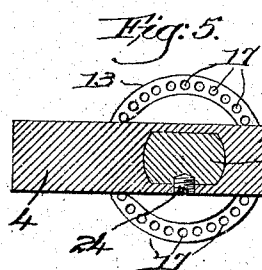
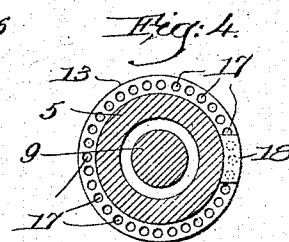
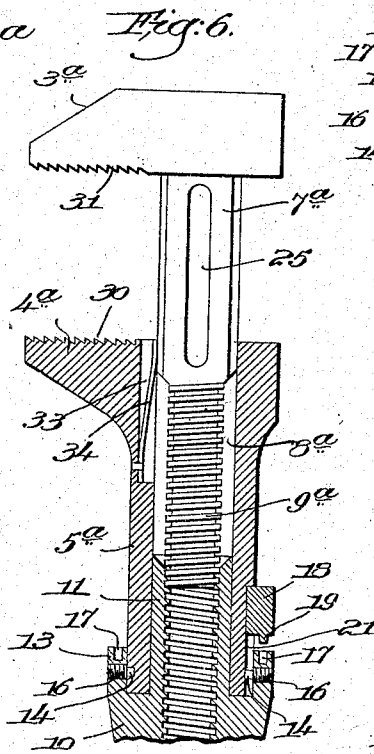
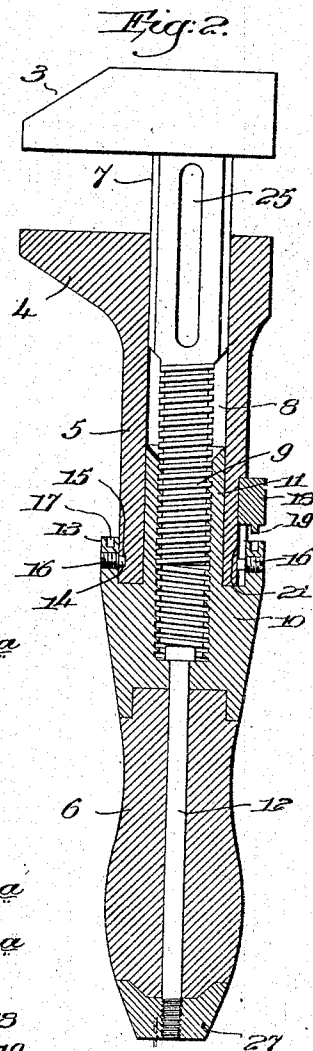
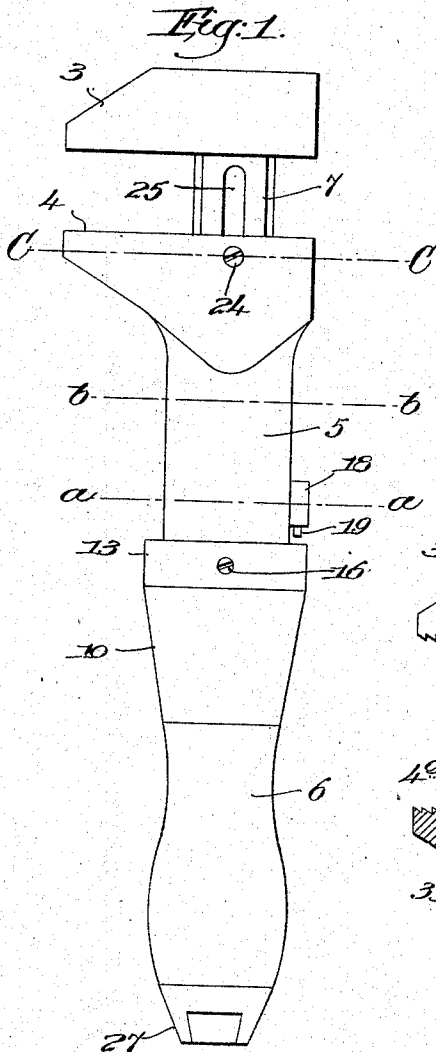


B. W. WOODWARD.
WRENCH.
APPLICATION FILED MAY 5, 1909.

952,223.

Patented Mar. 15, 1910.



Witnesses, *Edward F. Allen*
Paul S. Greenleaf.

Forced on
Benjamin W. Woodward,
by *Marby Gregory.*
attys.

UNITED STATES PATENT OFFICE.

BENJAMIN W. WOODWARD, OF IPSWICH, MASSACHUSETTS.

WRENCH.

952,223.

Specification of Letters Patent. Patented Mar. 15, 1910.

Application filed May 5, 1909. Serial No. 493,999.

To all whom it may concern:

Be it known that I, BENJAMIN W. WOODWARD, a citizen of the United States, residing at Ipswich, county of Essex, and State of Massachusetts, have invented an Improvement in Wrenches, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention relates to a wrench and particularly to that type of wrench in which the jaws are adjusted relative to each other by turning the handle about its axis.

One of the principal objects of my invention is to provide a novel lock for the handle to prevent it from turning after the jaws are properly adjusted to a nut so that during the use of the wrench there will be no liability that the handle will become turned and the jaws will become loosened.

