E. REYNOLDS.

WRENCH.

APPLICATION FILED OCT. 5, 1905.

916,017. Patented Mar. 23, 1909.

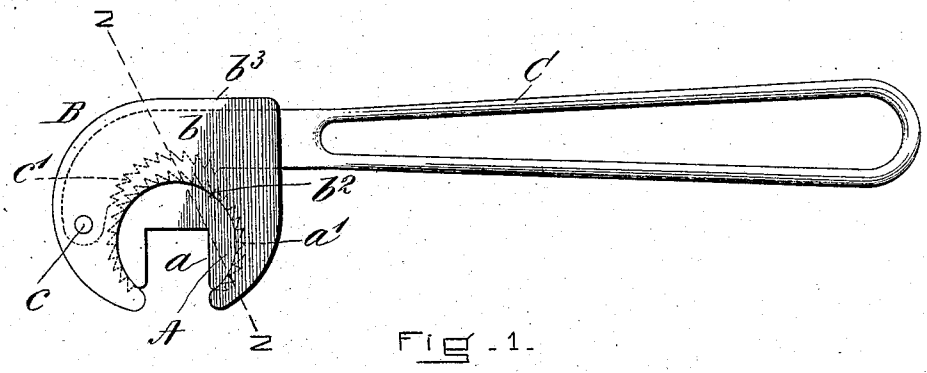


Fig. 1.

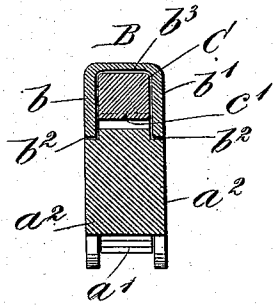


Fig. 2.

WITNESSES:
M. E. Flaherty
W. P. O'Brien.

INVENTOR:
Edward Reynolds
by his attys
Clarke Raymond & Coale

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWARD REYNOLDS, OF MILTON, MASSACHUSETTS.

WRENCH.

No. 916,017. Specification of Letters Patent. Patented March 23, 1909.

Application filed October 5, 1905. Serial No. 281,482.

To all whom it may concern:

Be it known that I, EDWARD REYNOLDS, of Milton, in the county of Norfolk and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in Wrenches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The object of my invention is to provide a wrench having a head arranged whereby it may be turned through a complete circle of rotative movement, which head has a slot cut therein and open from the side thereof whereby the head may engage a nut or other object to be turned when applied laterally thereto, and which head is operated or turned by a series of short, intermittent or repeated strokes of a handle or lever with which the head connects and whereby the head may be turned and the wrench be used in a narrow or confined place.

It is a further object of my invention to provide a wrench of the above kind which shall be of superior strength, easily operatable and of a simple construction, admitting of the wrench being manufactured and sold at a comparativley low cost.

My invention can best be seen and understood by reference to the drawings, in which—

Figure 1 shows the wrench in side elevation, and Fig. 2 shows a cross section of the wrench on the line 2—2 of Fig. 1.

In the drawings: A represents the head of the wrench. The head is made round in the form of a thick or wide disk and has cut into it on the side thereof a slot or opening a for receiving a nut or other object to be turned. The periphery or rounding edge of the head is serrated by teeth a^1 by which the head is turned as will hereinafter be explained.

The head is arranged to turn in and between the sides of a casing B. b, b^1 represent these sides, there being formed therein large annular bearings b^2 in which the head is adapted to turn by hubs a^2 extending from the sides thereof and fitting into these bearings. The size of the annular bearings b^2 are especially to be noted, these bearings being in fact so large that the slot cut in the head of the wrench will lie within the planes of the circle prescribed by the bearings so that a nut or other object fitting within said slot may turn as the head is turned without interfering with the bearings.

In order that the head of the wrench may be applied to a nut or other object the casing or rather the sides of the casing are cut away in part forming an opening by which the nut may enter the slot cut in the head.

C represents the handle of the wrench or lever by which the head is turned. This lever is arranged to enter the casing B and extend alongside or by the head and is pivoted between the sides b, b^1 of the casing in which the head turns by a pin c. Thus arranged the lever is adapted to engage the head when turned down and the edge of the lever at the point of its engagement is made serrated by teeth c^1 to insure an effective grip.

