

PATENT SPECIFICATION

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PROVISIONAL SPECIFICATION

Improvements in Adjustable Spanners

We, WEBMORE (BIRMINGHAM) AND COMPANY LIMITED, a British Company, of 10, Camp Lane, Kings Norton, Birmingham, 30, and IVOR RONALD HARRIS, a British Subject, of the said Company's address, do hereby declare the nature of this invention to be as follows:—

This invention relates to adjustable spanners and it has for its object an improved spanner which is simple in construction, cheap to manufacture and efficient in use.

According to the present invention, the spanner comprises a sheet metal handle to which a stationary jaw is fixed and an adjusting nut is held in a cage, formed by the handle and the fixed jaw, in position engaging a rack on the stem of an adjustable jaw. The adjusting nut therefore is detachably mounted solely by this engagement in the cage and the thrust on the nut when operating the adjustable jaw is taken by the fixed jaw.

According to a convenient embodiment of this invention, the handle of the spanner is formed from a sheet metal blank which is bent into a U-shape in cross section and the outer end of the sides of the channel have projecting lugs which have rectangular slots therein. The fixed jaw comprises a piece of hard steel which is fixed between the aforementioned perforated lugs, the fixed jaw having a rectangular notch on the inner side which registers with the rectangular perforations in the lugs. The fixed jaw is secured by rivets or by welding. The adjusting nut comprises a cylindrical piece of metal having a helical thread on the cylindrical wall and this nut is placed in position to project

laterally through the rectangular perforations in the lugs after which the lugs are closed in to cage the nut. The rectangular notch in the fixed jaw forms top and bottom faces for taking axial thrust on the nut, whilst the bottom of the slot takes lateral thrust. The movable jaw comprises a piece of hard steel having a stem rectangular in cross section which slides in the channel of the handle between the bottom of the channel and the adjusting nut. The jaw on the stem has a gripping face inclined at an obtuse angle to the inner face of the jaw having rack teeth thereon and the gripping face of the fixed jaw lies at a corresponding inclination. The centre portion of the helical thread on the adjusting nut is conveniently knurled to give a finger grip on the part of the nut which projects through the rectangular slots in the lugs of the handle. The edges of the rectangular slots are conveniently rounded to avoid sharp edges being presented to the finger and thumb. As the two jaws of the spanner are of the same width and equal to the distance between the inner faces of the sides of the handle, the jaws can grip a nut in a confined space. The stem of the adjustable jaw is positioned against the back of the channel by the adjusting nut and as the adjusting nut is positioned against the face of the fixed jaw, such fixed jaw will take lateral pressure.

Dated this 10th day of December, 1947.

J. E. S. LOCKWOOD,
Patent Agent for the Applicants,
White House, 111, New Street,
Birmingham, 2, and
31, Queen Street, Wolverhampton.

COMPLETE SPECIFICATION

Improvements in Adjustable Spanners

We, WEBMORE (BIRMINGHAM) AND COMPANY LIMITED, a British Company, of 10, Camp Lane, Kings Norton, Birmingham, [Price 2/-]

30, and IVOR RONALD HARRIS, a British Subject, of the said Company's address, do hereby declare the nature of this inven- 80

tion and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

5 This invention relates to adjustable spanners and it has for its object an improved spanner which is simple in construction, cheap to manufacture and efficient in use.

10 According to the present invention, a spanner comprises a sheet metal handle formed U-shape in cross-section to which a stationary jaw is fixed and an adjusting nut is held in a cage, formed by the
15 handle and the fixed jaw, in position engaging a rack on the stem of an adjustable jaw and holding such stem in slidable engagement with the handle, the arrangement being such that the adjusting nut
20 is mounted in position solely by its engagement in the cage and the thrust on the nut when operating the adjustable jaw is taken by the fixed jaw.

In order that the invention may be clearly understood and readily carried into effect, reference may be had to the accompanying drawings, on which:—

25 Figure 1 is a front elevation of a spanner constructed according to this invention.

Figure 2 is a side elevation.

Figure 3 is a section on line $x-x$ of Figure 1.

30 Figure 4 is a section on line $y-y$ of Figure 1.

Figure 5 is a side view of the fixed jaw and

Figure 6 is a side elevation of the adjusting nut.

