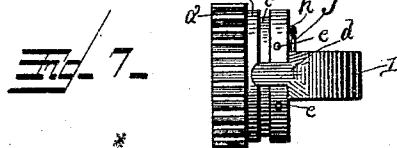
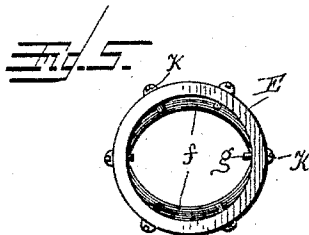
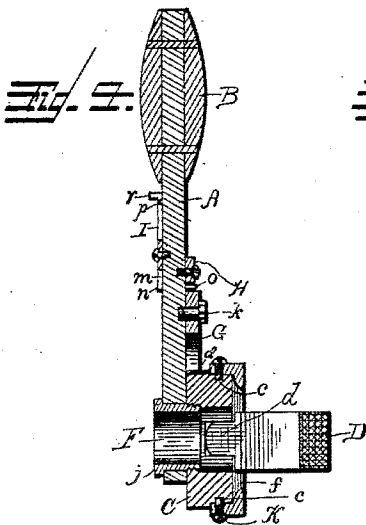
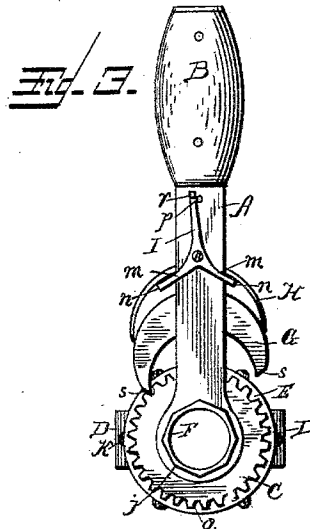
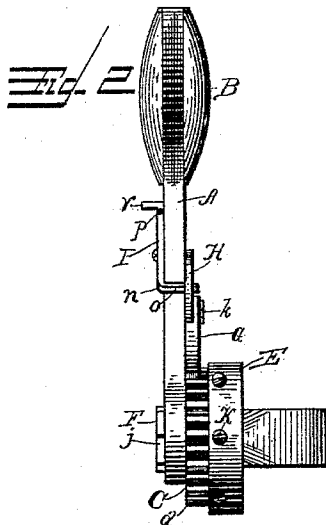
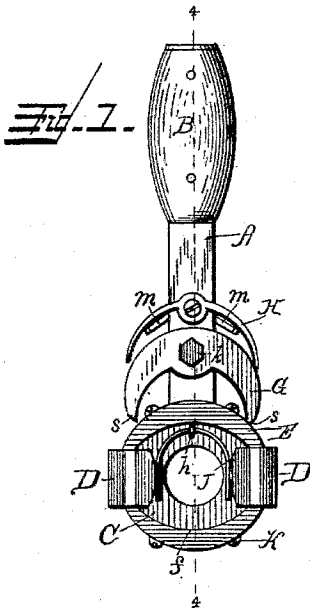


(No Model.)

G. McEACHRON.
RATCHET WRENCH.

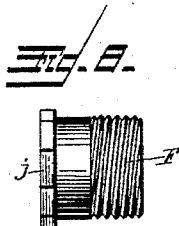
No. 584,061.

Patented June 8, 1897.



Witnesses.

Ed. S. Frye
Wm. M. Dunlap



Inventor.

George McEachron

By Helen S. Parson

Attorney

UNITED STATES PATENT OFFICE.

GEORGE MCEACHRON, OF BRAMPTON, MICHIGAN.

RATCHET-WRENCH.

SPECIFICATION forming part of Letters Patent No. 584,061, dated June 8, 1897.

Application filed October 5, 1896. Serial No. 607,893. (No model.)

To all whom it may concern:

Be it known that I, GEORGE MCEACHRON, a citizen of the United States, residing at Brampton, in the county of Delta and State of Michigan, have invented certain new and useful Improvements in Ratchet-Wrenches; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in ratchet-wrenches of that class having a handle, a means for reversing the ratchet to operate to the right or left, a means for closing and holding the jaws in contact with the nut to be operated upon, and a means for holding the jaws apart when not in use.

The objects of my invention are to provide a ratchet-wrench of that class that will be easy to apply and operate and that can be instantly adjusted to clamp various-sized nuts.

My invention consists in the construction and combination of the various parts shown in the accompanying drawings and described in the following specification.

In the drawings, Figure 1 is a front view. Fig. 2 is a side view. Fig. 3 is a back view. Fig. 4 is a vertical sectional view taken on the line 4 4 of Fig. 1. Fig. 5 is a plan view of the jaw-securing band from the inside. Fig. 6 is an enlarged view of one of the screws which secure the band upon the ratchet-ring. Fig. 7 is a side view of the ratchet-ring, showing the jaw applied thereto; and Fig. 8 is a side view of the thimble-bolt, which secures the handle to the ratchet-ring.

A is the handle, having suitable handholds B riveted thereon.

C is the ratchet-ring.

D D are the jaws; E, the jaw-securing band; F, the thimble-bolt; G, the dog which engages the ratchet-teeth; H, the spring by which the dog G is controlled; I, the lever by which the pressure of the spring H is regulated; J, the spring which holds the jaws D normally apart, and K the screws by which the band E is held in place.

The handle A is enlarged at the lower end

and has an opening therein forming a collar into which the thimble-bolt fits.

