April 24, 1945. A. F. FEASTER 2,374,477

UNIVERSAL LATHE TOOL POST

Filed May 8, 1944

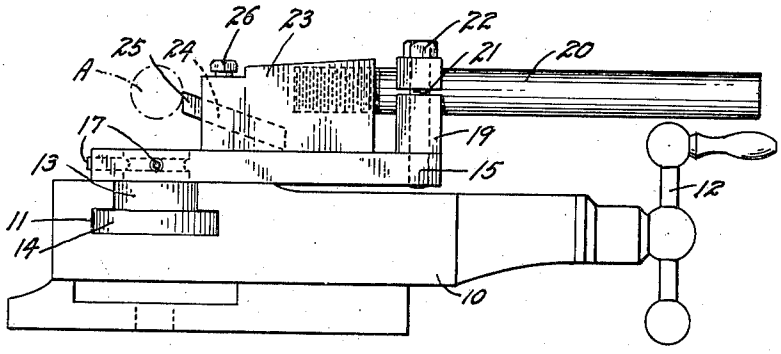


Fig 1

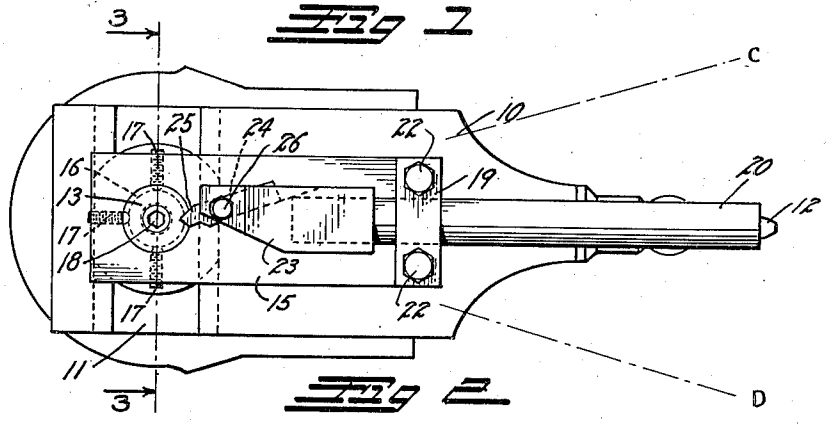


Fig 2

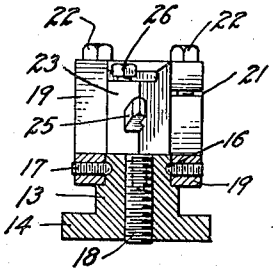


Fig 3

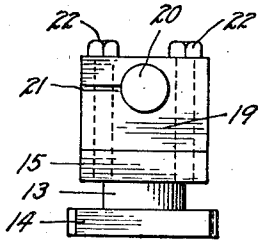


Fig 4

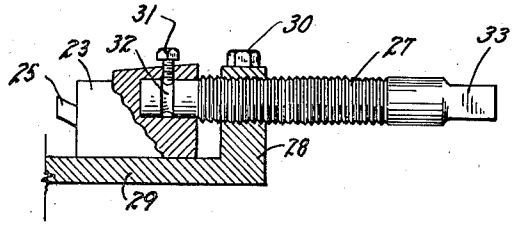


Fig 5

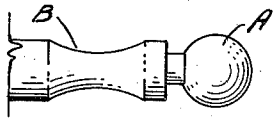


Fig 6

INVENTOR.
ALLAN F. FEASTER
BY
ATTORNEY

Patented Apr. 24, 1945 2,374,477

UNITED STATES PATENT OFFICE

2,374,477

UNIVERSAL LATHE TOOL POST

Allen F. Feaster, Boulder, Colo.

Application May 8, 1944, Serial No. 534,646

8 Claims. (Cl. 82—12)

This invention relates to a tool post for lathes and has for its principal object the provision of a simple and highly efficient attachment which can be quickly and easily placed in a standard compound lathe tool rest for turning spherical convexities and arcuate concavities in the work. A further object is to provide a tool-post for the above special purposes which can also be used for holding the tool for any of the usual work required of a lathe.

Other objects and advantages reside in the detail construction of the invention, which is designed for simplicity, economy, and efficiency. These will become more apparent from the following description.

In the following detailed description of the invention reference is had to the accompanying drawing which forms a part hereof. Like numerals refer to like parts in all views of the drawing and throughout the description.

In the drawing—

Fig. 1 is a side view of the improved tool post illustrating it in position on a standard compound tool rest;

Fig. 2 is a plan view thereof in place in the tool rest;

Fig. 3 is a cross-section through the improved tool post, taken on the line 3—3, Fig. 2, with the rest eliminated;

Fig. 4 is a rear view of the improved post;

Fig. 5 is a fragmentary sectional view illustrating an alternate method of constructing the post; and

Fig. 6 is a detail view illustrating a type of work to which the improved post is adapted.

A typical standard compound tool rest is illustrated on the drawing at 10 with its dove-tailed, post-receiving channel at 11, and transverse feed crank at 12. The improved tool post is designed to fit into the dove-tailed channel 11 of the standard compound rest.

The improved post employs a pivot post 13 having an enlarged foot portion 14 designed to slidably engage in the dove-tailed channel 11 of the rest 10. The upper portion of the pivot post is reduced in diameter to form a pivot bearing for a swinging base member 15. The pivot bearing of the post 13 contains a peripheral groove 16 into which one or more round-nosed set screws 17 project to prevent removal of the base. By tightening these screws, the base can be accurately set any any desired angle about the pivot post 13.

