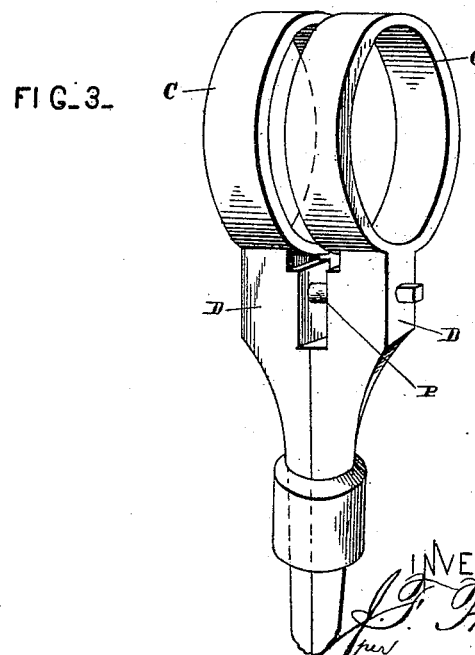
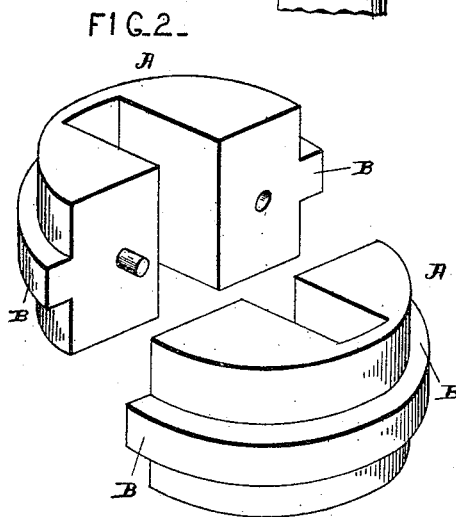
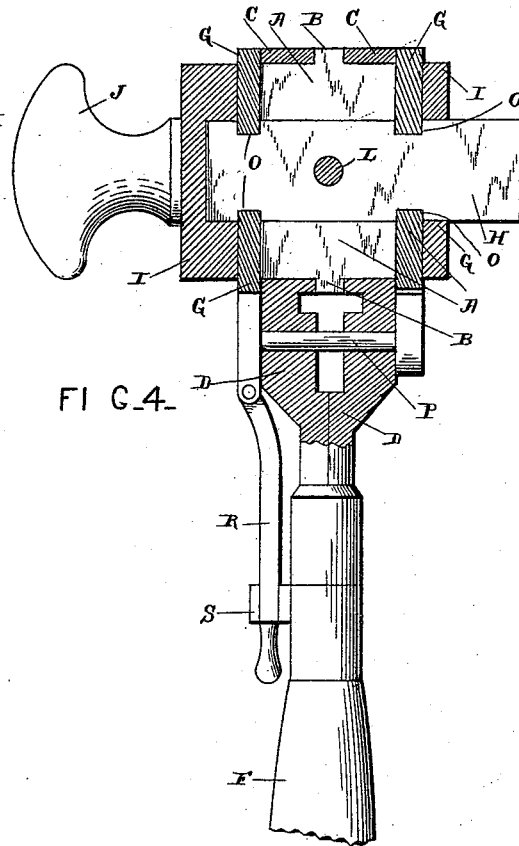
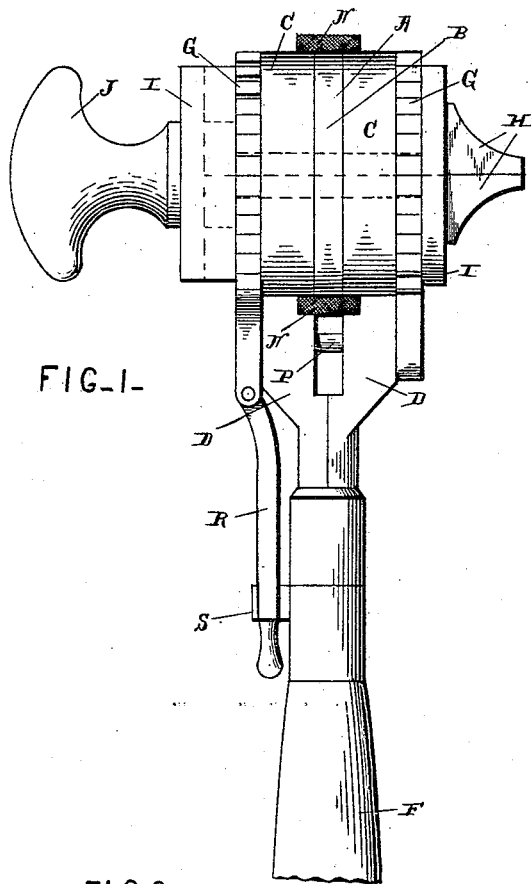


(No Model.)

J. F. THORN.
RATCHET WRENCH.

No. 458,079.

Patented Aug. 18, 1891.



WITNESSES.
Goodrich.
J. M. Keith.

INVENTOR.
J. F. Thorn.
Lehmann & Patterson,
Atty.

UNITED STATES PATENT OFFICE.

JOHN F. THORN, OF ORDWAY, SOUTH DAKOTA.

RATCHET-WRENCH.

SPECIFICATION forming part of Letters Patent No. 458,079, dated August 18, 1891.

Application filed March 23, 1891. Serial No. 386,129. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. THORN, of Ordway, in the county of Brown and State of South Dakota, have invented certain new and useful Improvements in Ratchet-Wrenches; and I do hereby 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in ratchet-wrenches; and it consists in the combination of the cylinder formed of two parts, the two bands which are passed over opposite ends of the cylinder and which bands are secured together by means of the handle, the two jaws, the right and left screw-threaded rod or shaft by which the jaws are moved, the ratchet-plates secured to opposite ends of the cylinder, and the dogs secured to opposite ends of the same shaft and which are moved in opposite directions by means of the spring-lever, as will be more fully described hereinafter.

