G. N. B. CHAMBERLAIN.

LATHE TOOL POST.

APPLICATION FILED DEC. 10, 1906.

905,648.

Patented Dec. 1, 1908.

2 SHEETS—SHEET 1.

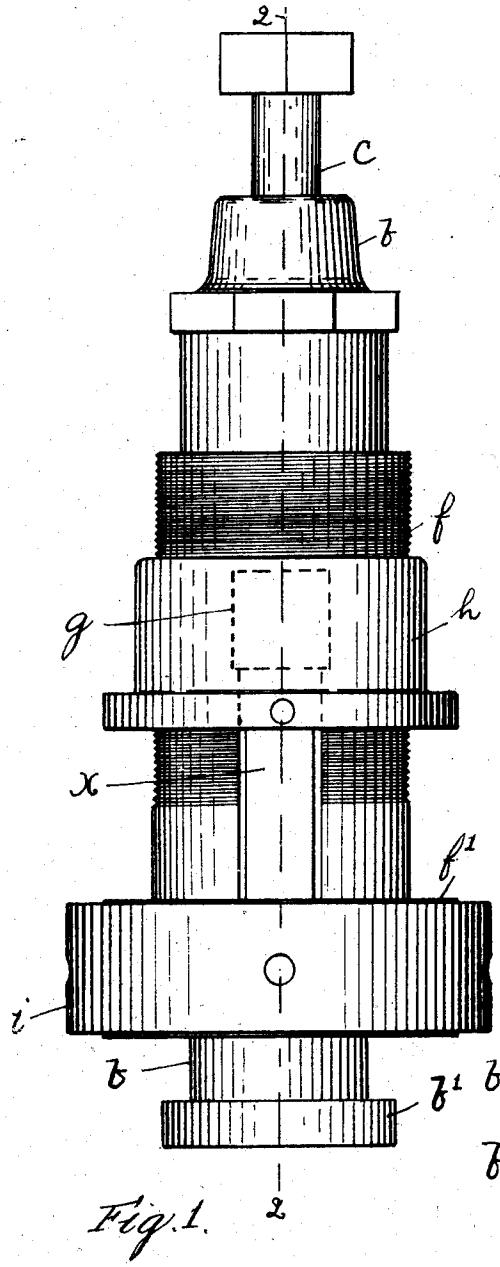


Fig. 1.

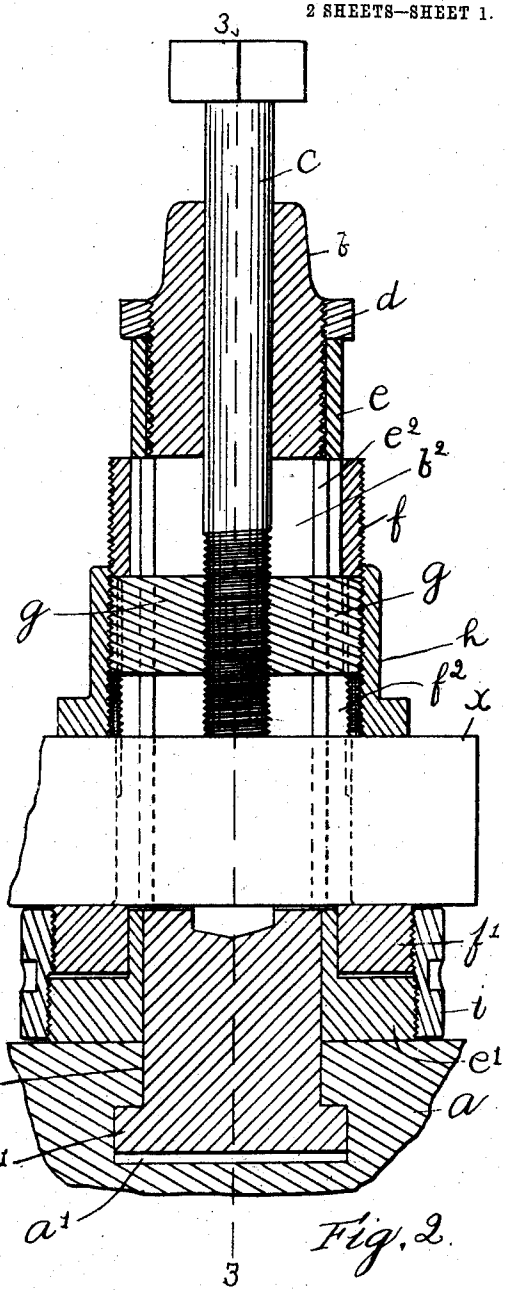


Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 3.

