(No Model.)

J. E. SWEET & C. E. LIPE.

TOOL POST FOR LATHES.

No. 261,967. Patented Aug. 1, 1882.

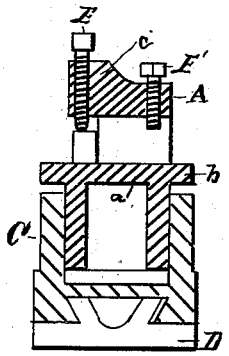


Fig 1

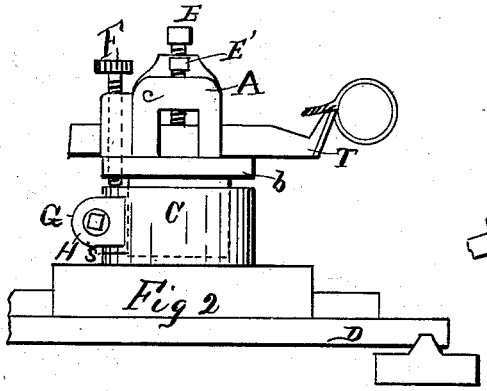


Fig 2

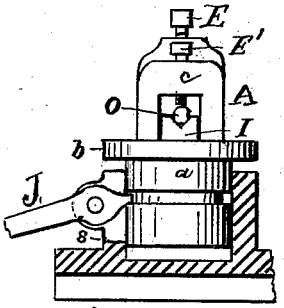
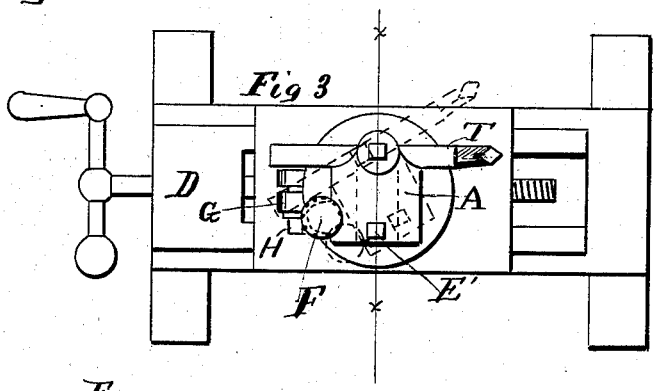


Fig 10



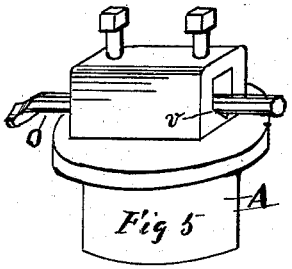
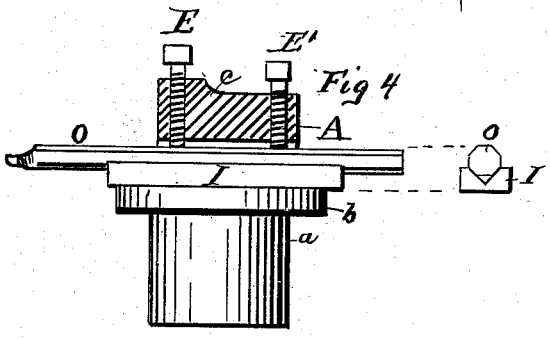


Fig 5



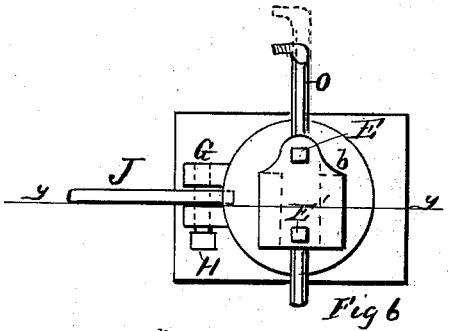
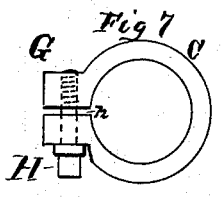
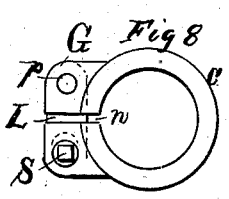
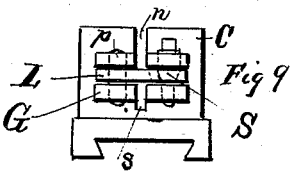


Fig 6







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TOOL-POST FOR LATHES.

SPECIFICATION forming part of Letters Patent No. 261,967, dated August 1, 1882.

Application filed May 26, 1881. (No model.)

To all whom it may concern:

Be it known that we, JOHN E. SWEET and CHARLES E. LIPE, of Syracuse, in the county of Onondaga and State of New York, have invented a new and valuable Improvement in Lathe Tool Posts; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

The object of this invention is, first, to provide an improved tool-post for lathes for boring and turning metal that will enable the operator to rigidly clamp the tool (either for turning or boring) in its holder, and afterward adjust it both in height and angular position to the work to be done, said adjustments being independent of each other—*i. e.*, either may be changed without disturbing the other; second, to so construct the tool-holder that it may be adapted to hold with equal facility the ordinary form of turning-tool or an improved form of boring-tool, the construction and advantages of which will be explained in connection with the device.

