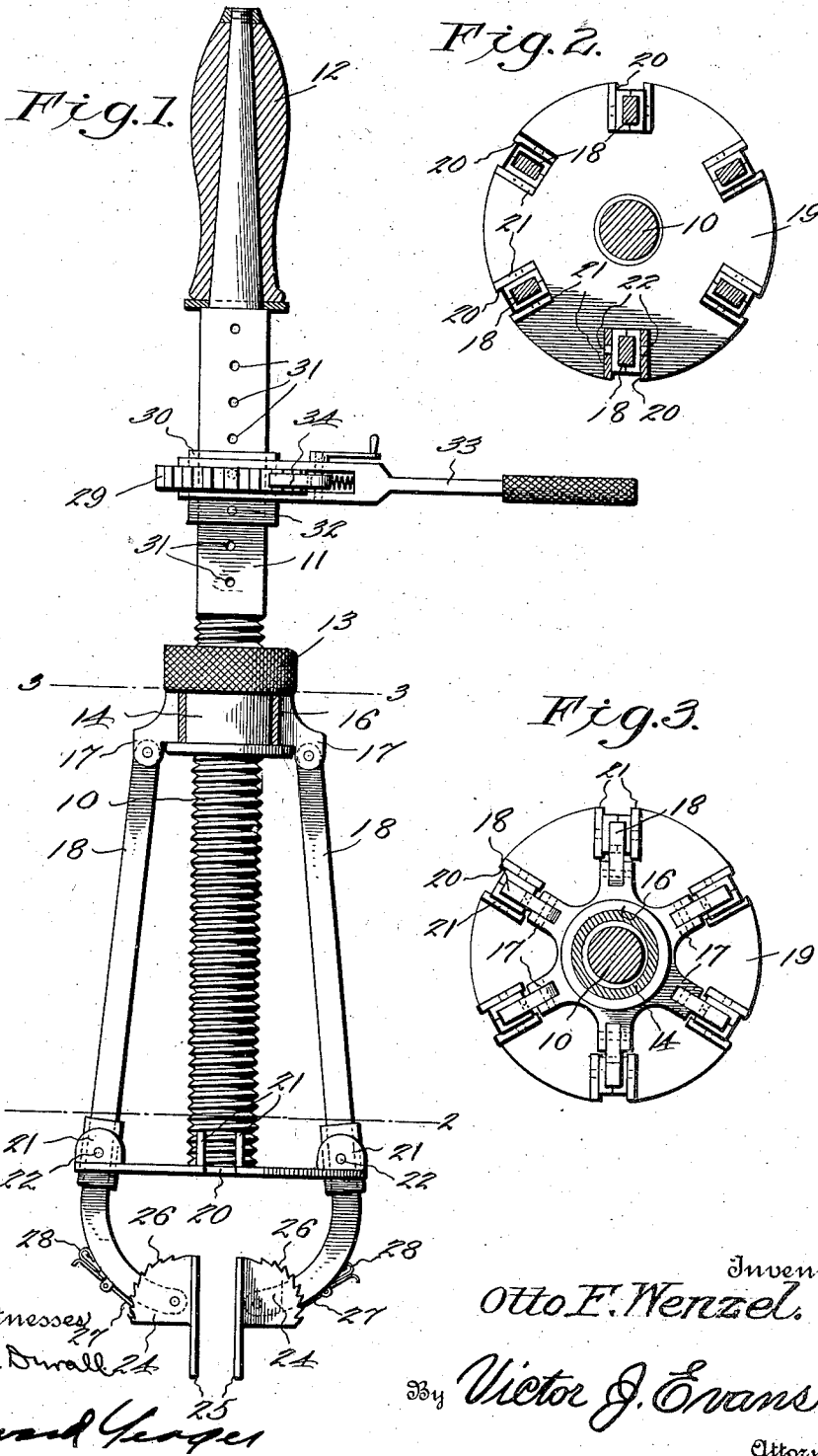


O. F. WENZEL.
WRENCH.

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1,279,950.

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Witnesses

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WRENCH.

1,279,950.

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To all whom it may concern:

Be it known that I, OTTO F. WENZEL, a citizen of the United State, residing at Fond du Lac, in the county of Fond du Lac and State of Wisconsin, have invented new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to ratchet wrenches, and comprehends a novel construction with a view of providing a quick adjustable wrench, with the gripping jaws being susceptible of assuming different angular positions relatively, in addition to being adjusted toward and away from each other.

The nature and advantages of the invention will be better understood when the following detail description is read in connection with the accompanying drawings, the invention residing in the construction, combination and arrangement of parts as claimed.