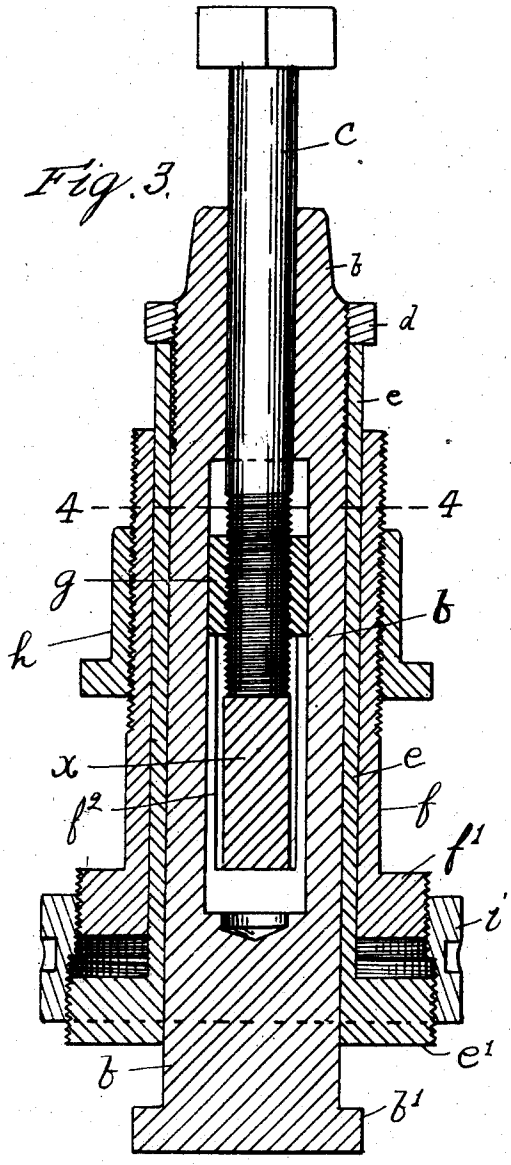
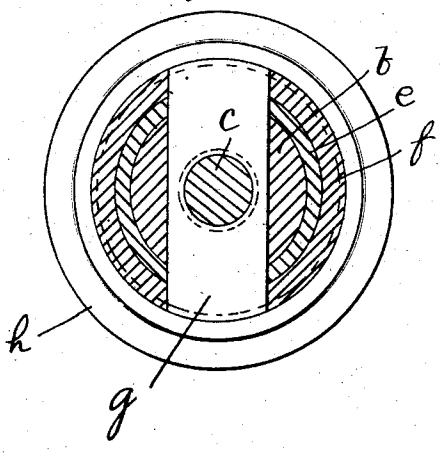


Fig. 4.



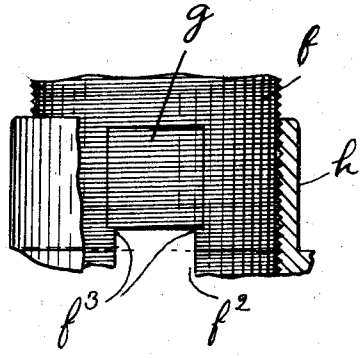


Fig. 5.

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UNITED STATES PATENT OFFICE.

GEORGE N. B. CHAMBERLAIN, OF BOSTON, MASSACHUSETTS.

LATHE TOOL-POST.

No. 905,648. Specification of Letters Patent. Patented Dec. 1, 1908.

Application filed December 10, 1906. Serial No. 347,198.

To all whom it may concern:

Be it known that I, GEORGE N. B. CHAMBERLAIN, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Lathe Tool-Posts, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention particularly relates to a form of lathe tool post or holder, in which the point of the tool may be vertically adjusted without changing its inclination, and has for its object to produce a tool post of this character which is simple in construction, which may be adjusted with facility after the tool has been clamped in position, and while a chip is being taken, and which is adapted to support the tool even more rigidly than the form of tool post having the convex rocker-plate on which the tool is clamped and which is ordinarily employed. I accomplish these objects by the means shown in the accompanying drawings, in which:—

Figure 1 is a front elevation of a tool post embodying my invention. Fig. 2 is a central section on the line 2—2 Fig. 1. Fig. 3 is a central section on the line 3—3 Fig. 2. Fig. 4 is a cross section on the line 4—4, Fig. 3, and Fig. 5 is a detail side view showing a portion of the clamping ring cut away.

