

D. W. SHAFFER.

WRENCH.

APPLICATION FILED FEB. 23, 1909.

Patented Oct. 26, 1909.

2 SHEETS-SHEET 1.

937,966.

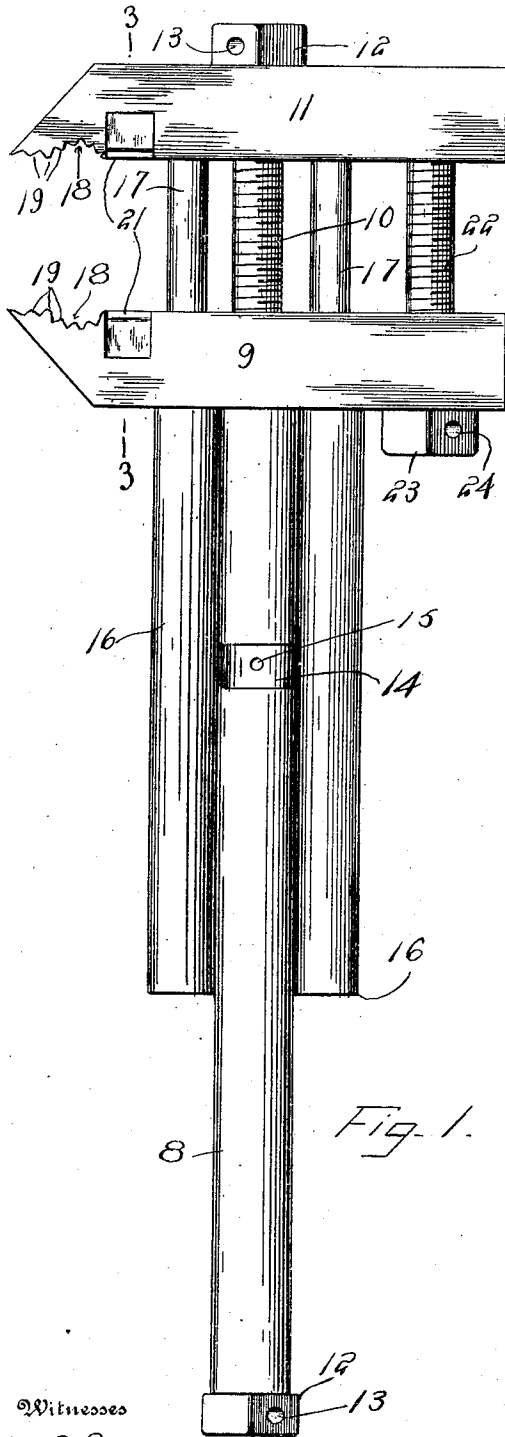
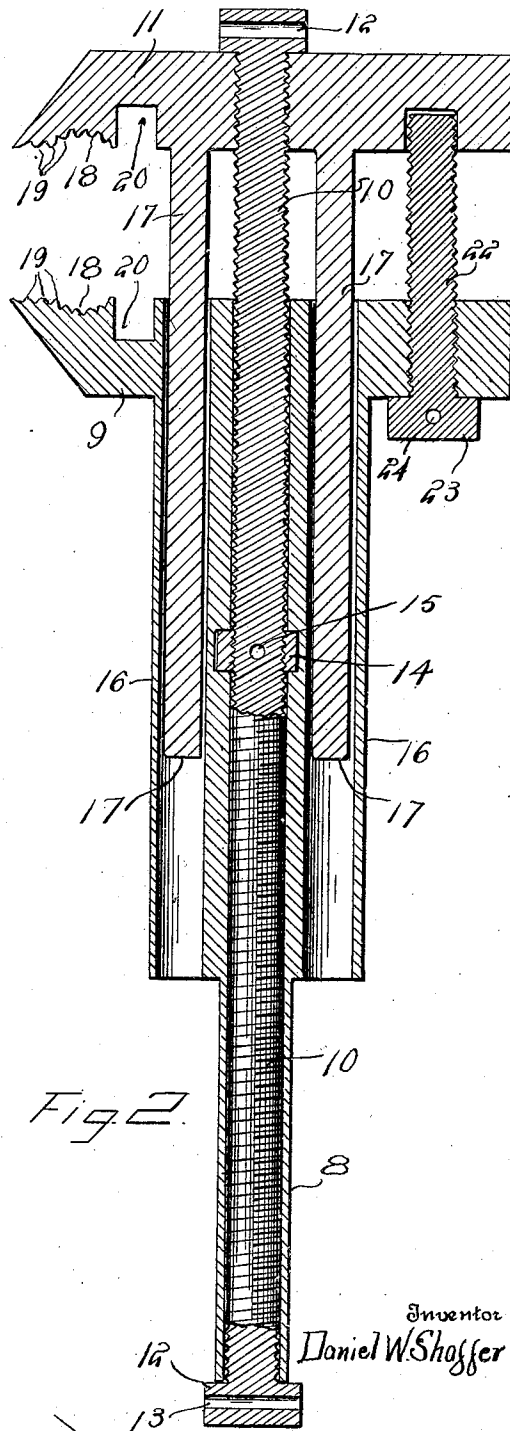