The ratchet-ring C is provided with the teeth *a* and the plain portion *b*, said plain portion having the groove *c* extending around its center, and has portions cut away on either side, in which the shanks *d* of the jaws D are secured by the pins *e*. The inner face of said ring opposite the toothed portion is threaded to receive the threaded end of the thimble bolt F, as seen in Fig. 4. The band E has one or more inwardly-projecting lips *f* upon the edge of the circle and upon the front side thereof. This makes the opening on one side of the band E oval in shape, while the other side of the band E is round, as shown in Fig. 5, and adapted to be revolved upon the plain portion *b* of the ratchet-ring C. The band E is also provided with threaded openings around its circumference, and when said band is placed upon the ring C the screws K are turned into said openings, the threaded portion engaging the threaded portion in the band and the plain end *g* entering the groove *c* in said ring, thereby securing the band upon the ring, but at the same time permitting it to turn freely thereon. It will be seen that when the band E is turned, as shown in Fig. 1, the jaws will be spread by reason of the spring J, attached to the inner face of the ring C by a staple *h*, pressing against them, but when the band is turned upon the ring C the jaws will be brought together, as the lips *f* engage the backs of the jaws. To tighten the jaws upon a nut, it is only necessary to slightly turn the band E. The thimble-bolt F has an octagonal shoulder or head *j*, which serves the double purpose of securing the handle and providing a hold, so that a wrench may be used to screw the threaded end into the threaded portion of the ratchet-ring C. The dog G is pivotally mounted upon a bolt *k*, which is threaded upon the extreme end, where it enters the handle A. Immediately above the dog G is the pivotally-mounted curved spring H, the ends of which are adapted to press against the dog G upon either side of the handle slightly above the spring H. Said lever is formed with two diverging arms *m* below its pivoted point, said arms being bent at *n* and the ends *o* thereof extending past the handle

A and under the curved spring H. A small projection *p*, formed upon the handle, serves to retain the lever against slipping when it is thrown in any desired position. An extending portion *r* upon the upper end of the lever serves as a hold by which to push the lever back and forth. When the lever is in position, as shown in Fig. 3, the tension of the spring H is removed from the end of the dog G at the right and is placed upon the left, which presses the left end of said dog down against the teeth *a* of the ratchet-ring C. To reverse the ratchet, so as to travel in the opposite direction, it is only necessary to throw the lever I past the projection *p*, when the spring H will press against the opposite end of the dog, and thereby lock it against rotation in the opposite direction. It will be understood that the pressure of the spring I upon the dog is only strong enough to throw the dog in the desired direction and does not bind the teeth of the ratchet-ring against turning in the desired direction, but when an attempt is made to rotate it in the opposite direction without throwing the lever I the flat faces *s* on either end of the dog will engage the ratchet-teeth *a*, and thereby lock the ratchet-ring against rotation.

In operation the lever is thrown to rotate the jaws in the desired direction, the band E is turned until the jaws D engage the nut, when the handle is drawn back and forth in the usual manner.

Having described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a ratchet-wrench of the class described, the jaw-operating band E, revolvably secured upon the ratchet-ring C, and having an opening, oval upon one side and round upon the other, said oval being formed by the lips *f*, for the purpose of operating the jaws D, mounted within said ratchet-ring C, and the ratchet-ring C, interiorly threaded at one end to receive a like threaded portion of the thimble-bolt F, and having the teeth *a*, and a groove *c*, around its outer circumference, said groove being adapted to receive the ends *g*, of the screws *k*, for the purpose of revolvably securing the jaw-operating band E, upon said ratchet-ring, in combination with the thimble-bolt F, whereby the handle A, is held in connection with the ratchet-ring C, and the handle A, having the lever I, which actuates the curved spring H, pivotally mounted upon one side thereof, and the curved spring H, which throws the dog G, in contact with the teeth *a*, of the ratchet-ring

C, and the dog G, both pivotally mounted upon the opposite side of said lever A, substantially as set forth.

2. In a ratchet-wrench, the combination of the handle A, having an opening in its lower end to receive a thimble-bolt F, and having a lever I, a curved spring H, and the dog G, pivoted thereto, with the thimble-bolt F, the ratchet-ring C, and the band E, adapted to be mounted upon the ratchet-ring C, and held thereon by means of the screws K, having the plain ends *g*, substantially as shown and described.

3. In a ratchet-wrench of the class described, the combination of the thimble-bolt F, having the head *j*, adapted to secure the handle to the ratchet-ring C, and the ratchet-ring C, having the plain portion *b*, provided with the groove *c*, the teeth *a*, and having the jaws D, pivoted thereto, with the band E, secured upon said plain portion *b*, of the ratchet-ring C, by means of the screws K, the plain ends of which enter the groove *c*, thereby permitting the said band to rotate, and the handle A, provided with the ratchet reversing and holding devices, all substantially as shown and described.

4. In combination in a ratchet-wrench, of the ratchet-ring C, having teeth *a*, a plain portion *b*, and a groove *c*, and the jaws D, mounted therein; the band E, having the lips *f*, and threaded openings around its circumference, and adapted to be secured upon the ratchet-ring C, by means of the screws K; with the thimble-bolt F, threaded at one end to enter a like threaded portion of the ratchet-ring C, and having a head *j*, and the handle A, carrying the dog G, the spring H, and the lever I, substantially as set forth.

5. In combination in a ratchet-wrench of the class described, the handle A, having the projecting portion *p*, the lever I, having the arms *m*, and the bent ends *o*, the curved spring H, the dog G, the thimble-bolt F, the ratchet-ring C, having teeth *a*, and a groove *c*, the jaws D, pivotally mounted in said ring C, a spring J, secured to said ring C, by means of a staple *h*, a band E, having lips *f*, and adapted to be secured to the ring C, by means of the screws K, having the plain ends *g*, to enter the groove *c*, in said ring, all substantially as shown and described.

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

GEORGE MCEACHRON.

Witnesses:

ALBERT H. POWELL,
ARTHUR B. GRAY.