No. 778,115. PATENTED DEC. 20, 1904.

E. L. CODDINGTON.

COMBINED BOLT THREAD CUTTER AND WRENCH.

APPLICATION FILED JUNE 4, 1904.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

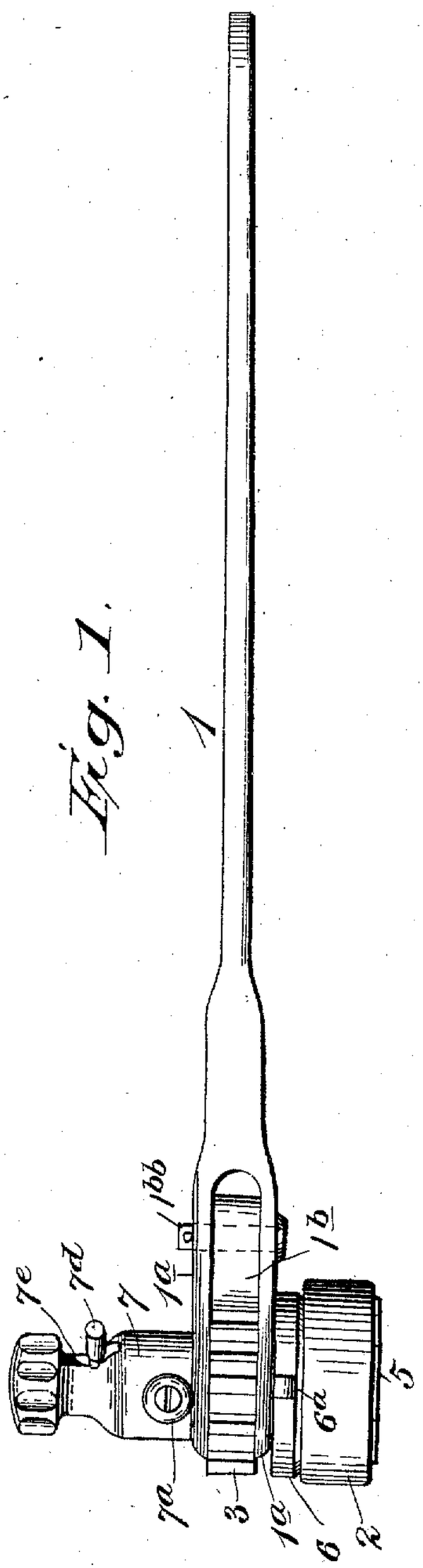


Fig. 2.

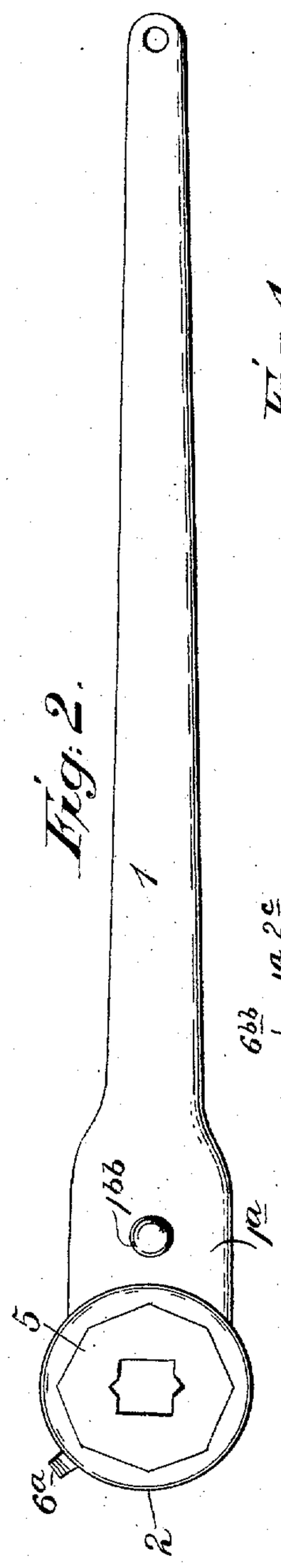


Fig. 4.