In the drawing forming part of this specification like numerals of reference indicate similar parts in the several views and wherein:—

Figure 1 is an elevation partly in section of a wrench constructed in accordance with my invention.

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1.

Fig. 3 is a sectional view taken on line 3—3 of Fig. 1.

A wrench constructed in accordance with my invention embodies a shank which embodies a cylindrical threaded portion 10, a squared intermediate portion 11, while one extremity of the shank is reduced and fitted within the handle 12, the latter being mounted for free rotation upon the reduced extremity of the shank to facilitate handling of the tool as will be readily understood. An adjusting nut 13 is threadedly associated with the portion 10 of the shank, and forming a part of the nut 13 is a sleeve 14 which surrounds the shank, the sleeve being terminally formed to provide an outwardly extending annular flange 15. Surrounding the sleeve 14 and resting upon the flange 15 is a collar 16 which is provided with a circumferential series of spaced pairs of apertured lugs 17, the latter being disposed beyond the flange 15. Between each pair of lugs 17 is arranged one extremity of an arm 18, the latter having pivotal connection with the lugs for the purpose to be hereinafter described.

Secured to the lower extremity of the shank is an annular plate 19 having notches 20 cut in the periphery thereof, there being one notch for each arm 18 to slide through when the nut 13 is adjusted. Rising from the plate 19 at opposite sides of the notch are apertured ears 21. Embracing each arm 18 is a sleeve which is also fitted within the notch 20, the sleeve consisting of two identically constructed sections, and each being provided with a stud 22 which is received in the aperture of one of the ears 21 rising from the plate 19. As clearly illustrated in Fig. 1, when the sleeve sections are operatively associated they serve to guide the arms 18 in their adjustment longitudinally of the shank.

The lower extremities of the arms 18 are curved inwardly, and pivotally mounted upon each extremity is a gripping element or jaw, each jaw embodying a segment 24 and a straight vertically disposed member 25. By reason of the construction of these jaws, and the fact that the jaws are grouped, they unitedly define a socket. Manifestly when the adjusting nut 13 is moved downwardly upon the threaded portion 10 of the shank, the arms 18 are spread or moved outwardly with a view of increasing the size of the socket, while the socket is reduced in size by adjusting the nut 13 in a reverse direction upon the threaded portion 10 of the shank. In addition to being susceptible of adjustment toward and away from each other in the manner just stated, the jaws can be swung upon their pivotal connection with the arms 18 so as to assume different angular positions relatively to accommodate themselves to different kinds of work. The segment 24 of each jaw is provided with a toothed surface 26 which is engaged by a spring pressed catch 27 carried by the curved extremity of each of the arms 18, whereby the respective jaws are held fixed relatively with their associated arms in any given position. The spring for influencing the catch is also carried by the curved extremities of the arms 18 as indicated at 28.

Subsequent to the proper adjustment of the jaws or gripping elements, the wrench in its entirety is adapted to be turned as a unit, and while this may be accomplished in any suitable manner I preferably make use of a ratchet wheel 29 which is carried by a sleeve 30, the latter surrounding the squared portion 11 of the shank. This portion of

the shank is provided with a longitudinal series of openings 31 with which an opening in the sleeve 30 is adapted to register, to receive a pin or the like 32 to hold the
5 ratchet wheel fixed relatively to the shank. Obviously the ratchet wheel may be slid longitudinally of the shank and located in the most advantageous position. A lever
10 33 is operatively associated with the ratchet wheel, and carries a spring pressed pawl 34 which may be readily engaged with the ratchet wheel to effect a turning of the wrench in its entirety with movement of the lever in one direction.
15 From the foregoing, it is clear that I have devised a wrench of the class in question, wherein the component movable parts may be quickly and easily adjusted as the occasion requires, and the tool subsequently
20 handled with the utmost convenience. While I have shown and described what I

consider the preferred embodiment of the invention, I desire to have it understood that I do not limit myself to this exact construction, and that such changes may be resorted to when desired as fall within the scope of what is claimed. 25

What is claimed is:—

A wrench comprising a shank threaded for a portion of its length, a nut adjustably 30 mounted thereon, a collar journaled on the nut, a plate secured to the lower end of the shank, a plurality of sleeves pivoted on said plate, arms pivotally connected with said collar and slidably fitted in said sleeves, the 35 lower extremities of said arms being curved inwardly toward each other, clamping elements pivotally mounted on the curved extremity of the arms and said clamping elements unitedly defining a socket. 40

In testimony whereof I affix my signature.

OTTO F. WENZEL.

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