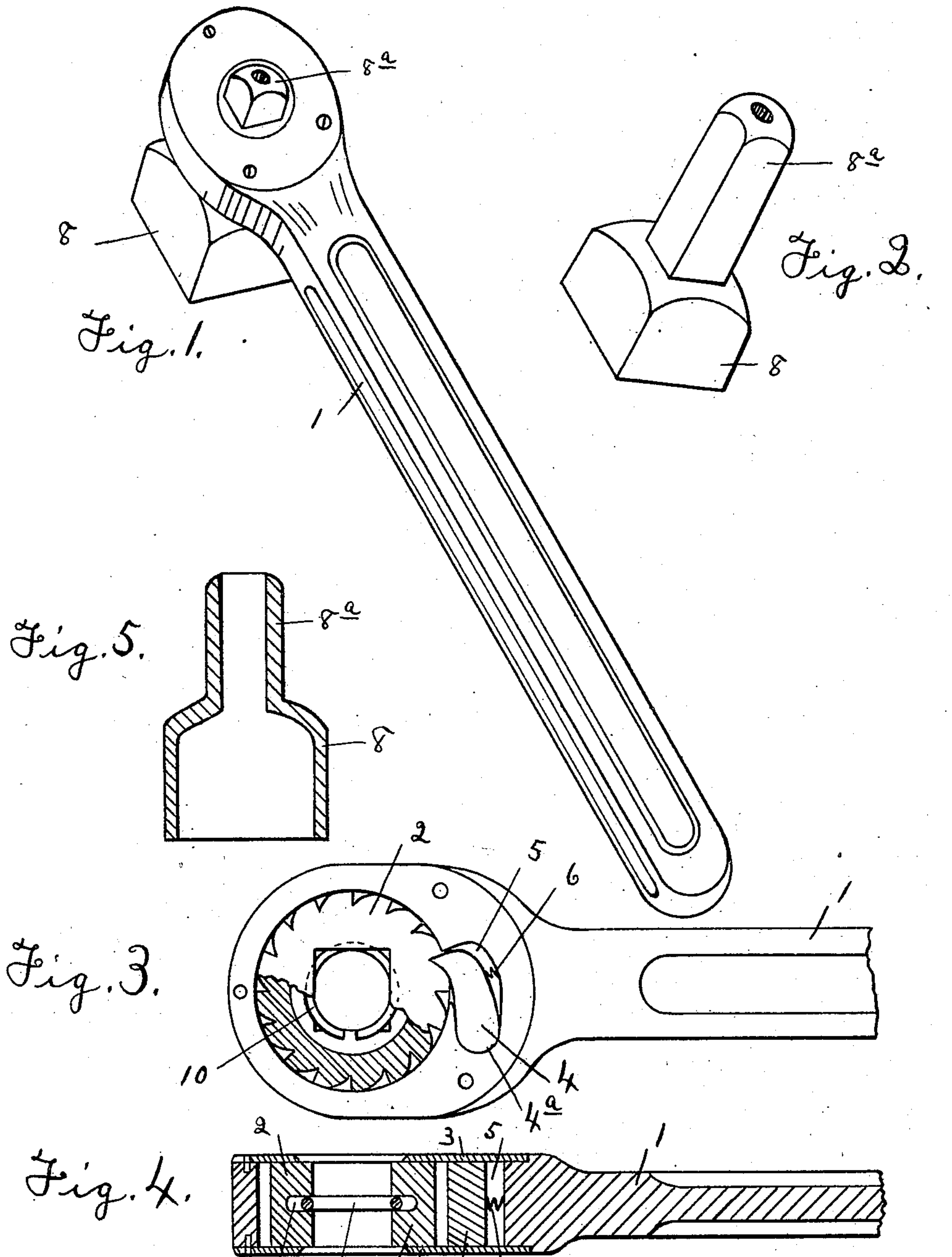


No. 886,476.

PATENTED MAY 5, 1908.

W. A. BURNOP.  
SOCKET RATCHET WRENCH.  
APPLICATION FILED APR. 22, 1907.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

WILLIAM A. BURNOP, OF DEERFIELD, NEW YORK, ASSIGNOR TO SPITZLI MANUFACTURING COMPANY, OF UTICA, NEW YORK.

