C. C. BARNES.

WRENCH.

APPLICATION FILED MAY 15, 1918.

1,344,573.

Patented June 22, 1920.

2 SHEETS—SHEET 1.

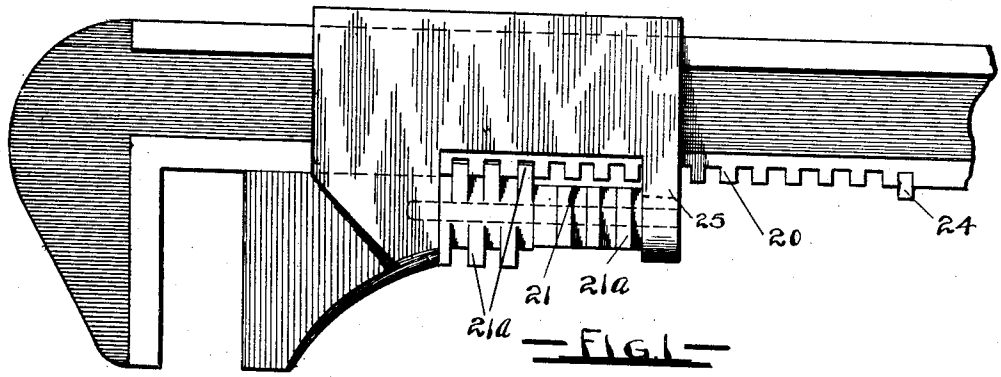


FIG. 1

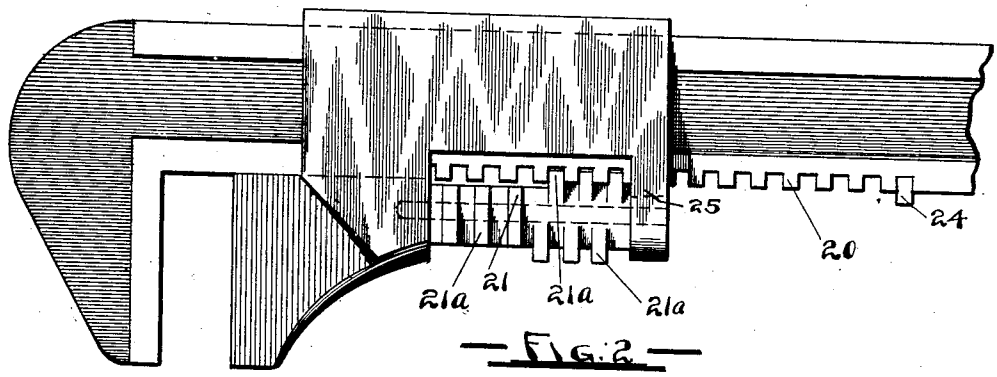


FIG. 2

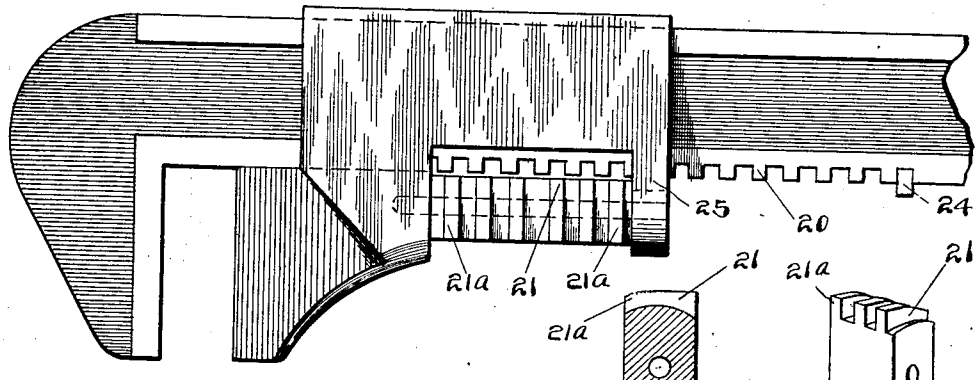


FIG. 3

FIG. 5 FIG. 4

INVENTOR

CARL C. BARNES.

BY C. F. Blake

ATTY.

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2 SHEETS—SHEET 2.

