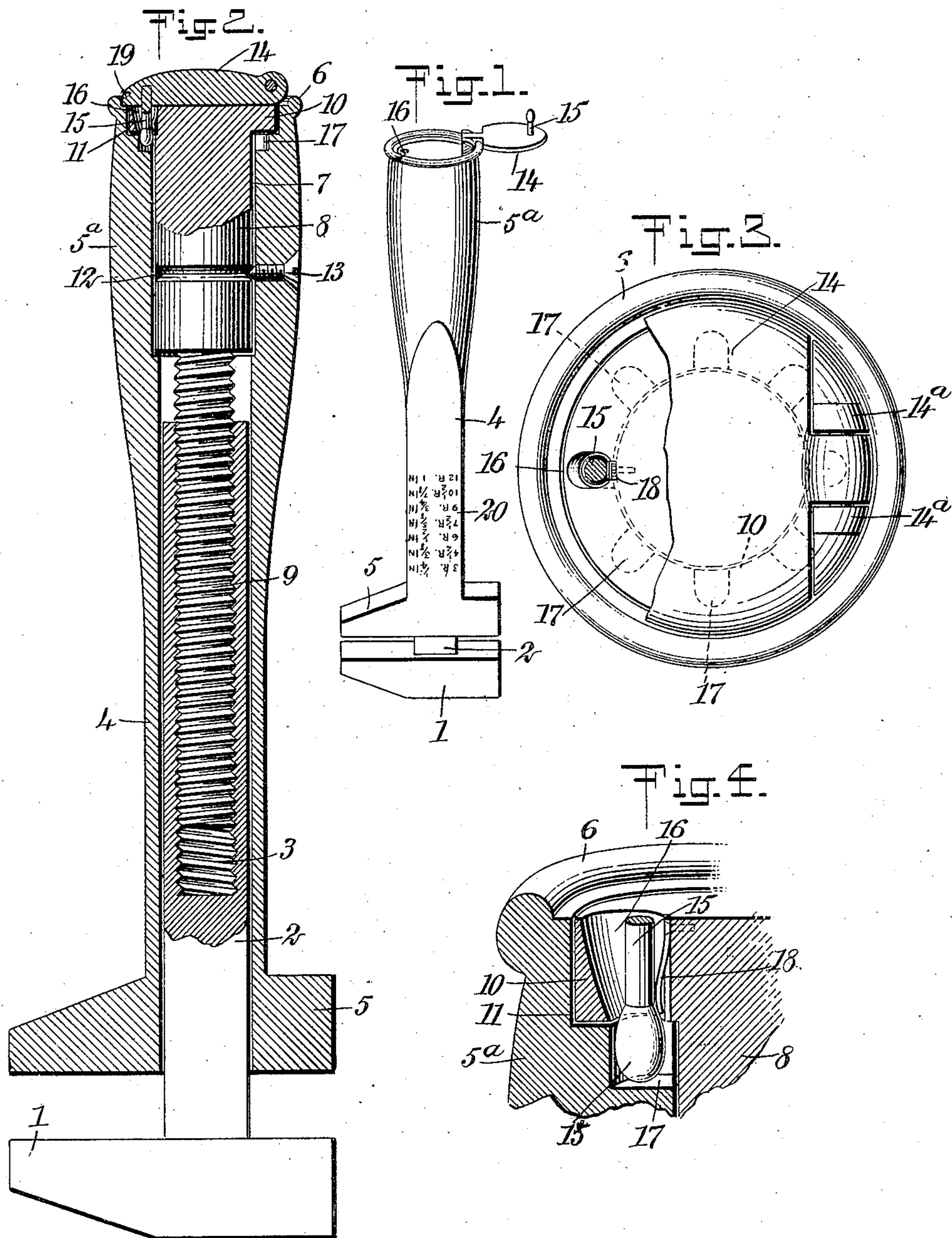


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A. S. MORANGE.
WRENCH.

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ALBERT SEALY MORANGE, OF STRATFORD, CONNECTICUT.

WRENCH.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALBERT SEALY MORANGE, a citizen of the United States, and a resident of Stratford, in the county of Fairfield and State of Connecticut, have invented a new and Improved Wrench, of which the following is a full, clear, and exact description.

This invention is an improvement in wrenches having, among other objects, to provide a strong and compact adjustable wrench of simple construction in which all of the operating parts are completely inclosed, thereby presenting a neat outward appearance and protecting the adjusting means from the weather.

A further object of the invention is to indicate at the side of the wrench or other convenient point thereof the number of revolutions of the adjusting means required to separate the jaws any given distance. This is very desirable in a wrench, in that times often arise, especially with automobilists in racing, when it is important that the wrench-jaws be separated the proper distance to take known sizes of nuts or bolts quickly without consuming time in trial adjustments.

I also provide in my improved wrench construction an effective locking means serving not only in the capacity of locking the jaws against movement to or from each other, but also performing the function when in an inoperative locking position of a crank-handle for rotating the adjusting means.

The above objects are accomplished by my invention, one embodiment of which is hereinafter disclosed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of my improved wrench, showing the closure-cap at the end of the wrench-handle in position to operate the wrench-jaws. Fig. 2 is a longitudinal central sectional view disclosing the interior of the wrench construction. Fig. 3 is an end view with the closure-cap partly broken away to more clearly show the locking means, and Fig. 4 is an enlarged fragmentary sectional view of the locking means.

The numeral 1 indicates an outer movable jaw integrally fixed to a shank 2 of usual wrench construction, said shank being square or oblong in cross-section, with a central longitudinal threaded bore 3 extending in it a

considerable portion of its length. The shank 2 is slidable in a casing 4, forming a handle for the wrench and having a bore to closely embrace the shank, but permit of the sliding movement.