## SOCKET RATCHET-WRENCH.

No. 886,476.

Specification of Letters Patent.

Patented May 5, 1908.

Application filed April 22, 1907. Serial No. 369,442.

*To all whom it may concern:*

Be it known that I, WILLIAM A. BURNOP, of Deerfield, in the county of Oneida and State of New York, have invented certain  
5 new and useful Improvements in Socket Ratchet-Wrenches; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to  
10 make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

The object of my present invention is to  
15 provide an improved socket ratchet wrench, which is simple, compact and strong, and cheaply constructed and well adapted to fulfil the requirements of such a device.

Figure 1 shows a perspective view of the  
20 ratchet wrench with the socket inserted in the wrench. Fig. 2 is a perspective view of the socket removed from the wrench. Fig. 3 is a partial plan view, with one of the side retaining plates of the wrench removed and  
25 also including a partial section of the ratchet wheel. Fig. 4 is a partial longitudinal section of the wrench. Fig. 5 is a vertical section of the socket.

Referring to the reference letters and  
30 figures in a more particular description, 1 indicates a lever handle which is provided at one end with a circular opening or eye, which receives the ratchet wheel 2, the ratchet wheel running or having bearing on the ends  
35 of the teeth in the opening or eye. The ratchet wheel 2 is retained from displacement laterally by the two side plates 3—3. A pawl 4 is provided arranged in a recess 5 at one side of and opening into the eye which  
40 receives the ratchet wheel 2. The pawl is provided with a rounded end 4<sup>a</sup> closely fitting one end of this recess, while the swinging end of the pawl swings in close proximity to the opposing wall of the recess 5, which wall  
45 serves to limit any tendency which the pawl may have to follow the movement of the ratchet wheel 2 in its relative rotation with reference to the handle or body of the wrench. This construction obviates the use  
50 of a pivoted pin for the pawl. The pawl 4 is forced into engaging position with the

ratchet wheel 2 by a spring 6, which serves to allow the pawl to be retracted over the teeth also. The ratchet wheel 2 is provided with a square central opening adapted to receive the shank 8<sup>a</sup> of the socket 8. For retaining the socket in its normal working position in the wheel 2, the wheel is provided with a circular recess 9 preferably arranged midway between its opposite sides, which recess receives the spring ring 10. When in its contracted position, the ring 10, which is substantially circular, bridges the corners of the square opening through the ratchet wheel 2. The end of the socket shank 8<sup>a</sup> is  
65 rounded, as shown, so that the shank can be forced into the opening in the wheel 2 and through the same, expanding the ring 10, which, when the socket is in position, is quite firmly grasped thereby and is held  
70 from dropping out or accidental displacement. By the application of sufficient force, however, the socket can be removed, overcoming the grip or friction of the spring 10.

The wrench may be reversed with refer-  
75 ence to the socket, so that it can be used for turning nuts on or off according to whether the thread is right or left. The socket 8, of course, is adapted to receive a nut on which the wrench is to be operated. The socket  
80 shown is adapted to a square nut, but it may be likewise adapted to an hexagonal or any other desired form. This wrench is also adapted for use with certain forms of ratchet drills.

It is understood, of course, that a set of sockets of varying sizes except as to their shanks will be provided, according to the various sizes of nuts on which the wrench is to be employed.

What I claim as new and desire to secure by Letters Patent is:

1. The combination of a lever handle body, a rotatable ratchet wheel mounted in the body, a pawl for engaging with and rotating the ratchet wheel, a socket adapted to be received in the ratchet wheel and a retainer therefor, consisting of a spring ring inserted in a recess in the ratchet wheel, substantially as set forth.

2. In a ratchet wrench, the combination of a body having an eye or opening, a ratchet

wheel having an angular central opening and  
an internal encircling recess around said  
opening, a holder or retainer consisting of a  
spring ring arranged in said recess and span-  
5 ning the corners of the opening in the wheel,  
substantially as set forth.

In witness whereof, I have affixed my sig-

nature, in presence of two witnesses, this  
18th day of April 1907.

WILLIAM A. BURNOP.

Witnesses:

GEO. E. RENDELL,  
SARAH E. CLARK.