M. MILLER & A. D. BURG.

WRENCH.

APPLICATION FILED DEC. 2, 1915.

1,175,973. Patented Mar. 21, 1916.

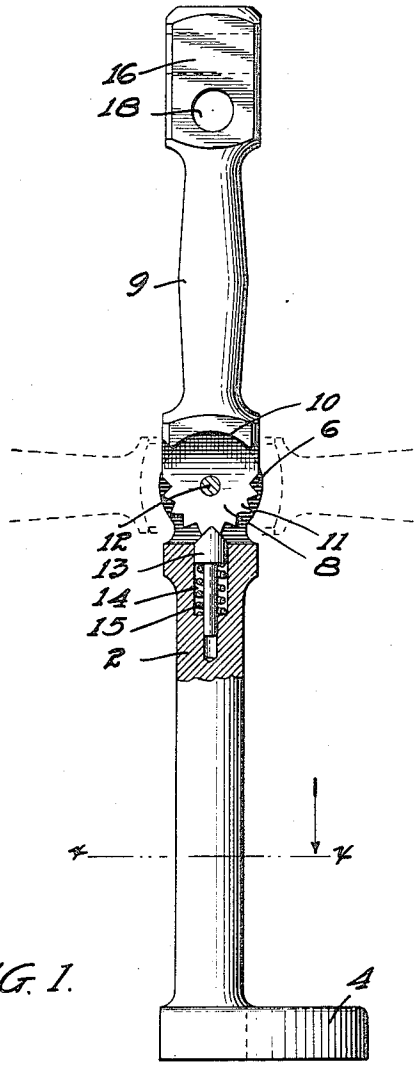


FIG. 1.

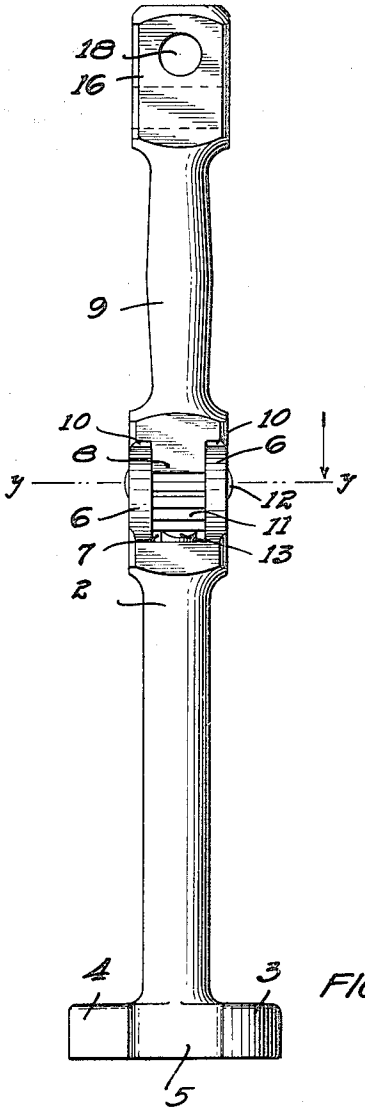


FIG. 2.

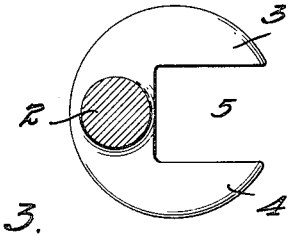


FIG. 3.

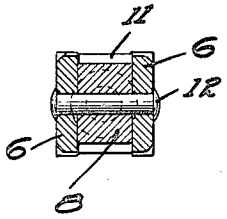


FIG. 4.

WITNESSES

M. R. McInnis

E. A. Paul

INVENTORS

MELCHIOR MILLER

ALFRED D. BURG

BY Paul & Paul

ATTORNEYS

UNITED STATES PATENT OFFICE.

MELCHIOR MILLER AND ALFRED D. BURG, OF LE MARS, IOWA.

WRENCH.

1,175,973. Specification of Letters Patent. Patented Mar. 21, 1916.

Application filed December 2, 1915. Serial No. 64,725.

To all whom it may concern:

Be it known that we, MELCHIOR MILLER and ALFRED D. BURG, citizens of the United States, residents of Le Mars, county of Plymouth, State of Iowa, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

The object of our invention is to provide a wrench that will fit the bur or bolt-head at any angle.

