T. C. HAMMOND.

Ratchet-Wrench.

No. 207,117. Patented Aug. 20, 1878.

Fig. 1.

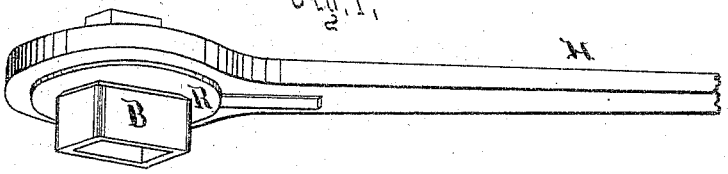


Fig. 2.

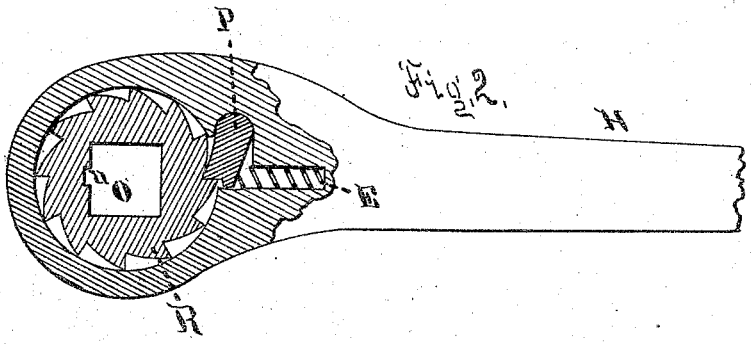


Fig. 3.

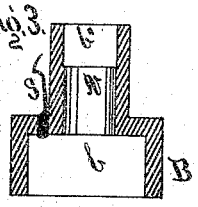
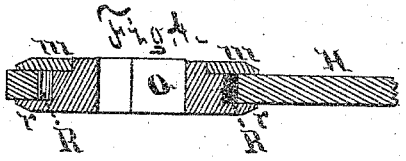


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

THOMAS CLEMENT HAMMOND, OF SACRAMENTO, CALIFORNIA.

IMPROVEMENT IN RATCHET-WRENCHES.

Specification forming part of Letters Patent No. **207,117**, dated August 20, 1878; application filed March 23, 1878.

To all whom it may concern:

Be it known that I, THOMAS CLEMENT HAMMOND, of the city of Sacramento, State of California, have invented a new and useful Improvement in Ratchet-Wrenches, of which the following is a specification:

The invention relates to that class of wrenches used for bolts and nuts; and consists of a combination of a set of sockets graduated to fit different forms and sizes of bolts and nuts, with a ratchet-wrench arranged so as to be readily adjusted to and work said sockets.

Referring to the accompanyings drawings, Figure 1 is an isometrical view of the ratchet-wrench and a socket combined. Fig. 2 is a sectional plan of the ratchet. Fig. 3 is a sectional elevation of the socket. Fig. 4 is a sectional detail of the ratchet.

Fig. 1 shows the socket B inserted in the ratchet-lever H R, so that when the socket B is placed over a nut or the head of a bolt, a rotary motion can be imparted to said nut or bolt without taking the socket B off.

Fig. 2 shows a sectional plan, presenting the ratchet R and square hole O, into which the shank of the socket (see Fig. 3) is inserted. *n* is the notch into which the spring-catch S lies for the purpose of holding the socket B in the ratchet R. P is the pawl, that is fixed in the handle H in such a manner that it oscillates freely in its circular socket, and is kept in its place by the opposite wall of the recess in the handle H fitting against the oscillating end of the pawl. E is a spiral spring laid in a recess in the handle H, which presses against the pawl P, forcing it into the flutes of the ratchet R.

Fig. 3 shows a sectional elevation of one of the sockets, composed of the box *b*, used to fit over the heads of bolts or nuts, the square shank N, which goes in the ratchet at O, the inside of said shank being cored in a cylindrical form for the purpose of admitting the ends of bolts that extend through the nuts over which *b* is placed. At the upper end of shank N is cored a square recess, *b'*, for the purpose of fitting over another or smaller size of nut or screw. S is a spring that lies in the notch *n* of the ratchet R and snaps out on the opposite side, so as to hold the ratchet R and the socket B together.

Fig. 4 is a sectional view, showing the details of the handle H and ratchet R, provided with a flange, *r*, at the bottom, and a hub or lug at the top, the same being made either round or other form, so that after the handle H is placed on the ratchet R the disk *m* is to be placed over and around the said lug; and as the lug is long enough to extend through the plate *m* it can be riveted over on the plate or provided with points which can be riveted over on *m*, holding it firmly in its place, and securing the handle H between the flanges *m* and *r*, the object of this form of construction being to form a ratchet that will be cheap, strong, and durable, and can be constructed of castings without undergoing any considerable amount of finishing; and as the ratchet-wrench is readily detached or adjusted to the socket B, therefore it is plain that the ratchet can be taken off and placed on again with the reverse side down, so that either right or left motion can be imparted to the socket for either screwing on or off a bolt or nut, and admitting of various sizes of sockets being inserted in the same ratchet R to suit the article to be acted upon.

What I claim as my invention is—

The combination of the interchangeable double-ended socket B, provided with spring-catch S, with the ratchet-wrench composed of handle H and ratchet R, provided with a square hole, O, spring-notch *n*, and plate *m*, substantially as above set forth.

THOMAS CLEMENT HAMMOND.

Witnesses:

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