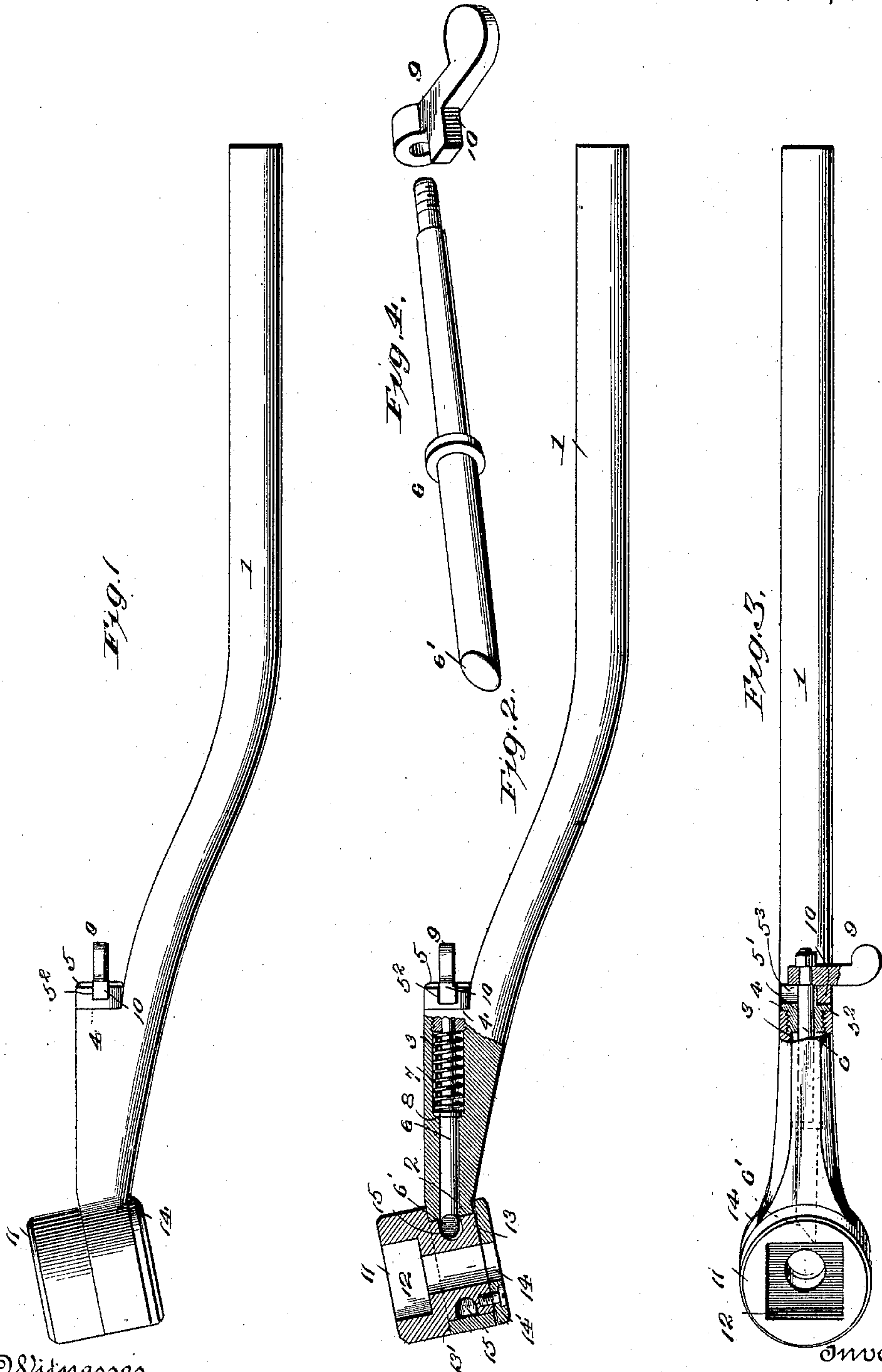


(No Model.)

J. GILBERTSON.  
RATCHET WRENCH.

No. 598,609.

Patented Feb. 8, 1898.



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# UNITED STATES PATENT OFFICE.

JOHN GILBERTSON, OF HAWLEY, MINNESOTA.

## RATCHET-WRENCH.

SPECIFICATION forming part of Letters Patent No. 598,609, dated February 8, 1898.

Application filed June 10, 1897. Serial No. 640,252. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN GILBERTSON, of Hawley, in the county of Clay and State of Minnesota, 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 appertains to make and use the same.

This invention relates to improvements in ratchet-wrenches, and has for its object to provide a device of simple mechanism, durable, not likely to get out of order, and which may be employed in taking off and replacing nuts upon spindles without removing the wrench from the nuts.

In the accompanying drawings, Figure 1 is a plan view of my improved wrench. Fig. 2 is also a plan view, partly in section. Fig. 3 is a side view, partly in section; and Fig. 4 is a perspective view of a portion hereinafter described.