Other objects of my invention are to improve this type of wrench in other particulars, all as will be more fully hereinafter described and then pointed out in the appended claims.

In the drawings wherein I have shown some embodiments of my invention, Figure 1 is a side view of a wrench embodying my invention; Fig. 2 is a longitudinal section; Fig. 3 is a section on the line *a-a*, Fig. 1; Fig. 4 is a section on the line *b-b*, Fig. 1; Fig. 5 is a section on the line *c-c*, Fig. 1; Fig. 6 is a view showing the application of my invention to a pipe wrench.

The two jaws of the wrench are designated 3 and 4. The jaw 4 is a fixed jaw and is made integral with the body 5 with which the handle 6 is associated. The jaw 3 is the movable jaw and it has rigid therewith the stem or shank 7 which extends down through a passageway 8 in the body 5. The main body of the shank is preferably rectangular in shape, as seen in Fig. 5, and the end of it is screw-threaded, as shown at 9. This screw-threaded portion has screw-threaded engagement with a nut 10 which is carried by the handle 6, so that by turning the handle and nut the jaw 3 will be adjusted. The nut 10 is provided with the cylindrical extension 11 which enters the end of the body 5, the passageway in said body being made cylindrical at this point to receive the hub or cylindrical extension 11. The nut 10 may be secured to the handle 6 in any suitable way, as, for instance, by means of the bolt

12. The nut 10 is provided with the flange 13 which overlies the lower end of the body 5, and said flange is provided with projections 14 which enter an annular groove 15 formed in the exterior of the body, this construction serving to connect the handle to the body 5 and at the same time to furnish the necessary swivel connection between the handle and body. The projections 14 may conveniently be formed on the end of screw-threaded plugs 16, so that by unscrewing the plugs 16 sufficiently to withdraw the projections 14 from the groove, the parts can be disconnected.

The end of the flange 13 is provided with a plurality of locking apertures 17, and the body 5 is provided with a sliding lock 18 having a feat or projection 19 adapted to enter any one of the apertures 17. The lock 18 may be slidably mounted on the body in a variety of ways without departing from my invention. I have herein shown said lock as provided with a dove-tailed rib which slides in a dove-tailed groove formed in the body.

In using my invention, the lock 18 is withdrawn, as shown in Figs. 1 and 2, and the handle 6 is turned thereby to properly adjust the jaws to fit the nut, bolt, or other article. When the jaws are adjusted, the lock 18 is moved downwardly to cause the feat 19 to enter one of the apertures 17 thereby locking the handle from turning, and the wrench may then be used in the ordinary way without any danger that the jaws will become loosened.

I have herein shown the body 5 as provided with a stop 24 which enters a groove 25 formed in the side of the shank 7. This stop 24 acts as a stop to limit the opening movement of the jaws.

My wrench can be readily taken apart for repair by simply removing the stop 24 and the screw-threaded plug 16 and then turning the handle until the screw-threaded portion 9 is screwed out from the nut 10.

The groove 21 extends clear to the end of the body 5 so that the lock 18 can be readily removed from the body or inserted in place after the handle and body are disconnected.

Another advantage of my improved wrench is that the screw threads of the nut and shank are always entirely protected and cannot, therefore, become battered so that the wrench will not work freely.

In Fig. 6 I have shown my improvements

as applied to a pipe wrench. In this embodiment of the invention 4^a is the fixed-jaw provided with a serrated face 30 and made integral with the body 5^a, and 3^a is the movable jaw provided with a serrated face 31 and made integral with the shank 7^a which has a screw-threaded portion 9^a. This screw-threaded portion enters the nut 10 as in the other embodiments of my invention and the body is provided with the lock 18 for locking the handle from turning, as above described. The passageway 8^a through the body 5^a is enlarged at 33 and a spring 34 is confined in said enlarged portion, which spring bears against the shank 7^a and normally holds it in the position shown in Fig. 6. A sufficient movement of the jaw 3^a is permitted, however, to enable the wrench to be used as a pipe wrench.

20 While I have illustrated one embodiment of my invention I do not wish to be limited to the construction shown.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a wrench, the combination with a body provided with a fixed jaw and having a passage extending therethrough, one end of which is cylindrical, of a movable jaw having a shank extending through said passage one end of the shank being screw threaded, a handle swiveled to the body and having rigid therewith a cylindrical hub

which fits into the cylindrical end of the passage in the body, said hub having formed integral therewith an internally screw threaded cylindrical extension to receive the screw threaded portion of the shank of the movable jaw and also having a flange which overlies the end of said body, said flange having a plurality of apertures in its end, and a lock slidably carried by the body and provided with a teat to enter any one of said apertures thereby to lock the handle from turning movement.

2. In a wrench, the combination with a body provided with a fixed jaw and having a passage, one end of which is cylindrical, of a movable jaw having a shank extending through said passage, a handle swiveled to the body and having formed integral therewith an internally screw threaded cylindrical extension entering and fitting the cylindrical end of the passage in the body and also provided in its end with a groove to receive the end of the body, and a lock slidably carried by the body and adapted to have locking engagement with the handle.

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

BENJAMIN W. WOODWARD.

Witnesses:

LOUIS C. SMITH,
THOMAS J. DRUMMOND.