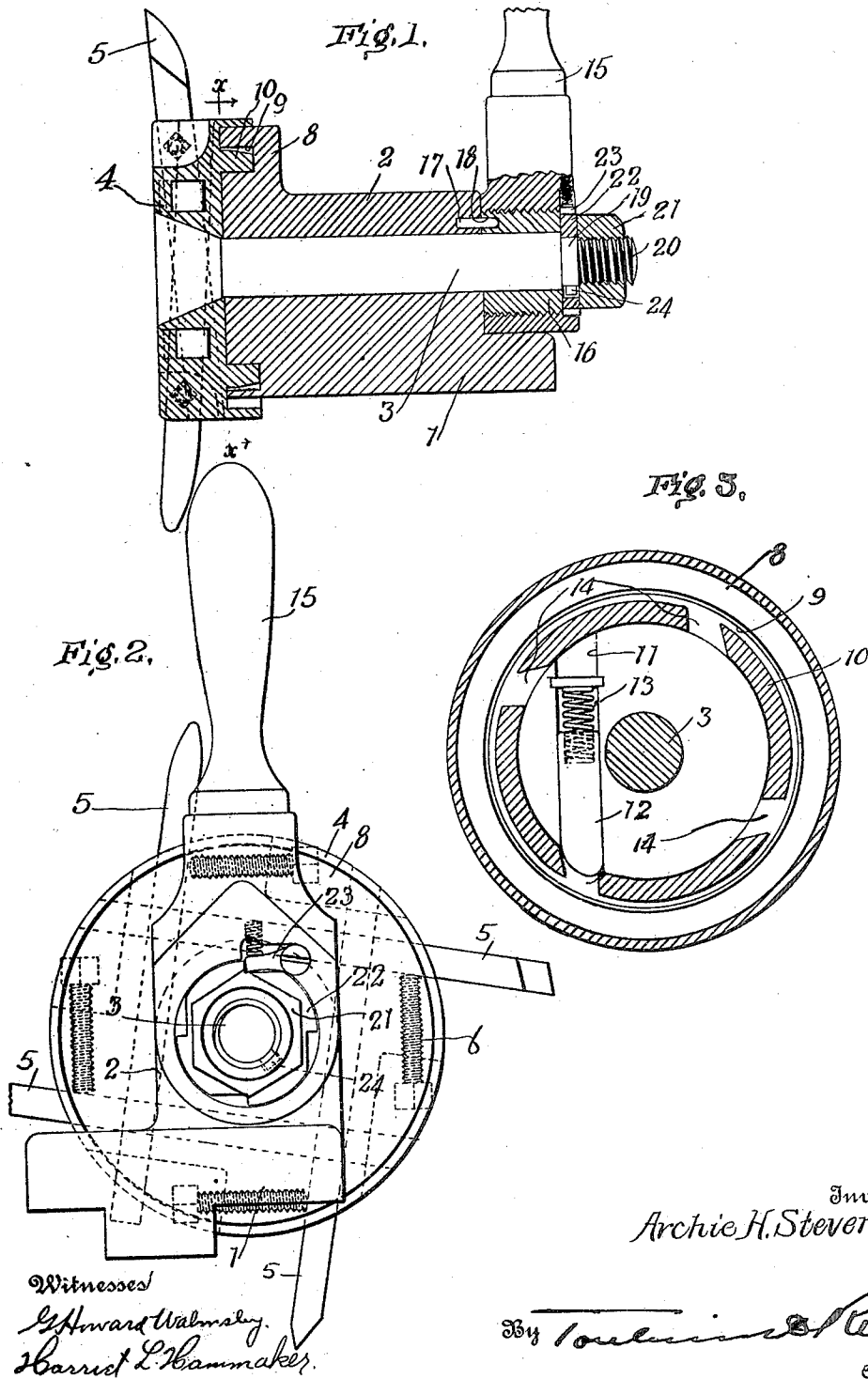


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TOOL HOLDER.
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TOOL-HOLDER.

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To all whom it may concern:

Be it known that I, ARCHIE H. STEVENS, a citizen of the United States, residing at Hornell, in the county of Steuben and State of New York, have invented certain new and useful Improvements in Tool-Holders, of which the following is a specification, reference being had therein to the accompanying drawing.

10 The invention relates to tool holders of that type adapted to support and successively bring into operative position a plurality of tools.

15 The object of the invention is to provide a tool holder, the operation of which to bring the different tools into operative position and to secure the tool support or head against movement will be very simple and positive.

20 To this end it is a further object of the invention to so connect a handle with a tool support that the movement of the handle in one direction will advance the tool support a distance sufficient to bring the next tool 25 into operative position, and the movement of the handle in the other direction will lock said tool support against all movement, thus rigidly supporting the tool in its operative position.

