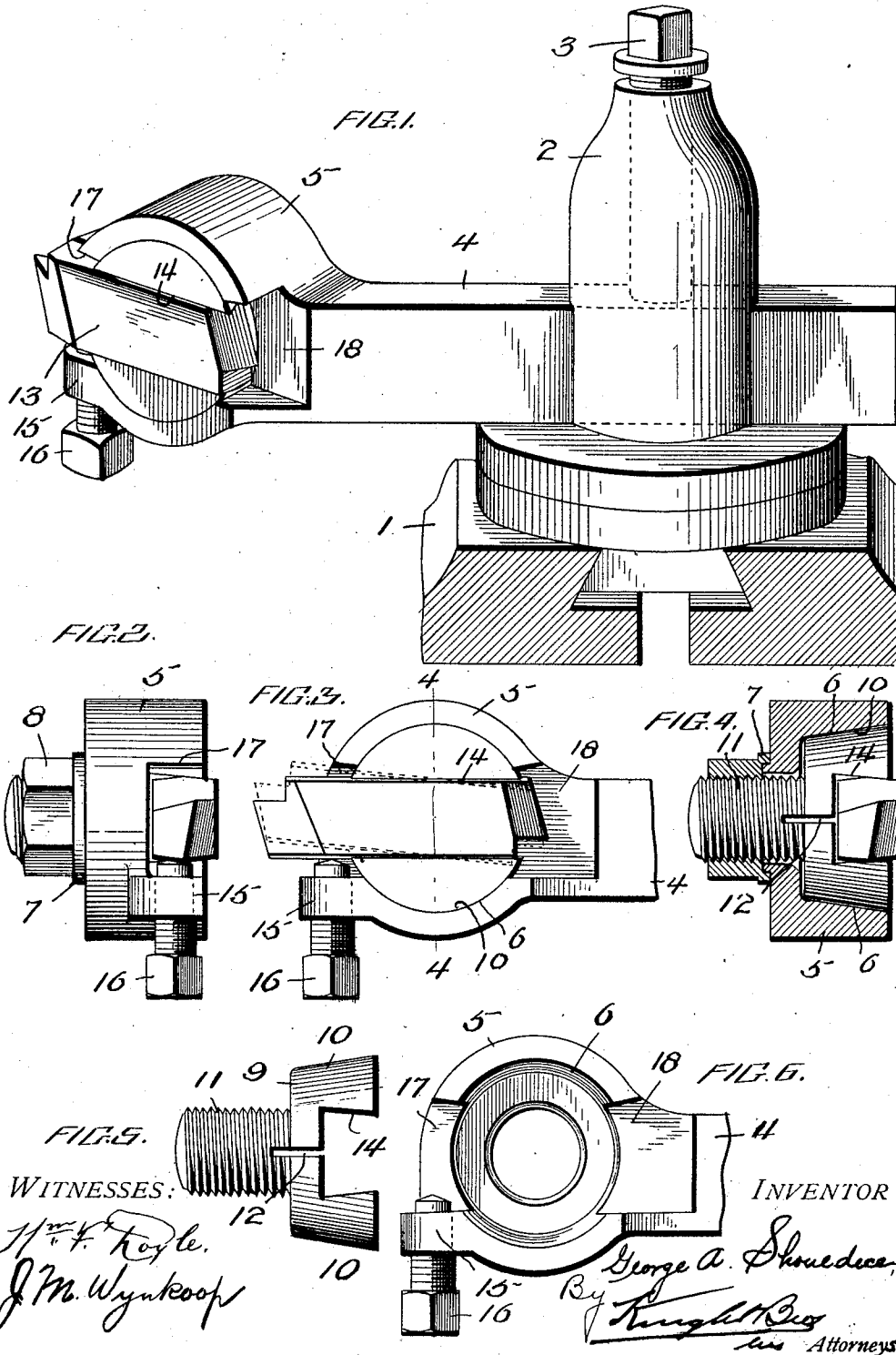


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ANGULARLY ADJUSTABLE TOOL HOLDER.
APPLICATION FILED JAN. 22, 1912.

1,050,701.

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UNITED STATES PATENT OFFICE.

GEORGE A. SHOULDICE, OF ALEXANDRIA, VIRGINIA.

ANGULARLY-ADJUSTABLE TOOL-HOLDER.

1,050,701.

Specification of Letters Patent.

Patented Jan. 14, 1913.

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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 Angularly-Adjustable Tool-Holders, of which the following is a specification.

The object of my invention is to provide in an angularly adjustable tool holder, a split clamping seat for the tool and a wedging socket for said seat, so that when the seat is drawn in an axial direction, it will be clamped upon the bit or tool.

A further object of my invention is to provide a circular clamping socket so that the clamping seat can rotate in it to raise or lower the cutting point of the bit, whereby fine angular adjustment of the bit can be obtained after it has been roughly positioned.

