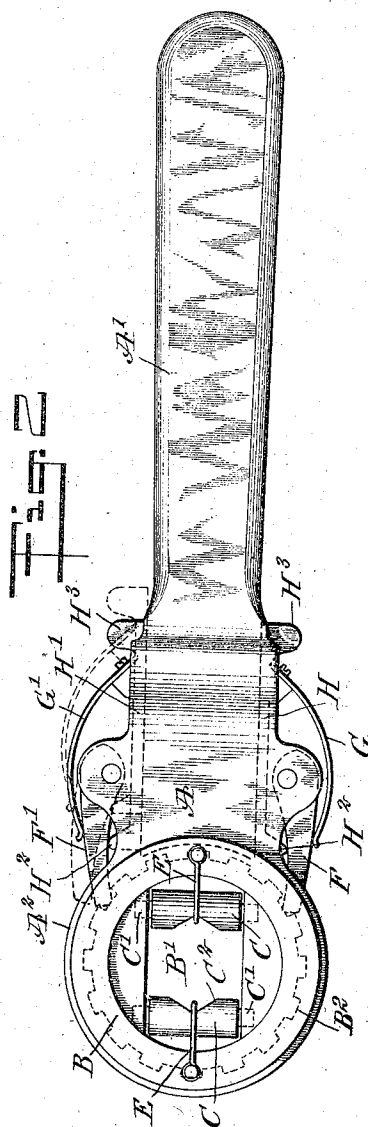
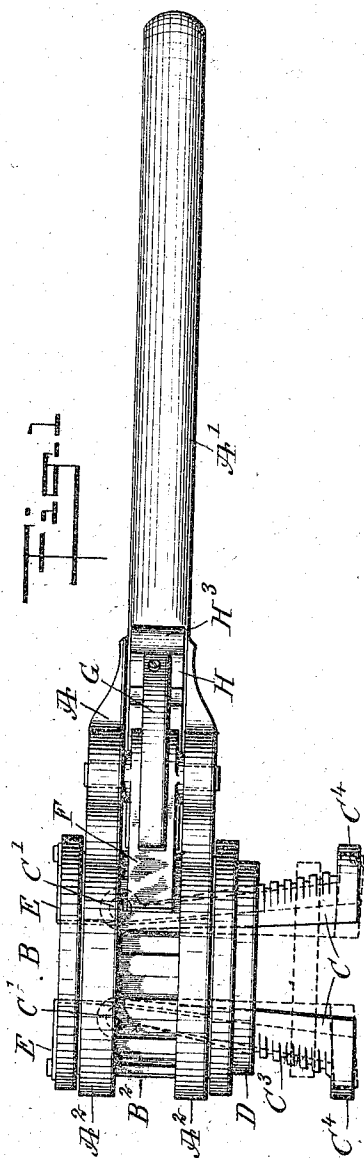


No. 867,005.

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E. H. BOAZ.
WRENCH.

APPLICATION FILED DEC. 20, 1906.



WITNESSES

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EMERY HATCHER BOAZ, OF BENBROOK, TEXAS.

WRENCH.

No. 867,005.

Specification of Letters Patent.

Patented Sept. 24, 1907.

Application filed December 20, 1906. Serial No. 348,674.

To all whom it may concern:

Be it known that I, EMERY HATCHER BOAZ, a citizen of the United States, and a resident of Benbrook, in the county of Tarrant and State of Texas, have invented a new and Improved Wrench, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved wrench arranged to combine simplicity with strength to permit convenient gripping, turning and releasing of different sized nuts or other articles, and to allow of screwing the nut any distance along a bolt without removing the wrench from the nut.

The invention consists of novel features and parts and combinations of the same, which will be more fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification; in which similar characters of reference indicate corresponding parts in both the views.

Figure 1 is a side elevation of the improvement, and Fig. 2 is a plan view of the same.