40 According to a convenient embodiment of this invention, the handle 1 of the spanner is formed from a sheet metal blank which is bent into a U-shape in cross-section and the outer end of the sides
45 of the channel have projecting lugs 2 which have rectangular slots 3 therein. The fixed jaw 4 comprises a piece of hard steel which is fixed between the aforementioned perforated lugs 2, the fixed jaw

50 having a rectangular notch 5, on the inner side which registers with the rectangular perforations 3 in the lugs 2. The fixed jaw 4 is secured by rivets or by welding. The adjusting nut 6 comprises

55 a cylindrical piece of metal having a helical thread on the cylindrical wall and this nut is placed in position to project laterally through the rectangular perforations 3 in the lugs after which the lugs
60 are closed in to cage the nut. The rectangular notch 5 in the fixed jaw forms top and bottom faces for taking axial thrust on the nut, whilst the bottom $5a$ of the slot takes lateral thrust. The movable jaw 7 comprises a piece of hard steel

having a stem 8 rectangular in cross section which slides in the channel of the handle between the back of the channel and the adjusting nut 6. The jaw 7 has a gripping face inclined at an obtuse
70 angle to the stem which has rack teeth 9 thereon and the gripping face of the fixed jaw lies at a corresponding inclination. The centre portion of the helical thread on the adjusting nut is conveniently
75 knurled to give a finger grip on the part of the nut which projects through the rectangular slots in the lugs of the handle. The edges of the rectangular slots 3 are conveniently rounded to avoid sharp edges
80 being presented to the finger and thumb. As the two jaws of the spanner are of the same width and equal to the distance between the inner faces of the sides of the handle, the jaws can grip a nut in a confined
85 space. The stem of the adjustable jaw is positioned against the back of the channel by the adjusting nut 6 and as the adjusting nut is positioned against the face $5a$ of the fixed jaw, such fixed
90 jaw will take lateral pressure.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we
95 claim is:—

1. An adjustable spanner comprising a sheet metal handle formed U-shape in cross-section to which a stationary jaw is fixed and an adjusting nut is held in a
100 cage, formed by the handle and the fixed jaw, in position engaging a rack on the stem of an adjustable jaw and holding such stem in slidable engagement with the handle, the arrangement being such that the adjusting nut is mounted in position solely by its engagement in the cage and the thrust on the nut when operating the adjustable jaw is taken by the fixed
105 jaw.

2. An adjustable spanner as set forth in Claim 1, in which the screw threaded member or adjusting nut engaging rack teeth on a stem of the movable jaw is rotatably held in engagement with the
115 rack teeth by means of a cage formed by the walls of a slot in the U-shaped handle and a notch in a fixed jaw fixed to the handle.

3. An adjustable spanner as set forth in Claim 2, in which the fixed jaw comprises a plate fixed between projecting lugs on the U-shaped handle, and in which such fixed jaw has a notch registering with slots on such lugs to form bearing
120 walls of the cage for the adjusting nut.

4. An adjustable spanner substantially as herein set forth and illustrated in the accompanying drawing.

Dated this 25th day of September, 1948.

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[This Drawing is a reproduction of the Original on a reduced scale.]

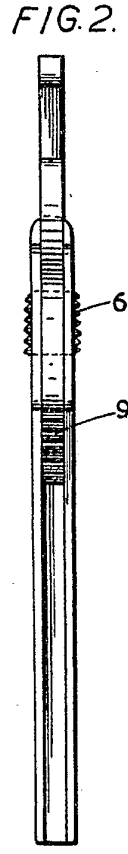
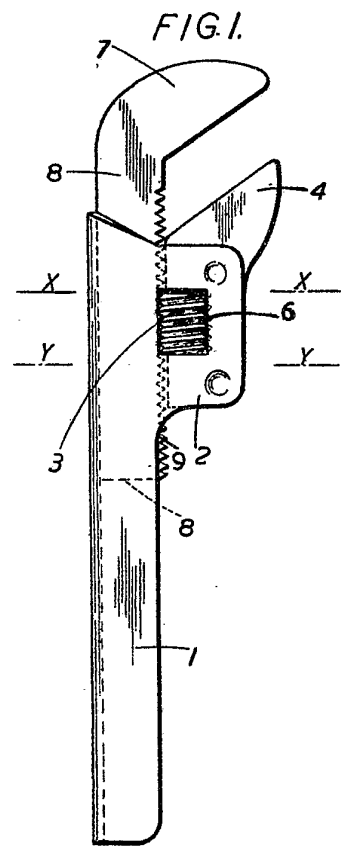


FIG. 6.

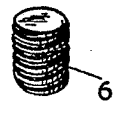


FIG. 5.

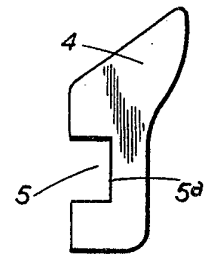


FIG. 3.

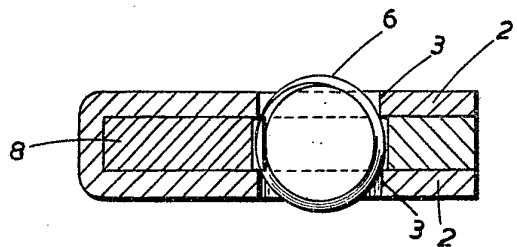


FIG. 4.

