

A. & W. BENDER.
WRENCH.
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1,003,975.

Patented Sept. 26, 1911.

Fig. 1.

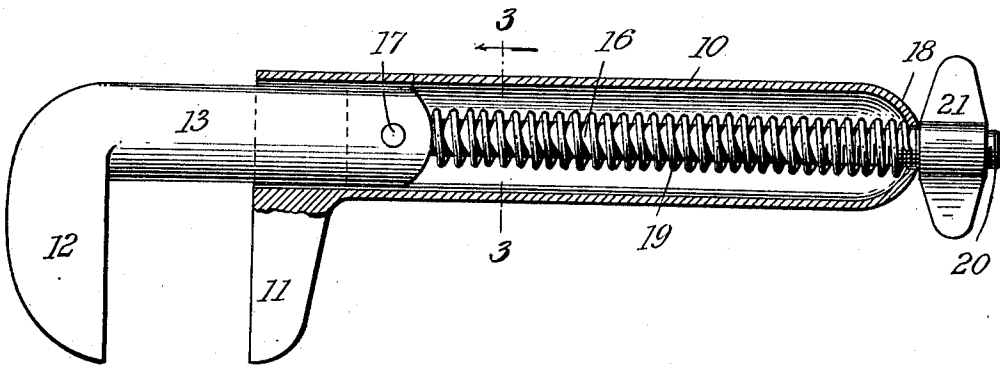


Fig. 2.

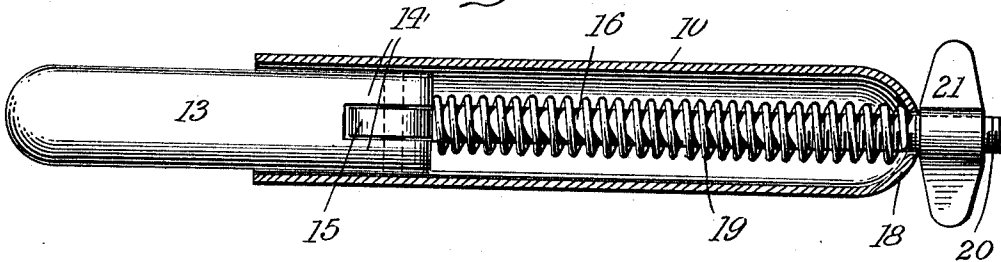
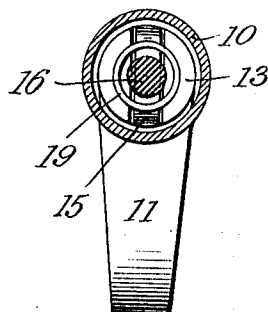


Fig. 3.



Witnesses:
Julius H. Stark
Daniel Holmgren.

Inventors:
Alfred Bender &
William Bender
By their Attorneys
Brewer & Jumps

UNITED STATES PATENT OFFICE.

ALFRED BENDER AND WILLIAM BENDER, OF NEWARK, NEW JERSEY.

WRENCH.

1,003,975.

Specification of Letters Patent. Patented Sept. 26, 1911.

Application filed March 2, 1911. Serial No. 611,827.

To all whom it may concern:

Be it known that we, ALFRED BENDER and WILLIAM BENDER, both citizens of the United States, and residents of Newark, county of Essex, and State of New Jersey, have jointly invented new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to a wrench of novel construction, which may be readily manipulated and which firmly grasps a nut or other article, even when the faces of the latter are not quite true.

In the accompanying drawing: Figure 1 is a view partly in longitudinal section of a wrench embodying our invention; Fig. 2 a similar section taken at right angles to Fig. 1, and Fig. 3 a cross section on line 3—3, Fig. 1.

A hollow stock or handle 10 is provided at one end with an integral fixed jaw 11. The movable jaw 12 is provided with an integral tubular stem 13 which is telescoped by the upper end of stock 10, and is slidable therein. The outer diameter of stem 13 is somewhat less than the inner diameter of stock 10, so that the stem in addition to its sliding movement, is also capable of tilting within the stock. At its inner end, stem 13 is forked as at 14 to accommodate the upper headed or disk-shaped end 15 of a spindle 16 which is pivoted to the fork as at 17. The inner end of stem 13 is arc-shaped, the radius of curvature of said arc exceeding the distance between pivot 17 and the middle of the arc as will be seen from Fig. 1. Spindle 16 extends axially through the stock, and protrudes from the lower end thereof, such end being contracted around the spindle as at 18. That portion of spindle 16 which is inclosed within the stock, is encompassed by an expansible spiral spring 19, one end of which bears against end 18 of the stock, while its other end bears against stem 13 to center the latter. The rear end of spindle 16 is threaded as at 20 and is engaged by a

winged nut 21 impinging against the end 18 of stock 10. When nut 21 is turned in one direction, it will draw stem 13 of jaw 12 into the stock against action of spring 19, to close the jaws. If the faces of the nut or other object to be grasped are parallel, the stem will only perform a longitudinal movement within the stock, but when such faces are not quite true, the stem will also be tilted on pivot 17, so that the movable jaw will accommodate itself to the deflection of the corresponding face of the nut. In this way the nut will be tightly grasped by the jaws, whether true or not true. To open the wrench, nut 21 is turned in the other direction, when spring 19 will push spindle 16 together with stem 13 outward and thus cause the movable jaw to recede from the fixed jaw. It will be seen that by the construction described spring 19 assumes the double function of centering stem 13, and of opening the movable jaw upon the slacking of nut 21.

We claim:

A wrench comprising a tubular stock having an integral fixed jaw, a stem longitudinally movable and tiltable within the stock and having an integral movable jaw, a screw spindle projecting outwardly from the stock, a pivot connecting the screw spindle to the stem, a nut engaging the protruding end of the spindle, and a coiled spring encompassing the spindle and bearing with its ends against the stock and stem respectively, the inner end of the stem being arc-shaped, the radius of curvature of said arc exceeding the distance between the pivot and the middle of the arc, whereby the spring is adapted to center the stem and also to subject the movable jaw to an opening pressure.

ALFRED BENDER.
WILLIAM BENDER.

Witnesses:

FRANK V. BRIESEN,
KATHERYNE KOCH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."