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3,526,160

WRENCH WITH PIVOTABLE HANDLE

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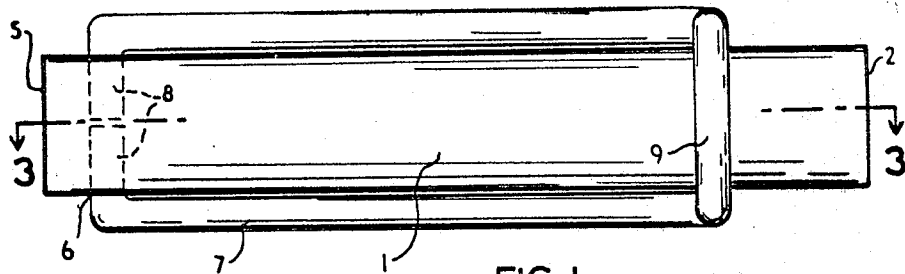


FIG. 1.

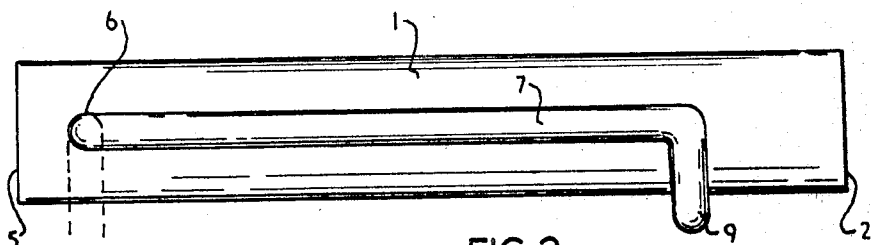


FIG. 2.

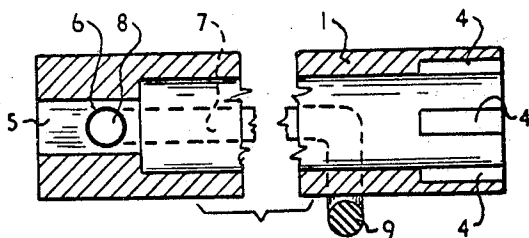


FIG. 3.

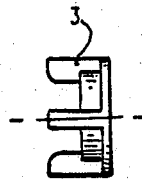


FIG. 4.

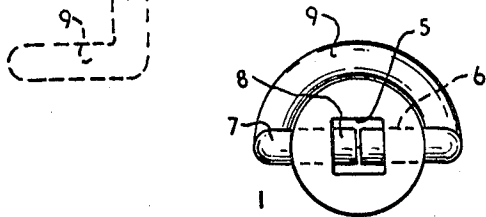


FIG. 5.

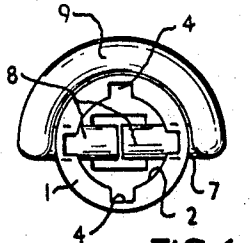


FIG. 6.

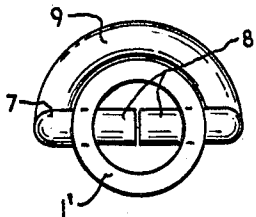


FIG. 7.

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WRENCH WITH PIVOTABLE HANDLE

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2 Claims

ABSTRACT OF THE DISCLOSURE

This tool of the so-called "Ruby wrench" type is in the form of an elongated member with a nut-accommodating socket in one end and having a torque-applying handle pivotally mounted near the other end that normally lies in folded or closed position parallel with said member and is swingable outwardly through approximately 90 degrees to an open or operative position normal to said socketed member for use as a torque applicator.

This invention relates to improvements in a wrench and appertains particularly to one adapted to engage and operate on nuts in relatively inaccessible places.

An object of the invention is to provide a socket wrench suitable for use with difficult to reach nuts such as the wing nuts employed to retain the bolts by which toilet seats and lids are hingedly connected to the plumbing fixture.

A further object is to provide a simple tool such as a socket wrench having a swingably mounted torque-applying handle that in useable position extends radially from the tool but is foldable thereagainst for storage.

A further object of the invention is to provide a tool with a pivotally mounted torque-applying handle in the form of a bail foldable against the tool for storage and having an angularly offset tool-straddling arcuate portion at the center of the bail.

A further object of the invention is to provide a socket-type wrench with a nut-accommodating socket in one end and a socket for accommodating a ratchet handle piece in the other end, with a foldable torque-applying handle pivotally mounted near the second mentioned end that normally lies against and parallel with the wrench in closed position.

A still further object of the invention is the provision of a two part socket wrench of the nature and for the purpose described that is characterized by structural simplicity, operative efficiency and low cost of production whereby the same is rendered commercially desirable.

To the accomplishment of these and related objects as shall become apparent as the description proceeds, the invention resides in the construction, combination and arrangement of parts as shall be hereinafter more fully described, illustrated in the accompanying drawings, and pointed out in the claims hereunto appended.

