G. A. SHOULDICE.

REVERSIBLE TOOL CLAMP.

APPLICATION FILED JAN. 22, 1912.

1,050,702.

Patented Jan. 14, 1913.

FIG. 1.

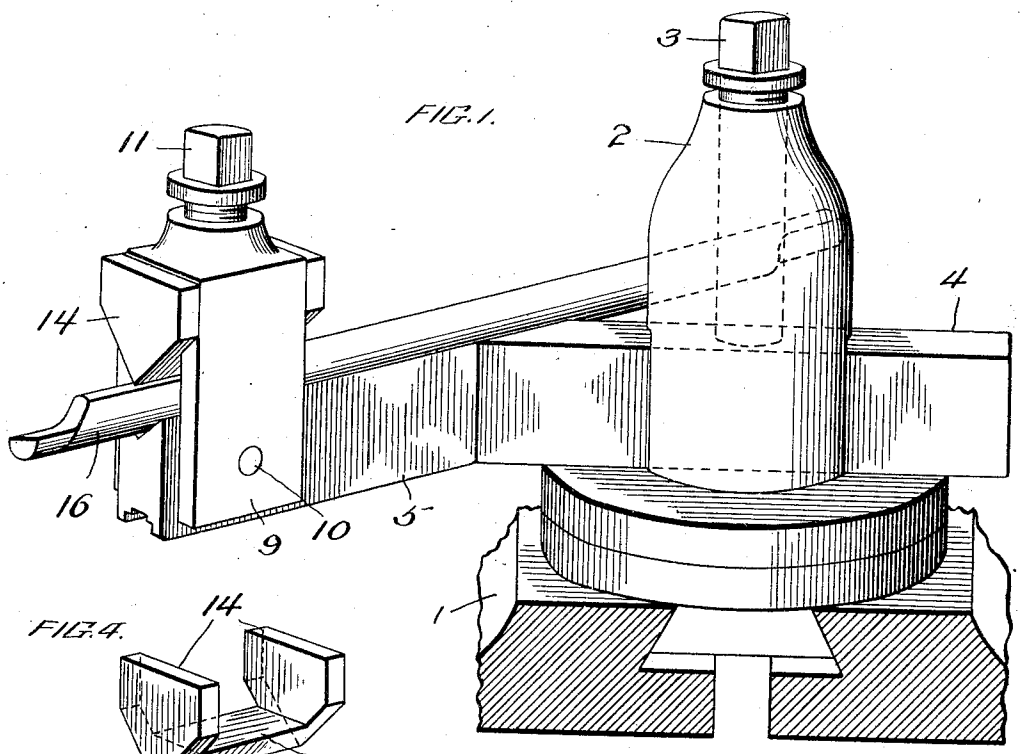


FIG. 4.

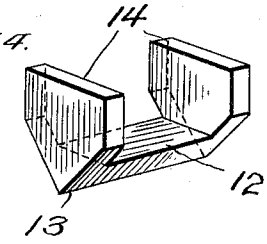


FIG. 2.

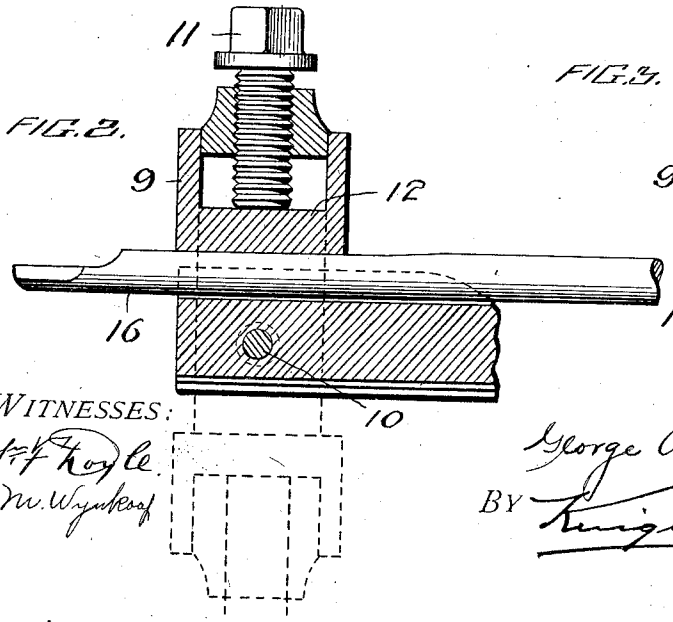
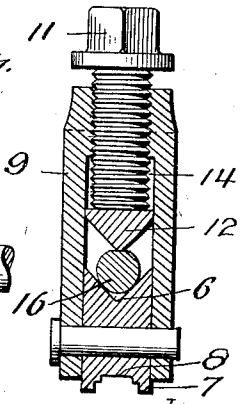


FIG. 3.



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REVERSIBLE TOOL-CLAMP.

1,050,702. Specification of Letters Patent. Patented Jan. 14, 1913.

Application filed January 22, 1912. Serial No. 672,673.

To all whom it may concern:

Be it known that I, GEORGE A. SHOULDICE, a citizen of the United States, residing in the city and county of Alexandria and State of Virginia, have invented certain new and useful Improvements in Reversible Tool-Clamps, of which the following is a specification.

