W. LE R. BONNELL.

WRENCH.

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1,401,956. Patented Jan. 3, 1922.

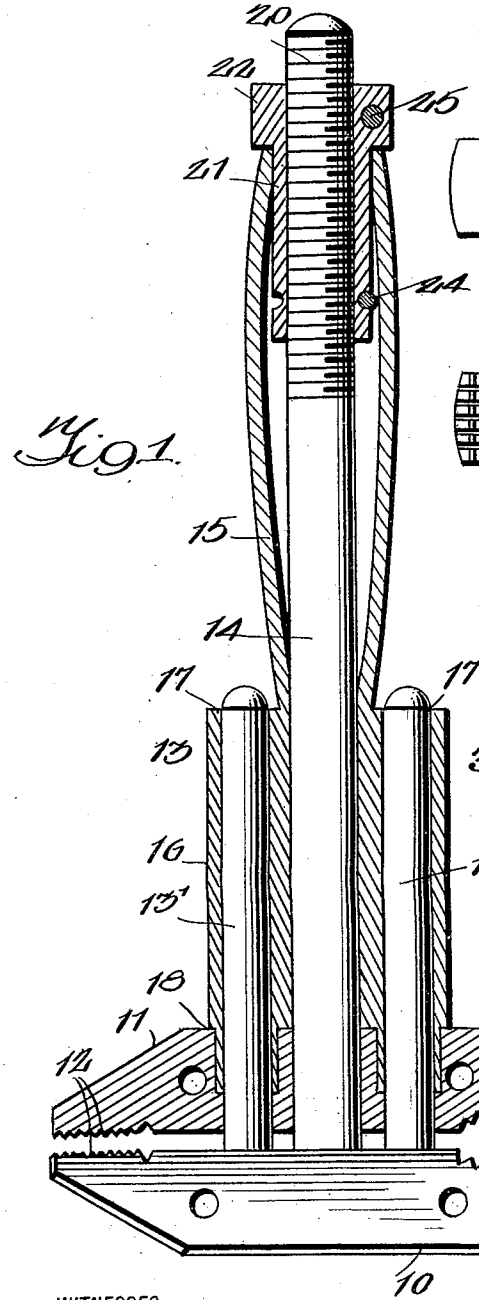


Fig. 1.

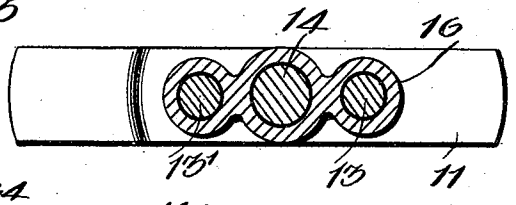


Fig. 3.



Fig. 2.

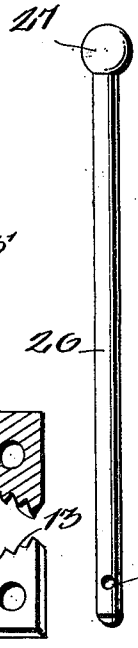


Fig. 5.

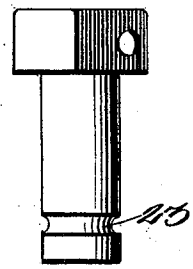


Fig. 4.

WITNESSES

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WRENCH.

1,401,956. Specification of Letters Patent. Patented Jan. 3, 1922.

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To all whom it may concern:

Be it known that I, WILLIAM LE ROY BONNELL, a citizen of the United States, and a resident of Chickasha, in the county of Grady and State of Oklahoma, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to a wrench, and more particularly to a combined pipe and nut wrench. The object of the invention is to provide such a wrench structure whereby a lever means may be used in conjunction with a screw for advancing and retracting the movable jaw of the wrench.

It is also an object of the invention that the parts of the wrench shall be few in number and positive in operation.

Other objects relating to details of construction, combination and arrangement of parts will hereinafter appear in the detailed description to follow.

