

Jan. 12, 1937

H. J. WOOCK

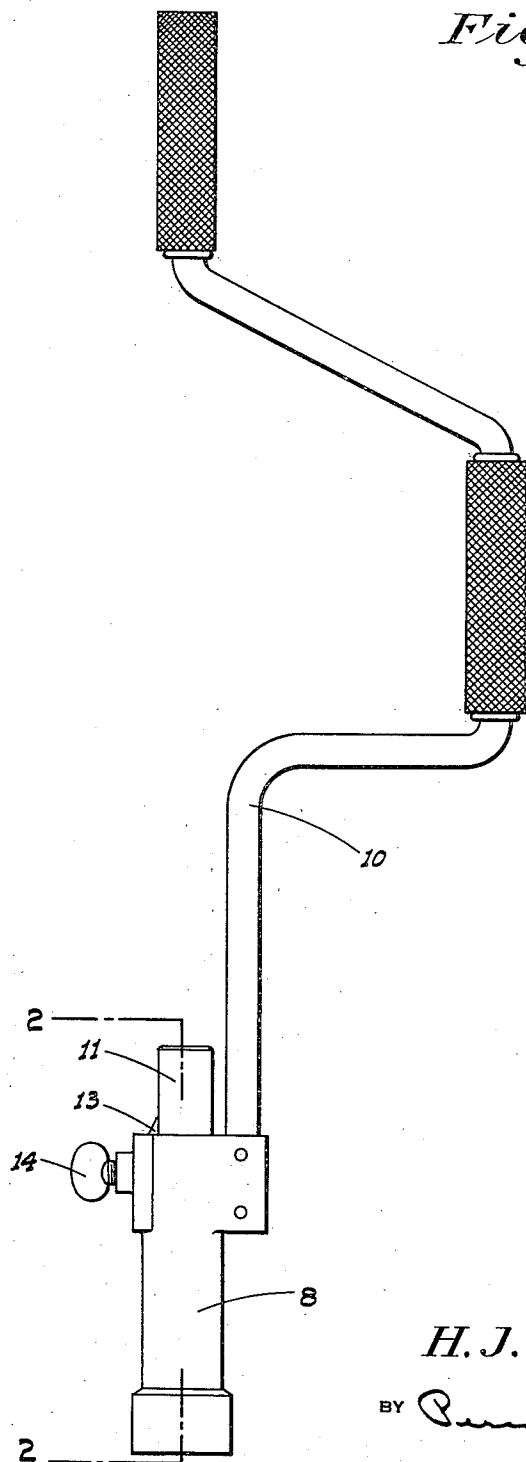
2,067,370

SOCKET WRENCH

Filed Sept. 9, 1935

2 Sheets-Sheet 1

Fig. 1



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Fig. 2

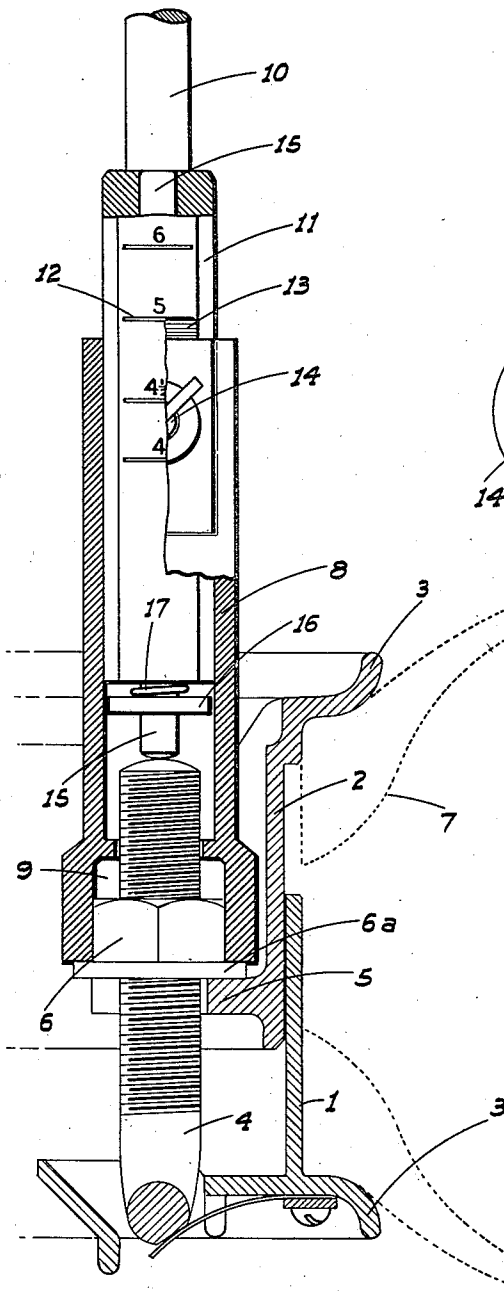
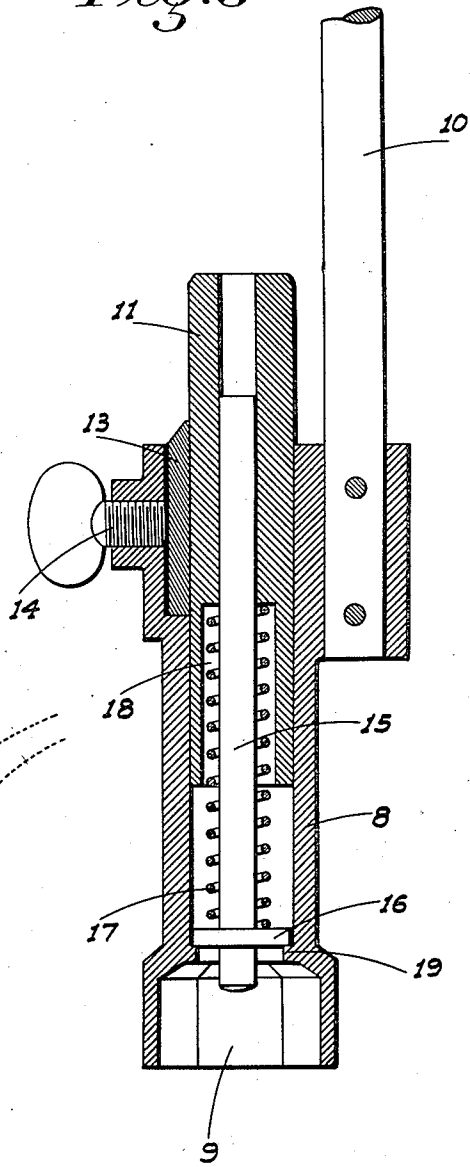


Fig. 3



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SOCKET WRENCH

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Application September 9, 1935, Serial No. 39,689

6 Claims. (Cl. 81—53)

This invention relates to brace socket wrenches, and particularly to one designed for use in connection with the adjustable tire supporting rim shown in my copending application for Patent Serial No. 39,690, filed September 9, 1935, to turn the connecting bolt nuts of said rim so as to adjust the bead engaging flanges of the same to different spacings as required for different tires.

It is of course essential that such nuts, of which there is a plurality, shall be all accurately adjusted to the same position on their bolts in order that they shall all be under the same strain or pressure and to avoid the distortion or warping of the rim members which would be had by an uneven positioning of the nuts. The principal object of my present invention therefore is to provide a wrench having visual gauge means whereby all the nuts may be turned down to exactly the same position on their respective bolts without having to resort to any try-and-fit operations. Also such gauge means is adjustable so that the nuts may be turned to occupy different but correspondingly correct positions on the bolts.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Figure 1 is a side elevation of my improved wrench.

Figure 2 is a fragmentary enlarged sectional view of the same on the line 2—2 of Figure 1, showing the wrench as engaged with a ring nut and bolt.

Figure 3 is an enlarged sectional view of the lower end of the wrench taken in a plane at right angles to Figure 2.

Referring now more particularly to the characters of reference on the drawings, the rim structure for which my wrench is particularly designed comprises cooperating rim members 1 and 2 slidably associated with each other for relative axial movement, so that the bead engaging flanges 3 of said members may be spaced different distances. The means to adjustably connect the members 1 and 2 comprises circumferentially spaced bolts of equal

length, one of which is shown at 4, and which are swivelly mounted in the member 1 and project through slotted lug 5 in the member 2. A nut 6 adjustably mounted on each bolt above its lug of course limits the distance the members 1 and 2 may separate and determines the spacing of the flanges 3 when a tire 7 is mounted in the rim and is under pressure tending to force the flanges apart. An enlarged washer 6a under each nut directly engages the corresponding lug. This rim structure is described in detail in said copending application for patent.