The object of my invention is to provide a wrench the jaws of which are made to revolve in either direction by means of ratchets and dogs and which is adapted to be operated more rapidly and conveniently than the ordinary wrenches now in use.

Figure 1 represents a side elevation of a wrench which embodies my invention. Fig. 2 is a detached view of the cylinder made in two parts. Fig. 3 is a detached view of the supporting-bands in which the cylinder is made to revolve. Fig. 4 is a vertical section taken through the center of the cylinder.

A represents the cylinder, which is made of two separate and distinct parts, and which parts have the flange B formed around their centers. Passed over opposite ends of this cylinder are the two supporting rings or bands C, which are secured to or form part of the prongs D, which have their outer ends to taper to a point and are made screw-threaded, so as to receive a nut E upon them. These prongs are secured inside of the handle F, of any desired length. Secured to opposite ends of the cylinder are the ratchet-plates G, which are made in two parts and which are cut away at their centers, so as to allow the ends of the jaws H to project between them.

Applied to the outer sides of the ratchet-plates G are plates I, of any suitable shape. These ratchet-plates and plates I may be formed in a single piece, if so desired, though these are here shown as being made in separate parts. The plates I secured to the top of the wrench are thicker than those secured to the lower end, and upon the top of the top plates I is secured the knob or handle J, by means of which the jaws are held in contact with any article to which they are applied. The jaws H are placed in the opening through the center of the cylinder, and the ratchet-plates are moved back and forth by means of the right and left screw-threaded shaft L, which is provided with a thumb-nut or wheel N at each end. This shaft is made just long enough to project through the cylinder and to receive the thumb-nut N upon its ends.

The cylinder revolving inside of the band C carries the jaws H freely around with them. Each of the jaws is provided with grooves O near its ends, and in which the ratchet-plates G catch for the purpose of assisting to hold the jaws H in position and to act as guides for them as they move back and forth. Passing vertically through the two shanks D is the partially-revolving shaft P, which serves to both hold the shanks together at their outer ends and to opposite ends of which the two dogs are rigidly secured. These dogs have their outer ends to extend in opposite directions, so as to alternately engage with the ratchet-plates G, which also have their teeth to extend in opposite directions. When the shaft P is turned by means of the spring-lever R, one of the dogs is thrown into operation with its ratchet-plate, while the other one is thrown out of operation entirely. Upon the inner end of the handle is placed the block S, which is provided with grooved shoulders against which the outer end of the spring-lever R catches, according to which one of the dogs it is desired to bring into operation. One of the dogs operates in connection with a right-hand ratchet-plate and is to be used when a nut is to be screwed up and the other is used in connection with a left-hand ratchet-plate, which is used when a nut is to be unscrewed.

By means of a wrench as here shown and described the jaws are always kept in con-

tact with the nut and do not have to be removed, as with the ordinary hand-wrench, and a nut can be screwed or unscrewed with great rapidity and in places where an ordinary wrench cannot be used to any advantage.

5 Having thus described my invention, I claim—

10 1. In a ratchet-wrench, the cylinder made in two parts, the jaws placed inside of the cylinder, and the operating-shaft by means of which the jaws are moved back and forth, combined with the supporting-bands, and the two shanks, which are secured together, substantially as shown.

15 2. In a ratchet-wrench, the cylinder formed of two parts, the two supporting-bands applied to opposite ends of the cylinder, and the two shanks to which the two rings or bands are secured, combined with the jaw placed inside
20 of the cylinder, the right and left hand shaft for operating them, the ratchet-plates formed in two parts, the two dogs, and a spring-lever for throwing them in and out of operation, substantially as described.

25 3. In a ratchet-wrench, the cylinder A, formed of two parts and provided with the flange B, the two rings or bands C, applied to opposite ends of the cylinder, the two shanks to which the rings or bands are secured, and
30 the handle, combined with the two jaws, the right and left threaded shaft for operating them, the ratchet-plates formed of two parts, the plates I, the knob or handle J, the two dogs secured to opposite ends of the same
35 shaft, the spring-lever, and the block S, secured to the handle, substantially as described.

4. In a wrench, a shank, loops secured there-

to, a cylinder mounted in the said loops, plates secured to opposite sides of the cylinder and provided with oppositely-extending ratchet-teeth on their respective peripheries, a shaft
40 mounted in the shank, oppositely-extending dogs secured to the ends of the shaft, which engage the said ratchet-teeth, and means for locking the said dogs in and out of contact
45 with the teeth, the parts being combined to operate substantially as shown and described.

5. In a wrench, a shank formed of two parts, each provided with a loop, a cylinder secured within the said loops, a shoulder on the said cylinder, which extends between the said loops
50 whereby the cylinder is held in position, adjustable jaws mounted in the cylinder, plates which are secured to the sides of the cylinder and which are provided with ratchet-teeth, a
55 shaft which connects the two parts of the shank, dogs secured to the ends of the shaft, a lever adapted to turn the said shaft, and a stop on the shank of the wrench for locking the said lever in the desired adjustment, the
60 parts being combined to operate substantially as shown and described.

6. In a wrench, the shank, the loops, the cylinder, the jaws, the circular ratchet-plates, the shaft and the dogs secured thereto, the
65 lever R, stop S, plates I, and handle J, the parts being combined to operate substantially as shown and described.

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

JOHN F. THORN.

Witnesses:

C. R. KIMBALL,
FRED. NITSCHÉ.