

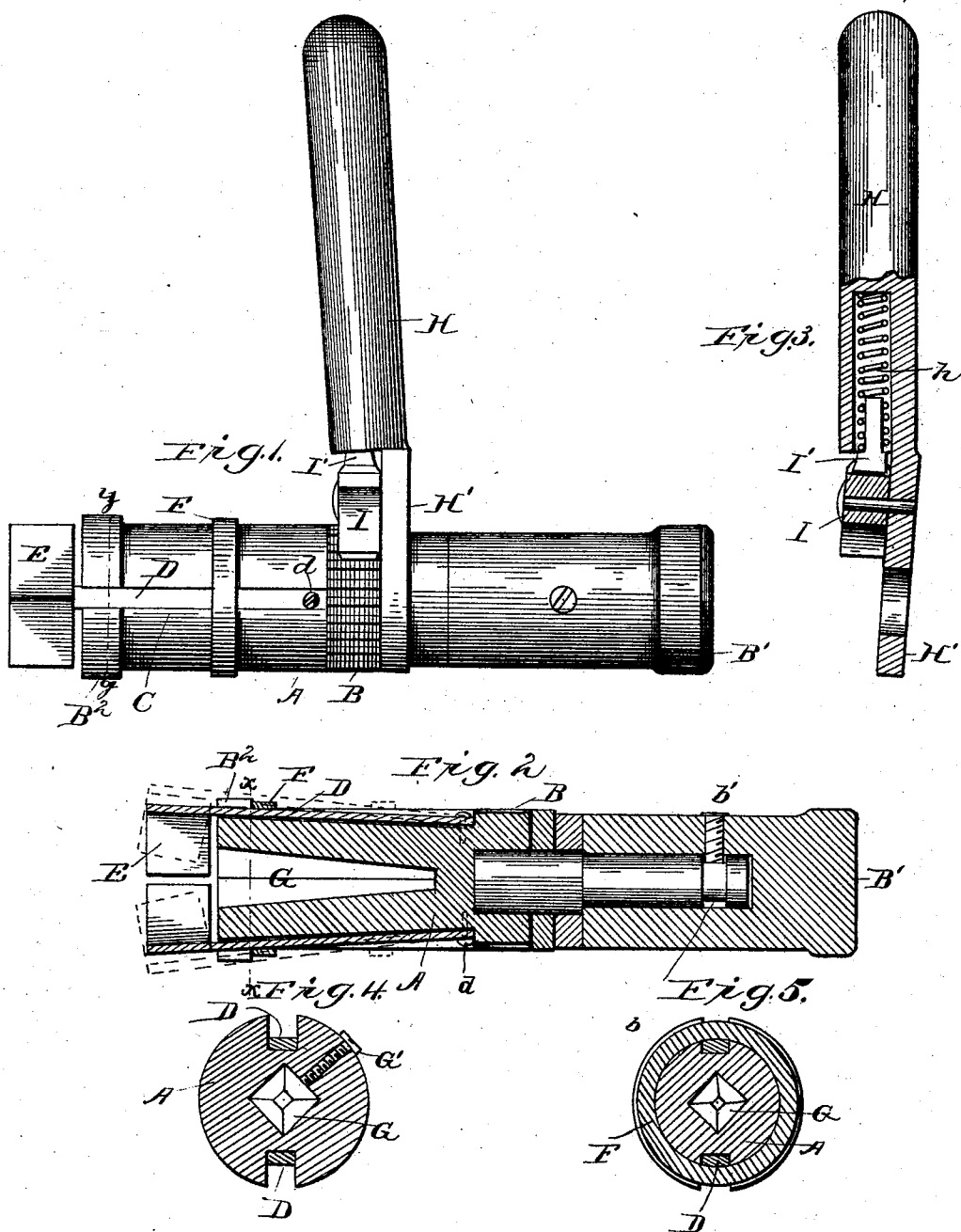
(No Model.)

C. H. BERNHEIM.

ADJUSTABLE NUT AND DRILL RATCHET WRENCH.

No. 501,862.

Patented July 18, 1893.