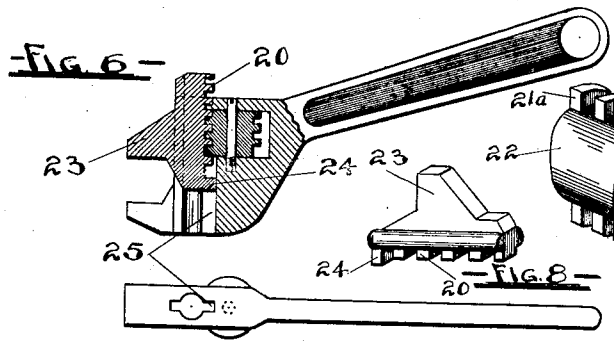


FIG. 6

FIG. 8

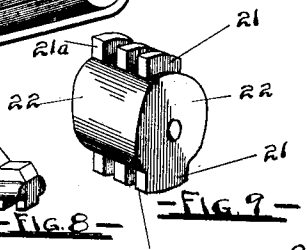
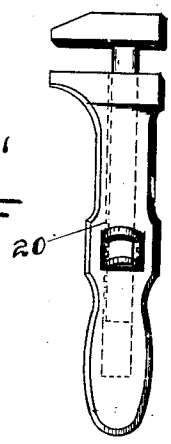


FIG. 9

FIG. 7



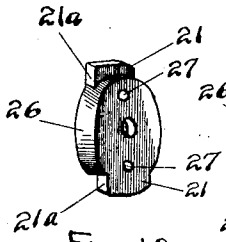


FIG. 10

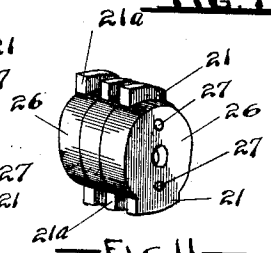


FIG. 11

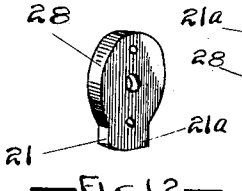


FIG. 12

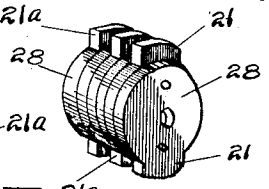


FIG. 13

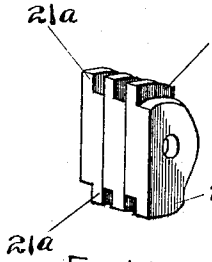


FIG. 14

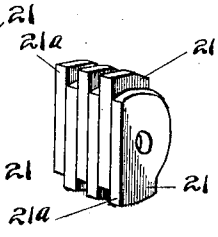


FIG. 15

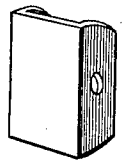


FIG. 16

INVENTOR
CARL C. BARNES
BY C. A. Blake
ATTY

UNITED STATES PATENT OFFICE.

CARL C. BARNES, OF PORTLAND, OREGON, ASSIGNOR OF ONE-HALF TO BUDDINGTON W. JONES, OF PORTLAND, OREGON.

WRENCH.

1,344,573. Specification of Letters Patent. Patented June 22, 1920.

Application filed May 15, 1918. Serial No. 234,807.

To all whom it may concern:

Be it known that I, CARL C. BARNES, a citizen of the United States, and a resident of Portland, county of Multnomah, State of Oregon, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

My invention relates to wrenches in general, and particularly to that class of wrenches employing a threaded nut and stem, and especially covers the form of said nut and the threads thereon.

The object of my invention is to provide a quick adjustable wrench wherein the nut is protected from accidental movement after the wrench is adjusted, and other results that will hereinafter appear.

I accomplish the above object by means of the construction illustrated in the accompanying drawings which are a part of this application for Letters Patent, like characters of reference indicating like parts throughout the several views of the drawings, and in which:

Figures 1, 2 and 3 show my device applied to a monkey wrench.

Fig. 4 is a perspective view of the nut as shown in Figs. 1, 2 and 3.

Fig. 5 is a sectional view of the same.

Fig. 6 is an elevation of another form of wrench with my device embodied therewith.

Fig. 7 is a plan view of the subject matter of Fig. 6.

Fig. 8 is the movable jaw as employed in the construction illustrated in Fig. 6.

Fig. 9 is a perspective view of the nut employed in the construction of Fig. 6.

Figs. 10, 11, 12, 13, 14 and 15 are modified forms of construction for the nut.

Fig. 16 is a keeper used with that form of nut illustrated in Figs. 14 and 15.

In wrenches of ordinary construction the threads or teeth of the nut and its coacting part are formed of partial helices, while in my device the teeth 20 which coact with the teeth upon the nut are normal to the axial plane of the wrench and the axis of the nut.

The nut, which coacts with said teeth to hold the movable wrench jaw in place, is provided with teeth 21 normal to the axis of the nut.

Each tooth upon the nut is composed of two portions integrally joined, one portion 21 having a cylindrical outer periphery, and the other portion 21^a being tangential thereto.

The nut is preferably formed with parallel sides, as illustrated in Figs. 4 and 5, as when this construction is followed, the nut, when engaged, lies flat or parallel with the plane of the wrench, and being thin lies within the outer surface of the wrench, so that when the wrench is laid down the nut cannot be hit and moved by any article.