My improved wrench may be constructed of any suitable metal; but in practice I employ tough iron and recommend that the bearing portions of the small parts be made of steel, especially that hereinafter designated as the "ratchet bolt or bar."

In the practice of my invention I first provide a longitudinal handle 1, laterally curved outwardly in order to protect the hand of the operator and having in one end a circular lateral opening 2. The portion of the handle adjacent to said opening 2 is thickened and provided with a longitudinal circular aperture 3, extending from the beginning or shoulder 4 of said thickened portion to and into the circular opening 2. Into the shoulder 4 I fit a screw-threaded circular plug 5, having centrally therethrough an aperture 5', somewhat smaller than the bore 3. On diametrically opposite sides of said shoulder 4 I provide two horizontal slots 5<sup>2</sup> and 5<sup>3</sup>, opening outwardly, as shown. I next provide, as specially shown in Fig. 4, a longitudinal cylindrical ratchet bar or bolt 6, adapted to play freely through the aperture 3 and plug 5. Said ratchet-bar 6 is constructed with its inner end 6' beveled on one side, so that the bevel can be made to face upwardly or downwardly at the will of the operator. The said bar is in-

closed in a spiral spring 7, having one end resting against the inner surface of screw-plug 5 and the other end against a shoulder or disk 8, secured upon the bar near its inner or beveled end, so that it is given a normal impulse toward and projected into the circular opening 2. The opposite end of said ratchet-bar 6 is provided with a latch 9, having upon the under side thereof a locking-dog 10, adapted to engage, when desired, with either of the slots 5<sup>2</sup> or 5<sup>3</sup> in the screw-plug 5. The object attained by the locking-dog and slots is to secure the ratchet bar or bolt 6 in a position relative to the position of its beveled end 6'.

The remainder of my invention consists of a circular wrench-head 11, having cut in its inner face a square or many-sided chamber 12 to receive the corresponding nut. The opposite portion of the wrench-head 13 is of reduced diameter and adapted to revolve snugly within the circular opening 2 in the end of the handle 1 and is laterally confined in said circular opening by shoulder 13' and by means of a plate 14, secured to the outer face of the head by means of screws 14'. The outer end of the revoluble head 11 projects slightly beyond the edge of the circular opening 2 in order that the plate 14 will not bind upon the ring forming said opening.

Upon the periphery of the reduced portion 13 of the wrench-head within the circular opening 2 are a succession of shallow circular cavities 15, adapted to be engaged by the protruding end of ratchet-bar 6, which is normally impelled into said cavities by means of spiral spring 7.

In operation a downward movement of the handle 1 will, by reason of the end of the ratchet-bar 6 engaging with one of the cavities 15, cause the wrench-head 11 to partly revolve, while an upward movement of the handle will cause the release of said ratchet-bar in consequence of the beveled end 6', which will not permit such engagement.

In the construction of my improved wrench I do not confine myself to the manner shown of securing the portions of my device together. For instance, I may adopt equivalent means for securing the outer plate 14, and instead of the cavities 15 I may use countersunk corrugations or rounded cogs.



By providing wrench-heads having assorted sizes of nut-chambers my improved wrench may be adapted to remove or apply nuts of any ordinary size, using a common handle  
5 for all.

The shoulder 8 on the ratchet-bar serves two functions—as a stop to limit the inward movement of the ratchet-bar under the influence of the spring by its engagement with the  
10 inner end of the enlarged chamber and as an abutment for the inner end of said spring.

It is also deemed important that the locking-dog extend from the latch in the direction of the length of the bar and be confined  
15 within the area of the plug, as shown best in Fig. 3, so as to be protected from injury, and by this disposition there is no danger of damage or breakage of the dog by sudden strain upon the head with which the end of the  
20 ratchet-bar engages. Furthermore, by the employment of the inwardly-extending dog the same cannot be accidentally disengaged from the slots, as is the case where the ratchet-bar is provided with a laterally-extending pin  
25 that simply rests in depressions.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The improved ratchet-wrench herein described, comprising the handle laterally 30 curved outwardly and having circular opening at one end and a longitudinal opening communicating therewith and an enlarged chamber to receive a spring, a ratchet-bar in said longitudinal opening and having a shoul- 35 der about midway its length and located in said chamber, a wrench-head rotatably located in the circular opening and provided with a plurality of cavities in its periphery, a screw-plug in the outer end of the longitu- 40 dinal opening and having oppositely-disposed slots, a spring around said bar in said chamber between the shoulder and plug, and a latch on the outer end of the ratchet-bar and provided with a locking-dog extending in the 45 direction of the length of the bar beyond the body portion of the latch and confined within the area of the plug to engage said slots, substantially as and for the purpose specified.

In testimony whereof I have signed this 50 specification in the presence of two subscribing witnesses.

JOHN GILBERTSON.

Witnesses:

JOHN EID,  
P. ANTON BERG.