C. STARKS.

WRENCH.

APPLICATION FILED JUNE 22, 1914.

1,123,612.

Patented Jan. 5, 1915.

2 SHEETS—SHEET 1.

FIG. 1.

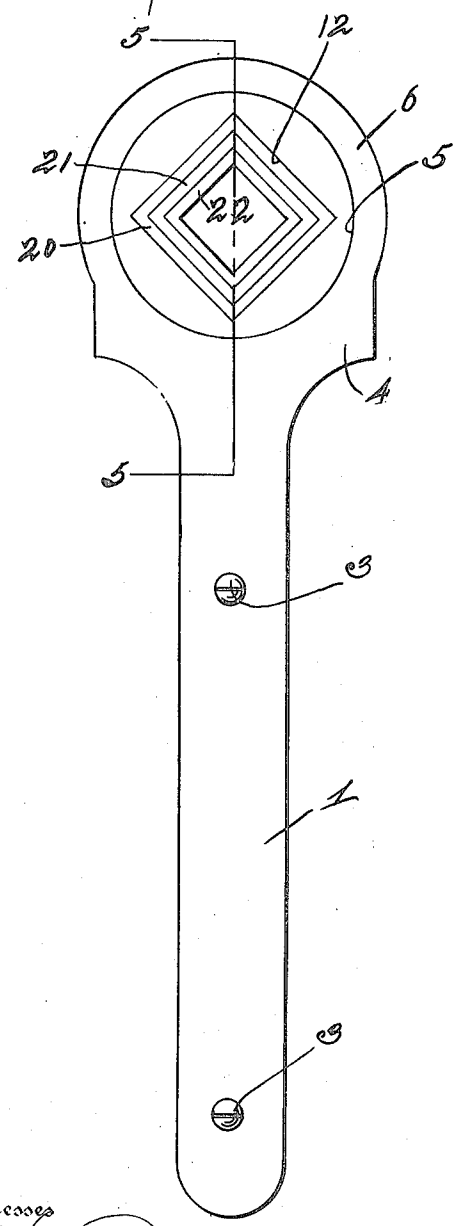
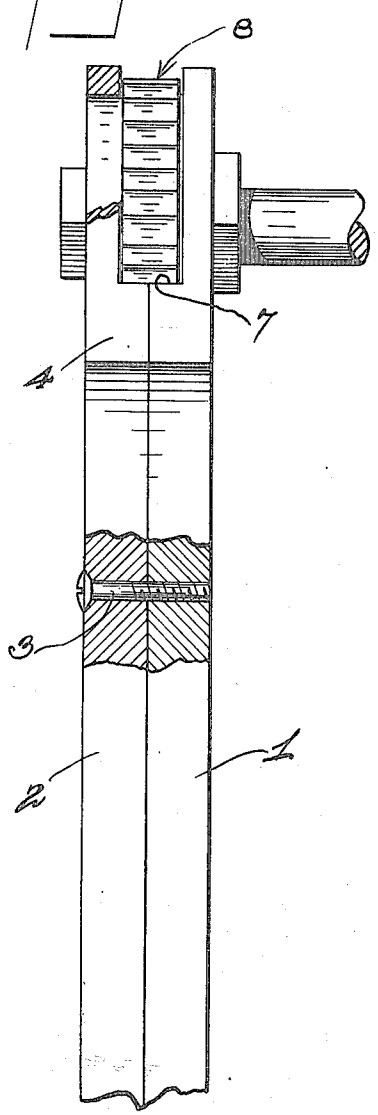


