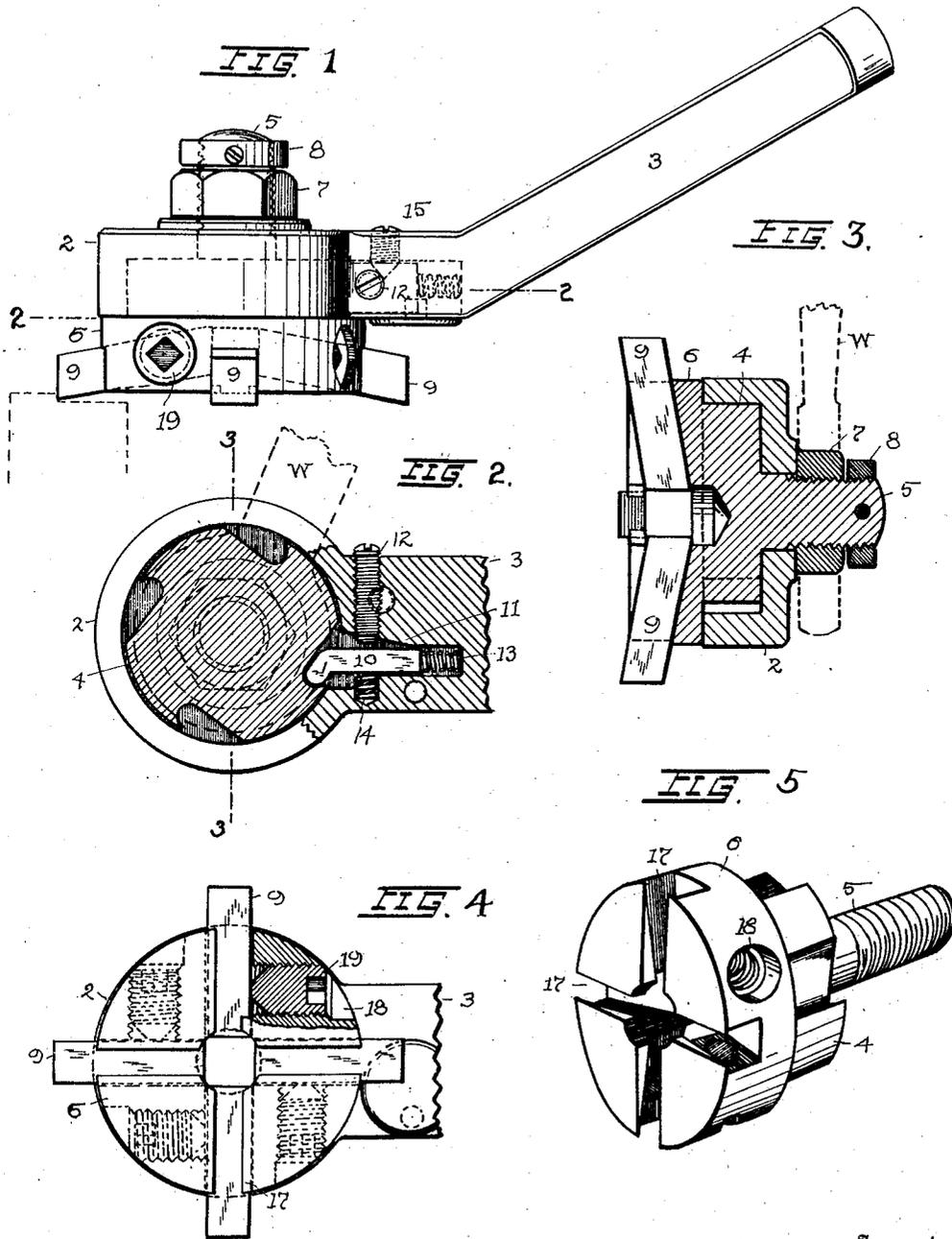


B. T. BROWAND,  
 TOOL HOLDER,  
 APPLICATION FILED JUNE 12, 1919.

1,406,339.

Patented Feb. 14, 1922.



Inventor

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# UNITED STATES PATENT OFFICE.

BENJAMIN T. BROWAND, OF CLEVELAND, OHIO.

## TOOL HOLDER.

1,406,339.

Specification of Letters Patent. Patented Feb. 14, 1922.

Application filed June 12, 1919. Serial No. 303,678.

*To all whom it may concern:*

Be it known that BENJAMIN T. BROWAND, citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, has invented certain new and useful Improvements in Tool Holders, of which the following is a specification.