Fig. 1. Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

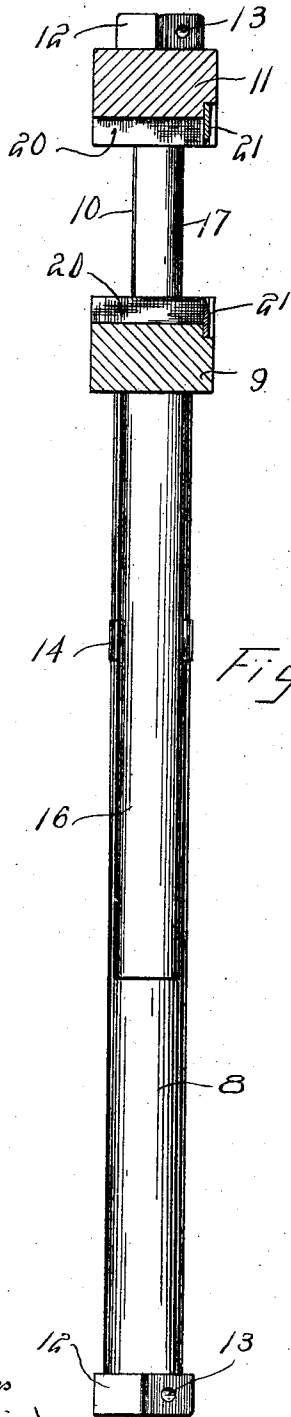


Fig. 3.

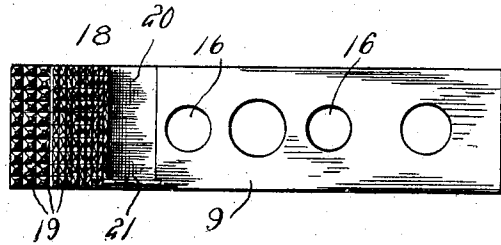


Fig. 4.

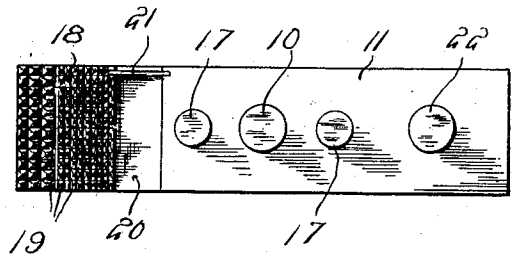


Fig. 5.

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# UNITED STATES PATENT OFFICE.

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## WRENCH.

937,966.

Specification of Letters Patent.

Patented Oct. 26, 1909.

Application filed February 23, 1909. Serial No. 479,310.

*To all whom it may concern:*

Be it known that I, DANIEL W. SHAFFER, a citizen of the United States, residing at Chattanooga, in the county of Comanche and State of Oklahoma, have invented certain new and useful Improvements in Wrenches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to a wrench and more particularly to the class of convertible pipe and nut wrenches.

The primary object of the invention is the provision of a wrench of this type which can be quickly and accurately adjusted so as to engage the work to be operated upon.

Another object of the invention is the provision of a wrench which can be quickly and accurately adjusted from opposite extremities thereof and at a point intermediate said extremities, and means for tightening the jaws of the wrench when engaged upon a piece of work.

A further object of the invention is the provision of a wrench of this character which is simple in construction, thoroughly reliable in operation, easily and quickly adjusted to accommodate work, durable and inexpensive in the manufacture.

With these and other objects in view the invention consists in the construction, combination and arrangement of parts or elements as will be hereinafter more specifically described, illustrated in the accompanying drawings which disclose the preferred form of embodiment of the invention and as brought out in the claims hereunto appended.

It is to be understood that changes, variations and modifications may be resorted to such as come properly within the scope of the claims hereunto appended without departing from the spirit of the invention, or sacrificing any of its advantages.