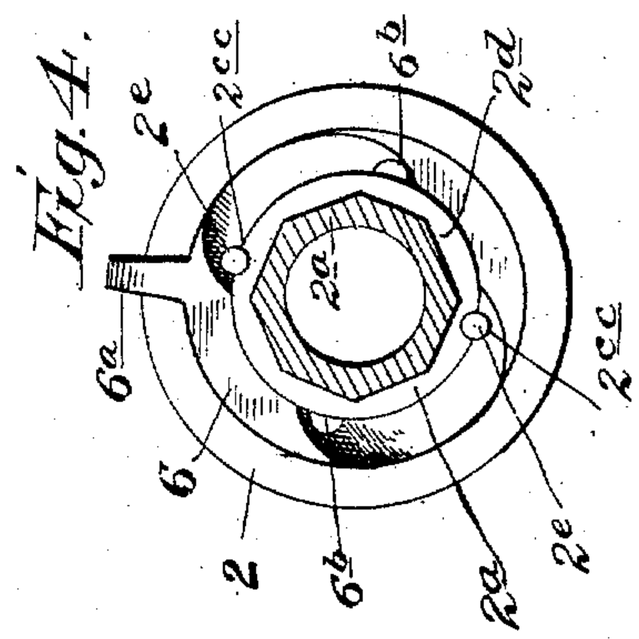
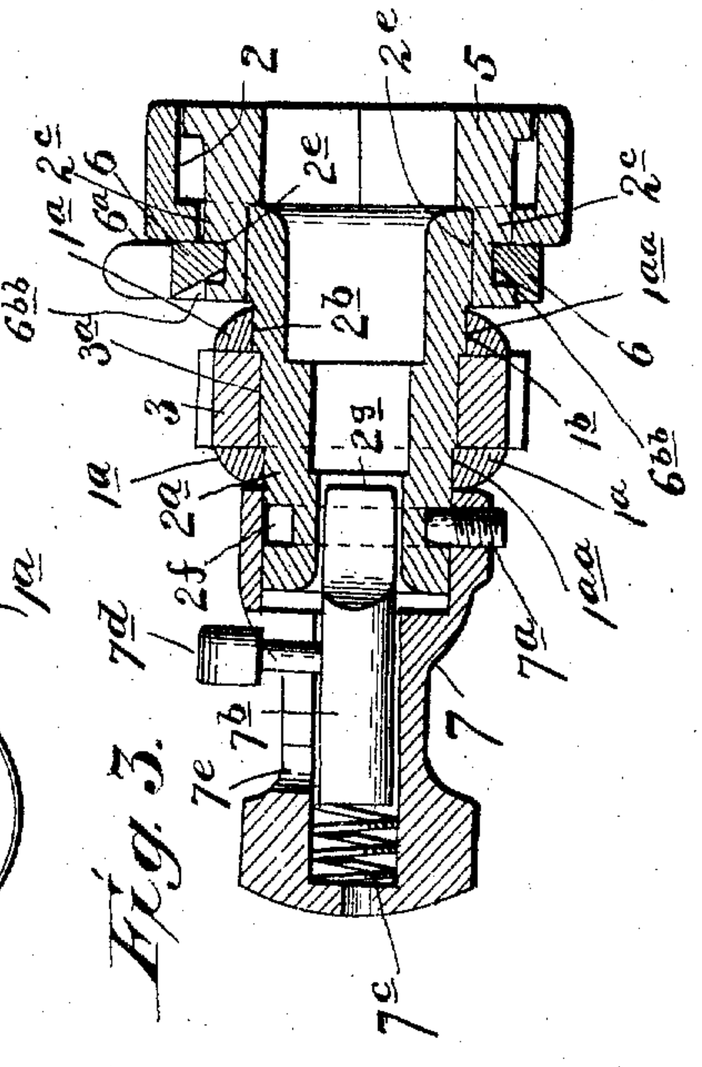


Fig. 3.



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E. L. CODDINGTON.

COMBINED BOLT THREAD CUTTER AND WRENCH.

APPLICATION FILED JUNE 4, 1904.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 9.

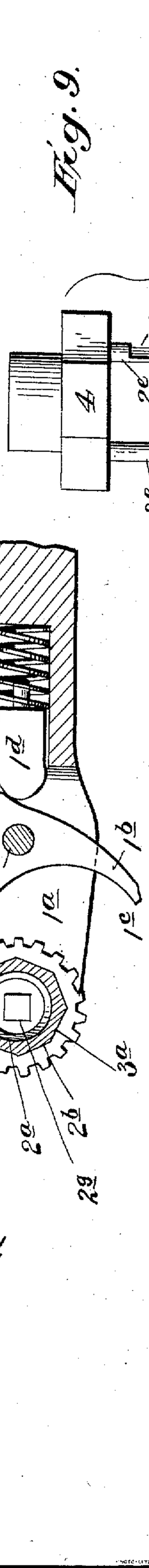


Fig. 8.

Fig. 7.

Fig. 10.

