respect to the inner portion of the nut.

The nut 8 is formed with an annular groove 8' and at the inner extremity of the opening 4 is located a ball bearing 9 seated in a recess 10 provided in shank 1 of the wrench. The ball bearing 9 is received by the groove 8' of the nut 8 and said bearing forms a rocker-bearing for the nut and the jaw 7, and at the same time provides an anti-friction bearing between the nut and the shank to facilitate rotation of the nut and manipulation of the jaw 7. Furthermore, the rocker-bearing 9 affords a swivel connection, so to speak, between the nut and the shank 1. It is preferred to provide the seat 10 for the ball bearing 9 in a hardened metal base or plate 11 countersunk in a recess 12 in the portion of the shank 1 adjacent to the inner extremity of the head 3.

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

1. A wrench comprising a shank provided with a jaw, a sliding jaw mounted upon the shank, a nut mounted on the shank and also on the sliding jaw for adjusting the latter, and an anti-friction bearing the entire body of which is interposed between the nut and the shank of the wrench and forming a rocker bearing for the sliding jaw.

2. A wrench comprising a main shank having a jaw at one end thereof and an off-standing head, the latter provided with a transverse opening widened at its outer portion, a nut arranged in said opening, a sliding jaw provided with a threaded shank mounted in said head and passing through the nut for adjustment thereby, and a ball bearing seated between the nut and the main shank and constituting a rocker-bearing for the sliding jaw.

3. A wrench comprising a main shank having a rigid jaw at one end and an off-standing head adjacent to said jaw, the head having a transverse opening widened at its outer portion and also a longitudinal opening therein, a nut mounted in the transverse opening of the head, a sliding jaw having a threaded shank passing through the nut and mounted in the longitudinal opening of the

head, the nut having an annular groove in its outer side, and a ball bearing seated between the main shank of the wrench and partially received by the annular groove of the nut, said bearing forming an anti-friction bearing between the nut and main shank and a rocker-bearing facilitating rocking or tilting movement of the sliding jaw.

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

PETER ANDERHOLM.

Witnesses:

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