

April 10, 1934.

N. EARLY

1,954,444

SOCKET WRENCH

Filed March 10, 1933

Fig. I.

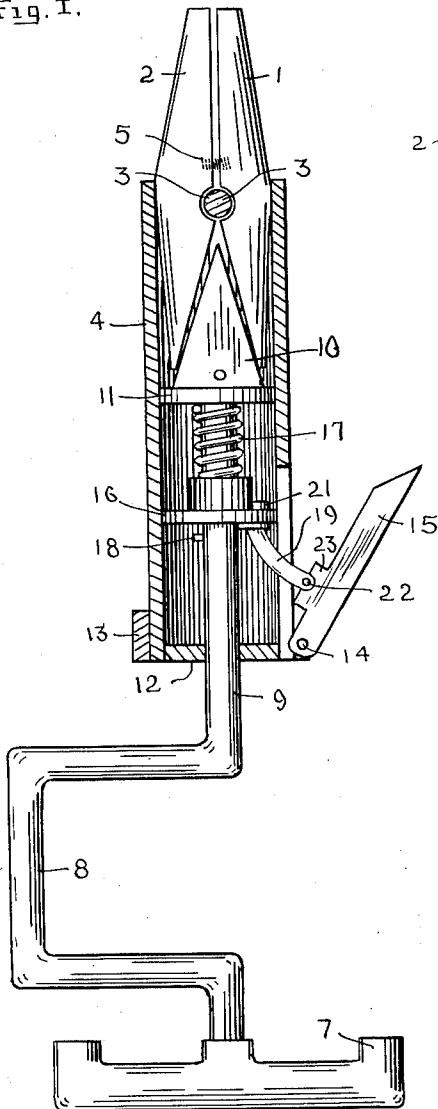


Fig. III.

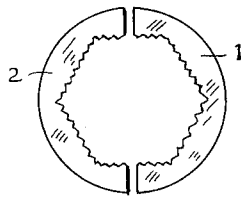


Fig. IV.

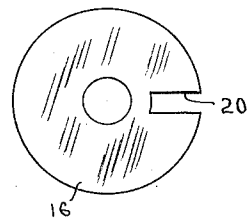
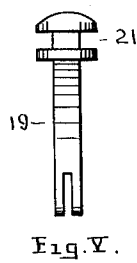


Fig. V.

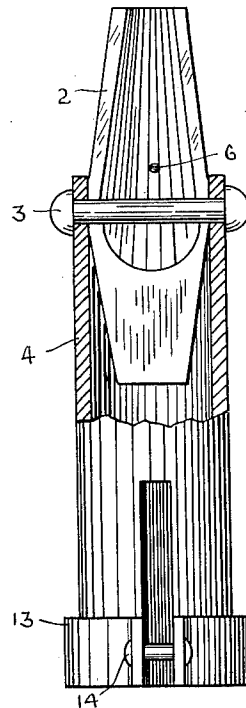


Fig. II.

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UNITED STATES PATENT OFFICE

1,954,444

SOCKET WRENCH

Noah Early, Helena, Mont.

Application March 10, 1933, Serial No. 660,224

3 Claims. (Cl. 81—116)

My invention relates to improvements in wrenches and the object of my improvement is to provide a wrench that may be adjusted to any ordinary bolt or nut, without the necessity of interchanging parts for different sizes, and without loss of time. Still further objects are to provide a wrench that will hold the nut after removing it, one with a very firm grip, a wrench with a handle, and one inexpensive of manufacture.

In the drawing:

Figure I is a side view of the wrench, showing the casing in section,

Fig. II is a front view with the casing partly in section,

Fig. III is an end view of the gripping members,

Fig. IV and Figure V show details.

The gripping members 1 and 2 are tubular at one end and wedge shaped at the other. The tubular portion is longitudinally corrugated on the interior and of hexagonal shape. They rock upon the bolt 3 which passes through the casing 4, and are held to the bolt by the walls of the casing. A spring 5, fitting within the hole 6, serves to hold the jaws apart in readiness for operation.