WITNESSES

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ADJUSTABLE NUT AND DRILL RATCHET-WRENCH.

SPECIFICATION forming part of Letters Patent No. 501,862, dated July 18, 1893.

Application filed April 19, 1893. Serial No. 470,933. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. BERNHEIM, of Conover, county of Catawba, 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 that class of ratchet wrenches provided with adjustable jaws adapting them for use with different sized nuts, and the invention consists in the combination of the head provided with the pawl and ratchet disk, and with the annular rim or flange, the longitudinal grooves and spring arms provided with nut clamping jaws and a ring adjustable on the head, and a socket in the head to receive the shank of a drill or bit, all as hereinafter described and claimed.

In the accompanying drawings Figure 1 is a side elevation of the improved device showing the nut jaws closed. Fig. 2 is a vertical section showing the nut jaws closed in full lines and showing the same in dotted lines to receive a larger nut, and also showing the drill or bit socket. Fig. 3, is a longitudinal section through the handle, showing the pawl with the spring locking dog for holding it engaged with the ratchet. Fig. 4 is a section on the line *y, y*, Fig. 1; Fig. 5 a section on the line *x, x*, Fig. 2.

A represents a head having formed thereon or connected therewith about centrally of its length a ratchet disk B, and the portion of the head above the ratchet to which the handle is connected is provided with a circumferential groove *b*, with which a screw *b'*, connected with the sleeve of the head or handle *B'*, engages acting to hold the handle endwise relative to the head while permitting the head to be rotated relative to the handle. The lower portion of the head is provided with an annular rim or flange *B²*, and said portion is provided with grooves C, extending from the lower edge of the ratchet disk to and through the flange. These grooves are preferably made tapering or inclining longitudinally inward from the flange toward the disk, and in which grooves are mounted spring arms D, connect-

ed of screws or bolts *d*. The spring arms D, have formed integral therewith at their lower ends angular clamping jaws E, for engaging the side faces of a nut. Surrounding the head is a ring F, having its inner face made in tapering form which engages the spring arms D, to clamp the jaws onto the nut. The lower portion of the head is provided with a socket G, made in form to receive the shank of a bit or drill, that is, provided with angular sides tapering from the mouth toward the closed or inner end and made of such size and length as to receive the shanks of varying sized drills or bits. A set screw *G'*, passes through the head to engage the shank to hold it in the socket.

The head or handle may be of any desired form either to grip with the hand or in the form of a breast plate, or a different form of handle may be used to best adapt the device to the kind of work to be done. The handle H for rotating the head is connected to said head by means of a sleeve or collar *H'*, and the handle is provided with a socket to receive a spring *h*. Mounted on the collar is a double pawl I, which is provided with an arm *I'*, with which the spring *h*, engages and which spring acts to hold the pawl engaged with the ratchet when thrown to either side and lock the handle engaged with the head and be rotated thereby. When the parts are in position represented by the full lines Figs. 1 and 2, the spring arms will grip a small nut and the ring F, will act to hold the jaws firmly engaged therewith and when it is desired to grip a nut of larger size the ring can be pushed up on the head to allow the arms to be spread apart sufficiently to take such larger nut, the ring being forced down a sufficient distance to hold the jaws engaged with said nut. By forming the flange *B²*, on the head, it will be seen that the strain is brought against the side walls thereof in such manner as to relieve the spring arms from side strain or twisting action.

By the construction as above described it will be seen that a combined adjustable nut and drill ratchet wrench is provided and at a reasonable cost and permit its use in places not readily accessible with the ordinary form of nut wrench.

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

The combination with the head of the pawl and ratchet disk, the head provided with the annular rim and with the longitudinal grooves, the spring arms mounted in the grooves the nut clamping jaws on the spring arms, a ring adjustable on the head to hold the jaws en-

gaged with the nut, and a socket in the head to receive the shank of a drill or bit, substantially as and for the purpose set forth. 10

In testimony whereof I have hereunto set my hand this 10th day of April, A. D. 1893.

CHARLES H. BERNHEIM.

Witnesses:

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