

A. HOLDREN.
WORM WRENCH.
APPLICATION FILED JULY 9, 1917.

1,245,921.

Patented Nov. 6, 1917.
2 SHEETS—SHEET 1.

Fig. 1.

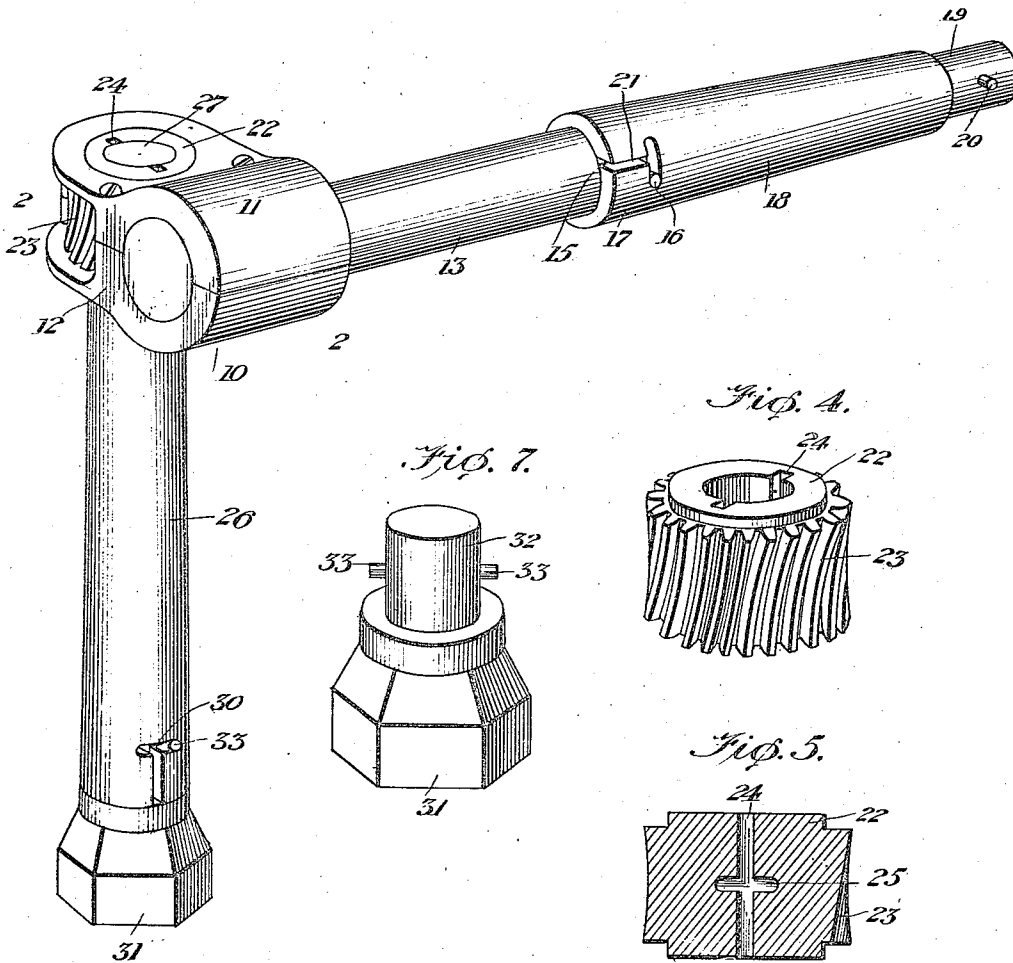


Fig. 4.

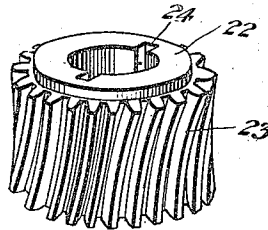


Fig. 7.

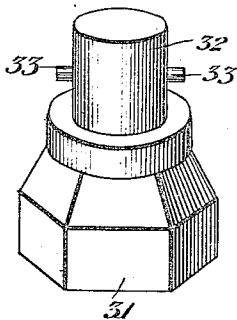
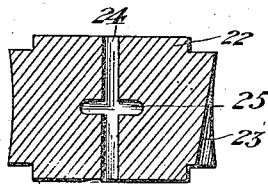


Fig. 5.