The wrench is operated by a brace consisting of a head 7, a handle 8, and a stock or shaft 9, by which the whole wrench may be turned. Riveted upon the end of the shaft 9 within the casing 4 is a wedge 10 which forces apart the rear ends of the grippers 1, 2 when the shaft is pushed deeper into the casing. Forcing apart the rear ends of the rocking grippers 1 and 2 clamps the outer ends together.

A circular portion 11 at the base of the wedge 10 serves to guide the end of the shaft and is fastened to the shaft. At the end of the casing 4 a disk 12 serves to guide the shaft 9 and serves also as a means upon which the end of the slotted casing 4 may be clamped by the metal strap 13. This strap is brought together by the rivet or bolt 14, which also acts as a pin to hold the end of the lever 15.

Slidably mounted upon the shaft 9 within the casing 4 is a sleeved disk 16, which is held apart from the circular base 11 of the wedge by a spring 17 under considerable tension. A pin 18 through the shaft 9 serves as a limit of motion for the sliding of the sleeved disk 16. A link 19 connects the sliding disk with the lever 15. This link has a flange and a grooved head 21 which fits into the slot 20 of disk 16.

In operation, the open jaws are placed upon a nut. Pressure upon the shaft 9 serves to clamp the

jaws 1 and 2 tightly upon the nut by forcing the wedge between the rear ends of the clamping members, and turning the handle removes or tightens the nut as desired.

If it is desired to clamp the nut in the wrench before applying it to the bolt, or to grip the nut and hold it after removal, use is made of the lever 15. Pressing this lever toward the side of the casing 4 acts through the link 19 to force the sleeved disk 16 against the spring 17. Spring 17 then yieldably forces the wedge 10, together with the attached shaft 9, deeper into the housing 4.

The flexibility of the spring permits clamping firmly a nut of any size. Pressed fully down, lever 15 is held in locked position, since pin 22, by means of the offset portion 23 of the lever 15 lies beyond the line determined by the link-head 21 and the pin 14. The nut may be released by pulling out the lever 15.

My wrench has a powerful grip; the harder one pushes on it, the tighter the grip. It fits any size nut without the need of separate parts, and is ready for instant adjustment. After removal it holds the nut until release is desired.

I claim:

1. A wrench having in combination a tubular casing, a bolt through the lower part of said casing, gripping members rocking upon said bolt and held by said casing, a non-rotatable wedge slidably entering between the rear ends of said gripping members so as to force together the outer ends, a shaft attached to said wedge, washers serving as guides for said shaft, a slidable sleeved washer upon said shaft, a spring tending to force said sleeved washer apart from said wedge, a link attached to said sleeved washer, a lever hinged to said link, and a band clamped upon said casing and hinged also to said lever.

2. A wrench having in combination a tubular casing, a bolt through the lower part of said casing, gripping members rocking upon said bolt and held by said casing, a spring between said gripping members tending to separate the outer ends, a non-rotatable wedge slidably between the inner ends of said gripping members, a shaft attached to said wedge, washers serving as guides for said shaft, a slidable sleeved washer upon said shaft, a pin in said shaft tending to limit the movement of said slidable sleeved washer upon it, a spring encircling said shaft between said wedge and said sleeved washer, a link attached to said sleeved washer, a lever hinged to said link, a band clamped upon said casing and hinged also to said lever, and a cap swiveled upon the end of said shaft.

3. A wrench having in combination a tubular casing, a bolt through the lower part of said casing, gripping members rocking upon said bolt and held by said casing, a non-rotatable wedge 5 slidable between the inner ends of said gripping members, a shaft attached to said wedge, said shaft extending beyond the end of said casing and forming a brace, washers serving as guides for said shaft, a slidable sleeved washer upon said shaft, a coiled spring upon said shaft between said wedge and said sleeved washer, a link attached to said sleeved washer, a lever hinged to said link, and a band clamped upon said casing and hinged also to said lever. 80

NOAH EARLY.

10	85
15	90
20	95
25	100
30	105
35	110
40	115
45	120
50	125
55	130
60	135
65	140
70	145
75	150