The invention is illustrated by way of example in the accompanying drawings, in which—

Figure 1 is a longitudinal vertical sectional view of the wrench, the forward or stationary jaw being shown in side elevation,

Figure 2 is an elevation showing the inner gripping face of the jaws,

Figure 3 is a vertical cross section taken substantially on the lines 3—3 of Figure 1, and also showing in elevation the rear end of the movable jaw,

Figure 4 is a side elevation of the interiorly threaded sleeve for advancing or retracting the movable jaw and handle, and

Figure 5 is a perspective view of the lever bar.

Referring to the drawings more particularly, 10 indicates the forward or stationary jaw, and 11 the rearward or movable jaw. One end portion of the opposing faces of the jaws is formed with teeth or serrations as indicated at 12, which are adapted to engage and grip the sides of a nut. The other opposing end portions of the jaws are likewise provided with teeth or serrations, as at 13, the last named teeth being in curved formation in order that they may be adapted to grip a pipe.

From the inner face of the jaw 10 there extends a pair of guide pins 13′ and from the same face of the jaw 10 intermediate of the pair of guide pins there extends a stem 14, said stem and guide pins being disposed in parallel relation and the stem being greater in length and diameter, as shown.

The jaw 11 is mounted to slide upon the guide pins 13′ and the stem 14. Suitable openings are provided in the jaw 11 through which the guides 13′ and stem 14 may pass. A hollow handle 15 is provided, the stem 14 passing through the interior thereof. The one end of the handle 15 is enlarged as at 16. The one end of this enlarged portion of the handle is provided with a pair of openings 17 through which the guide pins 13′ may pass; also at the end of each opening 17 a sleeve extension 18 is formed and extended into enlargement of the openings in the jaw 11 through which the guide pins 13′ pass. The openings in the jaw 11 and enlarged portion 16 of the handle through which the guide pins 13′ pass are sufficient so that no undue friction will be had against the sliding of the handle and jaw upon said pins. Likewise the jaw and handle are free to slide upon the stem 14.

On the free end of the stem 14 threads 20 are formed and adapted to receive the interiorly threaded sleeve 21. On the rear portion of the sleeve 21, there is formed a collar 22 which limits the forward movement of the sleeve with respect to the handle 15; also the sleeve is held against movement rearwardly by the cooperation of the annular groove 23 formed in said sleeve and the pin 24. The ends of the pin 24 extend through openings formed in the handle 15, not shown, and by a tight fitting in said openings or other suitable means the pin is held against removal. The sleeve 21 is free for turning movement, but held against longitudinal movement in either direction with respect to the handle 15.

In the collar 22 there is formed an opening 25 adapted to receive the lever bar 26. The opening 25 is preferably tangential with respect to the collar 22. The lever bar 26 is provided with an enlarged end as at 27, and its other end is provided with an opening 28 to accommodate a cotter pin or the like by which the same may be held against removal when positioned in the opening 25.

In the operation of the present device, by inserting the lever bar 26 in the opening 25, the sleeve 21 may be turned forward or backward which in turn will move with it the handle member 15 and which in turn car-

ries with it the jaw 11. In this manner, the jaw 11 may be retracted or advanced in a positive manner. Also it may be mentioned that great gripping stress may be applied between the two jaws. If desired, the lever bar 26 need only be used when tightening up the jaws 10 and 11, or after the same have been brought in contact with the nut or pipe upon which the wrench is intended to be used. At other times, the bar may be removed from the opening 25 if so desired.

I claim:—

A wrench comprising in combination, a stem having a jaw formed upon the one end thereof, a tubular handle telescoping said stem, a second jaw carried by the forward end of said handle, a sleeve in the rear end of said handle, co-operating threads between said sleeve and stem permitting the stem to move entirely through the sleeve, a collar formed on the rear end of said sleeve against which the tubular handle is adapted to abut, said collar having an opening extending tangentially therethrough, a lever bar extending through said opening whereby said sleeve may be turned for advancing or retracting the stem and jaws carried thereby, and means for holding the sleeve against longitudinal movement but free for rotative movement.

W. LE ROY BONNELL.