WITNESSES

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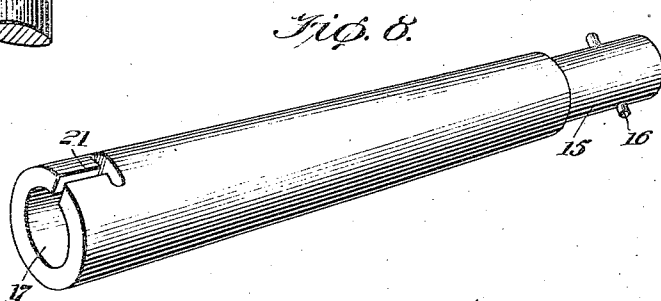
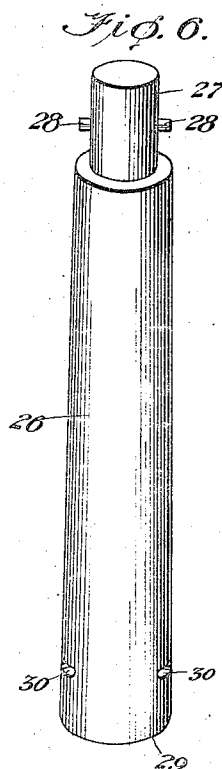
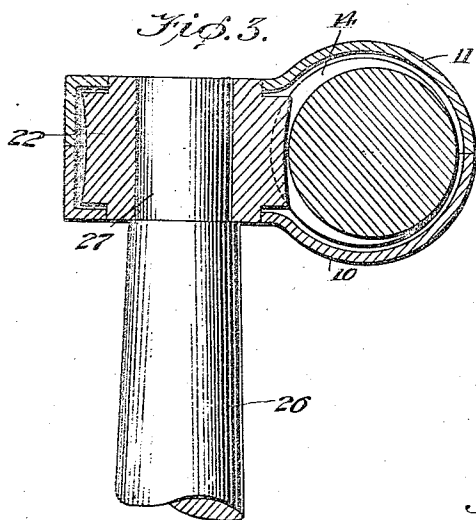
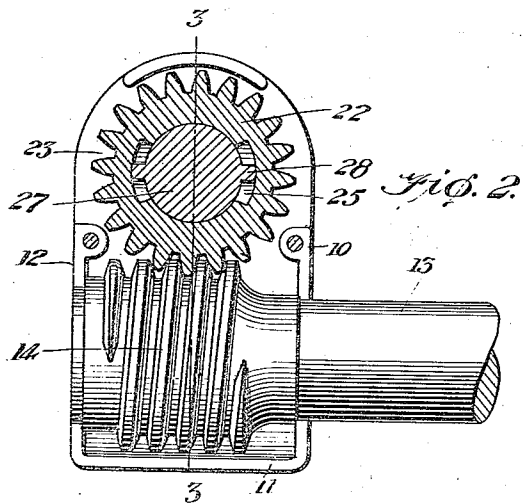
BY *Victor J. Evans*

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WITNESSES

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WORM-WRENCH.

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To all whom it may concern:

Be it known that I, ANDY HOLDREN, a citizen of the United States, residing at Martins Ferry, in the county of Belmont and State of Ohio, have invented new and useful Improvements in Worm-Wrenches, of which the following is a specification.

The present invention relates to improvements in wrenches, and has for its primary object to produce a wrench so constructed and arranged as to permit of the same to be used in corners or in inconvenient places not accessible by an ordinary wrench.

The invention further consists in the construction, combination and operative arrangement of parts set forth in the following description and falling within the scope of the appended claim.

In the drawings,
Figure 1 is a perspective view of the wrench constructed in accordance with the present invention.

Fig. 2 is a sectional view approximately on the line 2—2 of Fig. 1.

Fig. 3 is a sectional view approximately on the line 3—3 of Fig. 2.

Fig. 4 is a perspective view of the toothed member carried by the head of the wrench.

Fig. 5 is a sectional view approximately on the line 5—5 of Fig. 4.

Fig. 6 is a perspective view of the shank designed to engage in the bore of the toothed member illustrated in Figs. 4 and 5.

Fig. 7 is a perspective view of one of the removable socket members designed to engage with the shank.

Fig. 8 is a perspective view of one of the elements comprising the handle extension.