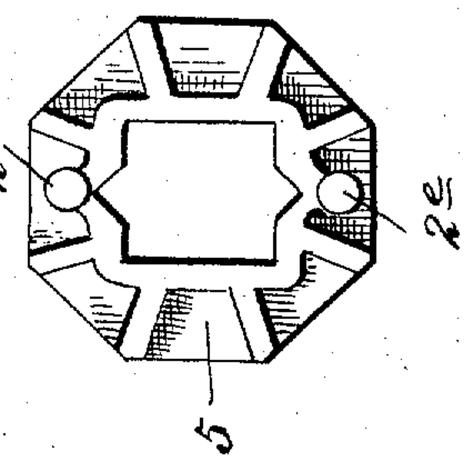
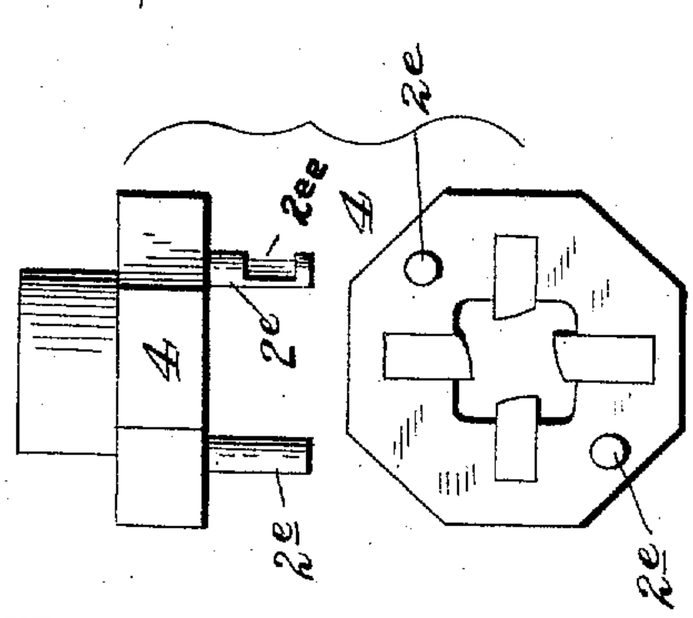


Fig. 6.



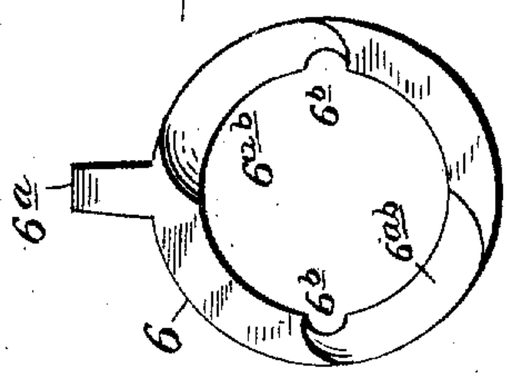


Fig. 5.

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No. 778,115. Patented December 20, 1904.

UNITED STATES PATENT OFFICE.

ERASTUS L. CODDINGTON, OF MARION, OHIO.

COMBINED BOLT-THREAD CUTTER AND WRENCH.

SPECIFICATION forming part of Letters Patent No. 718,115, dated December 20, 1904.

Application filed June 4, 1904. Serial No. 211,138.

To all whom it may concern:

Be it known that I, ERASTUS L. CODDINGTON, a citizen of the United States, residing at Marion, in the county of Marion and State of Ohio, have invented new and useful Improvements in a Combined Bolt-Thread Cutter and Wrench, of which the following is a specification.

My invention relates to improvements in combined bolt-thread cutters and wrenches.

Said invention has for its object to promote facility and convenience in applying the device in practical use and in simplifying structural detail and lessening cost of manufacture of the contrivance.

Said invention consists of the union or combination of means or devices in a single tool for producing screw-threads upon bolts and for the purposes of a wrench, substantially as hereinafter fully disclosed, and particularly pointed out by the claims.

In the accompanying drawings, illustrating the preferred embodiment of my invention, Figure 1 is a plan view, and Fig. 2 is a side view, of the same. Fig. 3 is an axial section. Fig. 4 is a section produced transversely through the "head" or axis of the tool intermediately of the locking annulus or ring and the nut or die receiving portion or socket of said head viewed in the direction of said annulus or ring. Figs. 5 and 6 are opposite side or lateral views of the locking-ring removed. Fig. 7 is a broken-away detached view of the handle or lever, showing more particularly the bifurcated apertured end thereof. Fig. 8 is a broken-away and partly-sectional view of said lever or handle produced at the same end and disclosing more particularly the spring-pressed dog and double-acting pawl housed therein. Fig. 9 is a detached view of a screw-thread-forming die. Fig. 10 is a like view of a nut receiving or engaging removable collar used in connection with my invention.