The wrench for turning these nuts to different positions on the bolts, so that all the nuts will be disposed at the same distance from the outer ends of the bolts, comprises a barrel or body member 8 having a socket 9 in its lower end to fit a nut 6 in non-turning relation. A brace and handle unit 10 of conventional form extends upwardly from and is rigidly connected to the barrel on one side of the same, as shown in Figure 1, so as to leave the upper end of the barrel unobstructed.

Slidably but non-turnably mounted in the barrel above the socket is a sleeve 11 having on its face opposite the handle 10 longitudinally spaced graduations as at 12 to directly or indirectly indicate different bead flange spacings. A combination pointer and clamping plate 13 is mounted in the barrel at its upper end to engage the graduated face of the sleeve and projects from the upper end of the barrel with a tapered edge as shown to read against the transverse graduation marks on the sleeve. A finger bolt 14 in the barrel adjustably engages the plate to clamp the same against the sleeve and hold said sleeve at any certain position.

Slidably mounted in the sleeve is a pin 15 which projects below the sleeve to contact the upper end of the bolt 4. Adjacent its lower end the pin has a fixed collar 16 which supports the lower end of a light compression spring 17. This is disposed about the adjacent portion of the pin and projects into a socket 18 in the sleeve so that the upper end of the spring bears against the bottom of the socket. The spring is prevented from pushing the pin all the way out of the sleeve by a shoulder 19 in the barrel above the socket 9 but below the collar 16 and which limits the downward movement of the latter without interfering with the projection of the bolt 4 beyond the shoulder.

In operation knowing the bead-flange desired, the sleeve 11 is adjusted so that the proper grad-

uation 12 reads against the edge of the plate 13; said sleeve being then clamped against movement by the bolt 14. After a tire has been placed on the rim and the bolts swung up into the lugs 5, the socket 9 is engaged with a nut and the handle 10 is turned to advance the nut on the bolt. The bottom of the socket engages and rests on the washer 6a so that the bottom of the nut is always flush with the bottom of the wrench barrel.

With the advancing and lowering of the nut on the bolt the barrel and sleeve are also lowered. The pin 15 however which engages the top of the bolt from the start remains stationary and is of course of such a length that when its upper end is flush with the top of the sleeve, as shown in Figure 2 (a position which may be readily seen by the operator manipulating the wrench), the nut has been advanced sufficiently to give the bead flanges the spacing for which the wrench is initially set.

The wrench is then removed from said nut and successively applied to the nuts, turning of the wrench being stopped when the pin is flush with the sleeve so that all the nuts are advanced exactly the same amount on the bolts.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described my invention, what I claim as new and useful and desire to secure by Letters Patent is:

1. A socket wrench comprising a hollow body member having a nut engaging socket at its lower end, a pin disposed in the member above the socket and adapted to contact the end of a bolt whose nut is engaged by the socket, and

a sleeve in said member and slidably supporting the upper portion of the pin, said pin being adapted to extend to the upper end of the sleeve when the nut is advanced on the bolt a predetermined distance.

2. A structure as in claim 1, with means to adjust the sleeve axially in the body member.

3. A structure as in claim 1, with a spring urging the pin toward the bolt, and means to limit the movement of the pin in such direction.

4. A structure as in claim 1, with a collar on the pin below the sleeve, a compression spring about the pin between the sleeve and collar, and a stop shoulder to engage said collar disposed in the body member above the socket and below the collar.

5. A socket wrench comprising a hollow body member having a nut engaging socket at its lower end, a pin disposed in the member above the socket and adapted to contact the end of a bolt whose nut is engaged by the socket, a sleeve slidable in the body member and slidably supporting the pin, means to clamp the sleeve in any position, said pin being adapted to extend to the upper end of the sleeve when the nut is advanced on the bolt a predetermined distance and one face of the sleeve being graduated; and a pointer member mounted on the body member to read against such graduations.

6. A socket wrench comprising a hollow body member having a nut engaging socket at its lower end, a pin disposed in the member above the socket and adapted to contact the end of a bolt whose nut is engaged by the socket, a sleeve slidable in the body member and slidably supporting the pin, graduations along one face of the sleeve, a combined clamping plate and pointer element mounted in the body member and projecting from the upper end thereof to read against the graduations, and means to releasably clamp said plate against said face of the sleeve.

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