

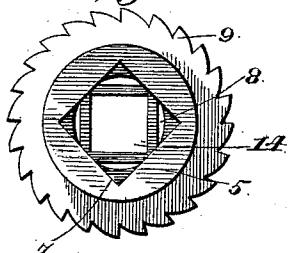
(No Model.)

E. P. JUSTICE.  
RATCHET NUT WRENCH.

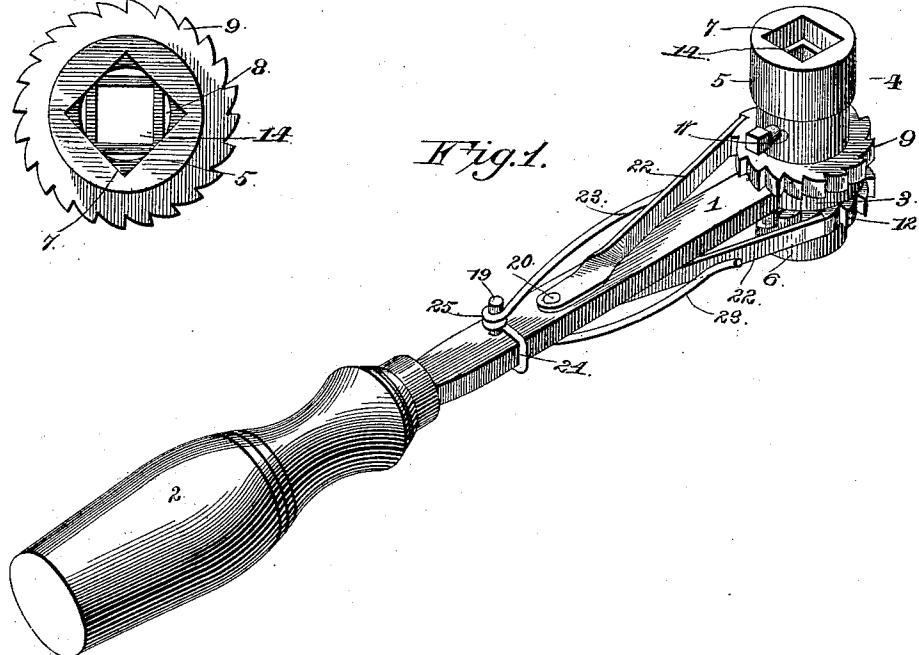
No. 429,034.

Patented May 27, 1890.

*Fig. 2.*



*Fig. 1.*



# UNITED STATES PATENT OFFICE.

ELIHU PINCK. JUSTICE, OF GREENVILLE, ILLINOIS.

## RATCHET NUT-WRENCH.

SPECIFICATION forming part of Letters Patent No. 429,034, dated May 27, 1890.

Application filed July 26, 1889. Serial No. 318,733. (No model.)

*To all whom it may concern:*

Be it known that I, ELIHU PINCK. JUSTICE, a citizen of the United States, residing at Greenville, in the county of Bond and State of Illinois, have invented a new and useful 5 Ratchet Nut-Wrench, of which the following is a specification.

This invention has relation to ratchet nut-wrenches, and among the objects in view are 10 to provide a simple, cheaply-constructed wrench of the class described, and, while designed for general use and provided with opposite nut-sockets of different sizes, is also especially adapted for use in connection with 15 application to lock-nuts wherein an ordinary nut working on a right-hand thread and a superimposed lock-nut working on an opposite thread are employed, the object being to remove both nuts simultaneously.

20 With these general objects in view the invention consists, broadly, in the provision of a nut-receiving socket having a ratchet-face and inclosing a rotatable nut-receiving socket having an oppositely-disposed ratchet, and in 25 a suitable shank or handle having oppositely-disposed spring-pawls, whereby when the handle is operated in one direction one pawl will operate to partially rotate one socket while the other pawl is idle, and when carried back 30 to the starting-point the first pawl will remain idle and the second pawl operate, and in this manner the two nut-receiving sockets operate in different directions and are adapted to remove and apply right and left hand 35 threaded nuts.

Referring to the drawings, Figure 1 is a perspective of a wrench constructed in accordance with my invention. Fig. 2 is an end elevation of the head, showing the double socket. 40 Fig. 3 is a longitudinal section; Fig. 4, a detail in perspective of the inner socket.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 represents the shank of the wrench, terminating at its rear end in an ordinary handle 2 and at its opposite end in an annular bearing-ring 3.

4 represents the wrench-head, and the same is composed of two sections 5 and 6. The section 5 consists of a socket end 7, adapted to receive a nut, and in rear of its socket has a cylindrical bore 8; and encircling the exterior

of the section, and near the rear or inner edge thereof, is a ratchet-wheel 9, between which and the inner edge is formed an annular boss 10. The section 6 terminates at its outer end in a nut-receiving socket 11, and is provided near said end with a ratchet-wheel 12, the teeth of which are disposed in a direction opposite those of the companion ratchet-wheel 60 on the opposite section; and in rear of the wheel there is formed a collar or boss 13, which agrees in diameter and is adapted to meet and form a continuation of the collar or boss 10 on the inner end of the opposite section. 65 In rear of the socket of the section 6 the exterior thereof is cylindrical and reduced, and is of a diameter agreeing with the internal bore of the section 5, into which it projects, and terminates in a nut-receiving socket 14, 70 flattened at four of its sides or made rectangular in cross-section and located the depth of a nut back of the nut-receiving socket of the section 5.