A further object is to provide a wrench by means of which a bur or bolt in an almost inaccessible position can be easily reached and loosened or tightened.

A further object is to provide a wrench of simple, durable construction and one which will be comparatively inexpensive to manufacture.

The invention consists generally in various constructions and combinations, all as hereinafter described and particularly pointed out in the claims.

In the accompanying drawings forming part of this specification, Figure 1 is a side view of a wrench embodying our invention, partially in section, Fig. 2 is a view of the wrench, looking toward the opening between the jaws, Fig. 3 is a sectional view on the line *x*—*x* of Fig. 1, Fig. 4 is a sectional view on the line *y*—*y* of Fig. 2.

In the drawing, 2 represents the shank of the wrench, having jaws 3 and 4 formed thereon in a plane at right angles to the axis of the shank and having a socket 5 formed between them that is adapted to receive a bolt head or bur on which the wrench is used. We propose to provide wrenches of different sizes having sockets of varying width to adapt them for the different sizes of burs and bolts and preferably the wrenches will be sold in sets of a suitable number, with sufficient variation in the sockets to adapt the tools for all burs and bolts that may be encountered in a machine or vehicle.

The end of the shank 2 opposite the jaws has ears 6 formed thereon with a space 7 between them to receive a tongue 8 formed on the end of a handle 9 having shoulders 10 which are seated on the rounded ends of the ears. The tongue 8 has a curved surface provided with ratchet teeth 11 and a pin 12 passes through the ears 6 and through said tongue and secures the parts together. A latch 13 is mounted in a socket 14 in the shank 2 and provided with a spring 15 which yieldingly holds the tapered end of the latch in engagement with the teeth of the ratchet. This handle 9 is free to swing through an arc of 180 degrees, as indicated by the full and dotted lines in Fig. 1, and may therefore be set at right angles to the shank 2 or in line therewith, or at any angle intermediate to the full and dotted line position. This adjustment of the handle adapts the wrench for a variety of uses. It may be thrust in between the spokes of a wheel or pulley and can be inserted in positions where it would be utterly impossible to use a wrench of the ordinary type.

The handle is preferably provided with an end portion 16 having holes 18 extending therethrough at right angles to one another into which a punch or other suitable article may be inserted for the purpose of forming an auxiliary handle when the handle proper is in alinement with the wrench shank. The ratchet device will hold the handle in its different adjusted positions and provides a flexible joint which permits the convenient movement of the handle either to the right or the left, according to the position in which it is desired to place the wrench jaws.

In various ways the details of construction herein shown and described may be modified and still be within the scope of our invention.

We claim as our invention:

1. A wrench comprising a shank having jaws formed thereon in a plane at right angles substantially to the axis of said shank, a handle hinged on the other end of said shank and provided with a hand grip, said handle having holes extending therethrough in which a supplementary handle may be inserted, the hinged connection of said handle with said shank permitting it to be adjusted at an angle thereto, and means for holding said handle in its adjusted positions.

2. A wrench comprising a shank having a substantially flat disk eccentrically mounted on one end of said shank in a plane at right angles substantially to the longitudinal axis of said shank, said disk having a recess in one side thereof extending inwardly to a point adjacent the center of said disk and the wall of said shank, the walls of said recess forming jaws for gripping a nut or bolt-head inserted into said recess, a

hand grip pivotally connected with the other end of said shank and free to swing to a position in alinement with said shank or angularly with respect thereto, and means for holding said hand grip in its adjusted position, for the purpose specified.

3. A wrench comprising a shank having a disk eccentrically mounted on one end of said shank in a plane at right angles substantially to the longitudinal axis of said shank, said disk having a recess in one side thereof extending inwardly to a point adjacent the center of said disk and the wall of said shank, the wall of said recess forming jaws for gripping a nut or bolt-head inserted into said recess, a hand grip pivotally connected with the other end of said shank and free to swing to a position in alinement with said shank or angularly with respect thereto, for the purpose specified.

In witness whereof, we have hereunto set our hands this 27″ day of November 1915.

MELCHIOR MILLER.
ALFRED D. BURG.

Witnesses:
J. T. KEENAN,
JANE PERRY.