FIG. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

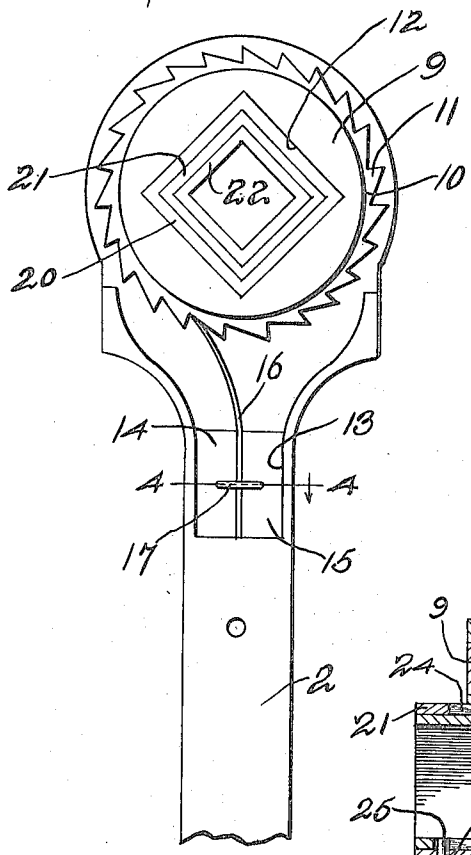
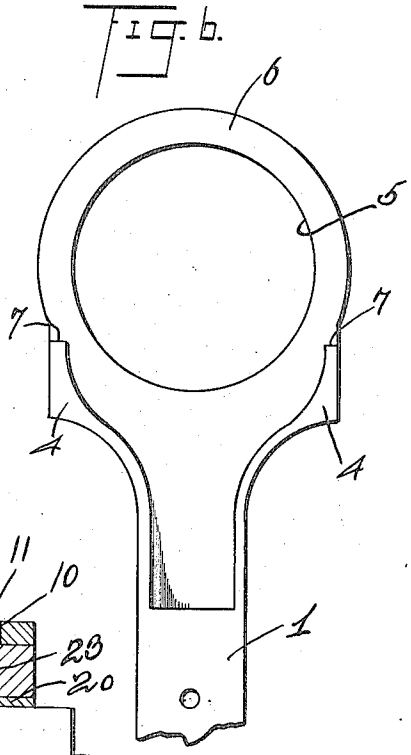


Fig. 6.



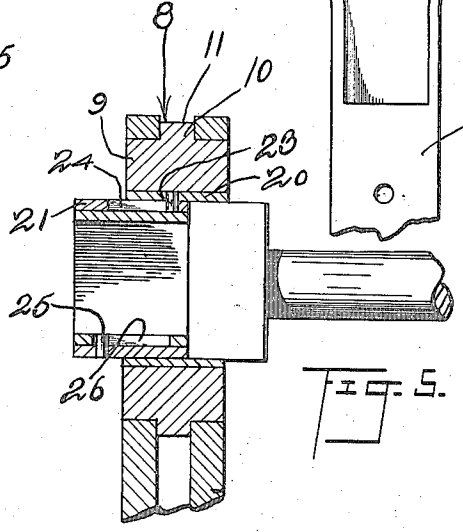
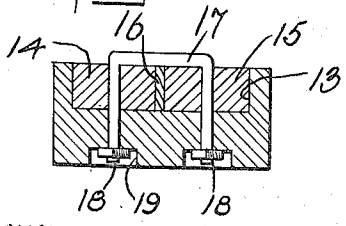


Fig. 5.

Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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WRENCH.

1,123,612. Specification of Letters Patent. Patented Jan. 5, 1915.

Application filed June 22, 1914. Serial No. 846,679.

To all whom it may concern:

Be it known that I, CHARLES STARKS, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to new and useful improvements in wrenches, and has for its principal object to provide a ratchet wrench which is adjustable automatically to permit the same to be used on nuts of different sizes.

Another object of the invention is to provide a wrench in which the head is permitted to rotate in one direction and which may be applied to nuts from either side so that the nut may be tightened or loosened as desired.

A further object of the invention is to provide a novel means for holding the ratchet spring in place to prevent the same from becoming inoperative and permit a new spring to be inserted should the old spring become worn or otherwise unfit for use.

With these and other objects in view, the invention consists in the novel combination and arrangement of parts which will be fully set forth in the following specification and accompanying drawings, in which,

Figure 1 is a side view in elevation of a wrench constructed in accordance with this invention, Fig. 2 is an edge view of Fig. 1 showing portions broken away to more clearly illustrate the details of construction and also showing the same as it would appear with a bolt in place, Fig. 3 is a view in elevation of the portion carrying the spring and showing the ratchet wheel in position, Fig. 4 is a transverse sectional view taken on line 4—4 of Fig. 3, Fig. 5 is a longitudinal sectional view taken on line 5—5 of Fig. 1, and Fig. 6 is a view in elevation of the inner side of the coöperating elements.