There are two series of teeth upon the nut, the teeth of one series being staggered or longitudinally offset relatively to the teeth of the other series, so that a change of the series of nut teeth to be engaged with the teeth 20 opens or closes the wrench a slight amount, as the case may be.

When the nut is turned so that neither series of teeth thereon engage the teeth 20 one of the flat sides of the nut will be presented to the teeth 20, and the movable jaw of the wrench may then be freely moved to adjustment with any desired nut or bolt.

When the wrench is adjusted and the nut is turned so that the teeth thereof engage teeth 20, the tangential portion 21^a of the nut teeth will stop the rotation of the nut when the teeth thereof properly engage the teeth 20.

A preferable form of construction for the wrench is illustrated in Figs. 1, 2 and 3, wherein twin nuts are used.

In each of these twin nuts the teeth of one series are offset from the teeth of the opposite series exactly the thickness of one tooth, so that a change from one series of teeth to the other, coacting with teeth 20, advances or recedes the wrench jaw a distance exactly equal to the tooth thickness.

The twin nuts are mounted so that the teeth of one nut are advanced a distance equal to one half a tooth thickness from the teeth of the other nut, as illustrated in Figs. 1, 2 and 3, so that there are four series of teeth that may be brought into engagement with the teeth 20, and since the teeth series on each nut are offset one tooth thickness, and the nuts are mounted one half a tooth thickness apart, the result is that an adjustment of one quarter tooth thickness may be obtained for the movable wrench jaw.

In Fig. 1 the forward nut is shown en-

gaged, and the rearward nut free; in Fig. 2 the reverse condition is shown, and in Fig. 3 both nuts are shown free.

In applying my device to a wrench of the type shown in Fig. 6 the teeth 20 are formed upon the movable jaw, and the nut has a cylindrical portion 22 to enable the same to be rotated by the fingers of the operator.

The movable jaw 23 is provided at its forward end with an elongated tooth 24 which contacts with the nut 22 to prevent the entire withdrawal of the jaw 23 from the wrench, there being provided a slot 25 wherein said tooth 24 slides.

Various forms of nuts may be used in such wrenches as illustrated in Figs. 1, 2, 3 and 6.

The nuts illustrated in Figs. 4, 5 and 6 have the teeth milled or cut upon them from solid stock; those illustrated in Figs. 10 and 11 are composed of a plurality of disks 26, each disk having two oppositely disposed offset teeth thereon, and the several disks composing the nut being joined by rivets 27; those illustrated in Figs. 12 and 13 are similar to those illustrated in Figs. 10 and 11 except that each disk 28 has only one tooth thereon, and alternate disks are relatively rotated 180 degrees and riveted together to form the nut; those illustrated in Figs. 14 and 15 are similar to those illustrated in Figs. 10 and 11 or 12 and 13, but instead of being riveted together they are provided with a flat side and adapted to be inclosed with a keeper illustrated in Fig. 16.

My invention may be made of any size and constructed of any materials deemed convenient and suitable for a device of this character, and while I have illustrated and described a form of construction and arrangement of parts found desirable in materializing my invention, I wish to include in this application all mechanical equivalents or substitutes that may fairly be considered to come within the scope and purview of my invention as defined in the appended claims.

Having disclosed my invention so that others may be enabled to construct and to use the same, what I claim as new and desire to secure by Letters Patent is:—

1. In a wrench, a pair of relatively adjustable members, each of said members having a jaw formed thereon; teeth normal to the axial plane of said wrench upon one of said members; a nut rotatably mounted upon that one of said members not having said teeth thereon; and oppositely disposed teeth upon said nut, said teeth having a cylindrical portion and a tangential portion, and being relatively offset.

2. In a wrench, a pair of relatively adjustable members, each of said members having a jaw formed thereon; teeth normal to the axial plane of said wrench upon one of said memebrs; a pair of nuts rotatably mounted upon that one of said members not having said teeth thereon; oppositely disposed teeth annularly arranged upon each of said nuts, said teeth upon each of said nuts being relatively longitudinally staggered; said nuts being mounted so that when the teeth of one nut engage the spaces between the teeth upon said adjustable member the teeth of the other nut are opposite the teeth upon said adjustable member.

3. In an adjustable wrench, a rotatable nut; oppositely disposed series of teeth normal to the axis of the nut, thereupon; oppositely disposed untoothed portions intermediate said series of teeth; and tangential projections upon each of said teeth.

In witness whereof I claim the foregoing to be my own I hereunto affix my signature in the presence of a subscribing witness, at Portland, county of Multnomah, State of Oregon, this 17th day of April 1918.

CARL C. BARNES.

Witness:
C. F. BLAKE.