The wrench is broadly indicated by the numeral 10, the same including a head 11 which is in the nature of a hollow casing and which has, what I will term, its sides 12 provided with alining openings forming bearings for the inner and rounded end of a handle member 13. The portion of the handle received in the head or casing 11 is provided with a worm screw 14, and the outer end of the handle 13 is formed with a reduced round extension 15 provided with a lateral lug 16. The extension 15 is designed to be received in the socket end 17 of a handle extension member 18, the said member 18, at its outer end being provided with a reduced extension, similar to the ex-

tension 15, and which is designated by the numeral 19 and upon this reduced extension is formed one or more lugs 20. The socket end 17 of the member 18 is provided with a substantially T shaped slot 21 entering from the outer end of the said member 18, and this socket is designed to receive the lug 16, and whereby, when the extension 18 is turned a determined distance, upon the handle 13, the lug will be seated against one of the end walls provided by the transverse opening in the T shaped slot 21. Likewise the lug upon the extension 19 of the handle 20 is designed to be received in a T shaped slot in the socket end of a second extension, similar to the member 18 and in this manner, it will be noted that the handle may be lengthened or shortened in accordance with the use of which the device is being applied to the convenience of the operator.

The walls of the head or casing 11 arranged at right angles to the portions 12 which I have termed the sides of the said casing are provided with alined openings which are round and which are designed to receive the ends of a cylindrical member 22, the said member, between the said walls of the casing, having its outer periphery formed with teeth 23 which are engaged by the worm screw 14 of the handle 13, and by turning the said handle, the member 22 will likewise be turned but, of course, at an angle with respect to the handle. The bore of the cylindrical member 22 is provided with oppositely disposed longitudinally extending slots 24, and the said bore, at the center thereof is provided with transverse depressions 25, each terminating an equal distance from the opposite sides of the slots 24, and communicating with the said slots.

The shank of the wrench is indicated, by the numeral 26 and has one of its ends reduced as at 27, the said reduced end, upon its opposite sides, being provided with outwardly extending lugs 28, of a size to be snugly received in the slots 24, and also of a size to be likewise received in the depressions 25 when the shank is turned to bring the said lugs into the said depressions. It will be noted, by reference to the drawings, that the reduced end of the shank 26 may enter the cylinder 22 from either of the ends thereof, so that the wrench may be successfully operated upon a nut or the like ar-

ranged either above or below the said wrench, or as a matter of fact, at any desired angle either above or below the said wrench.

- 5 The outer end of the shank 26 is provided with a socket 29 and is likewise provided with oppositely disposed T shaped slots 30 which enter from the end of the said socket, and, of course, communicate with the socket.
- 10 The nut or bolt holding member, or the socket proper is indicated by the numeral 31, and is provided with a reduced stem 32, the said stem being of a size to be snugly received in the socket 29 of the shank 26, and
- 15 upon the stem 32 is arranged diametrically pivotally disposed lugs 33 that are adapted to be first passed through the longitudinal passage of the T-shaped slot 30 and upon the turning of the socket member 31 with
- 20 respect to the shank 26, to enter the transverse passages provided by the said T-shaped slot and to contact with one of the end walls provided by the said transverse passages.
- 25 From the foregoing description when taken in connection with the drawings, it will be noted that my improved wrench may be successfully employed in corners or in other places where an ordinary wrench can
- 30 not be used. It is, of course, to be understood that a plurality of shanks, similar to that illustrated may be connected together in a manner in which the socket 31 is connected with the shank 26, so that the length
- 35 of the shank may be readily regulated to accommodate the wrench to various classes of work.

It will be noted that the device is of a simple construction, and it is thought that

40 from the foregoing the construction and ad-

vantages will be fully understood without further detailed description.

Having thus described the invention, what I claim is:

A wrench of the class set forth in- 45 cluding a hollow substantially rectangular head having right angularly arranged alining openings, a handle member journaled in two of said alining openings, a worm formed upon the handle and ar- 50 ranged in the head, said handle having its outer end reduced; a transverse pin on said reduced end, a handle extension having a socket end provided with a T shaped slot, said socket adapted to receive the re- 55 duced end of the handle and the pin designed to be received in the said T shaped slot, a cylindrical member journaled in the remaining pair of alining openings in the head and having peripheral teeth designed 60 to co-engage with the worm, longitudinally extending slots in the bore of the cylindrical member, said bore having transverse depressions communicating with the slots, a shank member having a reduced end pro- 65 vided with lugs, said reduced end designed to be received in the cylindrical member and the lugs to be passed through the slots and enter the depressions whenever the shank is turned upon the cylindrical member, 70 said shank having its outer end provided with an opening and further having a T shaped slot communicating with the opening, a socket member having a reduced extension provided with lugs, and the said ex- 75 tension designed to be received in the opening of the shank and the lugs thereof in the T-shaped slots of the shank.

In testimony whereof I affix my signature.
ANDY HOLDREN.