Feb. 21, 1928. 1,660,208

A. J. PREINING

WRENCH

Filed Jan. 21 1926

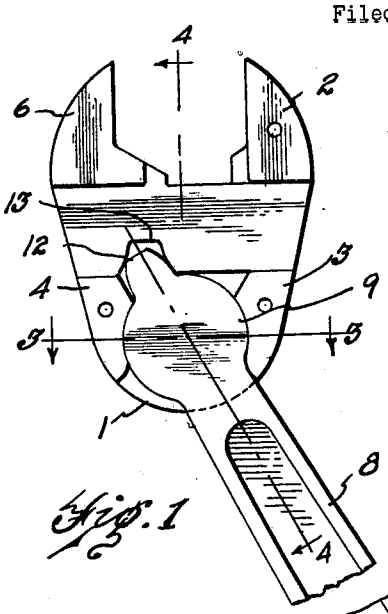


Fig. 1

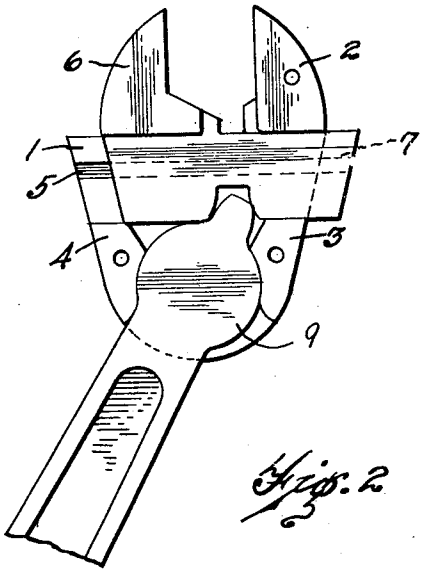


Fig. 2

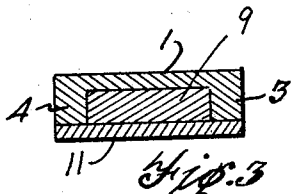


Fig. 3

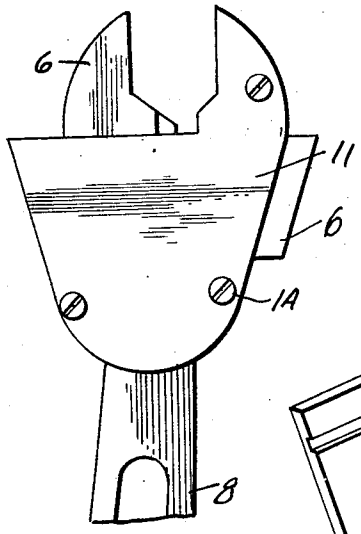


Fig. 6

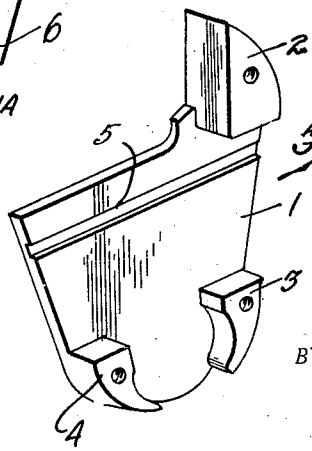


Fig. 5

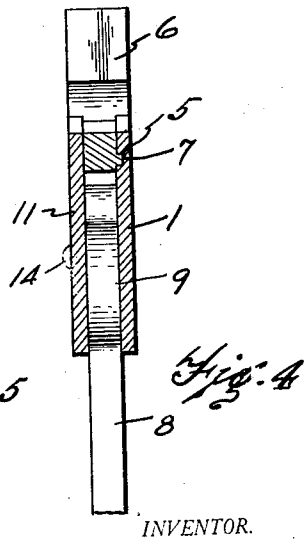


Fig. 4

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UNITED STATES PATENT OFFICE.

ADOLF J. PREINING, OF DETROIT, MICHIGAN.

WRENCH.

Application filed January 21, 1926. Serial No. 82,654.

This invention relates to wrenches and the object of the invention is to provide a wrench in which the head is pivoted in relation to the handle whereby upon turning the handle the jaws of the wrench are moved together to grip a nut.

Another object of the invention is to provide a wrench which may be adjusted from the maximum to the minimum by a comparatively small movement of the handle.

Another object of the invention is to provide a wrench in which the turning of the handle to turn the nut also tends to more firmly grip the nut in the wrench jaws.

Another object of the invention is to provide a wrench in which the pressure applied in gripping the nut increases with the size of the nut.

These objects and the several novel features of the invention are hereinafter more fully described and claimed and the preferred form of construction by which these objects are attained is shown in the accompanying drawings in which—

Fig. 1 is a view with the cover plate removed, of a wrench embodying my invention in the open position.

