United States Patent

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[54] **REVERSIBLE RATCHET HANDLE FOR SOCKET WRENCH**
5 Claims, 2 Drawing Figs.

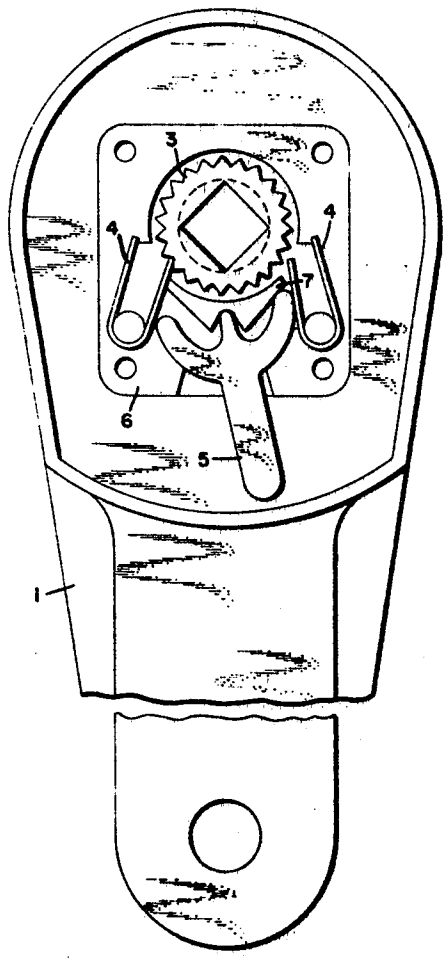
[52] **U.S. Cl.** **81/63.1**
[51] **Int. Cl.** **B25b 13/46**
[50] **Field of Search** 81/63.1, 58, 60, 61, 62

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ABSTRACT: A socket wrench handle with a reversible ratchet mechanism comprising a pair of U-shaped leaf springs to serve as pawls positioned on opposite sides of a ratchet wheel with a polygonal central opening and symmetrically shaped ratchet teeth and a tiltable reversing lever which can be swung into either one of its two terminal positions to disengage the one or the other of the two springs from the teeth of the ratchet wheel.