In the drawing *a* indicates the ordinary tool post block of a lathe provided with the usual T-slot *a'*, to receive the head of the tool post. My improved form of tool post comprises the central bolt or post *b* having a head *b'* which is adapted to slide in the T-slot of the block and to be clamped against the upper side thereof in the ordinary manner. Said post *b* is longitudinally bored to receive the clamping screw *c*, which, however, is not threaded in said post as is customary with the ordinary tool post, but is slidable vertically therein. A clamping nut *d* is threaded on the outer side of said post, and is adapted to engage the upper end of a tubular clamping member *e* which is slidably mounted on the post *b*. Said tubular member *e* has a head or flange *e'* at its lower end adapted to bear against the surface of the block, so that when the nut *d* is screwed down upon the end of said member *e* said heads *b'* and *e'* will be respectively clamped against the upper side of the T-slot *a'* and the top of the block, thus firmly securing the post in the desired position on the block. A tool support *f*, of tubular form is fitted to the slide on the outer side of the member *e* and said support is provided with a flange or head *f'* at its lower end, which is, when adjusted to its lowest position, adapted to bear on the upper side of the head *e'*. The edges of said flanges *e'* and *f'* are provided with right and left threads respectively and an adjusting ring *i*, having corresponding right and left threads, is threaded on both of said flanges or heads. Said post *b*, member *e* and support *f* are respectively provided with central, vertical, tool receiving slots b^2, e^2, f^2 which are arranged in register so that the tool *x* may be inserted in the usual manner. The slots b^2, and e^2 extend above the upper end of slot f^2 a distance approximately equal to the distance which the support *f'* is adapted to be lifted by ring *i* from its lowest position.

A cross bar or nut *g* is supported on the tool support *f* in the upper end of slot f^2, said cross bar fitting and extending through all of said slots b^2, e^2 and f^2 and acting to hold the several parts in which said slots are formed so that said slots will be constantly held in register. Said cross bar *g* is of somewhat greater thickness than the width of the lower portions of the slots b^2, e^2, and f^2 in which the tool is located, the upper portions of said slots being enlarged, so that said bar *g* may fit therein. Supporting shoulders f^3 are thus provided on support *f* for bar *g*. Said bar *g* is provided with a centrally arranged, screw threaded aperture into which the clamping bolt *c* is adapted to be threaded, so that, when said clamping bolt *c* is screwed down upon the tool *x* the latter will be firmly clamped against the flange or head *f'* of the support.

A clamping ring *h* is preferably threaded upon the outer surface of the support *f*, so that while the tool may be ordinarily clamped with sufficient security with the bolt *c*, said ring *h* may also be screwed down on the tool so as to assist the bolt *c* in firmly holding the tool in position.

After the tool has been clamped in position, as above described, if it is desired to raise or lower the tool without otherwise changing its position, it is simply necessary to turn the ring or nut *i* in the direction to raise or lower the support *f*, as the case may be. The point of the tool may thus be brought into the exact relation to the work

which is desired, after the post has been clamped on the block and the tool *h* has been clamped on the post, while the chip is being taken and without changing the inclination of the tool, or disturbing either the connection of the post with the block or the tool with the post. It will be understood that for one revolution of the ring *i* the post will be raised an extent equal to that of two of the screw threads.

Inasmuch as the tool bears directly on the flange *f'* and the flange *e'* rests directly on the surface of the block, it follows that the ring *i* provides a rigid support for the tool at all sides, as well as providing an adjusting means therefor. It will be apparent that the adjusting ring is enabled to perform this function of a support much more effectively, by reason of the fact that it engages the supporting base on which the tool is clamped at its extreme edge, than it would if it engaged these parts at points more nearly adjacent the center of the post.

As the tool support, and therefore the tool, is entirely supported by the adjusting ring, the downward pressure on the ring by the work causes the threads to bind sufficiently to prevent turning of the ring by the same pressure, although it would not prevent the ring from being readily turned by hand to adjust the tool.

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

1. In combination with a tool-block having a T-slot, a post having a head movable in said slot, means on said post for clamping said head against the upper side of said slot to secure said post to the tool-block, a tubular tool-support telescoping with said post, tool-clamping means on said support, and means for vertically adjusting said support and its tool-clamping means with relation to said post and its said post-clamping means, substantially as described.

2. In combination with a lathe tool-post having an encircling clamping device for securing it to the lathe and an encircling tool-support, a tool-clamping device for said support, and means for vertically adjusting said support and its tool-clamping device with relation to said post and the post-clamping device when said devices are in clamped position, substantially as described.

3. A lathe tool holder comprising a central post, a tubular clamping member mounted thereon, for clamping the post upon the lathe, a tubular tool-support telescoping said clamping member and having means for clamping a tool thereon, and means for vertically adjusting said support and its tool-clamping means with relation to said post and the post clamping member, substantially as described.

4. In combination with a lathe tool post having clamping devices for securing the same to a lathe, a tool support adjustably mounted on said post and having clamping devices for securing a tool thereto, and means for vertically adjusting said support and its tool clamping devices with relation to said post and the post clamping devices, said adjusting means being disposed to engage said support at opposite sides thereof to provide a rigid support therefor, substantially as described.

