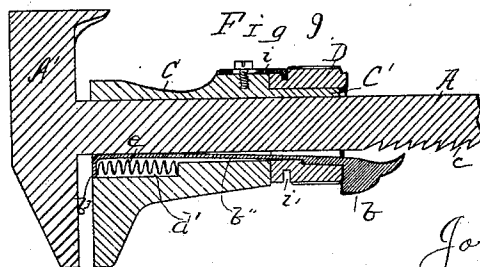
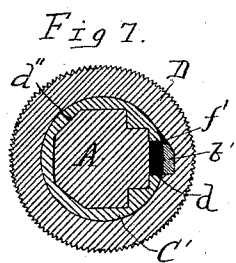
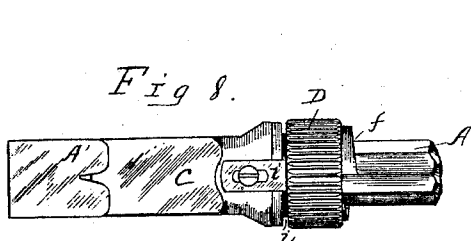
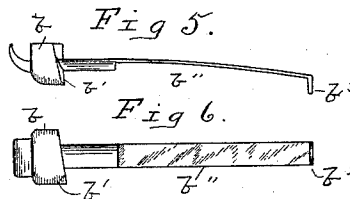
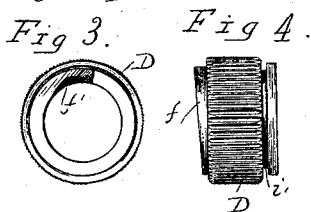
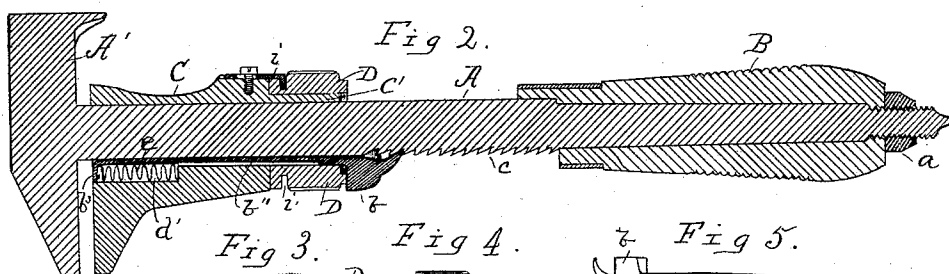
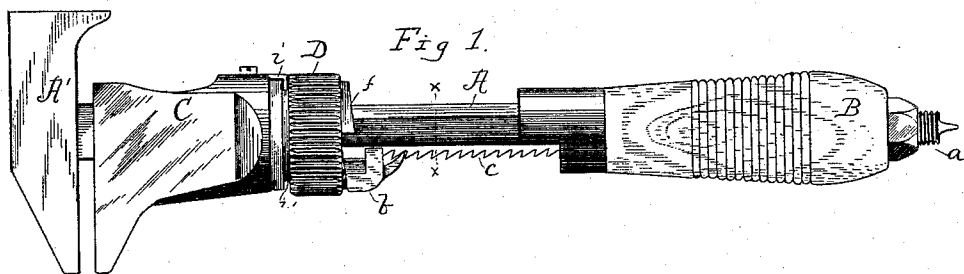


(No Model.)

J. GEISLER.
NUT WRENCH.

No. 498,782.

Patented June 6, 1893.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN GEISLER, OF DAYTON, OHIO.

NUT-WRENCH.

SPECIFICATION forming part of Letters Patent No. 498,782, dated June 6, 1893.

Application filed February 17, 1893. Serial No. 462,675. (No model.)

To all whom it may concern:

Be it known that I, JOHN GEISLER, of Dayton, county of Montgomery, State of Ohio, have invented a new and useful Improvement in Nut-Wrenches, of which the following is a specification.

My invention relates to new and useful improvements in nut-wrenches; the object of the invention is to provide a wrench so constructed that it may be conveniently and quickly adjusted to suit the diameter of any nut or other article it may be used upon.

The nature of my invention consists of a spring-actuated pawl and ratchet mechanism by means of which the movable jaw may be easily adjusted to any desirable position, and therein maintained most rigidly, regardless of the amount of strain it may be called upon to stand.

In the drawings accompanying the specification, in which like letters denote corresponding parts: Figure 1. is a side elevation of a wrench with my improvement; Fig. 2. a longitudinal sectional view through the center; Fig. 3. a detail detached plan view of the collar; Fig. 4. a detail detached side elevation of the same; Fig. 5. a detail, detached horizontal view of the ratchet pawl, showing the necessary curvature in the shank thereof; Fig. 6. a detail, detached plan view of same; Fig. 7. a vertical section through the center of the collar, showing the shank of the pawl in section, the position it occupies, when the pawl is free from engagement with the shank A; Fig. 8. a top view of the device, broken away on the line X—X of Fig. 1; Fig. 9. a horizontal section of the jaws with part of the shank broken away, showing the pawl free from engagement.