In the carrying out of my invention I constitute the same of two principal or general members 1 and 2, the former being a handle or lever and the latter a tubular head or socket having a tubular elongation or extension 2^a, reduced in cross-section or diameter to the proportions relatively of what may be termed a "spindle," upon a somewhat raised angular surface or portion 2^b of which is slipped or inserted a ratchet annulus or collar 3, having an opening 3^a therethrough, whose walls are produced with a corresponding surface to enable said annulus or collar when actuated, as presently described, to be effective in turning or actuating said spindle and accordingly the die-carrying and nut-engaging collar-carrying head, as will also later be more fully apparent. Said handle or lever 1 is bifurcated at one end and has the branches or arms 1^a thus formed provided with coincident apertures 1^{aa} to permit the insertion of the spindle extension 2^a of the socket-head 2 therethrough, as in assembling said handle with said ratchet-collar upon said spindle. It will be noted that one of the openings or apertures 1^{aa} is of such size as to suitably receive said spindle, while the other of said openings is relatively enlarged for the passage of the raised angular surface or portion 2^b of the spindle 2.

The socket-head 2 has an angular inner surface to enable the retaining therein as against turning of a bolt-thread-cutting die, as 4, or a collar, as 5, for applying it to a nut, as when used as a wrench. Said socket-head has two holes or passages 2^c in its bottom extending therethrough and terminating in recesses 2^{cc}, produced in the circumference of a circular enlargement or shoulder 2^d, formed upon the spindle extension 2^a to receive studs or projections 2^e of the bolt-screw-thread-cutting die 4 and of the nut-receiving collar 5, whichever may be required for use, when contained within said socket-head, said studs having lateral notches or recesses 2^{ee}, the purpose of which will be apparent presently.

A locking-ring 6, having a finger piece or projection 6^a for its ready manipulation, is slidingly or movably arranged upon the shoulder 2^d, having opposite notches or recesses 6^b therein adapted to register with the openings or passages 2^c in the socket-head 2 and the notches or recesses 2^{cc} of said shoulder, said notches 6^b 2^{cc} being adapted to conjointly receive the studs 2^e of the die 4 or of the collar 5, the recesses or notches 2^{ee} of said studs

at that time being in the same plane with the aforesaid notches 6^b 2^{cc} as at the initial point in effecting the locking of said die or collar in place. Said sliding or locking ring 6 has extending from its notches 6^b beveled or cam surfaces 6^{bb}, conforming to the general curvature of said ring, with their terminals arranged about diametrically opposite each other, whereby, it being assumed that the studs 2^e, with their notches 2^{ee}, are in the position above ascribed to them, that as said ring is suitably moved or revolved said beveled or cam surfaces 6^{bb} will engage the outer walls or surfaces of said notches, which are correspondingly beveled, and that upon said ring reaching its final position the wedging action thus imparted to said studs will firmly lock the latter in place, and accordingly the die 4 or collar 5, as may be the case. The counterpart of the beveled or cam surfaces aforesaid may be produced, as at 6^{ab}, upon the opposite side of the locking-ring 6, the same, however, alternating with the first-named. This arrangement renders the locking-ring effective with either side presented toward the studs 2^e.

The lever or handle 1 has pivoted therein between the branches of its bifurcated portion a double-acting pawl 1^b, as, preferably, by a key-retained pivot 1^{bb}, passed through said branches and pawl, said pawl having its integral divergent teeth 1^c adapted to alternately engage the ratchet annulus or collar 3 at opposite edges thereof by moving said handle in opposite directions upon its pivot, as well understood, for actuating said ratchet-collar and through it the socket-head 2 for the purposes as aforesaid. Said pawl has its angle or inner end adapted to alternately engage the opposite inclined or tapered outer end of a buffer rod or dog 1^d, suitably housed in said lever and seated upon a spring 1^e, arranged within said handle to hold said dog or buffer in forcible contact with said pawl for aiding the action of the latter.

It will be noted that of course the aperture in the outer end of the lever or handle 1 is provided for the convenient reception and application of a rope or line thereto, as in aiding the actuation thereof from a point out of the range of the application of the hand thereto, as will be readily understood.