5. In combination with a lathe tool post having clamping devices for securing the same to a lathe, a tool-support vertically adjustable upon said post and having clamping devices for securing a tool thereto, and means for vertically adjusting said support and its tool-clamping devices with relation to said post and the post-clamping devices, said adjusting means having a threaded connection with said support at opposite sides thereof, substantially as described.

6. A lathe tool holder comprising a post, a post-clamping means for securing the post to the lathe, a tool-support movable longitudinally of said post, tool-clamping means for securing a tool on said support, and means for positively moving said support and its tool clamping means in opposite directions relatively to the post and the post-clamping means, to vary the elevation of the tool with relation to the work while it is acting thereon and to hold the same positively in its different positions of adjustment, substantially as described.

7. A lathe tool holder comprising a post and a post-clamping device for securing the same to a lathe, a tool support vertically movable with relation to said post and its clamping device, a tool clamping device on said support, and an adjusting device having connections with said post-clamping device and with said support and the tool clamping device, respectively, one of said connections being screw-threaded to cause said support to be positively raised and lowered when said adjusting device is rotated in opposite directions, substantially as described.

8. A lathe tool holder comprising a post and a post-clamping device for securing the same to a lathe, a tool support, having a tool clamping device thereon, and vertically movable with relation to said post and its clamping device, and an adjusting device having a positive connection with said post clamping device and with said support and the tool-clamping device, said adjusting device being movable positively to raise or lower said support and the tool-clamping device with relation to the post and the post-clamping device, substantially as described.

9. A lathe tool holder comprising a post and a post-clamping device for securing the same to a lathe, a tool support, having a

tool clamping device thereon and vertically movable with relation to said post and its clamping device, and a rotatable adjusting device for said support, having an oppositely screw-threaded connection with said post-clamping device and with said support and the tool-clamping device, respectively, substantially as described.

10. A lathe tool holder comprising a central post, a tubular clamping member mounted thereon and means for forcing said post and said clamping member in opposite directions to clamp the post upon the lathe, a tubular tool support slidably mounted on said clamping member, means carried by said support for securing the tool thereon, and means, simultaneously engaging said clamping member and said support, for vertically adjusting said support, substantially as described.

11. A lathe tool-holder comprising a cylindrical post and means for securing the same upon the lathe, a cylindrical tool support slidably mounted upon said post and having a circular tool-receiving base at its lower end, means on said support for clamping the tool upon said base, and an adjusting ring threaded on said base and adapted to be rigidly supported by the lathe, substantially as described.

12. A lathe tool-holder comprising a cylindrical post, a tubular clamping member mounted on said post, means on said post for engaging said clamping member to clamp the post upon the lathe, a tubular tool support mounted, and vertically movable upon said clamping member and having a circular tool supporting base at its lower end, means on said tool support for clamping the tool upon said base, and an adjusting nut having a threaded connection with said base and with the lower end of said clamping member, the threads on said base extending oppositely to the threads on said member, substantially as described.

13. A lathe tool-holder comprising a cylindrical post, a tubular clamping member mounted thereon, a nut threaded on said post for forcing said clamping member into engagement with the lathe to clamp the post thereon, a tubular tool support mounted and vertically movable upon said clamping member, said tool support, clamping member and post having registering, transversely extending, tool-receiving slots therein, and said tool support having a circular base below said slots adapted to support the tool, a clamping device, threaded on said support for clamping the tool upon said base, and an adjusting nut threaded on said base and disposed to engage the lathe to provide a rigid support for said base, substantially as described.

14. A lathe tool-holder comprising a cylindrical post, a tubular clamping member mounted thereon, a nut threaded on said post for forcing said clamping member into engagement with the lathe to clamp the post thereon, a tubular tool support mounted and vertically movable upon said clamping member, said tool support, clamping member and post having registering, and transversely extending tool receiving slots therethrough, and said tool support having a circular base disposed to support the tool while in said slots, a cross bar extending through said slots and connected to said tool support, a clamping bolt threaded in said cross bar for clamping the tool against said base, and an adjusting nut threaded on said base and adapted to engage the lathe, substantially as described.

15. A lathe tool holder comprising a post having a clamping member and means for forcing them in opposite directions to clamp them upon the lathe, a tool support mounted on said clamping member and having means for securing a tool thereto, and means, simultaneously engaging said support and said clamping member, for vertically adjusting said support on said member, substantially as described.

16. A lathe tool holder comprising a post having a clamping member for securing it to a lathe, a tool support vertically movable thereon, means for clamping a tool on said support, and an adjusting ring encircling said post and having a threaded connection with said support, said ring being disposed to be rigidly supported by the lathe and to adjust said support vertically when rotated, substantially as described.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

GEORGE N. B. CHAMBERLAIN.

Witnesses:
LOUIS H. HARRIMAN,
H. B. DAVIS.