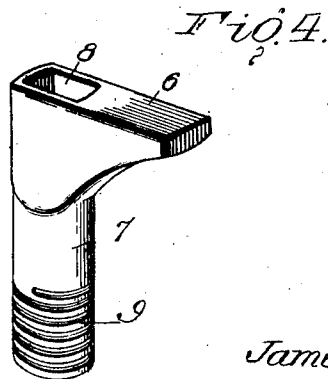
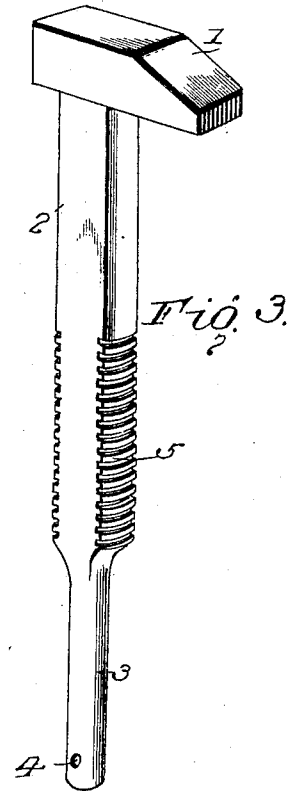
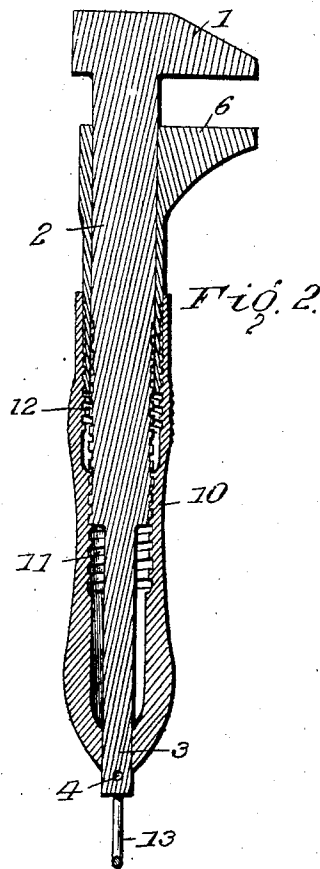
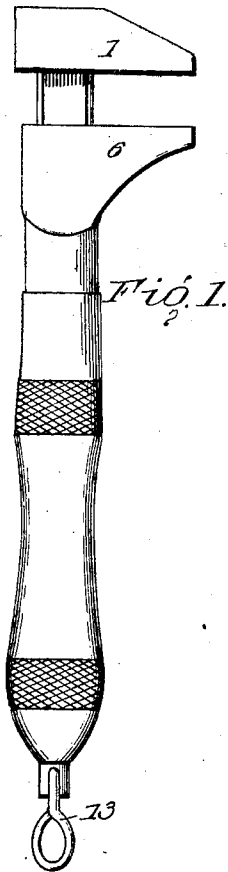


No. 880,619.

PATENTED SEPT. 11, 1906.

J. H. SHEPHERD.
WRENCH.

APPLICATION FILED DEC. 21, 1905.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES H. SHEPHERD, OF IDAHO SPRINGS, COLORADO.

WRENCH.

No. 830,619.

Specification of Letters Patent.

Patented Sept. 11, 1906.

Application filed December 21, 1905. Serial No. 292,722.

To all whom it may concern:

Be it known that I, JAMES H. SHEPHERD, a citizen of the United States of America, and a resident of Idaho Springs, in the county of Clear Creek and State of Colorado, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to certain new and useful improvements in wrenches; and it has for its objects, among others, to provide a strong, durable, and efficient wrench composed of minimum parts and those easily assembled and readily operated.

It comprises a fixed jaw with a shank, a movable jaw receiving said shank, and a handle in which both the shank of the fixed jaw and the portion of the movable jaw receiving said shank are received and with which they have independent threaded engagement. The parts are held against accidental separation by means permitting of readily disassembling the parts when desired.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the numerals of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a side elevation of a wrench constructed in accordance with my present invention. Fig. 2 is a substantially central longitudinal section through the same. Fig. 3 is a perspective view of the fixed jaw and its shank separated from the other parts. Fig. 4 is a perspective view of the movable jaw detached.

Like numerals of reference indicate like parts throughout the several views.

