PATENT SPECIFICATION

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COMPLETE SPECIFICATION.

Improvements in or relating to Wrenches.

I, PAUL OLLAGNON, a citizen of the French Republic of 36 bis, Rue du 11 Novembre, Saint-Etienne, Loire, France, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to wrenches for pipes, tubes or other cylindrical apparatus, nuts and the like, of the kind in which the clamping action is increased to close the jaws about the work by pressure on the wrench handle in one direction and is decreased to release the work by pressure in the reverse direction, the movable jaw being adjustable towards and away from the fixed jaw by a nut which co-operates with a threaded part of the handle.

It is an object of the present invention to provide a novel or improved wrench of the kind defined above which, comprising only three relatively movable parts, and by avoiding the use of a hinge pivot and roller cage for the movable jaw, is of simple and robust construction and is easy to use.

According to the invention, in a wrench of the kind referred to, the movable jaw is formed with a portion seating within an annular groove in the nut and constituting a fulcrum about which said jaw is rockable, movement of said jaw away from the wrench handle being limited by an abutment on the jaw engageable with the back of said handle.

In order that the invention may be clearly understood and readily carried into effect, the same will hereinafter be more fully described with reference to the accompanying drawings, which show one embodiment thereof by way of example, and in which:

Fig. 1 is a side view of the wrench showing the movable jaw in two different positions;

Fig. 2 is a similar view to Fig. 1 with parts in section;

Fig. 3 is a transverse section on line A-B of Fig. 1; and

Fig. 4 is a transverse section on line C-D of Fig. 2.

Referring now to the drawings, the wrench is shown as comprising a body 1 the head of which forms a fixed jaw extending at right angles to the body and the latter being fashioned at its other end in the form of a handle. The wrench body 1 is of rectangular section and is provided over a portion of its length intermediate the head and the handle with a screw thread which extends across the thickness of the body and with which co-operates a milled nut 2.

The upper part of the milled nut 2 is reinforced by a circular bead which is interiorly recessed to form an annular channel 2^1 in which the movable jaw 3 is supported. This jaw 3 is in the form of a triangle *a-b-c*, the side *a-b* of which is formed over a portion thereof as the toothed jaw proper, while the acute apex *c* rests in the annular channel 2^1. The movable jaw 3 is recessed longitudinally to allow for the passage of the wrench body 1, this recess being such that the jaw is rockable about the apex *c* through a small angle limited by the side *b-c* and by a pin 4 secured to the jaw at *a*. The movable jaw 2 is shown as a single member, though it may be made of several pieces fitted together.

A longitudinal groove 5 formed along the handle on the jaw side accommodates one end of a spring the other end of which is engaged in a hole formed in the part *b-c* of the movable jaw. The spring, which may be of the blade type or may be of circular cross-section, serves firstly to maintain the apex *c* of the movable jaw seated within the channel 2^1 of the nut 2; secondly to urge the said jaw outwardly about its apex, this movement of the jaw being limited by engagement of the pin 4 with the wrench body; and thirdly to prevent unintentional rotation of the nut 2.

In operation, the wrench functions in the following manner:

The milled nut 2 is actuated in such manner as to cause a pipe or other like element to be gripped between the two jaws. By the application of pressure on the back of the handle, i.e. that edge opposite the jaws rocking movement of the movable jaw 3 from the full line position shown in Fig. 1 towards the chain line position is produced about the apex *c*, the jaws closing more tightly about the tube as this pressure is

[*Price* 2/-]

increased.

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

1. A wrench of the kind referred to wherein the movable jaw is formed with a portion seating within an annular groove in the nut and constituting a fulcrum about which said jaw is rockable, movement of said jaw away from the wrench handle being limited by an abutment on the jaw engageable with the back of said handle.

2. Wrench according to claim 1, wherein the movable jaw is coupled to the nut by a spring which acts to retain the fulcrum portion of said jaw within the nut recess and also normally to urge said jaw away from the wrench handle.

3. Wrench according to claim 2, wherein the spring, which passes axially within the nut, is slidable upon rotation of the nut within a groove extending longitudinally of the handle.

4. Wrench having its parts arranged, combined and adapted to operate substantially as hereinbefore described with reference to the accompanying drawings.

Dated the 3rd day of August, 1946.

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and
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