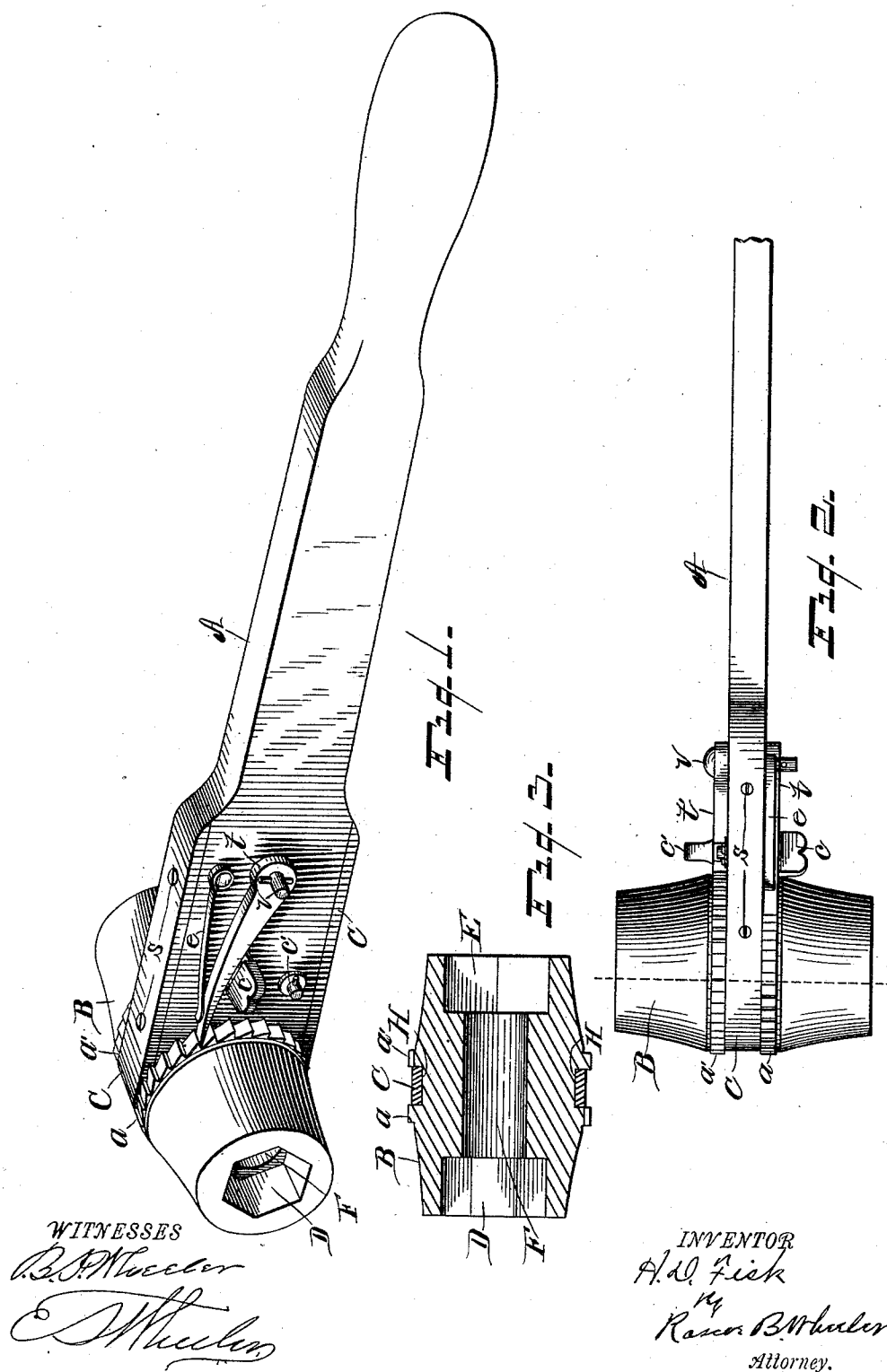


(No Model.)

H. D. FISK.
NUT WRENCH.

No. 467,401.

Patented Jan. 19, 1892.



UNITED STATES PATENT OFFICE.

HENRY D. FISK, OF DAVISBURG, MICHIGAN.

NUT-WRENCH.

SPECIFICATION forming part of Letters Patent No. 467,401, dated January 19, 1892.

Application filed October 16, 1889. Serial No. 327,233. (No model.)

To all whom it may concern:

Be it known that I, HENRY D. FISK, a citizen of the United States, residing at Davisburg, in the county of Oakland and State of Michigan, have invented certain new and useful Improvements in Nut-Wrenches; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in ratchet-wrenches; and it consists of a revolving head, cylindrical in form, having an opening passing longitudinally therethrough and terminating at each end in a larger opening or mouth to receive the nut, said head also having two rows of ratchet-teeth around its periphery, the acute angle of the teeth in said rows standing in opposite directions, and said head being centrally mounted on the end of a lever or handle, to each side of which is pivoted a spring-actuated pawl adapted to engage respectively with the rows of teeth of the revolving head, whereby the head may be revolved in either direction by the same motion of the handle for the purpose of screwing a nut on or off of a bolt, as desired, all of which will be hereinafter more fully set forth, and the essential features of the device pointed out particularly in the claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a perspective view of my improved wrench. Fig. 2 is a plan view of Fig. 1. Fig. 3 is a longitudinal section through the revolving head on dotted line of Fig. 1.