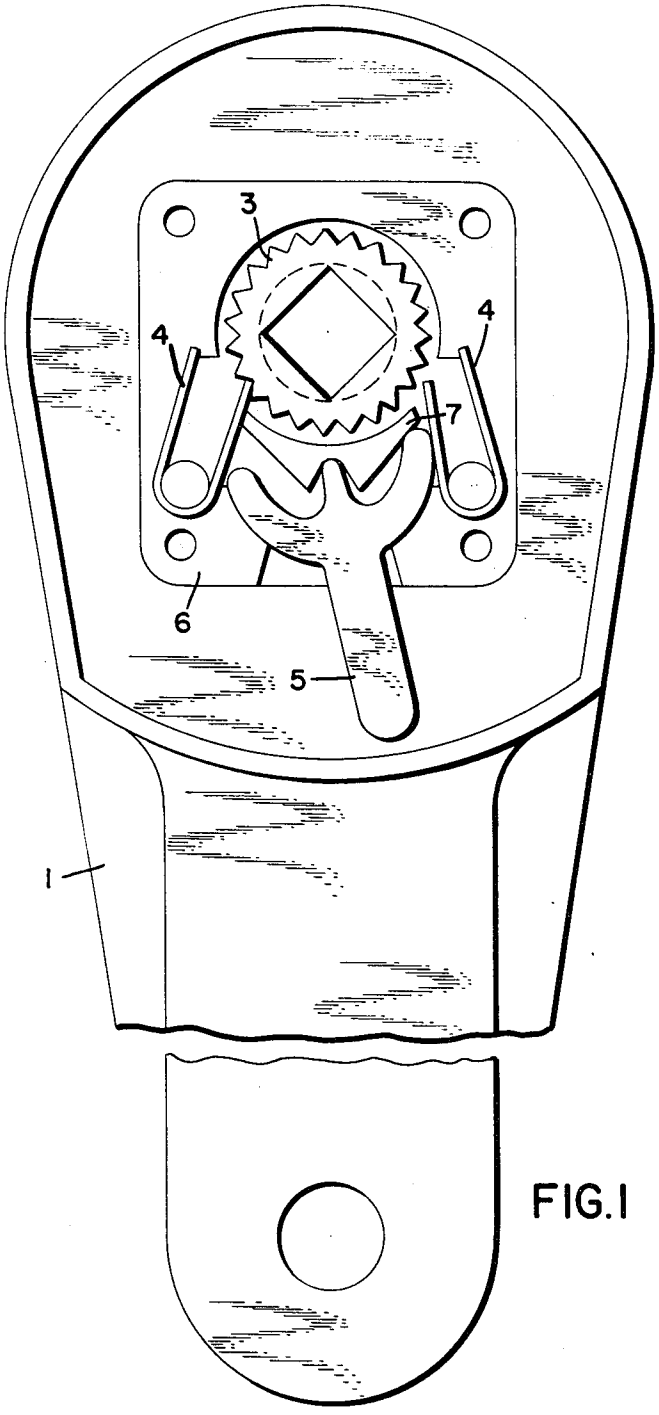


FIG.1

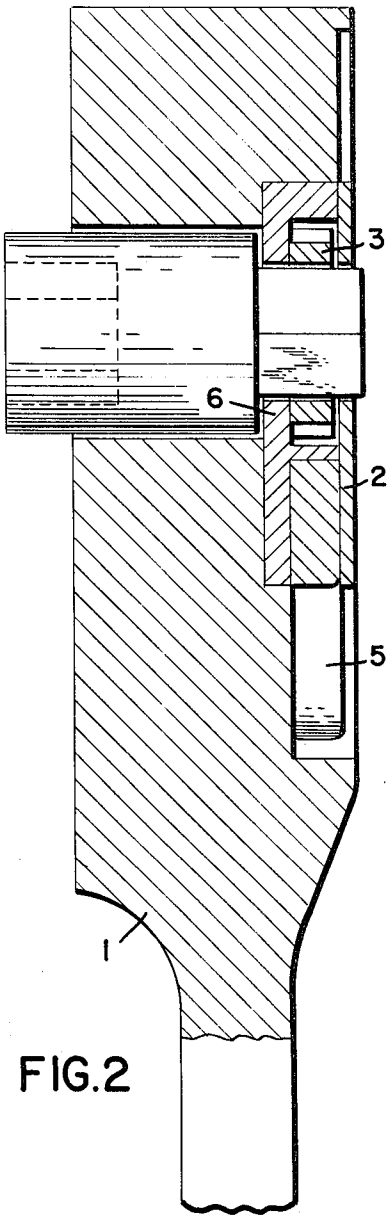


FIG.2

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REVERSIBLE RATCHET HANDLE FOR SOCKET WRENCH

The invention consists of a reversible ratchet handle for a socket wrench in which the only movable parts are a pair of U-shaped leaf spring pawls, a ratchet wheel with a polygonal central opening and symmetrically shaped ratchet teeth and a tiltable reversing lever which can be swung into either one of its two terminal positions to disengage the one or the other of the two spring pawls from the teeth of the ratchet wheel.

The invention will now be described more in detail with reference to the drawings wherein:

FIG. 1 is a plan view of the wrench handle with the cover plate removed; and

FIG. 2 is a longitudinal section of the same.

The wrench consists of a handle 1 with a removable cover plate 2 and only four relatively movable parts, namely the ratchet wheel 3, a pair of U-shaped leaf springs 4 to serve as selectively engageable pawls and a tiltable reversing lever 5 that can be swung into either one of its two terminal positions to selectively disengage the one or the other of the two spring pawls from the teeth of the ratchet wheel whose teeth are of symmetrical shape so that they can be engaged at either side.

Although the entire body portion of the handle can be made as one integral piece, it is preferable to make it in two pieces by providing it with a separately inserted recessed plate 6 to receive the relatively movable parts. The recessed plate 6 has recessed portions to receive and guide the ratchet wheel 3, to receive and retain the outer ends of the U-shaped springs 4 and to receive and guide the reversing lever 5. In addition to the recessed portions there is a raised portion 7 which acts as a pivot point for the reversing lever 5.

DESCRIPTION OF OPERATION OF THE PREFERRED EMBODIMENTS

The ratchet handle of the present invention is particularly useful with socket wrenches or thread-cutting devices. The socket extension is inserted through the polygonal central opening of the ratchet wheel 3 and the appropriate wrench socket is attached to the extension. A selection is made for applying pressure to or rotating the socket by moving lever 5 to the left or right.

The trident lever 5 is pivoted on raised portion 7 and maintained under pressure by the inner prongs of leaf springs 4. When the handle of lever 5 is moved to the right, it pivots on raised portion 7, is guided on the lower curved surface of the recess in plate 6 and depresses the inner prong of the right spring 4 as shown in FIG. 1. The ratchet wheel 3 is then permitted to rotate to the left.

With the lever 5 in the central position, the inner prongs of the springs 4 are both depressed and the ratchet wheel 3 is permitted to rotate freely in either direction.

To permit controlled rotation of the ratchet wheel 3 to the right, the handle of lever 5 is switched to the left.

It will be understood that this invention is susceptible to modification in order to adapt it to different usages and conditions and, accordingly, it is desired to comprehend such modifications within this invention as may fall within the scope of the appended claims.

I claim:

1. A reversible ratchet wrench comprising a handle, a body portion 1, 6, a ratchet wheel 3 recessed in said body portion, said ratchet wheel having a polygonal socket-receiving opening in the center thereof, a pair of U-shaped leaf springs defining spring pawls engaging the teeth of the ratchet wheel on one side or the other, and a tiltable reversing lever 5 mounted in the body portion between the spring pawls to selectively disengage either one of the spring pawls from the ratchet wheel.

2. The handle of claim 1 in which an inserted plate 6 is mounted in the body portion to house the relatively movable parts.

3. The handle of claim 1 further comprising a cover plate 2 mounted in the body portion.

4. The handle of claim 2 wherein said plate has recessed portions for receiving said ratchet wheel, the outer edges of said springs and said lever and a raised portion for pivoting said lever.

5. The handle of claim 4, wherein said reversing lever has a trident configuration consisting of a central and two side fingers, each side finger engaging a spring pawl to move it in or out of ratchet-engaging position.