

UNITED STATES PATENT OFFICE.

WILLIAM THOMAS, OF BOONEVILLE, ARKANSAS.

WRENCH.

996,683.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM THOMAS, a citizen of the United States, residing at Booneville, in the county of Logan and State of Arkansas, have invented certain new and useful Improvements in Wrenches, of which the following is a specification, reference being had to the accompanying drawing.

10 This invention relates to improvements in wrenches and more particularly to an improved ratchet wrench of extremely simple and efficient construction.

15 The primary object of the invention resides in the provision of a wrench of the above character consisting of a rotatable ratchet member and a nut receiving socket member removably carried thereby, the body of the wrench carrying a pair of piv-
20 oted pawls for engagement with the ratchet member, and means engaging said pawls to hold the same in yielding engagement with the teeth of the ratchet, said pawls locking the ratchet and wrench shank together in
25 one direction of movement to turn the nut.

A further object of the invention is to provide a wrench which may be easily manipulated, is strong and durable in construction and may be manufactured at a comparatively low cost.

30 With these and other objects in view, the invention consists of the novel features of construction, combination and arrangement of parts hereinafter fully described and
35 claimed, and illustrated in the accompanying drawings, in which—

40 Figure 1 is a side elevation of a ratchet wrench constructed in accordance with the present invention; Fig. 2 is a longitudinal section of the head of the wrench; Fig. 3 is a top plan view; and Fig. 4 is a section taken on the line 4—4 of Fig. 2.

Referring in detail to the accompanying drawing, 5 designates the wrench shaft or
45 handle which is preferably offset adjacent to one end and has formed thereon a plate 6 which is of a general circular form. This plate extends in the plane of one face of the handle and a second plate 7 similar to the
50 plate 6 in form is secured to the handle by means of a screw 7'. A cog-wheel or ratchet member 8 is arranged between the plates 6 and 7, said member and the plates being provided with openings to receive a socket
55 member 9 which extends from the opposite sides of the wrench as shown in Fig. 3. A

block 10 is integrally formed with the plate 6, the plate 7 being secured to said block by means of a screw 11, said block having a reduced end portion 10' which is slightly
60 spaced from the end of the wrench shank 5 as clearly shown in Fig. 2. Between this reduced end of the block 10 and the wrench shank a metal plate 12 is positioned, said plate carrying a stud 13 which projects into
65 a longitudinal socket 14 formed in the shank. A coiled spring 15 is disposed in this socket, and at its outer end receives the stud 13 which is carried by the plate 12. Pawls 16 are arranged between the plates 6
70 upon opposite sides of the block 10 and are pivotally mounted at one end upon the pins 17. These pins are formed with cylindrical heads to be received in suitable openings in the plate 7. The pivoted ends of the pawls
75 16 are provided with angular faces 16' which bear upon the ends of the plate 12. The other ends of the pawls are formed with the ratchet teeth engaging extensions 16^a and the finger-pieces 16^b, the latter provid-
80 ing means whereby the pawls may be moved outwardly from between the plates 6 against the tension of the spring 15 to release the ratchet.

In the operation of my improved wrench, 85 the nut receiving opening 9' which is provided in the socket member 9 is adapted to receive the nut. One of the pawls 16 is now raised while the other pawl locks the ratchet member 8 between the plates 6 for movement
90 with the wrench shank in one direction while in the movement of said shank in the opposite direction, the pawl moves over the teeth of the ratchet, the plate 12 yieldingly holding the pawl upon the ratchet teeth.
95 In this manner the nut may be easily and quickly unthreaded from the bolt, or threaded upon the same by simply reversing the positions of the pawls.

From the foregoing it is thought that the 100 construction and operation of my improved wrench will be readily understood.

The device is extremely simple in construction and may be easily and quickly manipulated with but little exertion on the
105 part of the operator.

The socket member 9 is adapted to be removed from the annular ratchet member and replaced by another having a differently shaped opening therein, so that the wrench
110 may receive square, hexagonal, octagonal or nuts of other polygonal forms.

Having thus described the invention what is claimed is:—

5 A wrench of the character described comprising a shank having a plate integrally formed on one end thereof, a second plate
10 rigidly secured to said shank at one end and extending in parallel relation to the first named plate, an annular ratchet member arranged between said plates, said plates and
15 ratchet member having alined openings therein, a socket member removably disposed through said openings and supporting the ratchet member in position between the plates, a block integrally formed on said
20 first named plate and disposed between the ratchet and said shank, the end of said block being spaced from the end of the shank, a screw rigidly securing the second named plate to said block, pawls pivoted at one of
their ends upon opposite sides of said block and movable between said plates, said pawls having ratchet engaging extensions formed

thereon and finger-pieces whereby they may be moved to an inoperative position, said
pawls and block having longitudinally 25 curved engaging surfaces, a plate arranged between the end of the wrench shank and the end of said block, said shank having a socket therein, a coiled spring arranged in said socket to yieldingly hold the plate in 30 engagement with the end of said block, said plate having a stud thereon extending into the outer end of the spring, said plate extending upon opposite sides of the block for engagement by the pivoted ends of the 35 pawls to yieldingly hold the pawls in their operative or inoperative positions.

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

WILLIAM THOMAS.

Witnesses:

W. D. NORMAN,

E. N. JORDAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."