Referring now to the drawings by characters of reference, the numeral 1 designates one of the wheel holding elements, while the numeral 2 designates the coöperating element. These elements 1 and 2 are held together by means of the lag screws 3 in such a way as to form a handle for the wrench. A suitable enlargement 4 is formed at one end of each of the elements 1 and 2 and these enlargements are provided with the enlarged central apertures 5 forming the rings 6, the use of which will appear upon referring to Fig. 2. These rings 6 are formed of the recessed portions 7 in which recesses the ratchet teeth of the rotatable element of the wrench are free to turn.

The rotatable element hereinbefore referred to, is designated generally by the numeral 8 and comprises the body portion 9 having the peripheral flange 10 formed thereon. This peripheral flange is provided with a plurality of peripheral teeth 11 which are arranged to engage the spring as will be more fully hereinafter described. The body portion 9 is rotatably mounted in the rings 6 as clearly illustrated in Fig. 2 and is provided with the central rectangular aperture 12 having the adjustable nut receiving members which will be more fully hereinafter described.

Secured within the recess 13 formed in the element 2 are provided the blocks 14 and 15 between which the leaf spring 16 is held. These blocks are made to fit tightly so that the spring is held against movement, and are secured in place by means of the U-bolts 17, the free arms of which extend through the blocks and through the element 2 and are provided with the nuts 18 which lie in the countersunk portion 19 as clearly shown in Fig. 4. It will thus be seen that the spring is removably held and may be easily and quickly removed and a new spring replaced should the same become inoperative for any reason.

The jaw member, which is arranged to fit the rectangular aperture 12, is formed of a plurality of rectangular members 21 and 22 which are of graduated sizes so that the element 21 is slidable in the element 20 and the element 22 is slidable in the element 21. Secured to and extending through the rectangular element 20 is a suitable pin 23 which is arranged to extend into the slot 24 formed in the element 21 and said element 21 is provided on the side opposite the slot with a pin 25, which is arranged to slide in the slot 26 formed in the element 21. Thus it will be seen that the several elements may be free to move with relation to each other, but still will be held in such a way as to limit the movement and prevent any parts from becoming lost.

It will be apparent from the foregoing that in use the wrench is applied to a nut in the manner illustrated in Figs. 2 and 5. As shown in Fig. 5, the element 20 is of the proper size to fit the head of the nut

or bolt and the elements which are too small to fit the head of the bolt are pushed laterally so as to permit the element 20 to grip the head of the bolt and thus permit the same to be turned. Should a nut or bolt of smaller size be in use, the same is arranged so that the head extends into one of the smaller apertures and will push the inoperative members outwardly. It will thus be seen that a wrench which is capable of use for different size nuts and which is arranged to turn the nuts in opposite directions, is provided and the construction thereof is so that the same is automatically adjustable, thereby eliminating any inconvenience.

While in the foregoing there has been shown and described the preferred embodiment of this invention, it is to be understood that such changes may be made in the combination and arrangement of parts as will fall within the spirit and scope of the invention as defined in the appended claim.

Having thus described my invention, I claim:

A wrench including a pair of coöperating members forming handle portions, each of said members being provided with enlargements at one end, said enlargements being recessed and provided with enlarged central apertures, a rotatable element mounted to rotate in the apertures, said rotatable element being provided with a toothed peripheral flange, a pair of blocks carried in one of the recesses in the elements forming the handle, a leaf spring held between the blocks and arranged to engage the ratchet teeth, a U-bolt extending through the blocks and arranged to hold the spring and blocks in place in the handle member, the rotating elements being provided with a rectangular central aperture, a plurality of rectangular jaw members arranged to telescope within each other, each of said jaw members being provided with a pin and having a slot in the side opposite the pin, the said pins and slots being arranged to limit the movement of the jaw members with relation to each other, and means to hold the coöperating elements in operative position.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES STARKS.

Witnesses:
E. T. Pelton,
W. Behringer.