(No Model.)

# T. SCHAEFER.

## RATCHET WRENCH.

No. 566,229. Patented Aug. 18, 1896.

Fig. 1.

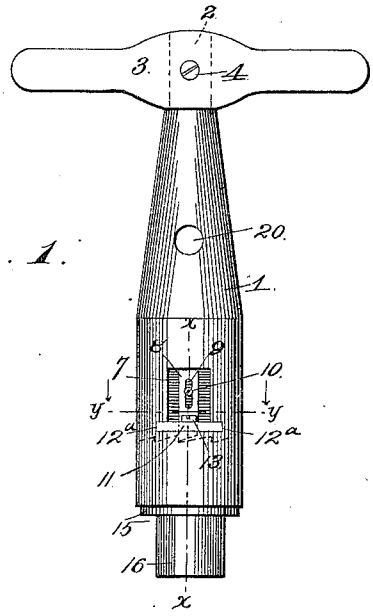



Fig. 2.

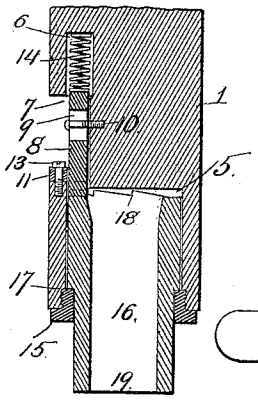



Fig. 3.

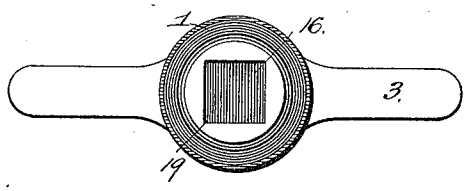
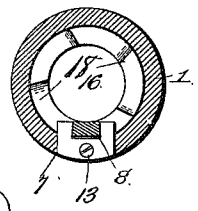



Fig. 4.




Witnesses:

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# UNITED STATES PATENT OFFICE.

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## RATCHET-WRENCH.

SPECIFICATION forming part of Letters Patent No. 566,229, dated August 18, 1896.

Application filed March 28, 1896. Serial No. 585,265. (No model.)

*To all whom it may concern:*

Be it known that I, THEODORE SCHAEFER, of Blackburn, Saline county, 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 thereof.

My invention relates to ratchet-wrenches; and it consists in certain novel and peculiar features of construction and combinations of parts, as hereinafter described and claimed.

My object is to produce a wrench of this character which is of such form that it may be engaged with nuts or bolt-heads in places nearly inaccessible to an ordinary wrench, and at the same time is simple, strong, durable, and inexpensive of construction.

In order that the invention may be fully understood, reference is to be had to the accompanying drawings, wherein—

Figure 1 represents in side elevation a ratchet-wrench constructed in accordance with my invention. Fig. 2 represents on a larger scale a section taken on the line $x\,x$ of Fig. 1. Fig. 3 represents an inverted plan view of the wrench on the same scale as Fig. 2. Fig. 4 represents a horizontal section taken on the line $y\,y$ of Fig. 1.

In the said drawings, 1 designates the shank or body of the wrench, which is provided at its upper end with a diminished extension 2, which projects into a handle 3 and is secured therein by a set-screw 4. The shank or body portion of the wrench is provided at its lower end with a cylindrical recess 5, with which communicates the lower end of a vertical groove 6, and said groove in turn communicates with the laterally enlarged or widened opening 7 in the face of the shank. A sliding bolt 8 fits within said groove 6 and is provided with a vertical guide-slot 9, engaged by a guide or securing screw or pin 10, which extends radially into the shank. The lower end of the bolt is prevented from lateral movement by means of guide-plate 11, which is bifurcated and embraces snugly said bolt, as illustrated most clearly in Fig. 4. Said bifurcated plate 11, in order that it may be held reliably in position, fits into oppositely-disposed grooves $12^a$, formed in the shank, and is prevented from sliding forward and outward by means of a set-screw 13, which passes downwardly through it and into the shank, as shown clearly in Fig. 2. The bolt 8 is held downwardly with a yielding pressure by means of a spring 14, which occupies the groove 6 and is interposed between the upper end of the same and the upper or opposing end of said bolt.

15 designates an externally-threaded collar or cylindrical tap which screws into the lower end of the shank 1, and journaled rotatably in said collar or tap and extending vertically into the shank is a tubular clutch-section 16, provided with a downwardly-disposed annular shoulder 17, which rests upon the upper end of the collar or tap 15, which therefore holds the tubular section reliably in position. The upper end of said section is provided with ratchet-teeth 18, all disposed in the same direction, which act in conjunction with the beveled lower end of the bolt 8, and the lower end of said tubular section is squared internally, so as to engage a nut or other angular object.

In operation it is obvious that after the rectangular end of the section is engaged with a nut or bolt to be turned it is simply necessary, by means of the handle, to turn the shank so that the spring-actuated bolt will engage and bear against the abrupt face of the opposing tooth, and after turning the nut or bolt by one twist of the hand as far as convenient the movement of the hand is reversed and the bolt slides inoperatively over the ratchet-teeth of the clutch-section 16 without turning the latter back or otherwise affecting its position. The handle is then turned as before to operate the clutch-section 16 still more, and this operation is repeated until the bolt or nut is screwed home or disconnected, as the case may be. It is obvious, of course, that this ratchet-section may be made to operate toward the right or toward the left, as desired. The shank is provided at a suitable point with an opening or passage 20, whereon may be placed a rod by which to turn it in case the handle is removed.

Slight changes in the formation, proportion, or arrangement of the parts may be made without departing from the spirit of the invention.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

A wrench comprising a shank provided with a cylindrical recess or socket in its lower end, a collar or tap screwed into the lower end of the same, a clutch-section formed rectangular internally at its lower end and fitting into said recess or socket and provided with an annular shoulder which rests upon said collar or tap, and with ratchet-teeth at its upper end, a bolt slidingly mounted in said shank and suitably guided, a spring bearing upon the upper end of said bolt and holding it with yielding pressure into engagement with said ratchet, a bifurcated plate embracing said bolt and fitting in grooves in said shank, and a set-screw for holding said plate reliably in position, substantially as described.

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

THEODORE SCHAEFER.

Witnesses:

H. J. PELOT,

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