

Sept. 19, 1944.

W. R. TAYLOR

2,358,362

RATCHET WRENCH

Filed June 1, 1942

Fig. 1

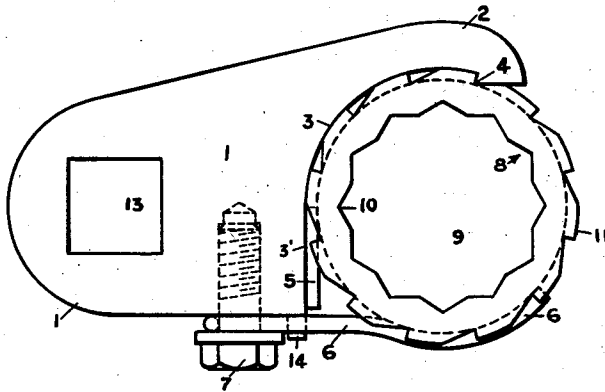


Fig. 2

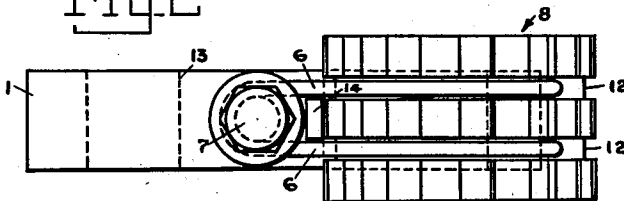


Fig. 3

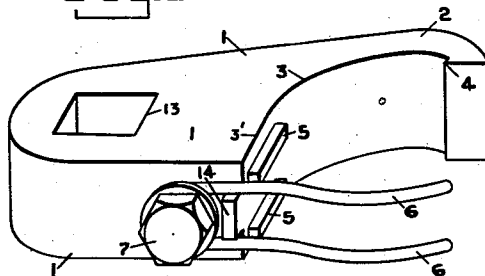
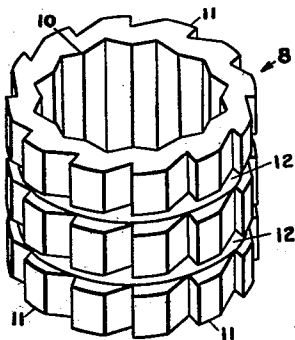


Fig. 4



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UNITED STATES PATENT OFFICE

2,358,362

RATCHET WRENCH

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Application June 1, 1942, Serial No. 445,323

2 Claims. (Cl. 81-60)

(Granted under the act of March 3, 1883, as
amended April 30, 1928; 370 O. G. 757)

The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to a ratchet wrench for operating in restricted spaces which has been found to be of particular utility in handling cylinder base nuts on radial engines in place of the box wrenches commonly used for this purpose.

The invention comprises a body portion having a dog, a floating socket and spring means to retain the floating socket in cooperating relation with the dog. The floating socket is made possible by means on the body restraining axial motion of the socket, and the socket is readily replaceable by a new or different sized socket.

It is therefore among the objects of the invention to provide a ratchet wrench for operating in restricted spaces, and one which shall have a replaceable socket securely held when in place.

The specific nature of the invention as well as other objects and advantages thereof will clearly appear from a description of a preferred embodiment as shown in the accompanying drawing in which:

Fig. 1 is a top plan view of the wrench,

Fig. 2 is a front view of the wrench shown in Fig. 1,

Fig. 3 is a perspective view of the wrench with the socket removed, and

Fig. 4 is a perspective view of the socket.

Referring to the drawing by characters of reference, there is shown a body portion 1 with an arm portion 2 defining with the body portion a 90° sector 3. A dog 4 is provided on the end of arm 2 and bosses 5 are provided on the flat end 3' of the body portion adjoining the arcuate portion 3. The central portion of end 3' is extended to form a lug 14. A forked spring 6 is held by a bolt 7 and has its arms lying respectively in the planes of the bosses 5 and held in position by lug 14. The socket indicated generally at 8 comprises a central opening 9 designed in conventional manner with longitudinal serrations 10 for nut-engaging purposes and external ratchet teeth 11 spaced to give a maximum thickness of metal consistent with minimum desirable stroke. Annular channels 12 are provided in the periphery of the socket 8 and these are dimensioned and spaced to receive the bosses 5 and the spring arms 6. A square or other conveniently shaped opening 13 is provided in the body 1 to receive a turning bar.

To assemble, the spring arms having been fastened in place, astride lug 14 and thus aligned with the bosses, the spring arms are forced back and the socket is dropped into the sector with the bosses in the channels of the socket and the springs are then permitted to snap into place into the said channels. The bosses and the lug-stabilized springs in the channels will effectively prevent accidental removal of the socket while operations are in progress, yet the socket is easily removed at will, and one body portion may serve for an entire set of wrench sizes as well as allow replacement of worn sockets.

The spring serves the triple function of furnishing the ordinary yield necessary for ratchet operation, retaining the socket against the locking means therefor, and permitting removal and replacement.

I claim:

1. A tool comprising a body portion and a wrench portion separable from said body portion, an arm on said body portion defining with the body portion an arcuate member terminating in a pawl for engagement with the wrench portion, an extended boss on the inner periphery of said member, a spring finger on said body and opposite said arm, said wrench portion being of generally cylindrical shape, a work-engaging opening in said wrench portion, ratchet teeth exteriorly of said wrench portion and parallel to the axis thereof, an annular channel upon the outer periphery of said wrench portion transverse to the ratchet teeth, said annular channel receiving said boss to prevent lateral movement of the wrench portion relative to the body portion, said spring finger fitted in said annular channel whereby the wrench portion is held in engagement with said boss and with said pawl.

2. A tool comprising a body portion having an arcuate surface terminating at one of its ends in a pawl, and a cylindrical wrench portion separable from the body portion, said wrench portion being formed with axially aligned ratchet teeth on its outer periphery and a pair of spaced annular grooves intermediate the length of the teeth, a pair of spring fingers extending from the other end of the arcuate surface and detachably carried by the body and extending into said grooves to lock the wrench portion against axial movement and to hold said portion in cooperative relationship to said pawl, and a lug carried by the body and extending between the fingers to hold them in alignment with the grooves in said wrench portion.

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