Upon the opposite end of the spindle portion 2^a, which has an annular groove or recess 2^f therein near one end, and its bore produced in angular outline for a short distance, as at 2^g, is arranged a loose hand-actuated knobbed member or sleeve 7, with its enlarged or greater-diametered portion encompassing so much of said spindle as contains said groove and having studs or pins 7^a projecting from its inner surface and entering or engaging the latter, whereby said member or sleeve may be free to be turned independently of said spindle and socket-head, said studs or pins being preferably in the form of blunt ended or cylindric screws and readily removable, if desired, for renewal or other purposes. Said sleeve or member has arranged within it an angular bolt or coupling 7^b, cushioned upon and subjected to the action of a spring 7^c, suitably seated in said sleeve, said bolt being provided with a finger-piece 7^d, extending through a bayonet or L-shaped slot 7^e in said sleeve for the movement of said coupling or bolt and to be retained out of action normally. This sleeve or member, with its bolt, is designed to be resorted to or brought into service for actuating the socket-head 2, more especially in using the device as a wrench for turning nuts when the lever or handle 1 for any reason is inconvenient or incapable of use or ineffective for completing such operation, the knobbed end of said member or sleeve in that instance being grasped and the socket-head thus actuated by hand. Also it is noted that by having the knobbed member 7 separate from the socket-head said member is prevented from turning when grasped by the hand for steadying the device, as in actuating the latter by the lever 1.

Latitude is allowed as to details herein, as they may be changed as circumstances suggest without departing from the spirit of my invention and the latter still be protected.

I claim—

1. A device of the character described, employing a handle or lever carrying a pawl, a socket-head equipped with a ratchet-collar engaged by said pawl, a locking-ring applied to a spindle extension of said socket-head, and means for the effective application of said socket for use, having studs or projections, said ring adapted to have an eccentric or wedging action upon said studs or projections.

2. A device of the character described, employing a pawl-equipped lever, a socket-head, a ratchet-collar mounted upon a spindle extension of said socket-head and adapted to be engaged by the pawl of said lever, an insertible collar having studs or projections provided with lateral notches, and a locking-ring arranged movably upon said spindle extension and adapted to have an eccentric or wedging action upon said studs or projections via said notches.

3. A device of the character described, employing a socket-head having a spindle extension provided with an angular cross-sectional surface, a ratchet annulus or collar fitting said angular surface, a lever or handle having pivotal connection with said spindle extension and provided with a double-acting pawl, adapted to alternately engage said ratchet annulus or collar, and a nut or die receiving collar adapted to fit into said socket and having notched studs or projections, and a locking-ring having notches opposed to the notches of said studs and beveled or cam surfaces forming extensions of said locking-ring to impart an eccentric or wedging action upon said studs.

4. A device of the character described, employing a ratchet and lever actuated socket-head, and a nut or die receiving collar, having studs or projections provided with lateral notches, and a locking-ring movably arranged upon a spindle extension of said socket-head having notches terminating in beveled or cam surfaces traversing arcs of said ring, said notches being adapted to register the notches of said studs, and means for preventing longitudinal movement of said locking-ring.

5. A device of the character described, employing a socket-head adapted to receive a nut or die holding collar, means for locking in place said collar, a hand-actuated member or sleeve, said socket-head having axial movement upon said hand-actuated member, and a bolt adapted to provide for the conjoint rotation or turning of said socket-head and hand-actuated member.

6. A device of the character described, employing a socket-head adapted to receive a nut or die holding collar, means for locking in place said collar, a hand-actuated member or sleeve, said socket-head having axial movement upon said hand-actuated member, and a spring-actuated bolt adapted to provide for the conjoint rotation of said head and hand-actuated member or sleeve, and having a finger-piece movable in a slot in an extension of said socket-head.

7. A device of the character described, employing a socket-head adapted to receive a nut or die holding collar, means for locking in place said collar, a hand-actuated sleeve or member, said socket-head having axial movement upon said hand-actuated member, and a bolt adapted to provide for the conjoint rotation of said socket-head and hand-actuated member or sleeve and having a finger-piece extending through a bayonet-slot in an extension of said socket-head and adapted to be retained in a retracted position by said slot.

8. A device of the character described, employing a socket-head adapted to receive a nut or die holding collar, means for locking the latter to an extension of said socket-head, a movable hand-actuated member or sleeve having inward-projecting studs or projections engaging an annular groove in said extension and carrying a sliding bolt adapted to engage an angular bore in said socket-head extension, and means adapted for the retention of said bolt in retracted position.

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

ERASTUS L. CODDINGTON.

Witnesses:
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D. K. HEMPSTEAD