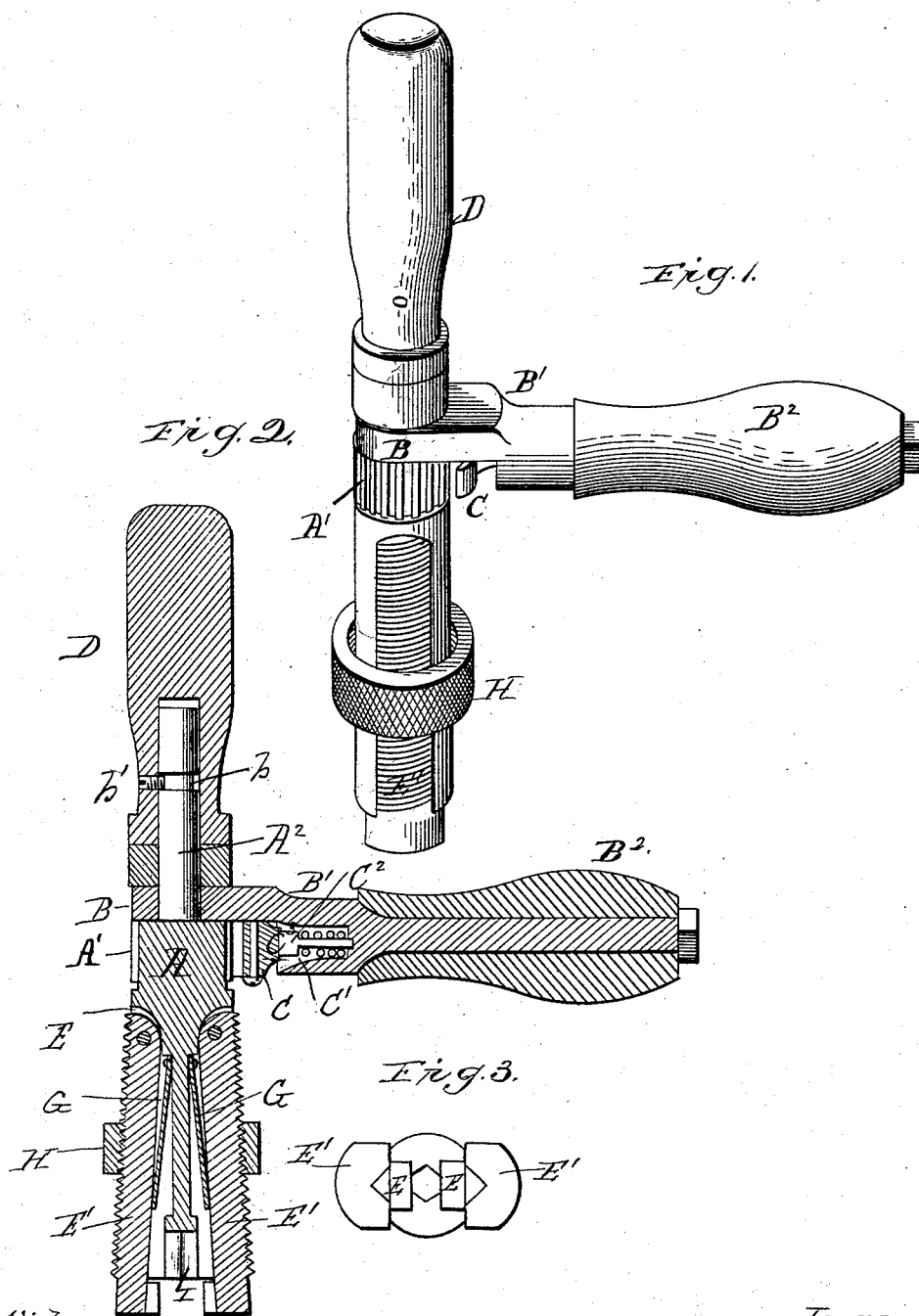


(No Model.)

C. H. BERNHEIM.
ADJUSTABLE RATCHET WRENCH.

No. 524,412.

Patented Aug. 14, 1894.



Witnesses
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UNITED STATES PATENT OFFICE.

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ADJUSTABLE RATCHET-WRENCH.

SPECIFICATION forming part of Letters Patent No. 524,412, dated August 14, 1894.

