(No Model.)

D. V. MILLER.

RATCHET WRENCH.

No. 304,542. Patented Sept. 2, 1884.

Fig. 1.

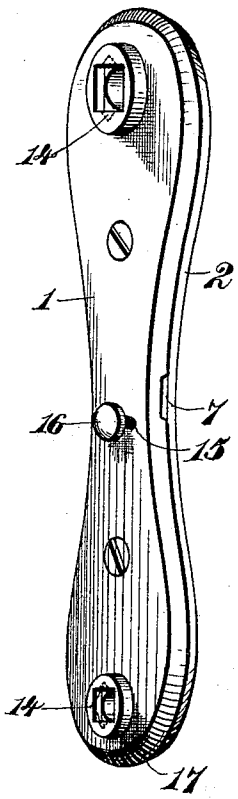


Fig. 2.

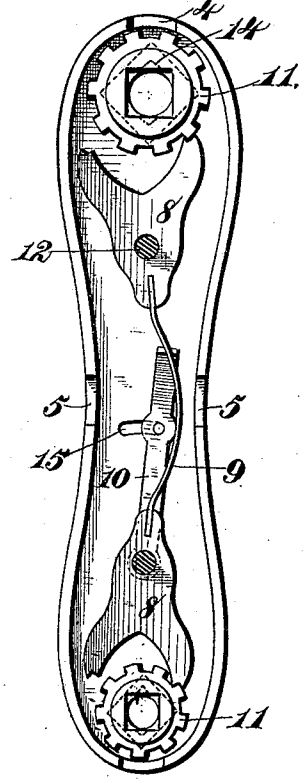


Fig. 3.

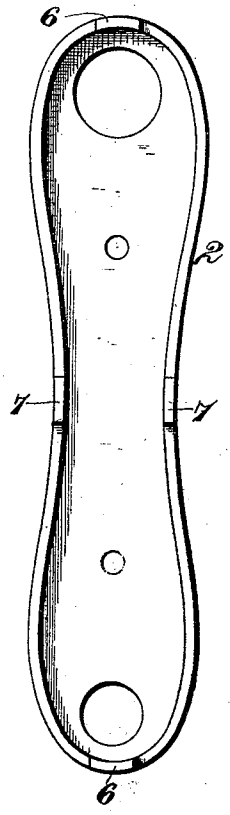


Fig. 4



Witnesses.
Robt Everett.
J. A. Rutherford

Inventor.
Darwin V. Miller.
By James L. Norris.
Atty.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

DARWIN V. MILLER, OF WEEDSPORT, NEW YORK.

RATCHET-WRENCH.

SPECIFICATION forming part of Letters Patent No. 304,542, dated September 2, 1884.

Application filed February 25, 1884. (No model.)

To all whom it may concern:

Be it known that I, DARWIN V. MILLER, a citizen of the United States, residing at Weedsport, in the county of Cayuga and State of New York, have invented new and useful Improvements in Ratchet-Wrenches, of which the following is a specification.

The invention relates to improvements in the ratchet-wrench for which Letters Patent No. 283,201 were issued to me August 28, 1883, and has for its object to avoid the necessity of employing a marginal row of screws and screw-holes for holding together the two sections or halves of the case or handle; to provide means which not only serve as pivots or bearings for the pawls, but also to securely connect and hold together the two halves or sections of the case or handle; to provide a novel construction of the case whereby the racking strain on the two sections of the case or handle is prevented from being transmitted to the devices which constitute pivots or bearings for the pawls, and the means for connecting the sections of the case, and to otherwise improve the construction and symmetrical appearance of the wrench case or handle. These objects I accomplish in the manner and by the means hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of the wrench embodying my invention; Fig. 2, an inside plan view with one section or half of the case or handle removed; Fig. 3, an inside plan view of the section or half of the case omitted from Fig. 2, and Fig. 4 detail views of the devices used for connecting the two sections of the case or handle, and which constitute the pivots or bearings for the two pawls.

Referring to the drawings, the numbers 1 and 2 indicate the two sections or halves comprising the case or handle, each having on its inner face a marginal flange, 3, of uniform thickness throughout its extent. The flange of the section 1 is constructed at each end portion of the latter with a square recess, 4, and at each side with a similar recess, 5, while the flange of the other section, 2, is constructed at the end and side portions, respectively, with projecting lips 6 and 7, such lips being of the same size as the recesses, so that when the two sections are brought together to form the closed case or handle the lips accurately and snugly enter the recesses, and thereby prevent any movement whatever of one section laterally or horizontally on the other. The flanges create an interior chamber when the sections are brought together, within which are arranged the pawls 8, their connecting double-acting spring 9, the lever 10, for operating the spring to reverse the motion of the heads, and the rotating ratchet-heads 11, all in the same manner as in my patent mentioned, except in the particulars hereinafter described and claimed. In my said patent the axes of the pawls are composed of posts rigidly attached to one section and entering orifices in the other, and by such construction I was compelled to provide the flanges or rims with screw-holes to receive a marginal row or line of screws, which considerably increased the cost of manufacture. To obviate this, lessen the cost of production, and provide a better and more desirable article, I employ the metal screws 12, Fig. 3, which are loosely passed through one section of the case and the pawls and their extremities screwed into screw-holes in the other section of the case, the smooth cylindrical parts 13 of the screws serving as the pivot-bearings of the pawls, while the screw-threaded ends and their heads serve to tightly clamp the sections one upon the other, yet permitting their convenient and rapid separation if occasion demands. The connecting and pivot-bearing screws are arranged in the same longitudinal line with the end notches and lips of the case or handle sections, while the side lips and recesses are centrally between the said screws, whereby a firm and substantial union of the sections is provided, and the rocking action on the sections when using the wrench is prevented from being transmitted to the screws, thereby rendering the structure more durable and satisfactory. Each of the rotating heads 11 is provided with a square nut seat or socket in its opposite sides, of different size, to fit four different sized nuts, as in my said patent, but in addition thereto I provide two of the opposite walls of each seat or socket with V-shaped notches 14, whereby the seat or socket is rendered capable of engaging two opposite corners of a hexagon nut, or a nut having six

sides. The reversing-lever 10 of the wrench connects, through a slot, 15, in one section of the case, with a sliding button, 16, for moving the lever to reverse the motion of the rotating heads, all as in my patent cited. I do not, therefore, deem it essential to enter into any detailed explanation of the manner of operating and using the wrench. The outer edges of each section or half of the case are rounded off, as at 17, to render the case more convenient in the grasp of the hand, while at the same time presenting a more symmetrical appearance to the wrench.

Having thus described my invention, what I claim is—

1. A wrench consisting of the two halves or sections containing between them the rotating heads and their actuating-pawls, with metal screws constituting pivot-bearings for the pawls, and also serving to connect the two sections or halves together, substantially as described.

2. A wrench consisting of two sections or halves having flanges on their inner sides, constructed, respectively, with recesses and lips engaging each other, the rotating ratchet-heads and pawls arranged in the chamber created by the flanges, and the metal screws serving as pivot-bearings for the pawls and as means for detachably connecting the two plates, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

DARWIN V. MILLER.

Witnesses:

JAMES C. BRYANT,

AARON F. HOYT.