The invention will be best understood and can be more clearly described when reference is had to the drawings forming a part of this disclosure wherein like characters indicate like parts throughout the several views.

In the drawings:

FIG. 1 is a bottom plan view of the wrench;

FIG. 2 is a side elevation thereof;

FIG. 3 is a longitudinal section, as taken on line 3-3 of FIG. 1;

FIG. 4 is an elevation of a conventional type of wing nut designed to be engaged by the socket end of the wrench;

FIGS. 5 and 6 are elevations of wrench as seen from the left and right ends thereof respectively; and

FIG. 7 is an end elevation similar to FIG. 5, of a modified form of the wrench.

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Referring now to these drawings, it will be seen that the wrench includes a main body part comprising an elongated member 1 in the form of a hollow cylinder. At one end, namely that on the right side of FIGS. 1, 2 and 3, and as seen in end elevation in FIG. 6, a nut-accommodating socket 2 is provided. As the present Ruby wrench is intended for use with wing nuts 3, shown in FIG. 4, the socket 2 is interiorly provided with four circumferentially spaced grooves 4 extending inwards from the open end of the elongated cylindrical member 1. It will be obvious that this socket end structure may be varied as required to receive by longitudinal insertion and hold in non-rotatable engagement any particular form or design of nut. In its opposite or second end, the elongated cylindrical member 1 is provided with a co-axial opening 5 that is square in cross-section and extends inwards only a short distance. This square socket 5 allows of the removable application of a conventional ratchet handle piece (not shown) when the wrench is being used in cramped quarters or when greater than usual torque is required to turn a wrench-engaged nut. Finally, the elongated wrench body 1 has an opening extending transversely through the cylinder near the square socket end 5 as a pair of aligned bores 6, 6.

A wrench handle for axially turning the elongated cylindrical nut socket and applying torque to an engaged nut is in the form of a U-shaped bail 7 whose two side arms are parallel and spaced apart a distance equal to the external diameter of the cylindrical member 1. The bail is provided with inwardly extending axially aligned ends 8 that are journaled in the cylindrical member's bores 6, 6. In closed, folded or storage position the opposite arms of the bail lie parallel with an alongside the wrench's cylindrical body, the mid part of the bail having an arcuate semicircular bight portion 9 disposed in a plane at a right angle to the plane of the bail arms. The bight straddles member 1 when in closed, folded or storage position.

In use, the bail-like handle 7 is swung outwardly on its pivot ends 8 through approximately 90 degrees so that it stands normal to or extends radially from the axis of the elongated cylindrical body 1 of the socket wrench, as shown in dotted outline in FIG. 2, and so affords a handy and efficient torque applicator. The operative position of the bail may be at an angle of more or less than 90 degrees as the location of the work may dictate, such angle choice being one of the advantages of this swinging bail handle. Furthermore, the angularly disposed arcuate portion 9 at the center of the bail improves the user's grip on the tool and lessens the chance of his hand sliding off the handle. When the handle is in open position and a ratchet piece is engaged in socket 5, the handle 7 can be turned in cooperation with the ratchet piece.

The modified form of wrench shown in FIG. 7 employs an elongated cylindrical body 1' with a uniform interior diameter, which while simpler to fabricate sacrifices the square socket 5 in the second end of the preferred form and so loses the advantage of attaching a ratchet handle piece which on occasion might prove needful.

From the foregoing description taken in connection with the accompanying drawings, it will be manifest that a wrench is provided that will fulfill all the necessary requirements of such a device, but many changes could be made in the above description and many apparently widely different embodiments of the invention may be constructed within the scope of the appended claims.

What is claimed is:

1. A wrench comprising an elongated cylindrical member having a nut-accommodating socket at one end, said member having a pair of axially aligned diametrically

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opposed bores near its other end; and a one-piece, torque
applying handle, said handle having the form of a U-
shaped bail, said bail having a pair of parallel sides
spaced apart a distance substantially equal to the ex-
ternal diameter of said member, said sides of the bail
having free end portions bent perpendicularly to the re-
spective sides, axially aligned with each other and rotat-
ably engaged in the respective bores, said handle further
having a semicircular bight disposed in a plane perpen-
dicular to a plane defined by the parallel sides, the in-
side diameter of said bight being substantially equal to
the external diameter of said member, so that the handle
is swingable between a fully open position where the
sides are perpendicular to the axis of said member and
a fully closed position where the sides are paral-
lel to the axis of said member and the bight
snugly straddles said member near said one end
thereof, whereby the bight serves as a hand grip while
the handle is in open position to keep an operator's hand

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from slipping off the handle while rotating the handle
with said member around the axis thereof.

2. A wrench as defined in claim 1, wherein the other
end of said member has another socket therein to receive
a tool for turning said member on its axis while said
handle can be grasped and turned in cooperation with
said tool in turning said member.

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U.S. Cl. X.R.

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