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To all whom it may concern:

Be it known that I, CHARLES H. BERNHEIM, of Lexington, county of Davidson, State of North Carolina, have invented new and useful Improvements in a Combined Adjustable Nut and Drill Ratchet-Wrench, of which the following is a full and exact description, reference being had to the accompanying drawings, making part of this specification.

My invention relates to a combined nut and drill ratchet wrench which while adjustable to receive nuts of varying sizes, is also adapted to hold the shank of a drill or bit, whereby to combine in a single tool, one adapted for various kinds of work, having few parts, and adapted for both light and heavy work, easily and quickly adjustable to its various uses, without the use of interchangeable parts.

The invention consists of the novel features and the peculiar combination of the parts which hereinafter will be more fully set forth and claimed and which are shown in the accompanying drawings, in which—

Figure 1, is a perspective view of my improved combined adjustable nut and drill ratchet wrench. Fig. 2 is a vertical section of the same. Fig. 3 is a bottom plan view of the wrench, the operating handle being removed.

The head A, has mounted thereon about centrally of its length a ratchet disk A', and the portion of the head above the disk is made of smaller diameter than the main portion as shown at A², and has loosely mounted upon it a sleeve B, which sleeve has an arm B', projecting therefrom to which a handle B², is secured. Mounted on the arm is a reversible pawl C, of usual construction and well known operation and the handle is provided with a socket C', in which is mounted a spring actuated dog C², which engages the pawl, said spring actuated dog acting to hold the pawl in engagement with the ratchet disk when thrown to either side to cause the pawl to rotate the disk and with it the head either to the right or left. The upper portion is provided with a circumferential groove b, and mounted upon said portion A², is a handle D, which is held endwise relative thereto by means of a screw b', passing through the same and engaging the groove which as above

stated while holding the handle endwise relative to the head permits the head to be revolved relative to the handle.

The lower portion of the head is provided with longitudinal grooves E, arranged opposite each other, in which are mounted arms E', pivotally connected to the head independently of each other, near the upper ends, in such manner that the lower ends may have a great range of movement as hereinafter described. The lower ends of these arms are provided with angle jaws or clamping faces of a form to engage the side faces of a nut, in any of the various positions of adjustment they may be set.

Mounted in the head beneath the arms E, are springs G, which act to force the arms apart or distend the same. The outer faces of the arms are screw threaded and mounted on the head is a collar H, internally screw threaded to engage the threads formed on the arms, and by the adjustment of said collar to or from the pivoted ends of said arms to permit the clamping jaws to be more or less opened or distended. The jaw portions of the arms project below the face of the head to move across the lower face thereof.

Formed in the lower end of the head is an angularly sloped tapering socket I, adapted to receive and hold the upper end or shank of a drill or bit and the clamping jaws are so formed that when brought to the full closed position they will engage the shank of the drill or bit also at a point below the socket and by which means form a secure connection between the bit and ratchet brace.

It will be seen that by pivoting the arms at points near their upper ends each independently of the other that a great range of movement is given to the lower or clamping ends so as to grip either small or large nuts, and that by forming the socket in the head to receive the shank of a drill or bit, that a combined adjustable nut and drill ratchet wrench is provided.

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

1. A wrench comprising a head having longitudinal grooves in its sides diametrically opposite each other, arms seated in said

grooves and pivoted to the head at one end, the other ends of the arms having jaws which overlap and work beyond the end of the wrench head, the outer faces of the arms being threaded, and a collar mounted on the head and internally threaded to correspond with the threads on the said arms, substantially as described.

2. A wrench comprising a head having a socket in its end to center a bit or tool, and having longitudinal grooves in its sides, arms seated in the said grooves and pivoted at one end to the head, the outer faces of the arms being threaded, jaws at the ends of the arms overlapping and working beyond and across the end of the head, springs located in the grooves and adapted to force the arms outward, and an internally threaded collar mounted on the head and adapted to engage with the screw thread of the arms, substantially as described.

3. The herein specified wrench comprising a head having ratchet teeth, a ratchet handle to rotate the head in either direction, a socket in the end of the head to center the tool, longitudinal grooves in the sides of the head at diametrically opposite points, arms seated in the grooves and pivoted to the head at their inner ends, the outer faces of the arms being screw threaded, jaws at the outer ends of the arms working across the socketed end of the head, springs located in the grooves to move the arms outward, and a collar internally threaded to engage with the arms and clamp their jaws against the sides of a tool or nut, substantially as described.

In testimony whereof I have hereunto set my hand.

CHARLES H. BERNHEIM.

Witnesses:

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