

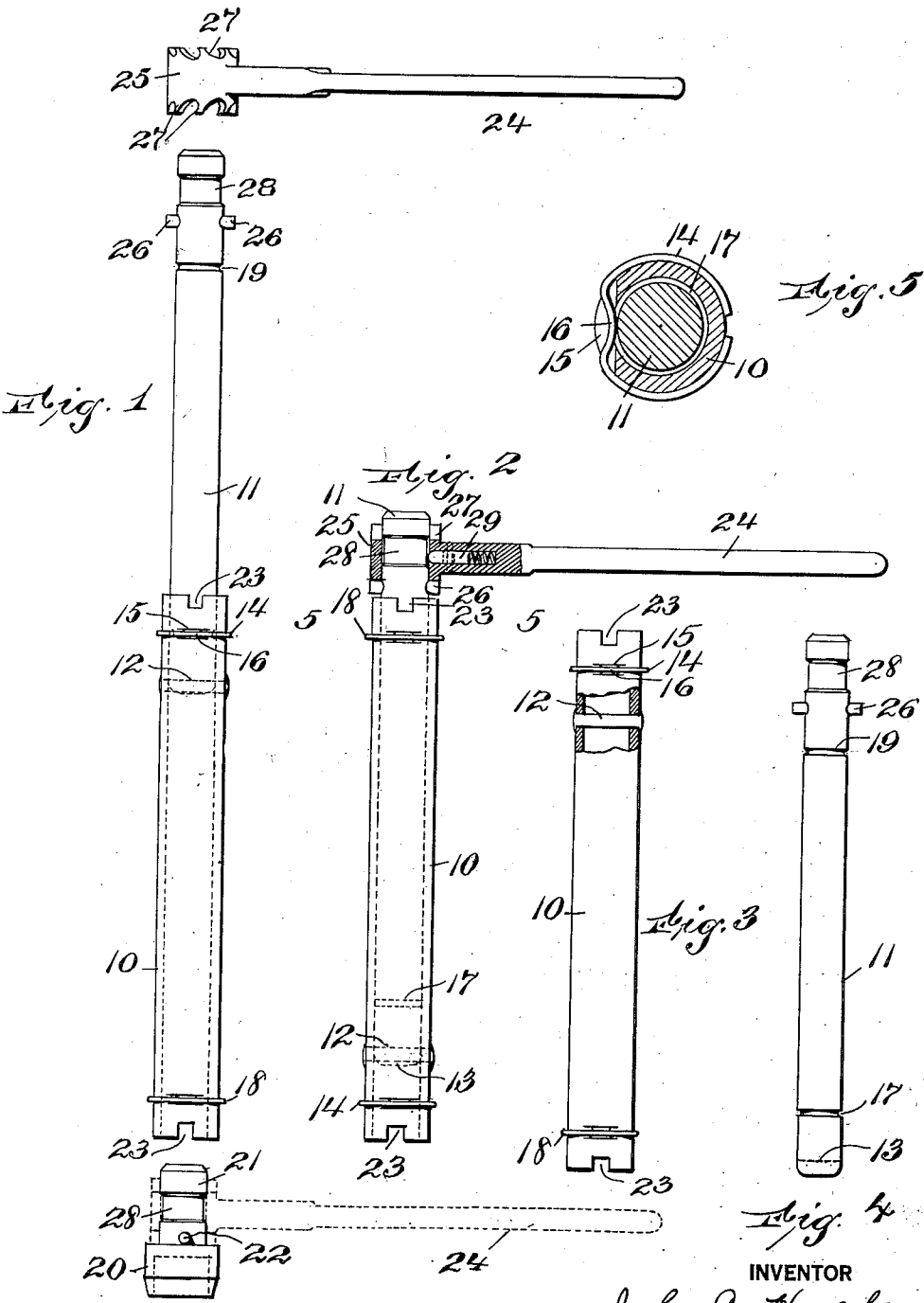
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J. C. HURLEY

WRENCH

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INVENTOR
John C. Hurley,
BY
Wm. H. Canfield.
ATTORNEY

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UNITED STATES PATENT OFFICE.

JOHN C. HURLEY, OF NEWARK, NEW JERSEY.

WRENCH.

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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 an improved wrench and is adapted for use where it is impossible or inconvenient to reach, with a hand wrench, to where the nut to be turned is located, and while the wrench is adapted for different applications, I have illustrated and described it as applied to a wrench on which I secured United States Letters Patent on Aug. 9, 1921, No. 1,386,708.

The object of the invention is to provide an extension that can be assembled in a compact form, being substantially the length of the handle of the wrench, and which can be, when assembled in a certain relation, used as a short extension, the same parts when differently assembled being used as a long or maximum extension.

