(No Model.)

# W. J. HUNTER.

## RATCHET WRENCH.

No. 302,659. Patented July 29, 1884.

Fig. 1.

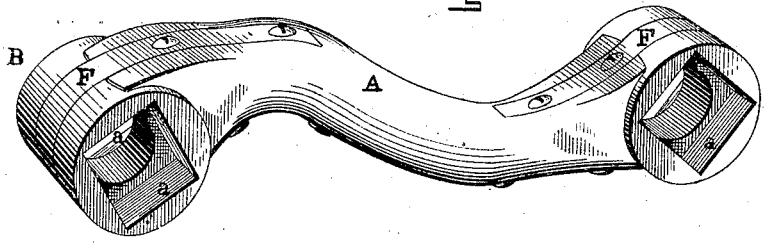



Fig. 2.

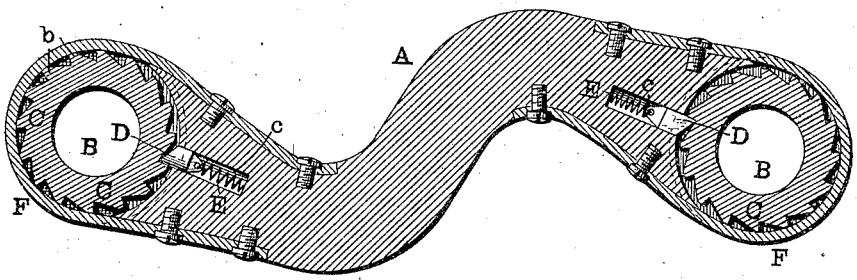



Fig. 3.

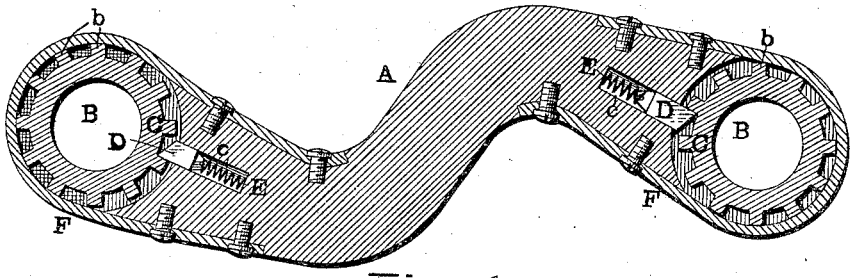
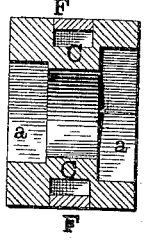



Fig. 4.




WITNESSES:

Jas. F. DeHamel

Walter J. Dodge.

INVENTOR:

Walter J. Hunter,

by Dodger & Son,

Attys

# UNITED STATES PATENT OFFICE.

WALTER J. HUNTER, OF GREENSBURG, PENNSYLVANIA.

## RATCHET-WRENCH.

SPECIFICATION forming part of Letters Patent No. 302,659, dated July 29, 1884.

Application filed December 18, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER J. HUNTER, of Greensburg, in the county of Westmoreland and State of Pennsylvania, have invented certain Improvements in Ratchet-Wrenches, of which the following is a specification.

My invention relates to ratchet-wrenches; and it consists in a novel manner of attaching the rotating head or barrel to the lever or handle, and in other features hereinafter explained.

In the accompanying drawings, Figure 1 represents a perspective view of my improved wrench; Fig. 2, a longitudinal section through the same; Fig. 3, a similar section showing a different form of ratchet, and Fig. 4 a sectional view of the rotary head or barrel.

The purpose of this invention is to produce a wrench more especially suitable for turning nuts or bolts in places offering but limited play or movement for the wrench, and to adapt a single wrench to varying sizes of nuts. With this purpose in view I employ a stock or lever, A, preferably of curved or ogee form, and provide this stock or lever at one or both ends, advisably both, with a rotary head or barrel, B, having rectangular or polygonal seats or sockets *a*, to receive nuts or bolt-heads. Each head or barrel B is reduced in diameter and formed with a circumferential ratchet, C, midway between its ends, the teeth *b* of which are preferably formed with a flattened end or outer face, each forming a short arc of the circumference, and all together forming a bearing surface or journal for the head or barrel B, thereby rendering other journals unnecessary, and consequently reducing the size and weight of the head.

The ends of the stock or lever A are recessed or hollowed out concentrically with the journal thus produced, and are also formed each with a socket, *c*, to receive a pawl or dog, D, which fits closely but freely within the socket, and is urged outward by a spring, E, placed in the socket before it. The pawl being placed in its socket, the journal or ratcheted portion of the head B is placed in the seat in the end of stock or lever A, and is encircled by a metal strap or band, F, the ends of which are firmly screwed, bolted, or otherwise fastened to the stock, preferably in recesses or seats therein, as shown, to produce a flush and even surface.

The ratchet C being of smaller diameter than the ends of the head or barrel B, the latter cannot move endwise, because the band F fills the space between the enlarged ends, and the ratchet-teeth, being covered by the band F, cannot become filled or clogged by dirt or matter of any kind. They are also thus protected against injury, and, being protected against the entrance of dust and grit, will not be so rapidly worn or cut away as if exposed.

The arrangement of the band F about the ratchet C therefore constitutes an important feature of my invention.

The heads B are each made with openings of different sizes, thus giving one wrench four sizes of openings, and giving to it a wide range of use.

In wrenches of this character it is desirable that provision be made for reversing the rotation, because the curved stock used would otherwise come into contact with the body, limiting the movement of the wrench, before a proper movement could be completed—as, for instance, in turning up the nuts of a railway-rail joint, where the stock would quickly come against the ties unless the upwardly-curved end of the stock could be used for the handle or moving end. This result may be accomplished by unfastening the retaining band or strap F, removing the head or barrel and the pawl, and returning them to place, each in a reversed position; or the teeth of the ratchet may be made, as in Fig. 3, with perpendicular front and rear faces, so that by simply reversing the pawl it may be made to rotate the barrel in either direction.

I am aware that ratchet-wrenches have heretofore been made in a variety of forms, and that a band has been passed around journals formed upon a rotary head; but such band was cut away to expose the ratchet-teeth to an outside spring, instead of being arranged to cover and protect the same.

Having thus described my invention, what I claim is—

1. The herein-described wrench, consisting of stock A, rotating heads B B, pawls D D, springs E E, and bands F F, all combined and

arranged to operate substantially as shown and described.

2. In a ratchet-wrench, the combination of a stock, A, a spring-pawl, D, seated therein, a cylindrical head, B, having a reduced portion between its ends, provided with ratchet-teeth, and a band, F, encircling the reduced portion and secured to the stock, substantially as described.

3. In combination with a stock provided with a spring-pawl, a rotary head provided with sockets *c* and ratchet-teeth *b*, and a band, F, encircling and covering the toothed portion and secured to the stock, substantially as shown.

WALTER J. HUNTER.

Witnesses:
F. M. MECHLING,
JAS. A. SHIELDS.