30 In the accompanying drawings, Figure 1 is a longitudinal, sectional view, taken centrally through a tool holder embodying my invention; Fig. 2 is an end elevation of the same on a larger scale; Fig. 3 is a transverse, sectional view on a larger scale, taken on the line *x-x* of Fig. 1 and looking in the 35 direction of the arrows.

40 In these drawings I have illustrated one embodiment of my invention and have shown the same comprising a base 1 adapted to be secured to a suitable support and having an upwardly extending portion 2 which is provided with a longitudinal bore to receive a rotatable spindle 3. Mounted on the 45 spindle 3 and arranged at one end of the portion 2 of the base is a tool support or head 4 having mounted therein a plurality of tools 5 arranged at intervals about the periphery of said support and adapted to be successively moved into operative position 50 by the rotation of the support. These tools may be mounted in the support in any suitable manner but preferably the latter is provided with sockets in which the tools are 55 inserted and in which they are held by means of set screws 6, the latter being arranged

within the cavities or cut-away portions 7 of the support so that they will not project beyond the periphery of the support. Preferably, the sockets in which the tools are 60 mounted are arranged obliquely to the plane of the face of the tool support, thus causing the outer ends of the tools to project beyond the face of the support and giving ample clearance for the operation of the tool when 65 it is operating upon a flat surface of the work.

The support may be rotated and held in its adjusted positions in any suitable manner. 70 Preferably, however, the base 2 has a disk-shaped portion 8 provided in its outer face with an annular groove 9 to receive an annular flange 10 carried by the tool support. That portion of the disk 8 lying within the 75 annular groove is provided with a transverse slot 11 in which is mounted a dog 12 and a spring 13 tending to move the dog outward. The end of this dog is rounded and is adapted to bear against the flange 10 of the tool support and to engage recesses or notches 80 14 formed in said flange. The forward edge of each notch is inclined at a broad angle to the radius of the flange and the adjacent edge of the dog 12 is also curved on a larger radius than is the opposite edge thereof. 85 Consequently, the tool support will be permitted to rotate in a forward direction, the inclined surfaces of the dog and the flange serving to force the dog out of the notch and permit this rotation. The opposite edge 90 of each notch, however, is sharp and will engage the comparatively blunt corner of the dog and prevent the rotation of the head or support in the reverse direction. Forward movement is imparted to the tool support 95 by means of a handle 15 mounted upon the opposite end of the spindle 3 and so connected thereto that when moved in a forward direction the spindle will be rotated, thus 100 advancing the tool support, and if rotated in the opposite direction will lock the spindle and the tool support against all movement. To this end I have mounted upon the spindle 3 a collar 16 in which the spindle is free to 105 rotate and which is held against rotation by means of a pin 17 mounted in the end of the bearing portion 2 of the base and entering a recess 18 in the adjacent edge of the collar, thus holding the collar firmly against rotation but permitting the spindle to be 110 moved axially. The outer surface of the collar 16 is screw-threaded and the hub of

the handle 15, which extends about the collar 16, is also screw-threaded. The rear end of the spindle 3 is reduced, as shown at 19, and the extreme end portion of the same is screw-threaded, as shown at 20, to receive a nut 21. Mounted on the reduced portion of the spindle between the screw-threaded portion thereof and the body portion is a ratchet wheel 22 cooperating with a spring-pressed pawl 23 mounted in a recess in the hub of the handle 15. The ratchet wheel is rigidly secured to the spindle, preferably by means of a key 24.

When the parts are in their assembled position, as shown in the drawings, the nut 21 is applied to hold the same securely in position. It will be noted that the nut does not engage the handle and, consequently, is not loosened by the rotation thereof. The movement of the handle is limited to substantially a quarter of a revolution by the edge thereof coming in engagement with the base 1, or in any other suitable manner. The forward movement of the handle will cause the pawl to engage the adjacent tooth of the ratchet wheel 22 and thus rotate the ratchet wheel, spindle and tool head, the pressure on the handle serving to force the dog 12 out of the notch 14 to permit the tool support to rotate. The direction of the threads connecting the handle 15 to the collar 16 is such that its forward movement will tend to move the handle away from the bearing portion of the base and the length of its forward movement is such that the tool support will be advanced a distance sufficient to permit the dog 12 to engage the next notch and bring the next tooth into operative position just before the handle reaches the limit of its movement. Upon the return movement of the handle the pawl 23 will ride over the tooth of the ratchet wheel and the threaded connection between the handle and the sleeve will cause the handle to move inward toward the end of the bearing portion of the base and to frictionally engage the same so that the rearward movement of the handle will be limited by this frictional engagement between the same and the base. The same rearward movement of the handle tends to move the spindle lengthwise of its bearing and to cause the adjacent surfaces of the tool support and the disk 8 to engage one with the other. The frictional engagement of these parts, together with the frictional engagement of the handle with the end of the bearing, serve to effectually lock the spindle against movement, thus holding the tool support in its adjusted position until forward pressure is again applied to the handle. Obviously, the parts which come into frictional engagement may be provided with specially shaped surfaces or otherwise constructed to increase the frictional contact if desired. The ar-

range-ment of the handle with relation to the bore is such that the frictional engagement between the two parts will be sufficient to check the movement of the handle just after it has moved rearwardly far enough to permit the pawl to engage the next tooth of the ratchet wheel.

