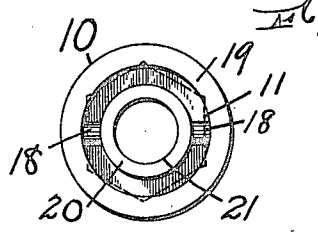
J. C. HURLEY.

WRENCH.

APPLICATION FILED AUG. 22, 1919.

1,386,708. Patented Aug. 9, 1921.

Fig. 2



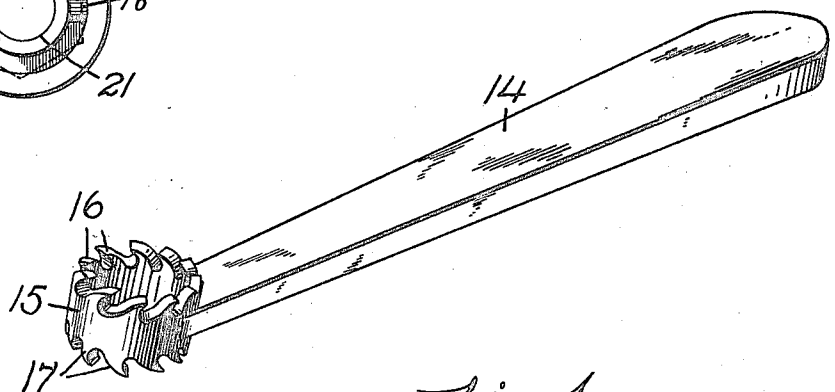
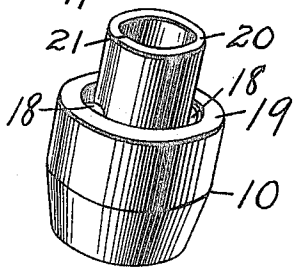




Fig. 1



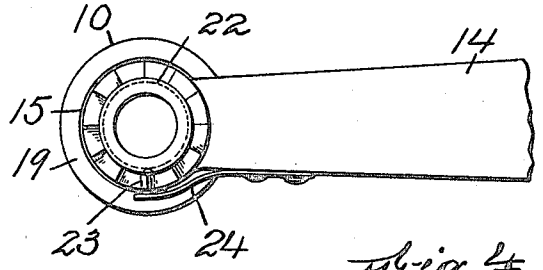




Fig. 4

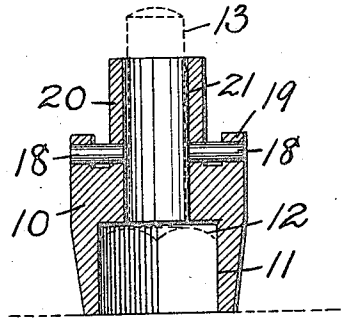



Fig. 3

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# UNITED STATES PATENT OFFICE.

JOHN C. HURLEY, OF NEWARK, NEW JERSEY.

## WRENCH.

1,386,708. Specification of Letters Patent. Patented Aug. 9, 1921.

Application filed August 22, 1919. Serial No. 319,079.

*To all whom it may concern:*

Be it known that I, JOHN C. HURLEY, a citizen of the United States, and a resident of Newark, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to a wrench which can be used similar to a ratchet wrench, which has no springs embraced within the ratchet mechanism and which can be easily reversed.

The invention further resides in a wrench of this kind which is of a diameter not much greater than the nut or machine element that is adapted to be turned, so that it can be used as a ratchet wrench in a restricted space.

The invention is also designed to provide a wrench which can follow up the nut on a bolt, which follow-up feature, coupled with the small diameter of the wrench and its easy reversal, makes it a most desirable tool.

A wrench embodying my invention is illustrated in the accompanying drawing, in which Figure 1 is a perspective view of the wrench with the two members separated, but in position to be assembled. Fig. 2 is a top view of the socket member of the wrench. Fig. 3 is a central vertical section through Fig. 2, and Fig. 4 is a top view of a wrench showing a means for holding the members against accidental separation.

The wrench comprises a socket member 10, which is provided with a recess 11 on the inside and which opens at the bottom so that the socket member can be placed over the machine element to be turned, the recess conforming to the element, in the form shown the element being represented in dotted outline in Fig. 3 as a nut 12 on a bolt 13.

The handle member consists of a handle proper 14 and a cylindrical eye 15, which handle member is adapted to be placed on the socket member, and when rotated in one direction to turn the socket member, and when rotated in the opposite direction to slip thereon.

One method of providing for this is to provide the eye with teeth 16 on one face and teeth 17 on the other face, which teeth are adapted to engage a projection on the socket member, which, in the form shown, consists of a pin 18, which pin can be reinforced by a similar pin on the opposite side of the wrench, and to provide for a substantial securing of the pin I provide an annular flange 19, which is spaced from and surrounds the stem 20.

The teeth 16 and 17 project in planes concentric to the axis of the wrench and face in the same direction circumferentially, so that when the handle is placed over the stem, if the teeth 17 are at the bottom they engage the pins 18, and when the handle is operated it turns the socket member to the left, but if the handle is taken off and turned over and again put on the socket member and then operated, the socket member will be turned to the right.

It will thus be evident that by simply removing the handle and by turning it over and then replacing it on the socket member, the wrench can be quickly converted from a right hand wrench to a left hand wrench, and vice versa.

The pins 18 are finished at their ends so that they form no projections and provide a neat appearance. The stem 20 can be made tubular with a passage 21 through it, this form being well adapted for use where the nut is to be followed up on a bolt; for instance, if a nut is being turned on a bolt to tighten a band on a tank or silo or similar structure. This follow-up feature is very desirable, particularly in conjunction with the small diameter of the wrench relative to the nut. The handle, being mounted above the nut and within the diameter of the socket member, permits the operation of the wrench close up against a wall or other flat surface. It will be noted that the wrench is without springs in the ratchet mechanism, and the eye 15 being made to slide easily and rotate easily on the stem, there is no difficulty encountered in insuring the gripping of the teeth 16 or 17 on the pins 18.

In Fig. 4 I show a modification in which the stem is provided with an annular groove 22 and the pin 23 is arranged so that it is seated in the groove to prevent accidental longitudinal motion of the eye on the stem. The pin is yieldingly held in position, in the form shown this being done by mounting the pin on the end of the spring 24 which is secured to the handle. The rounded end of the pin 23 makes it possible to unseat the pin from the groove by simply giving a sharp jerk to the handle, which causes it to separate from the socket member.

I claim:

1. A wrench comprising a socket member having a stem thereon, and a handle member having an eye to fit endwise on the stem and removable therefrom, said eye having teeth on its two faces, said teeth all facing in the same direction, said socket member having a projection to be engaged by the teeth, whereby when the eye is removed from the stem, turned over and replaced, the wrench is reversed.

2. A wrench comprising a socket member having a tubular stem thereon and a handle member having an eye to be removably placed endwise on the stem, said eye having teeth on its two faces, said teeth all facing in the same direction, said socket member having a projection to be engaged by the teeth, whereby when the eye is removed from the stem, turned over and replaced, the wrench is reversed.

3. A wrench comprising a socket member having a stem and an annular flange spaced from the stem, a pin in the space, and a handle member having an eye to fit around the stem and in the space and removable endwise therefrom, the eye having teeth on its two faces, said teeth pointing in the same direction, said teeth being adapted to engage the pin, whereby when the eye is removed from the stem, turned over and replaced, the wrench is reversed.

In testimony that I claim the foregoing, I have hereto set my hand, this 20th day of August, 1919.

JOHN C. HURLEY.