The stock A of the wrench is provided at one end with an integral handle A' and at the other end with the spaced bearings A², in which is mounted to turn a head B having a central opening B' and carrying jaws C—C pivotally connected at C' with the head B so as to extend within the central opening B' thereof, at a distance beyond one end of the head B, as plainly illustrated in Fig. 1. The jaws C are provided at their inner faces with V-shaped grooves C² for readily engaging and gripping the nut or other article to be turned by the wrench, and the outer faces C³ of the said jaws are beveled and threaded and engaged by a nut D, so as to move the jaws C towards each other on screwing the nut outward on the jaws, as indicated in dotted lines in Fig. 1. The jaws C are provided at their outer terminals with outwardly extending flanges C⁴, that limit the outward screwing motion of the nut D on the threaded faces C³ of the jaws C. The jaws C are pressed outwardly by springs E secured to the head B, so as to firmly hold the threaded faces of the jaws in engagement with the nut D and consequently when the latter is screwed outward the jaws C are moved toward each other, and when the nut D is screwed inward on the jaws the latter swing outward to release the nut or other article gripped by the jaws.

In order to turn the head B in either direction, the following arrangement is made: The peripheral surface of the head B is provided between the bearings A² with ratchet teeth B² adapted to be engaged by pawls F and F' fulcrumed on opposite sides of the stock A, and the said pawls F and F' are pressed on by springs G, G' secured to slides H, H' mounted to slide longitudinally on opposite sides of the stock A. Each of the slides H is provided at its inner end with a lug H² and

at its outward end with a handle H³ adapted to be taken hold of by the operator, to push the corresponding slide H or H' inward or outward. Now when the slides H and H' are in the innermost position, as illustrated in the drawings, then both pawls F, F' are held in engagement with the ratchet teeth B² by the corresponding springs G, G', but when either of the slides H, H' is moved rearward then the corresponding offset H² swings the corresponding pawl F or F' outward and out of engagement with the ratchet teeth B². Now it is evident that as the springs G, G' are attached to the slides H, H' they move with the latter and consequently when a slide H or H' is moved backwardly into an outermost position, then the corresponding spring engages with its free end the pawl F or F' directly opposite the offset H², so as to hold the slide in the outermost position.

The wrench is used as follows: When the jaws C—C are open, as indicated in Fig. 1 they can readily be engaged with the nut or other article to be turned, then the nut D is screwed down on the jaws so as to firmly engage the same with the nut. Now when it is desired to screw the nut down on the bolt the slide H' is moved into an outermost position so as to render the pawl F' inactive, and the operator by now moving the handle A' forward and backward intermittently rotates the head B so as to turn the nut on the bolt. Now by having the head B provided with a central opening B' it is evident that the nut can be screwed down any distance on the bolt, as the latter can readily extend up through the central opening B'. After the nut has been screwed into place the operator turns the nut D in the reverse direction, so as to allow the jaws C to open and disengage the nut screwed up on the bolt. The wrench can now readily be removed. When it is desired to unscrew a nut the jaws C are engaged with the nut in the same manner as described, and then the slide H is moved outward, to render the pawl F inactive, while the other slide H' is held in an innermost position with the pawl F' in engagement with the ratchet teeth B². Now by the operator working the handle A' forward and backward an intermittent rotary motion is given to the head B, to unscrew the nut, as the head B is now turned in the reverse direction from the one previously given when screwing up the nut, as above described.

The wrench shown and described is very simple and durable in construction, and permits the operator to securely engage and grip nuts and like articles of different sizes, turning the articles in either direction as the case may require.

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

1. A wrench comprising a handled stock, a head carrying jaws and mounted to turn in the said stock, ratchet

teeth on the said head, pawls fulcrumed on opposite sides
of the said stock for engaging the said ratchet teeth,
slides on the stock for throwing the said pawls out of
engagement with the said ratchet teeth, and springs se-
cured on the said slides and pressing the said pawls.

5 2. A wrench comprising a stock having at one end a
handle and at the other spaced bearing rings, a head hav-
ing a central opening rotatable in the rings, jaws pivoted
to the head within the central opening and projecting

therefrom, the outer surface of said jaws being beveled 10
and screw-threaded, and a nut encircling the jaws and
coacting with the threads thereof.

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

EMERY HATCHER BOAZ.

Witnesses:

CLIFFORD G. BECKHAM,
N. HARDING.