Referring to the letters of reference, A indicates the handle of the wrench; B, the revolving head; C, the metal strap encircling the head B, and by means of which said head is secured to the handle.

D and E are openings or mouths in the ends of the head to receive the nuts, and F is an opening through the head that receives the end of the bolt extending beyond the outer face of the nut when the wrench is in operation.

The head B is made of a solid piece, and is provided with a double row of ratchet-teeth *a a'* around its periphery, that are formed integral therewith, said teeth being located on each side of the horizontal center of the head, and the points of the teeth in said rows standing in opposite directions, as shown in Figs. 1 and 2. An annular groove H is formed in the periphery of the head B between the rows of teeth *a a'*. Said groove loosely receives the strap or band C, as shown in Fig. 3, which passes around the head B, its ends being secured to the handle A, as shown at s in Figs. 1 and 2, whereby the head is permitted to revolve, though firmly secured to the handle A, the end of said handle being concaved to fit the periphery of the head, as shown in Fig. 1. The head is provided with a recess in each end to receive the nut and with the central opening F passing longitudinally therethrough and communicating with the end recesses, said opening F being adapted to receive the end of the bolt that extends through the nut when applying the wrench thereto, the recess E in one end of the head being square and the recess D in the opposite end being polygonal, to adapt the wrench to the various forms of nuts, as shown in Figs. 1 and 3.

The pawls *t t'* are pivoted to the handle A on each side thereof, both pawls being secured by a single bolt *v*, passing through the handle, and the ends of said pawls, as shown in Fig. 2, and are adapted to engage with the rows of ratchet-teeth *a a'*, respectively. Each pawl is provided with a spring *e*, adapted to bear against the edge thereof to retain said pawl in contact with the teeth, as shown in Fig. 2, and with a thumb-set or stop *c c'*, by the turning of which the pawl may be disengaged from said teeth. The pawl *t* is adapted to engage with the ratchet-teeth *a* and the pawl *t'* with the teeth *a'*. In practice, however, but one pawl is engaged at a time. As an illustration—

To employ the wrench to screw a nut onto a bolt, the head B is placed on the nut, said nut lying in the recess D in the end thereof. The thumb-stop *c'* is then turned so that the edge thereof will bear against the pawl *t'* and lift it from engagement with the ratchet-teeth

5 a' , as shown in Fig. 2. Then by throwing
 the handle A to the left the pawl t , engaging
 with the ratchet-teeth a , will revolve the head
 B, turning the nut. As the handle is thrown
 10 back, the pawl t will slip over the teeth a
 and again engage said teeth as the handle is
 thrown to the left. Thus it will be seen that
 by oscillating the handle of the wrench the
 nut is screwed onto the bolt. Should it be
 15 desired to remove the nut from the bolt, the
 thumb-stop c is turned edgewise, so as to lift
 the pawl t from engagement with the ratchet-
 teeth a , and the thumb-stop c' is turned so as
 to permit the pawl t' to engage the ratchet-
 20 teeth a' , when by the same operation of the
 handle the head B will be revolved in an op-
 posite direction and the nut unscrewed.

25 This form of wrench, as will be seen, is
 simple of construction and effective in opera-
 tion, and will greatly facilitate the removal
 and replacing of nuts.

Having thus fully set forth my invention,
 what I claim as new, and desire to secure by
 Letters Patent, is—

30 1. In a wrench, the combination of the han-
 dle, the integral wrench-head centrally jour-
 naled thereon, said head having a nut-receiv-
 ing recess in each end and two peripheral
 ratchets, the teeth of which stand in opposite
 directions, the pawls adapted to engage said
 ratchets, respectively, and the thumb-stops or
 turn-buttons by means of which said pawls

may be successively disengaged from said
 ratchet, substantially as specified.

35 2. In a wrench, the combination of the han-
 dle, the integral head journaled thereon, said
 head having a nut-receiving recess and a
 concentric opening communicating therewith,
 and said head being also provided with two
 peripheral ratchets, the teeth of which stand
 40 in opposite directions, the pawls adapted to
 engage said ratchets, and the turn-buttons
 adapted to engage said pawls to successively
 disengage them from the ratchets.

45 3. In a wrench, the combination of the han-
 dle, the integral head having a nut-receiving
 recess in each end thereof and a concentric
 opening communicating with said recesses,
 said head also having the circumferential
 groove and a peripheral ratchet on each side of
 50 said groove, the teeth of which stand in opposite
 directions, the looped band lying within said
 groove and attached to opposite faces of the
 handle, the spring-actuated pawls engaging
 said ratchets, and the turn-buttons adapted
 55 to raise said pawls from said ratchets respec-
 tively, as set forth.

In testimony whereof I affix my signature in
 presence of two witnesses.

HENRY D. FISK.

Witnesses:

ALONZO H. LOSEE,
 THOS. CRUCE.