The operation of the tool holder will be understood from the foregoing description and it will be apparent that the device is exceedingly simple in its construction and of a very strong, durable character, and that it is likewise very simple in its operation, the tools being automatically positioned by the forward movement of the handle and efficiently locked in their adjusted positions by the rearward movement of the handle, enabling the device to be very quickly and easily operated with one hand and providing a very efficient tool holder.

It will be understood, of course, that while I have shown the tool support or head adapted to hold four tools, any suitable number may be used and the detents altered accordingly in order that the tools may be advanced and to enable each tool to be adjusted and held in operative position. Further it will be understood that any suitable cam connection may be substituted for the screw-threaded connection between the handle and the sleeve, the screw-threaded connection having in this instance a cam action.

While I have shown and described one embodiment of my invention it will be understood that this has been chosen for the purposes of illustration only and that I do not desire to be limited to the details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

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

1. In a tool holder, the combination, with a base, and a rotary tool-support mounted on said base and adapted to support a plurality of tools, of a handle, means actuated by the movement of said handle in one direction to advance said rotary support a predetermined distance, and means controlled by the movement of said handle in another direction to establish a locking engagement between said base and said handle.

2. In a tool holder, the combination, with a base, a spindle journaled in said base, and a tool support secured to said spindle, of a sleeve mounted on said spindle and held against rotation relatively thereto, a handle mounted on said sleeve, a screw-threaded connection between said handle and said sleeve to cause said handle to move toward said base when said handle is moved in one direction about the axis of said spindle, and a connection between said handle and said

spindle to cause said spindle to rotate when the handle is moved in the other direction about the axis of said spindle.

3. The combination, with a base, a spindle 5 rotatably mounted therein and capable of longitudinal movement relatively thereto, and a tool-support mounted on said spindle and having parts adapted to engage said base to lock said support against movement, 10 of a handle operatively connected with said spindle to rotate said tool-support when said handle is moved in one direction and to impart longitudinal movement to said spindle to bring the support into locking engage- 15 ment with said base when said handle is moved in another direction, a device yieldingly mounted between said tool-support and said base to lock said support against rearward movement with said spindle and 20 to permit forward movement thereof when force is applied to said spindle.

4. The combination, with a base, a spindle rotatably mounted therein, capable of longitudinal movement relatively thereto, a tool 25 support carried by said spindle and movable into locking engagement with said base, said base having a transverse groove in that end adjacent to said tool support, a spring-pressed dog mounted in said groove, and a 30 locking flange carried by said tool support and extending across the end of said groove, said flange having recesses to cooperate with the end of said dog, of a handle operatively 35 connected with said spindle, and a connection between said handle and said spindle whereby either rotary or longitudinal movement may be imparted to said spindle and said tool support by the movement of said handle.

5. The combination, with a base, a spindle 40 rotatably mounted therein and capable of longitudinal movement relatively thereto, of a tool-support secured to one end of said spindle and having surfaces adapted to be

45 moved into and out of frictional contact with cooperating parts of said base when longitudinal movement is imparted to said spindle, a handle mounted about the axis of said spindle having a part arranged to be moved into frictional engagement with said 50 base, a sleeve mounted on said spindle, a screw connection between said handle and said sleeve, and a feeding connection between said handle and said spindle, whereby the movement of said handle in one direction 55 will rotate the spindle to advance the tool-support and the movement of the handle in the other direction will bring the cooperating surfaces of said parts into frictional engagement.

6. The combination, with a base, a spindle 60 rotatably mounted therein and capable of longitudinal movement relatively thereto, of a tool-support secured to one end of said spindle and having surfaces adapted to be 65 moved into and out of frictional contact with cooperating parts of said base when longitudinal movement is imparted to said spindle, a sleeve mounted on said spindle and held against rotary movement relatively 70 to said base, a ratchet wheel mounted on said spindle and held against rotary movement relatively thereto, and means to hold said sleeve and said ratchet wheel against longitudinal movement relatively to said spindle, 75 a handle having a hub portion mounted on said sleeve and arranged to be moved into frictional engagement with said base, a screw-threaded connection between said hub portion of said handle and said sleeve, and a 80 pawl carried by said handle and adapted to engage said ratchet wheel.

In testimony whereof, I affix my signature in presence of two witnesses.

ARCHIE H. STEVENS.

Witnesses:

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ELLIS H. WILLIAMS.