In the accompanying drawings, Figure 1 represents a vertical section of our improved tool-post, taken on line *x x*, Fig, 3; Fig. 2, a side elevation of same; Fig. 3, a plan showing its location on the carriage of lathe; Figs. 4, 5, and 6, views of post with special boring-tool in position; Figs. 7, 8, and 9, views of devices for binding the post and casing together. Fig. 10 shows a modification of the means for adjusting the height of the tool, the sectional part being taken on *y y*, Fig. 6.

Similar letters of reference in the different views indicate the same parts.

The tool-holder or post proper, A, is a single casting, provided with a turned cylindrical stem, *a*, (which may be cored out, as shown, to lessen its weight,) projecting downward from a base-plate, *b*, and fitted to enter and revolve freely in the casing C, bored out to receive it. Said casing is gibbed to the cross-slide of the lathe-carriage D, and moved in the ordinary manner with screw and nut. From the top of base-plate *b* rises a column, C, the top of which overhangs on one side, as shown, forming a recess adapted to receive the tool T for ordinary turning, which is placed in position from the side in contact with the face of the column and clamped on the base-plate with the set-screw E. A lifting-screw, F, with a milled head, screws through a lug on the side of column *c*, the end of which screw rests on the top face of casing C. The function of this screw is to adjust the height of the tool and holder, while it does not affect the swinging of the post horizontally. The flat end of the screw simply slides around on top of the casing. From the side of the casing toward the operator projects a lug, G. (Shown clearly in Figs. 7 and 8.) After the casing C has been bored out to receive the post it is cut through the center of this lug, as shown at *n*, down to a point, *s*, Figs. 2, 9, and 10, and a binding-screw, H, fitted to compress the casing. The object of this screw is to bind the casing and post A firmly together after the tool has been adjusted to its work.

The post is adapted for holding boring-tools as follows: The tools are preferably made from "octagon" bar-steel, one form of which is shown in working position in Figs. 4, 5, and 6. Through the column of the post, from side to side, is a mortise, the lower side being on a level with the top of base-plate *b*. In this mortise is fitted to slide a loose piece, I, Fig. 4, in the top of which is planed a V-shaped groove to fit the angular sides of the tool, as shown to the right in Fig. 4. The mortise being central through the column, and at right angles with the position of the turning-tool, the boring-tool may be clamped down with the same set-screw, E. An additional set-screw, E′, may be placed at the other end of the mortise to give greater firmness to the boring-tool, if desired. Any size steel that will go through the mortise may be used for a boring-tool, as the V groove will fit any size steel within proper limits. A modification of this principle is shown in Fig. 5, which is a post specially adapted for boring. The bottom of the mortise is channeled in the V form, the tools being held therein by set-screws from above, the turning-post being removed by simply lifting it out of the casing, and the boring-post inserted.

Fig. 10 shows a modification for raising or lowering the post, and consists in placing the lugs on the casing C far enough apart to place between them a lever, J, which may fulcrum on the binding-screw, the short end projecting

inward into an annular groove cut in the stem of the post. The other end, projecting outward, may be used as a handle to adjust the post in height, while the revolving function of the post is unimpaired. When properly adjusted the binding-screw clamps the device rigidly, the lever J being thin enough to allow the lugs to close up sufficiently for the purpose.

Figs. 8 and 9 represent a different form of binding device. The casing C is cut as before, and the two lugs thereon connected by means of a link, L, pivoted to the lugs at one end and having a slot in the other, through which a conical bolt, S, is made to pass. Said bolt has a square head on top for a wrench, and the screwing down of the bolt causes the large part of the cone to act on the end of the slot in link L, thus drawing the two sides of the casing together, as desired.

While we are aware that tool-posts have been made that will allow the tool to be raised or lowered after being clamped, we believe that the additional feature of allowing it to be rotated horizontally after such clamping to be new and useful.

The advantages of our improvements may be briefly summed up as follows: The open jaw for receiving the turning-tool will take in and clamp almost any shape of tool. The post may be quickly adjusted to the work both vertically and horizontally, and instantly clamped rigidly to the slide-rest. The adjustments being independent of each other, either may be operated without affecting the other. The advantages of this tool-post over the ordinary forms for boring holes are as follows: The ordinary forms of tool-posts are adapted only to hold tools made from rectangular bars of steel, which form is undoubtedly the best for outside turning; but to make a boring-tool for such a form of post, and have it as strong and stiff as is possible for a certain size of hole, one end of a rectangular bar must be forged down to a "round," or nearly so, to enter the hole, and the other end left to be clamped in the post, thus necessitating a good deal of labor to produce the required tool. With our improved tool-post boring-tools may be made from any size octagon or round steel. Very little forging is required to make them. The V-shaped channel keeps them in line with the pole while cutting. The same tool may be used for any depth of bore by simply letting it project beyond the end of the channel the required distance.

Having thus described our invention, we claim—

1. For use in a lathe, a tool-post cast or forged in one piece, its lower portion or stem cylindrical in cross-section, and its upper end provided with a recess or mortise, jointly with a turning-tool or cutter, and one or more set-screws or other equivalent devices for clamping said tool down upon the bottom of said recess or mortise, to thus confine the force exerted by the set-screw wholly to the mass of the single integral tool-post.

2. The combination, with a tool-post having a cylindrical lower portion or stem, its upper end provided with a recess or mortise, and a tool clamped down upon the bottom thereof, of a socket for said post to rest in, a device for clamping said socket tightly to and around the cylindrical portion of the post, and a screw for adjusting the post to different points of elevation, substantially as and for the purpose set forth.

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