Upon the outer end of the handle or casing 4 is integrally formed a wrench-jaw 5, cooperating when in use with the jaw 1 for turning nuts, bolts, &c., as desired. The other end of the handle is constructed having a swelled rounded portion 5^a with a bead 6 at its extreme end, said swelled portion affording a convenient handhold in the application of the wrench to the work.

Rotatably mounted in an enlarged rounded bore 7 in the handhold 5^a is a cylindrical plug 8, carrying a screw 9, engaging the threads 3 in the shank 2 at one end, and an enlarged head 10, that is seated in a counter-bored portion 11 at the opposite end. The plug 8 is provided with a circumferential groove at some suitable portion of its length, into which the pointed end of a screw 13, passing transversely through the handle, projects, thereby preventing any relative longitudinal movement of the plug and casing.

For rotating the plug in adjusting the wrench-jaws are projecting lugs 14^a from the head 10, between which is pivoted a closure-cap 14 of oval outward form to give this end of the wrench a finished and attractive appearance when the cap is closed. The under face of the cap has fixed thereto a combined crank and locking pin 15 with a swelled outer end adapted to be passed through a hole 16 in the head 10 and engage with any one of a series of openings 17 in the periphery of the bore 7 for locking the plug and adjusting-screw against rotation.

A spring 18, fixed at one side of the hole 16, is so shaped as to engage the swelled end of the locking-pin when the latter has been projected into any one of the series of openings 17. This engagement is just sufficient to keep the cap 14 in closed position against accidental displacement, but permit its ready withdrawal by inserting the finger-nail in a nick 19 to the position shown in Fig. 1.

At some convenient point of the wrench structure, preferably as shown at 20 in Fig. 1, is placed a scale denoting the number of revolutions of the adjusting-screw required to move the wrench-jaws an inch or a fractional part thereof, thereby permitting the separation of the jaws the required amount for any known bolt or nut diameter without

waste of time in attaining the proper adjustment by repeated trials.

In assembling the wrench the plug 8 and its attached screw 9 are inserted in the handle end of the wrench and the screw 13 seated in the circumferential groove 12. By now passing the shank 2 into the casing 4 and withdrawing the cap 14 to the position shown in Fig. 1 the pin 15 may be used as a crank for turning the plug and screw, thereby engaging the thread of the latter with the threaded bore of the shank and drawing the jaw 1 inwardly until it contacts with the jaw 5. The cap 14 is then turned on its hinge to close the end of the wrench and lock the screw and jaws against movement. When it is desired to separate the jaws any given distance, the scale 20 is referred to, and the required number of turns to accomplish it is given by the pin 15 after the cap is withdrawn. The jaws are then again locked in like manner.

The precise embodiment of my invention is not material, provided its essential characteristics are employed as pointed out in the annexed claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a wrench, an outer jaw, a shank connected therewith, an inner jaw carried by a hollow casing, cooperating with the outer jaw, said shank having a threaded bore and slidable in the casing, a swelled handhold at the outer end of the casing, a rotatable plug in the handhold carrying a screw to engage the threaded bore of the shank, means to prevent the relative longitudinal movement of the plug in the handhold, a closure-cap hinged to the outer end of the plug, and means carried by the cap for rotating the screw.

2. In a wrench, an outer jaw, a shank connected therewith, an inner jaw carried by a hollow casing, and cooperating with the outer jaw, said shank having a threaded bore and slidable in the casing, a rotatable plug in the handhold of the casing carrying a screw to engage the threaded bore of the shank, means to prevent the relative longitudinal movement of the plug in the handhold, a closure-cap hinged to the outer end of the plug, and means carried on the under face of the cap for rotating the plug and screw, said means being adapted to be projected into any one of a series of openings on the interior of the casing and frictionally engaged therein, for the purpose described.

3. In a wrench, an outer jaw, a shank connected therewith, an inner jaw carried by a

hollow casing, and cooperating with the outer jaw, said shank having a threaded bore and slidable in the casing, a rotatable plug in the handhold of the casing carrying a screw to engage the threaded bore of the shank, means to prevent the relative longitudinal movement of the plug in the casing, an enlarged head on the plug, a hole passing transversely through the head, a closure-cap hinged to the head of the plug, and means carried by the cap adapted to be projected through the hole in the plug-head and frictionally engaged therewith, for the purpose described.

4. A wrench comprising jaws relatively movable to and from each other, a handle, and unitary rotatable means operable at the end of the handle for adjusting the jaws and locking them in adjusted position.

5. A wrench comprising jaws relatively movable to and from each other, screw-threaded means for adjusting the jaws, a closure-cap hinged at one end of the screw, and a pin fixed to the under face of the closure-cap for rotating the screw and locking the same against movement.

6. A wrench comprising two jaws relatively movable to and from each other, rotatable means for adjusting the jaws, and a cap having a crank-pin for rotating the adjusting means, said pin also being adapted to lock the jaws in adjusted position.

7. A wrench comprising jaws relatively movable to and from each other, a handle, screw-threaded means for adjusting the jaws, unitary means operable at the end of the handle for rotating the adjusting means and locking the jaws in adjusted position, and a scale carried by the wrench to indicate the number of rotations of the adjusting means required to separate the jaws any given distance.

8. In a wrench, an outer movable jaw, a shank connected therewith, a threaded bore in the shank, an outer casing or handle in which the shank is slidable, a jaw fixed to the casing, an adjusting-screw engaged with the threaded bore of the casing, means for preventing relative longitudinal movement between the screw and casing, a cap hingedly connected with the screw having a pin for rotating the same, a series of openings in the casing in which the pin is adapted to be projected, and a spring for frictionally engaging the pin.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALBERT SEALY MORANGE.

Witnesses:

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