In the drawings: Figure 1 is a side elevation of a wrench constructed in accordance with the invention. Fig. 2 is a longitudinal sectional view through the same. Fig. 3 is a transverse sectional view on the line 3—3 of Fig. 1. Fig. 4 is a plan view of

one of the jaws of the wrench. Fig. 5 is a similar view of the other jaw of said wrench.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

In the drawings, the numeral 8 designates a hollow handle preferably of tubular formation and constructed of metal and which handle has formed at one end thereof a fixed jaw 9 the latter containing a central opening in register with the bore of the hollow handle 8 and within which bore is mounted a rotatable adjusting screw 10 the same being of considerably increased length with respect to the hollow handle 8 so as to have one end or extremity project beyond the working face of the fixed jaw 9 formed on the hollow handle.

In threaded engagement with the adjusting screw 10 is a movable jaw 11 the latter correspondingly shaped with respect to the said fixed jaw and which is adapted to be adjusted toward and away from the latter as the occasion demands. At opposite ends of the adjusting screw 10 are fixed squared heads or nuts 12 although the latter may be of any other desirable shape if found expedient, and contained transversely through the said heads or nuts 12 are holes or openings 13 to permit the insertion of a nail or spike so as to permit the turning of the said heads for actuating the adjusting screw for moving the jaw 11 toward or away from the fixed jaw of the wrench. At a point intermediate the extremities of the ends of the adjusting screw 10 and fixed to the latter is a collar or ring 14 which latter works in a space in the hollow handle 8 and serves to prevent longitudinal displacement of the adjusting screw in the said handle. Contained transversely in the collar or ring 14 are holes or openings 15 to permit a nail or the like to be inserted for imparting rotation to the adjusting screw, in the hollow handle of the wrench.

Disposed at opposite sides of the hollow handle 8 and in parallel alinement therewith are guide tubes 16 which latter have their inner ends joined to the fixed jaw 9 and the bores of said guide tubes 16 register with suitable openings in the said fixed jaw.

Formed integral with and projecting from

the inner face of the movable jaw on opposite sides of the adjusting screw 10 are guide stems 17 which latter slide freely within the bores of the guide tubes 16 and serve to prevent lateral displacement of the movable jaw 11 with respect to the fixed jaw 9.

The inner or binding faces of the jaws 9 and 11 respectively, are provided with transverse semi-circular toothed channels or recesses 18 which are alined with each other and are adapted to accommodate pipes, rods or the like to be gripped by the jaws for the turning thereof. The said inner faces or binding surfaces of the jaws adjacent the recesses or channels 18 are serrated or roughened as at 19 so that when the jaws are actively gripping a nut the same will prevent the slipping of the jaws from the latter.

Parallel with the channels or recesses 18 and in the inner faces of the jaws are grooves 20 the latter closed at one end by cutting blades 21 mounted vertically or formed integral with the jaws and adapted to coöperate with each other upon the closing of the jaws to sever or cut wire interposed between the latter.

Threaded adjacent the rear end of the fixed jaw 9 is a regulating screw 22 the inner end of which is adapted to be forced against the movable jaw 11 at its rear end after adjustment of the latter with respect to the fixed jaw to jam the gripping portions of the jaws firmly and securely upon the work to be operated on by the wrench.

The outer end of the regulating screw 22 is formed with a squared head 23 although the latter may be of any other desirable shape

and contains holes 24 to enable the engagement of a nail or the like with the head to permit the adjustment of the regulating screw. However, it is obvious that the heads of both the adjusting and regulating screws can be turned by any other suitable tool.

What is claimed is—

1. A wrench comprising a fixed jaw, a hollow handle carried by the fixed jaw, an adjusting member mounted for rotation in said handle, means preventing longitudinal displacement of said member within the handle, a movable jaw operated upon by the member to bring the same toward and away from the fixed jaw, guide tubes disposed parallel with and on opposite sides of the handle, guide stems carried by the movable jaw and slidable in said guide tubes, heads fixed to opposite extremities of the said member, and a headed regulating screw threaded in the fixed jaw and acting upon the movable jaw.

2. A wrench comprising fixed and movable jaws, a hollow handle carried by the fixed jaw, an adjusting screw mounted in the hollow handle and operating the movable jaw, guide tubes disposed parallel with and at opposite sides of the handle, guide stems carried by the movable jaw and slidable in said guide tubes, and means to enable the turning of said adjusting screw.

In testimony whereof, I affix my signature, in presence of two witnesses.

DANIEL W. SHAFFER.

Witnesses:

M. J. THOMPSON,  
HUGH MOSSMAN.