In the drawing, Figure 1 is a side elevation of an angularly adjustable tool holder embodying my invention; Fig. 2 is a front elevation of the same; Fig. 3 is an elevation in detail; Fig. 4 is a sectional view on the line 4-4, Fig. 3, parts being in elevation; Fig. 5 is a detail elevational view of the clamping seat detached; and Fig. 6 is a detail side elevation of the wedging socket.

1 represents a suitable support on which the tool post 2 is secured, said post having a clamping nut or screw 3. The post is provided with an elongated slot in which the tool holding bar 4 is secured by means of the screw 3.

The outer end of the tool holding bar is deflected to one side as clearly shown in Fig. 1 and is provided with an enlarged annular hollow head 5 having a wedging socket 6, the walls of which socket are tapered as clearly shown in Fig. 4. This socket is provided with a central opening around which is a collar 7, which forms a seat for the clamping nut 8, the inner face of the collar and the opening in the socket being screw-threaded, as clearly shown in Fig. 4. The split clamping seat is wedge-shape in cross-section, as more clearly shown in Figs. 4 and 5, where it will be seen that the outer walls 10 of the seat 9 are inclined.

11 is a screw extending axially from the clamping seat and adapted to project through the screw-threaded opening and collar of the wedging socket on which the nut 8 is adapted to be screwed. The split

clamping seat is provided with a split 12 which extends a short distance in the body of the screw 11, whereby the clamping seat may be firmly clamped on the tool 13. The tool 13 is adapted to be received in the wedge-shaped seat 14 of the clamping seat. It will be noticed that the walls of the wedge-shaped seat 14 converge toward the outer face of the split clamping seat and that the cutting tool 13 is provided with an upper and lower face corresponding to the converging walls of the seat 14, whereby the tool is firmly wedged in position against lateral displacement which is very essential in the boring or cutting of a piece of metal, as will be understood by those skilled in the art, inasmuch as a fractional lateral movement of the tool would tend to destroy the work operated upon. The split clamping seat, after the tool 13 is in position, is drawn snugly within the wedging socket 5 by means of the nut 8, whereupon the walls of the wedging socket compress the clamping seat firmly on the tool, the split 12 permitting the walls of the clamping seat to be drawn together, as will be readily understood.

15 is a lug on the wedging socket in which is mounted a set screw 16, the inner end of which is adapted to impinge against the under face of the cutting tool. The object of this construction is to give fine adjustments to the cutting tool. It frequently happens that after the cutting tool is set for its work, that some finer adjustment of the tool is necessary for accurate cutting. I provide for this fine adjustment by means of the set-screw 16 which, upon being revolved in the lug 15 adjusts the tool, as shown in dotted lines in Fig. 3, to any desired fine adjustment. In this connection, it will be noted that the wedging socket and the split clamping seat are circular so that there is no difficulty in revolving the split clamping seat in the wedging socket by means of the screw 16 for the finer adjustments of the cutting tool. It will also be noted that the adjusting screw 16 is located beneath the bit or tool 13, when the tool bar 4 is in position in the post, so that the screw 16 receives the thrust upon the bit, therefore there is no liability of the thrust upon the bit revolving the split clamping seat 9 in its wedging socket and thus disturbing the finer adjustment of the bit. The wall of the wedging socket is provided with diametrically opposite recesses 17 and

18, through which the tool 13 projects, said sockets being wider than the tool so that the tool may be revolved with the split clamping seat in said socket, as will be readily understood from the dotted lines in Fig. 3.

I claim:—

1. In a tool holder, the combination with a wedging socket circular in cross section and provided with an opening through its rear wall, of a split clamping seat-member adapted to enter said socket, formed with a tool seat having one open side and undercut top and bottom walls, a screw-threaded shank extending from said split clamping seat and adapted to pass through the opening in the wall of the socket, and having a jam-nut, and a tool in the tool seat conforming to the undercut walls and having a transverse dimension which causes it to extend beyond the face of the holder.
2. In a tool holder, a wedging socket-member having one open face and tapering side walls, a split clamping seat-member fitted in said socket and formed with one open face with opposed undercut side walls and with a flat inner face, a tool having side faces conforming to the undercut side walls of the clamping seat-member and having a transverse dimension which extends it beyond the outer faces of the socket-member and seat-member.
3. In a tool holder, the combination with

a wedging socket circular in cross section having an opening in its rear wall, diametrically opposite recesses in the wall of said socket, a lug projecting tangentially from the wall of said socket below one of said recesses, and an adjusting screw mounted in said lug, of a split clamping seat adapted to enter said wedging socket and provided with a tool seat having undercut top and bottom walls, a screw-threaded shank extending from said clamping seat through the opening in the wall of the wedging socket, a nut mounted on said shank whereby the clamping seat may be drawn in an axial direction into said socket to clamp a tool in said tool seat, and a tool having an inclined upper and lower face for engagement with said undercut walls of the tool seat, whereby it is held against lateral displacement; said adjusting screw being tangential to the socket so as to develop fine angular adjustment of the tool after it has been roughly positioned and at the same time receive the thrust upon the bit.

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.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."