

UNITED STATES PATENT OFFICE.

JOHN ELLEBRECHT, OF ST. LOUIS, MISSOURI.

RATCHET-WRENCH.

SPECIFICATION forming part of Letters Patent No. 582,013, dated May 4, 1897.

Application filed September 14, 1896. Serial No. 605,732. (No model.)

To all whom it may concern:

Be it known that I, JOHN ELLEBRECHT, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Ratchet-Wrenches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to ratchet-wrenches; and it consists in the novel construction, combination, and arrangement of parts herein-after shown, described, and claimed.

The object of my invention is to operate nuts without removing the wrench during such operation and in positions where the handle of the wrench cannot make a complete circuit.

Figure 1 is a view in elevation of my improved ratchet-wrench. Fig. 2 is a bottom plan view of the wrench shown in Fig. 1. Fig. 3 is a horizontal sectional view taken approximately on the line 3 3 of Fig. 1. Fig. 4 is a transverse sectional view taken approximately on the line 4 4 of Fig. 3. Fig. 5 is a vertical sectional view taken approximately on the line 5 5 of Fig. 1.

In the construction of my improved ratchet-wrench I employ the handle 6, in the front end of which is formed a circular opening 7, which opening serves as a bearing for the rotating head 8. An opening 9 is formed in the handle 6 and intersects the opening 7. A smaller opening 10 extends from the end of the opening 9 a short distance, and a catch 11 is placed in the opening 9 with its point 12 projecting into the opening 7. The head 13 of the catch is reduced in size and extends into the opening 10, which opening forms a bearing for said head, and a coil-spring 14 is placed upon said head with one end resting against the shoulder 15, formed by the junction of the head 13 with the body of the catch, and with its opposite end resting against the shoulder 16, formed at the junction of the openings 9 and 10.

An elongated slot 17 is formed in the handle 6 and intersects the opening 9, and a pin 18 is fixed in the catch 11 and operates in said slot 17.

The rotating head 8 is formed integral with

and upon the end of the circular block 19, and a recess 20 is formed in the lower end of the block 19 and is designed to receive the nuts which are to be operated.

Formed in the periphery of the rotating head 8 are square or rectangular notches 21, designed to receive the point 12 of the catch 11. The point 12 has a bevel-face 22 on one of its sides, and the parts are arranged in such a way that when the handle is operated in one direction the head 8 will be rotated, and when the handle is operated in the other direction the catch 11 will slip from notch to notch and the head 8 will not be rotated.

Assuming that the parts of the wrench are arranged for the purpose of tightening nuts, the arrangement may be changed when it is desired to loosen nuts by manually engaging the pin 18 and operating the catch 11 until the point 12 is out of engagement with the notches in the rotating head, then removing the handle from the head and turning said handle over and replacing it upon the head.

The catch 11 forms a ratchet connection between the handle 6 and the rotating head 8, and the ratchet is reversed simply by removing the head from the handle and turning the handle over.

The side walls of the notches 21 perform the functions of ratchet-teeth, and in order to make the ratchet reversible it is necessary to make these side walls substantially parallel with each other and on radial lines relative to the center of the rotating head. It is to this reversible ratchet and to the construction whereby it is made reversible that I wish to call especial attention.

I claim—

In a ratchet-wrench, the handle 6 having the circular opening 7 in its front end and the opening 9 intersecting said opening 7 and the opening 10 extending from the inner end of said opening 9 and the opening 17 intersecting said opening 9, the rotating head 8 removably operating in said opening 7 and having the rectangular notches 21 formed in its periphery, the block 19 formed integral with one end of said head and having the polygonal recess formed in its lower end to receive the nut, the catch 11, having the bev-

eled point, slidingly mounted in said opening 9 and having its head reduced in size and extending into said opening 10, the coil-spring 14 placed upon said head with one end resting against the shoulder formed by the junction of said head with the body of said catch and its opposite end resting against the shoulder formed by the junction of the opening 9 with the opening 10, and the pin 18 fixed in

the body of said catch 11 and operating in said slot 17, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN ELLEBRECHT.

Witnesses:

JNO. B. LUEPKE,
M. E. SPILLMAN.