The present invention is an improvement in the tool holder shown in my Letters Patent No. 1,281,761 of Oct. 15, 1918, and in general my object is to provide a tool holder in which a rotatable head is adapted to be conveniently locked and unlocked and also rotated by reverse movements of a single locking nut and a wrench, and in which the tools or cutters are set at an inclination to the front face of the rotatable head to permit the tool to operate on work placed opposite the front face or at the side of the rotatable head, and wherein the parts are easily set and adjusted without having any projecting parts to interfere with the working of the tools.

In the drawings accompanying this application, Fig. 1 is a top view of my tool holder. Fig. 2 is a cross section and plan view on line 2—2, Fig. 1. Fig. 3 is a sectional view on line 3—3, Fig. 2. Fig. 4 is a front view of the tool holder with a portion of the rotatable head in section. Fig. 5 is a perspective view of the rotatable head.

The holder comprises a round body or member 2 having an arm 3 adapted to be secured in a rest or support in a lathe or other metal working machine, and body 2 has a circular recess in one side and a central opening in its opposite side adapted to receive the ratchet hub 4 and stem 5 of a rotatable head 6. Stem 5 is partly screw-threaded and carries a hexagon nut 7 which is adapted to be turned by a wrench into locking engagement with the outer face of the body 4 to clamp the head against rotation. A collar 8 is pinned upon the outer end of stem 5 opposite nut 7 with a slight space or clearance between their juxtaposed faces so that the nut 7 may be rotated and released from locking engagement with the head before the nut is stopped in its longitudinal travel on the stem by collar 8. The moment this stop occurs the nut locks against the collar and becomes a fixed part of the stem 5 so that head 6 will be rotated by the wrench upon continuing the movement which has unlocked nut 7.

Thus, when nut 7 is unlocked from the body and locked against collar 8, head 6 may be rotated by the wrench to carry any one of the several cutting tools 9 into a working position opposite the work, and the working position of each tool is fixed or established by teeth or notches in the ratchet hub 4 and by a pawl 10 confined within a recess 11 in body 2 at its juncture with arm 3. Pawl 10 has a limited play in a longitudinal direction to permit rotation of the head, and a backing spring 13 in recess 11 is adapted to maintain pawl 10 in constant working engagement with said hub. Pawl 10 is also free to oscillate within narrow limits in the flaring end of recess 11, the limit of such play being determined by a stop screw 12. A coil spring 14 is socketed opposite screw 12 and serves to keep pawl 10 against said stop screw 12, and locking of screw 12 in any set position is effected by a pointed locking screw 15. Head 6 may be rotated freely in one direction when nut 7 permits, but the reverse rotation of the head is limited by the pawl and ratchet teeth. Thus when nut 7 is in locking engagement with collar 8 the head 6 is free to be rotated in one direction by wrench W for the purpose of setting or placing any given cutting tool 7 opposite the work, and as soon as the desired tool is in substantially its proper working position a reverse movement of wrench W will turn the head until the pawl 10 bears against the stop screw 12 whereupon nut 7 will turn and lock tightly against body 2. During the latter part of this movement head 6 is prevented from rotating by pawl 10, and the exact stop position of the cutting tool in head 6 relatively to the work is determined by adjustment of screw 12.

Each tool or cutter 9 is formed of square stock cut to any desired length and fashioned at its cutting end to meet any given requirements, and it should be understood that the several tools in the head may be used successively on the work to perform different operations or produce different cuts and that the tools are formed and sharpened at their ends accordingly. Each tool is mounted and secured for radial adjustment and for this purpose head 6 is provided with channels or slots 17 radially at its front side and also provided with screw-threaded openings 18 extending through its round face

within which separate set screws 19 are confined and adapted to lock against one side of each tool, see Fig. 4.

5 The slots or channels 17 are inclined relatively to the front face of head 6 so that the cutting end of each tool 9 will project or lie in a plane in advance of the face of said head, thereby permitting cutting operations on a piece of work of any size or  
10 shape placed directly in front of head 6. There are no other parts projecting from the head except the tools, so by inclining the tools relatively to the head there is  
15 nothing to interfere with the operations of a given piece of work either at the side or in front of the cutter head.

What I claim is:

A tool holder having a body member provided with a recess, a ratchet pawl at one side of said recess, a backing spring for  
20 said pawl and a stop screw and a coil spring on opposite sides respectively of said pawl between its ends, in combination with a rotatable head adapted to hold a plural  
25 number of tools and having ratchet teeth adapted to coact with said pawl in holding said head from rotating in one direction.

Signed at Cleveland, in the county of Cuyahoga and State of Ohio, this 9th day of June, 1919.

BENJAMIN T. BROWAND.