The object of my invention is to provide a three-point bearing for the bit.

A further object of my invention is to provide a reversible clamping member whereby the cutting tool may be clamped on the upper or the lower face of the supporting bar; and with these and minor objects in view, my invention consists of the parts and combination of parts as will be hereinafter more fully set forth.

In the drawing, Figure 1 is a side elevation of my invention; Fig. 2 is an enlarged detail longitudinal sectional view through the clamp; Fig. 3 is a transverse sectional view through the same; and Fig. 4 is a perspective view of the movable clamping jaw.

1 designates a base on which is mounted the post 2, having an elongated slot for receiving the supporting bar and provided with a clamping nut 3 by means of which the tool supporting bar is securely locked in position. The tool supporting bar 4, in the embodiment shown in the drawing, is deflected at its outer end at an angle to the main body, as will be more fully hereinafter pointed out. The deflected end 5 of the supporting bar is provided with a V-shaped groove 6, as will be more clearly seen in Fig. 3, so that a tool placed in this groove will have a two-point bearing in the groove. The under face 7 of the deflected end may be flat, but I prefer to provide a series of flat grooves 8 in said face for the reception of tools of various sizes.

9 is a shackle pivotally mounted at 10 on the deflected end 5 of the tool supporting bar, whereby it is free to swing around the end of the supporting bar, as will be hereinafter set forth.

11 is a set screw mounted in the upper end of the shackle and 12 is a movable clamping jaw having a pointed clamping edge 13. The jaw 12 is provided with upwardly extending wings 14 which project flush with the outer faces of the pivoted clamping member 9, whereby it is limited by engagement with the edges of the clamping member against longitudinal movement, but at the same time is free for vertical movement. As will be seen, the movable jaw 12 is mounted in the pivoted shackle 9 and that the lower end of the set screw 11 is in engagement with the clamping jaw, whereby the jaw may be forced tightly against the tool 16 and lock the same securely in the groove 6.

The supporting bar is first secured in its proper position in the post 2 and a cutting tool 16 is placed in the groove 6 on the deflected end 5, whereupon the shackle being in the position shown in Figs. 1 and 3, the set screw 11 is operated so as to bind the clamping jaw 12 firmly against the tool, whereby the tool is rigidly locked in the groove of the supporting bar with a three-point contact; two of the points of contact being on the sides of the groove 6 and the third point of contact being the pointed edge of the movable clamping jaw 12, as clearly shown in Fig. 3, thus firmly locking the tool on its supporting bar against movement. As shown in the drawing, the shackle and its clamping jaw are adapted to swing into position to cooperate with either side of the bar (see dotted lines, Fig. 2) so as to clamp a bit or cutting tool either upon the flat face or in the flat grooves of the bar, or in the V-shaped groove of the bar.

In certain kinds of work, it is desirable to have the deflection of the bar in a direction opposite to that shown in Fig. 1, whereupon the set screw 3 is loosened, the bar removed from the post 2, then reversed, and again clamped in the post 2 by means of the screw 3 so as to present the cutting tool in a different direction from that shown in Fig. 1. When the bar is reversed, the shackle is swung around the end of the bar and the cutting tool is placed either on the flat face of the supporting bar or in the flat grooves 7 and 8, and the clamping jaw securely clamped on the tool by means of the set screw 11 as will be clearly understood.

I claim:—

1. In a tool holder, the combination with a tool supporting bar, having a V-shaped seat for the tool providing a two-point elongated bearing, a clamping jaw having a longitudinally extending knife edge bearing extending in position to oppose said two-point bearing and provide a third elongated bearing point, and means to develop pressure upon the clamping jaw so as to clamp a tool on the bar.

2. A tool holder comprising a tool-sup-

porting bar having a V-shaped longitudinal seat, a shackle secured to said bar, a clamping jaw mounted in said shackle with ends projecting over the faces of the shackle to confine the clamping jaw in the shackle; said shackle having a longitudinally extending knife edge presented in opposition to the V-shaped seat and forming therewith an elongated three-point bearing, and said shackle having a means for imposing pressure upon the clamping jaw.

3. In a tool holder, the combination with a tool supporting bar, of a shackle pivoted to said bar and adapted to swing into position over the top and bottom faces of the said bar, a clamping jaw loosely mounted in said shackle and a set screw mounted in the shackle and adapted to bear on said clamping jaw.

4. In a tool holder, the combination with a tool supporting bar provided with a grooved bearing face on one side and a flat bearing face on the other side, of a shackle pivoted to said bar carrying a clamping jaw and adapted to swing into position to cause the clamping jaw to coöperate with either side of the bar so as to clamp a tool either upon the grooved face of the bar or upon its flat face.

5. In a tool holder, the combination with a tool supporting bar having a V-shaped groove in one of its faces and a series of graduated flat tool receiving grooves in its other face, of a shackle pivoted to said bar, a clamping jaw loosely mounted in said shackle with a single point bearing, said shackle adapted to swing into position to cause the clamping jaw to coöperate with the tool holding grooves on either side of the bar, so as to clamp a tool on either side of the bar.

The foregoing specification signed at Washington, D. C., this 17 day of November, 1911.

GEORGE A. SHOULDICE.

In presence of two witnesses:

HERVEY S. KNIGHT,

EDWIN S. CLARKSON.