Fig. 2 is a similar view thereof in the closed position.

Fig. 3 is a section taken on line 3—3 of Fig. 1.

Fig. 4 is a section taken on line 4—4 of Fig. 1.

Fig. 5 is a perspective view of the stationary wrench jaw.

Fig. 6 is an elevation of the wrench head.

As shown in Fig. 5 the wrench comprises a head or plate 1 having a wrench jaw 2 formed integrally therewith. A pair of lugs 3 and 4 are also formed integrally with the plate 1. The plate 1 is provided with a groove 5 thereacross and the movable jaw 6 shown in Fig. 2 is provided with a rib 7 riding in the groove 5 as will be understood from Figs. 4 and 5. As will be understood from Fig. 1 the movable jaw 6 when positioned in the head 1 rides on the lugs 3 and 4 and beneath the jaw 2. The handle 8 shown in Figs. 1, 2 and 3 is provided with a cylindrical portion 9 fitting between the lugs 3 and 4 which form a bearing for the portion 9 in the wrench head and when so positioned in the head the lever 8 may be turned with the portion 9 acting as a bearing. By this arrangement the handle is pivotally mounted in the head and the handle is provided with a tooth 12 engaging in the notch 13 in the movable jaw 6. When the jaws 2 and 6 are fully opened as shown in Fig. 1 the base of the tooth 12 engages the adjacent portion of the jaw member 6 so that the leverage in gripping a large nut is much greater than the leverage applied in gripping a small nut. In the position shown in Fig. 2 the top of the tooth 12 engages the wall of the notch 13 which decreases the applied leverage when the wrench is used on smaller nuts. By this arrangement the gripping effect of the jaws engaging the nut is increased with the size of the nut and this differential in leverage is very important as it is comparatively easy to turn the small nuts while it is increasingly difficult to turn the large nuts. The cover plate 11 may be fastened to the jaw 2 and the lugs 3 and 4 by the screws 14 or may be welded to these members if desired.

To operate the wrench the jaws are fully opened by moving the handle 8 to the position shown in Fig. 1 at which time the face of the movable jaw 6 may be positioned against the nut to be turned. At this time the handle 8 is moved to the left of Fig. 1 thus moving the jaws together to engage the corresponding faces of the nut at which time further movement of the handle 8 to the left of Fig. 1 turns the nut. The wrench may be easily disengaged from the nut by reversing the movement of the handle 8 slightly. By an oscillating movement of the handle 8 the wrench may be used similar to a ratchet wrench as the jaws are released and engaged again on succeeding faces of the nut during such oscillating movement of the handle. By means of the lever and notch the handle moves through an arc of about sixty degrees to produce a maximum movement of the wrench jaws and as the tooth 12 of the lever is quite thick it is practically impossible to break this end off even when using the wrench to remove nuts which are very tight.

From the foregoing description it becomes evident that the device is very simple and efficient in operation, is composed of few parts and is of consequent low manufacturing cost and provides a device which accomplishes the objects described.

Having thus fully described my invention, its utility and mode of operation, what I

claim and desire to secure by Letters Patent of the United States is—

1. A wrench comprising a head having a stationary jaw and a pair of lugs spaced therefrom, a movable jaw movable transversely of the head and having a portion movable between the stationary jaw and the said lugs, there being a rib on the said portion of the movable jaw, the head being provided with a groove in which the said rib is adapted to ride, the said portion of the movable jaw being provided with a notch, a handle having a circular portion adjacent one end, said lugs being shaped in opposed faces to receive the said circular portion of the handle whereby the same is pivotally supported between the lugs, there being a tooth carried by the handle engaging in the notch in the movable jaw portion, the arrangment being such that the leverage applied by turning the handle in gripping a large nut is greater than the leverage applied in gripping a small nut.

2. A wrench comprising a head having a stationary jaw and a pair of lugs spaced therefrom, a movable jaw movable transversely of the head and having a portion movable between the stationary jaw and the said lugs, there being a rib in the said portion of the movable jaw, the head being provided with a groove in which the said rib is adapted to ride, the said portion of the movable jaw being provided with a notch, a handle pivotally mounted in the head and having an end engaging in the said notch, said handle further having a circular portion with which said end is integrally formed, said lugs being in spaced relation and having opposed faces formed to receive the circular portion of the handle and providing a pivotal mounting therefor.

3. A wrench comprising a head having a stationary jaw and a pair of lugs spaced therefrom, a handle pivotally mounted in the said head and supported in its pivotal movement by the said lugs, a movable jaw resting on the said lugs and extending beneath the stationary jaw, there being a rib on the movable jaw, the head being provided with a transverse groove in which the said rib is adapted to ride, the movable jaw being provided with a notch in which the end of the said handle engages.

In testimony whereof I sign this specification.

ADOLF J. PREINING.