The letter A represents the shank, at one end of which is a fixed jaw A' conveniently provided with claws for removing tacks or nails, while the other end is constructed to perform the work of a screw driver; to this end of the shank the handle B is secured, and maintained thereon, by the nut *a*. The shank is provided with a series of ratchet teeth *c*, on its lower surface, for engagement with the tooth of the pawl *b*, having the inclined portion *b'* and a spring metal shank *b''* turned at right angles at the end *b³*. The object of the peculiar construction of this pawl will be ex-

plained hereinafter. C represents the movable jaw, having a sleeve portion C'. Through this jaw there is a central opening *d''* conforming to the shape of shank A, in which said shank is mortised; a slot extends downwardly longitudinally from the central opening, and through the sleeve, as at *d* into which the shank *b''* of the ratchet pawl fits; by turning the collar D the recess *f'* therein, is brought horizontally above the slot *d*, at which time the shank *b''* of the pawl is permitted to spring into the recess *f'* through the slot *d*, and thereby the said pawl is freed from engagement with the teeth on the shank A. Consequently the movable jaw may be slid along the shank and the pawl be made to engage with the teeth *c* at any desired distance from the fixed jaw. It will be understood that the slot *d* extends entirely through the thickness of the sleeve C', so that the shank *b''* of the ratchet pawl is permitted to spring the required distance to become disengaged with the teeth *c*. The slot also extends longitudinally through the jaw terminating at the forward end in a recess or spring seat *d'* of sufficient magnitude to receive a spiral spring *e* which is inclosed and confined therein by the shank *b''*, the end *b³* of which incloses the end of the recess, thereby maintaining the spring *e* within said recess and causing it to apply the necessary tension to draw the pawl sufficiently forward when released from the teeth *c*.

Having described the constructive features of my invention, its operation will be briefly stated.

It will be noted that the slotted portion of the movable jaw, indicated by *d*, is in the lower portion of the sleeve of said jaw, or that part nearest the ratchet teeth of the shank A. When the recess *f* in the collar D is brought immediately above the slot *d*, the shank *b''* of the pawl, by reason of the natural resiliency thereof, springs upward into the recess *f*, and the tooth of said pawl thereupon withdraws from the ratchet teeth *c*; at the same instant the spring *e*, the purpose of which is to keep the pawl normally against the inclined surface of the collar, draws the pawl forwardly by pressing against the portion *b³* thereof. To secure the movable jaw at any adjustment, the collar D is turned in the direction to bring the pawl gradually over the inclined surface

f'. This presses the pawl downwardly in the direction of the shank A and out of the recess *f* over the beveled surface thereof, thereby compressing the spring *e*, as the pawl is brought 5 against the inclined portion of the collar, and the spring metal shank *b''* of the pawl in the direction of the shank A. It will be understood that the pawl becomes engaged with the teeth *c* immediately upon entering the incline 10 of the collar, and is released therefrom when it is entirely off of the inclined portion of said collar. The collar D is maintained upon the sleeve C' by the guide plate *i* entering the groove *i'* on said collar, which collar is maintained in a fixed axis of rotation by the plate 15 *i* which has a downwardly projecting flange that enters the groove *i'* on said collar; this plate is adjustably attached to the movable jaw.

20 Having described my invention, I claim—

1. In a nut wrench, the combination with the shank A provided with ratchet teeth and a fixed jaw having a sleeve portion integral therewith, and a longitudinal slot extending 25 through said sleeve as at *d*, and terminating in a recess or spring seat *d'*, a spiral spring adapted to fit said recess, a ratchet pawl adapted to fit in said slot and to inclose the end of the

recess *d'*, a collar with an annular incline and an annular groove mounted on the sleeve portion C' and engaging with the ratchet pawl, substantially as herein described. 30

2. In a nut-wrench, the combination with the shank having ratchet teeth thereon and a fixed jaw; of a movable jaw with a sleeve portion, a slot extending through said movable jaw terminating in front in a recess or spring seat, a collar having an annular incline and groove, a ratchet pawl operated by said collar to release the movable jaw or maintain it 35 in a fixed position, substantially as described. 40

3. The combination of the fixed jaw, the shank A with ratchet teeth, the movable jaw with a slot therein, terminating in a recess *d'*, a spring seated in said recess, the pawl seated 45 in the slot and inclosing said spring within the recess, the collar D provided with the annular incline *f* and the annular groove *i'*, the plate *i* to maintain said collar in position, substantially as described. 50

In testimony whereof I have hereunto set my hand this 7th day of February, 1893.

JOHN GEISLER.

Witnesses:

GEORGE H. WOOD,
R. J. MCCARTY.