The invention is illustrated in the accompanying drawing, in which Figure 1 shows a wrench of my improved form with the parts extended to maximum and with the handle and the socket member slightly removed from the extension. Figure 2 is a view with the socket member illustrated and with the handle shown partly in section, this view showing the extension members assembled to form a short or minor extension or wrench. Figure 3 is a side view, partly in section, of one of the extension members. Figure 4 is a side elevation of the other extension member, and Figure 5 is a section on an enlarged scale, taken on a plane indicated by the line 5—5 in Figure 2.

My invention comprises two extension members which are slidably arranged so as to be longitudinally assembled, one end of one being slidably into either end of the other, these members having coacting parts which will lock the members rotatively together, the means on one member being located near its end so that the members are slid almost entirely one within the other in one position, and having its major portion extending from the other in its other position.

The form shown as one embodiment of my invention comprises an extension member 10, which is the outer member, and an extension member 11, which is the inner member, the outer member being prefer-

ably in the form of a tube and the inner member being in the form of a bar. The member 11 has a sliding fit inside the member 10, and the coacting means are provided, in the form shown, by a pin 12 which extends across the member 10 near one end and receives the slot 13 in the end of the member 11. Thus when the member 11 is slid in the member 10, as shown in Figure 1, the slot 13 engages the pin 12 and they are held so that they rotate together, this forming a maximum extension of the two parts, but in Figure 2 the member 10 is shown reversed so that the member 11 slides in from the other end and travels almost the length of the member 10 before it engages the pin 12.

To hold the members against longitudinal separation, but to permit their being separated when desired, I provide a yielding means, in the form shown this comprising a ring 14, which ring 14 is held against longitudinal movement by being seated in the cut-away portion 15 of the member and having an inwardly bent looped part 16 to engage a depression such as the annular groove 17 on the member 11, and inserted in the other end is a ring 18, similar to the ring 14, which has a holding engagement with the groove 19.

The ends of the extension members are adapted for connection with a handle and nut-engaging part, one, such as the member 10, having both ends adapted to engage the nut-engaging member, and in the form shown the nut-engaging member is in the form of a socket member 20 which has a stem 21 having a pin 22 projecting from its opposite side, the stem 21 of the socket member fitting up into the bore of the member 10, and the ends of the member 10 having notches 23, which notches are adapted to receive the ends of the projection or pin 22.

The end of the member 11 is adapted to receive a handle, in the form shown this handle comprising a grip 24 and an eye 25 which fits over the upper part of the stem 11, the upper part of the stem 11 being formed similar to the stem 21 of the socket member and having projections or pins 26 which are adapted to be engaged by the teeth 27 on both edges of the eye 25, these teeth preferably facing in the same direction and therefore being adapted for easy reversal, since when the wrench is operated in one direction and then the eye 25 is taken

off and turned over and reversed, the wrench is reversed so far as its ratchet is concerned.

While it is not essential that the socket member and the handle be connected to the extension as herein described, these forms are preferable.

When used normally the handle 24 is placed directly on the socket member, as shown in dotted outline in the lower part of Figure 1. Both the upper part of the stem 21 and the upper part of the member 11 are provided with a recessed portion 28 extending around the stem and providing for the rotation and also the necessary slight up and down motion of the spring-pressed pin 29 seated in the handle, and thus being adapted for holding the parts together, but permitting their intentional separation, since the ends of the annular depressed part or grooved part 28 are inclined. The depressed part 28 on the stem 21, when the stem 21 is placed in the bottom of the member 10, is engaged by the rings 14 or 18, according to which end of the member the stem is inserted into.

I claim:

1. A wrench comprising a pair of members, one slidable within either end of the other, the inner member having a slot across one end, and a pin in the outer member near one end thereof to receive said slot whereby the members are caused to rotate together.

2. A wrench comprising a pair of members, one slidable within either end of the other, the inner member having a slot across

one end, a pin in the outer member and near one end thereof to engage the slot of the inner member whereby the members are caused to rotate together, and springs normally seated slightly within the outer member, the inner member having depressions to receive the springs to yieldingly hold the members in engagement.

3. A wrench comprising a socket member, a handle to fit on the socket member, a pair of extension members telescopically arranged, one of said members being adapted to be reversed on the other, the extension members having coacting means for rotatively connecting them when assembled, the reversible member having both ends adapted to operatively engage the socket member, the other of said extension members having one end adapted to be operatively engaged by the handle.

4. A wrench comprising an outer extension member with notches on its two ends and a transverse pin near one end, and an inner member with a transverse slot in one end to engage the pin when the inner member is slid into either end of the other member.

5. A wrench comprising an outer tubular member with a transverse pin near one end, and an inner member to slide into either end of the outer member and having a transverse slot to engage said pin.

In testimony that I claim the foregoing, I have hereto set my hand, this 15th day of July, 1922.

JOHN C. HURLEY.