The lever having been brought into engagement with the head the operation of turning the head is effected by further turning of the lever in the same direction when all the parts including the head will turn together as will also the nut or other object engaged by the head. After the lever has been turned a short distance the engagement edge thereof may be released from the head simply by turning the lever in a reverse direction. Thereupon and especially when the lever strikes the side or edge b^3 of the casing connecting the sides thereof and on the other side of the lever away from the head, the casing will be made to turn or shift on the head, or in other words, will turn on the hubs of the head when the lever will be brought around to or shifted into a position where it may take a fresh grip on the toothed edge of the head and its further turning effected. In fact by repeating this action the head and the nut or object engaged by it may be turned through a complete and repeated circle of rotative movement.

In order that the lever C may have an extended grip contact with the head a rounding toothed edge may be formed in the lever, or better, as shown, the lever where it engages the head is bent around the same. Attention is also directed to the fact that the rounding serrated edge of the lever where it engages the head is made longer than the nut receiving opening or slot formed in the side of the head so that when the head has been turned to a position where the slot in the head will be adjacent to the engaging or toothed portion of the lever there will still be left enough teeth for said lever to engage

the head on one or both sides of said opening to continue its operation of turning. In other words, the rounding toothed or serrated portion of the lever where it engages the head should be long enough to span the slot or opening in the head. Attention is also directed to the fact that the edge or side portion b^3 of the casing which lies back of the lever acts as a stop and prevents the lever from being thrown too far away from the head as well as assisting by the lever contacting therewith in turning the casing on the hubs of the head in order that the lever may be thrown around to a position where it may obtain a fresh grip on the head as before described.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States:—

1. In a wrench, the combination of a rotatable head having a slot therein open from ths side of the head whereby it may be applied laterally to a nut or other object to be turned, bearings in which said head is mounted to turn rotatably and through a complete circle of rotative movement, said bearings being located in an annular plane outside the area traversed by the slot in said head as said head is turned through a complete circle of movement, and means for turning said head.

2. In a wrench, the combination of a rotatable head having a slot therein open from the side of the head whereby it may be applied laterally to a nut or other object to be turned, a head support having formed therein bearings in which said head is mounted to turn rotatably and through a complete circle of rotative movement, and means for turning said head, the same comprising a handle or lever pivotally connecting with said support and extending in part alongside or by said head whereby upon turning said lever in one direction it may engage with or grip said head and said head be turned by said lever or handle, or by turning said lever or handle in the reverse direction it may be turned away from contact or engagement with said head and become shifted to a position where it may make renewed contact or engagement therewith, whereupon said head may be turned through one or more complete circles of rotative movement.

3. In a wrench, the combination of a rotatable head having a slot therein open from the side of the head whereby it may be applied laterally to a nut or other object to be turned, said head also having hubs extending from the sides thereof, bearings for said hubs in which said head may turn through a complete circle of rotative movement, said bearings also being located in a plane outside the area traversed by the slot in said head as said head is turned through a complete circle of movement, and means for turning said head.

4. In a wrench, the combination of a rotatable head having a slot therein open from the side of the head whereby it may be applied laterally to a nut or other object to be turned, a casing in which said head is mounted to turn by bearings formed in the sides of said casing and in which bearings said head turns by hubs extending therefrom and through a complete circle of rotative movement, said casing also being open on the side thereof whereby the nut or object to be turned may enter the slot in said head when the head is applied to said nut, and means for turning said head, the same comprising a handle or lever pivoted between the sides of said casing and adapted to intermittently engage with said head.

5. In a wrench, the combination of a rotatable head having a slot therein open from the side of the head whereby it may be applied laterally to a nut or other object to be turned, means for supporting said head whereby it may be turned through a complete circle of rotative movement, a handle or lever pivotally supported and arranged and adapted in part to engage said head and when said head has been turned to a certain position to span the slot or opening therein and engage said head on one or both sides of said slot or opening.

6. In a wrench, the combination of a rotatable head having a slot therein open from the side of the head whereby it may be applied laterally to a nut or other object to be turned, a casing in which said head is mounted to turn by bearings formed in the sides of said casing and in which bearings said head turns by hubs extending therefrom and through a complete circle of rotative movement, said casing also being open on the side thereof whereby the nut or object to be turned may enter the slot in said head when the head is applied to said nut, and means for turning said head, the same comprising a handle or lever pivoted between the sides of said casing and adapted to intermittently engage with said head, said handle or lever at the point of its engagement with said head being adapted whereby it may span the slot or opening in said head and engage with said head on one or both sides of said opening when said head has been turned to a certain position, and a stop with which said handle or lever engages when turned away from said head.

EDWARD REYNOLDS.

Witnesses:
JOHN E. R. HAYES,
ROBERT E. BREWER.