Upon the exterior reduced portion 15 of the 75 section 6, and at substantially its center, an annular groove 16 is formed, which when the sections are together registers with a threaded perforation 17, formed in the section 5 and adapted to receive a locking-screw and lock 80 the sections against separation and yet permit of an unretarded independent revolution of each section.

Through the shank 1, near the handle 2, is passed a lateral pin 19, the opposite ends of 85 which project at each side of the shank, and above the same, and pivoted to the shank as at 20, are opposite pawls 22, pressed by the terminals of an arm 23, formed of spring-wire. For the purpose of convenience the spring- 90 wire is bent, as at 24, at its center to embrace the edge of the shank, and is then coiled in reverse directions around the pins, as at 25, so that each arm will have a different tendency, whereby said arms or pawls are designed for co-operation with the ratchet-wheels having oppositely-disposed teeth.

The operation of my invention is as follows: To apply the nut, the outer larger socket of the section 5 is employed in the 100 usual manner of a ratchet-wrench, after which the smaller or binding nut is applied and screwed home by a reversal of the wrench-head and through the medium of the socket

14 in the section 6. In removing the nuts the two nuts are simultaneously embraced by the large socket 7 of the section 5 and the inner socket 14 of the section 6, and by oscillating 5 the handle of the wrench back and forth it will be readily apparent that first one nut and then the other are rotated in reverse directions.

Having thus described my invention, what 10 I claim is—

1. In a ratchet-wrench, the combination, with opposite wrench-sections, one of which sections encircles the other section, and each of which sections terminates in a nut-receiving socket, each section provided with oppositely-toothed ratchets, and a handle provided with opposite pawls adapted to engage the ratchets and to operate the sections and their respective sockets in reverse directions, substantially as specified.

2. In a nut-wrench, the combination, with a head formed of opposite sections, each terminating at its outer end in a nut-receiving socket and one section inclosing and rotating upon the other section, of ratchet-wheels mounted on sections, the teeth of one ratchet being oppositely disposed to those of the other, and opposite pawls for operating the ratchet, substantially as described, for rotating the 30 sockets in reverse directions, substantially as specified.

3. In a nut-wrench, the combination, with opposite sections, the one section terminating at one end in a nut-receiving socket, with the 35 opposite end terminating in a cylindrical bore and having its exterior provided with a ratchet-wheel, and the other section terminating in one end in a nut-receiving socket and intermediate its ends provided with a 40 ratchet-wheel, the teeth of which are reversed with relation to the opposite wheel, said section terminating in its opposite or inner end in a reduced cylinder adapted for rotation within the bore of the first or opposite section, and in a nut-receiving socket located in 45 rear of the socket of the first section, and means for locking said sections against endwise separation, substantially as specified.

4. In a nut-wrench, the combination, with 50 opposite sections, one section rotatably mounted upon and inclosing the other section and terminating in a nut-receiving socket, the inner section being provided with an annular groove in its exterior and the outer section 55 with a perforation, of a screw-bolt mounted in the perforation and terminating in the groove, whereby the endwise separation of the sections is avoided, substantially as specified.

5. In a nut-wrench, the combination, with two sections forming a head and terminating in 60 sockets, the one section being rotatably mounted upon the other section, and each provided with a ratchet-wheel intermediate its ends, the teeth of one ratchet being oppositely disposed to those of the other and forming 65 adjoining annular bosses, of a shank terminating at its forward end in an annular bearing-ring adapted to receive the bosses, and provided with opposite spring-pawls operating in the ratchets, substantially as specified. 70

6. The combination, with the outer section 5, terminating in one end in the enlarged nut-receiving socket and at its opposite end in a cylindrical bore, and provided with a ratchet-wheel intermediate its ends and forming an 75 annular bearing-boss, of the opposite section 6, terminating in its outer end in a nut-receiving socket, and provided with the ratchet-wheel the teeth of which are reversed with 80 relation to the opposite wheel, and having an annular bearing-boss corresponding with that of the outer or opposite section, and having its inner portion reduced to enter the bore of the section 5, and terminating at its inner end in a nut-receiving socket smaller in size 85 than at its outer or opposite end, and located directly in rear of that of the section 5, and the shank provided at its forward end with the annular bearing-ring for the reception of the bosses, and provided with oppositely-disposed 90 spring-pressed pawls, each of which is adapted to engage a ratchet-wheel, substantially as specified.

7. The combination, with the head having the oppositely-disposed ratchet-wheels and 95 formed of independent sections, one receiving the other and adapted to revolve thereon, of the shank connected with the head and provided with opposite pawls, each engaging a ratchet, and with a transverse pin extending 100 through and beyond the shank on either side below the pawls, and a section of spring-wire bent at its center to partially embrace the shank, and having its terminals coiled around the respective projecting ends of the pins in 105 reverse directions and terminating against the pawls forward of their pivot, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in 110 presence of two witnesses.

ELIHU PINCK. JUSTICE.

Witnesses:

JOHN T. GOODSON,  
R. D. MUDD.