Referring now to the details of the drawings, 1 designates the fixed jaw, and 2 its shank, which latter is rectangular in cross-section for the greater portion of its length, and beyond the rectangular portion is the reduced cylindrical portion 3, having at its outer end an opening 4 therethrough. The rectangular portion is provided for about one-half of its length upon its opposite edges with screw-threads 5.

6 is the movable jaw. It has a tubular shank portion 7, provided with a rectangular bore or passage 8 therethrough, the same being of a shape and size corresponding substantially to that of the rectangular portion

of the shank of the fixed jaw. This tubular shank 7 is provided exteriorly with the threads 9, which are oppositely disposed to the threads 5 of the shank 2. 60

10 is the handle, which may be given any desired exterior configuration and is provided interiorly with a bore of two diameters. Of these the smaller is provided with screw-threads 11 to receive the threads 5 of the shank of the fixed jaw, while the larger diameter is provided with the interior threads 12, oppositely disposed to the threads 11 and receiving the threads 9 on the tubular shank 7 of the movable jaw. 70

The parts of the wrench are assembled by slipping the shank of the fixed jaw into the hollow shank of the movable jaw, then slipping the handle over the fixed jaw's shank and over the tubular shank of the movable jaw and screwing the handle onto the threads 5 of the shank of the fixed jaw and then inserting a spring-ring or the like 13 through the opening 4 of the portion 3 of the shank 2. This holds the parts against separation. Adjustment of the jaws relatively to each other is accomplished with ease by turning the handle in one direction or the other. The parts may also be assembled by first screwing the shank of the movable jaw into the handle and then applying the handle to the shank of the fixed jaw and then applying the fastening-hook or other device 13, the relative adjustment of the jaws being attained in the same manner as above described. 80 85 90

From the above it will be seen that I have devised a simple, strong, and durable wrench which is capable of easy manipulation, composed of but three parts and those capable of manufacture at minimum cost, and when assembled not liable to derangement, injury, or breakage. 95

The disposition of the interior threads of the handle is such that when the shank of the movable jaw is turned to its limit within the handle the latter will be free from its threaded engagement with the shank of the fixed jaw. 100

What is claimed as new is—

1. A wrench comprising a fixed jaw with a shank, a movable jaw with a tubular shank, and a handle having different internal threaded diameters receiving both of said shanks and having direct threaded engagement with both of said shanks at all times for screw adjustment thereof simultaneously in opposite directions, the end of the shank of the movable jaw having a bearing in the end of 105 110

the handle, and removable means passed through the end of the shank of the fixed jaw for preventing separation of the parts said means permitting free adjustment of the jaws.

5 2. A wrench comprising a fixed jaw with threaded shank, a movable jaw having a threaded shank receiving the shank of the fixed jaw, and a handle having different internal threaded diameters receiving both of
10 said shanks and having direct opposite threaded engagement with both of them at all times for simultaneous adjustment in opposite directions and means engaging the end
15 of the shank of the fixed jaw for preventing separation of the parts and at no time interfering with the manipulation of the parts to change the relation of the jaws to each other.

3. A wrench comprising a fixed jaw having
20 a shank with threaded portion and reduced portion with opening therethrough, a movable jaw having an exteriorly-threaded shank and a passage therethrough for the shank of the fixed jaw, and a handle having
25 oppositely-disposed threads of different diameter and directly receiving the threads of the two shanks, the end of the shank of the

movable jaw having a bearing in the end of the handle and means engaging the ends of the shank of the fixed jaw for preventing separation of the parts and at no time interfering with the manipulation of the parts to change the relation of the jaws to each other.

4. A wrench comprising a fixed jaw with shank having exterior threads, a movable jaw having a shank with opposite-disposed exterior threads and a passage therethrough for the shank of the fixed jaw, a handle having two interior diameters with oppositely-disposed threads one at all times engaging directly the threads of the shank of the fixed jaw and the other at all times engaging directly the threads of the shank of the movable jaw, and a detachable fastener engaging the shank of the fixed jaw outside and beyond the end of the handle to prevent separation of the parts the adjustment of said parts being at no time affected by said fastener.

Signed by me at Denver, Colorado, this 18th day of December, 1905.

JAMES H. SHEPHERD.

Witnesses:

CHARLES A. STOKES,
JESSE H. SHERMAN.