The pivot post may be locked in the channel 11 at any desired point by means of a central hollow set screw 18 which passes axially and vertically through the post and which can be brought to bear against the bottom of the channel 11 to clamp the foot portion 14 in the dove-tail of the channel.

The base 15 extends to one side of the pivot post and carries a clamp member 19 at its projecting extremity. The member 19 is drilled to receive a tool bar 20 and this drill hole is split at one side, as indicated at 21. Two cap screws 22 secure the member 19 to the base 15 and, when these screws are tightened, the drill hole in the member will be contracted about the bar 20 to lock the latter in any desired position therein.

The forward extremity of the bar 20 is threaded into or otherwise secured to a tool block 23 which slides upon the base 15. The forward extremity of the tool block contains an inclined tool channel 24 in which any desired turning tool 25 may be clamped by means of a clamp screw 26.

When used for turning a ball, such as indicated at "A" in Fig. 6, the axis of the pivot post 13 is placed immediately below the center of the ball "A." The tool is fed to the work by the crank 12 and it is fed around the work by swinging the bar 20 from side to side, as indicated by the center lines "C" and "D" in Fig. 2, to cut away the excess material to produce a perfect sphere. A complete sphere such as illustrated at "A" in Fig. 6 may be produced by swinging the bar completely around to the center line of the work.

For turning a concavity, such as indicated at "B" in Fig. 6, the axis of the post 13 is placed at the axis of the concavity and the tool 25 is moved forwardly by adjusting the bar 20 until it projects beyond the axis of the post 13. The concavity can now be turned by swinging the bar 20 about its pivot post 13 and feeding with the crank 12. Thus, any desired arcs may be turned either as concave projections or as convex indentations. The downward pressure on the tool is absorbed by the contact between the tool block 23 and the base 15 not by the bar 20. The latter acts only to absorb side play of the block 23.

In the Fig. 5 an alternate method of mounting the tool block 23 is illustrated. In this method a threaded feed bar 27 is employed which is threaded through an upstanding flange 28 on a swingable base member 29. The threaded hole in the flange 28 can be contracted about the bar 27 by means of a clamp screw 30 to lock

the bar in any desired position. The forward extremity of the bar 27 is rotatably mounted in the tool block 23 and may be locked therein by means of a round nosed set screw 31 which engages a peripheral groove 32 in the bar 27. A wrench receiving extremity 33 may be formed on the bar 27 to facilitate rotation thereof. The operation of this form is similar to the first form except that adjustment of the tool block is obtained by rotating the threaded bar 27 which allows an accurate adjustment to be more easily attained.

While a specific form of the improvement has been described and illustrated herein, it is desired to be understood that the same may be varied, within the scope of the appended claims, without departing from the spirit of the invention.

Having thus described the invention, what is claimed and desired secured by Letters Patent is:

1. A tool post for lathes comprising: a pivot member; an enlarged foot on said pivot member to be positioned in the post channel of a lathe rest; a base pivotally mounted on said pivot member; a tool holding block slidably mounted on said base; and means for locking said block in any desired position on said base.

2. A tool post for lathes comprising: a pivot member; an enlarged foot on said pivot member to be positioned in the post channel of a lathe rest; a base pivotally mounted on said pivot member; a tool holding block slidably mounted on said base; a bar projecting from said block radially of said pivot member; and means for locking said bar to said base at any desired position of the former.

3. A tool post for lathes comprising: a pivot member; an enlarged foot on said pivot member to be positioned in the post channel of a lathe rest; a base pivotally mounted on said pivot member; a tool holding block slidably mounted on said base; a bar projecting from said block radially of said pivot member; an upstanding member secured to said base about said bar, the latter being slidable therethrough; and means for locking said bar in said upstanding member.

4. A tool post for lathes comprising: a pivot member; an enlarged foot on said pivot member to be positioned in the post channel of a lathe rest; a base pivotally mounted on said pivot member; a tool holding block slidably mounted on said base; and means for locking said block in any desired position on said base, said block being movable radially across the axis of said pivot member.

5. A tool post for lathes comprising: a pivot member; an enlarged foot on said pivot member to be positioned in the post channel of a lathe rest; a base pivotally mounted on said pivot member; means for supporting a tool on said base; and a set screw extending vertically through said pivot member to be brought into contact with the bottom of said channel to lock said pivot member in place therein.

6. A tool post for lathes comprising: a pivot member; an enlarged foot on said pivot member to be positioned in the post channel of a lathe rest; a base member extending to one side of said pivot member; a bearing formed on said pivot member, said base having an opening for receiving said bearing; a tool holding block on said base member; and means for adjusting the position of said block on said base member in a plane radial to the axis of said pivot member.

7. A tool post for lathes comprising: a pivot member; an enlarged foot on said pivot member to be positioned in the post channel of a lathe rest; a base member extending to one side of said pivot member; a bearing formed on said pivot member, said base having an opening for receiving said bearing; a tool holding block on said base member; means for adjusting the position of said block on said base member in a plane radial to the axis of said pivot; and means for locking said base at any desired radial position about said pivot post.

8. A tool post for lathes comprising: a pivot member; an enlarged foot on said pivot member to be positioned in the post channel of a lathe rest; a base member extending to one side of said pivot member; a bearing formed on said pivot member, said base having an opening for receiving said bearing; a tool holding block on said base member; means for adjusting the position of said block on said base member in a plane radial to the axis of said pivot member; and set screws projecting radially inward from said base to said pivot member, there being a peripheral groove in the latter for the reception of said screws.

ALLEN F. FEASTER.