

(No Model.)

W. S. SHERMAN.
TOOL HOLDER.

No. 577,075.

Patented Feb. 16, 1897.

Fig. 1.

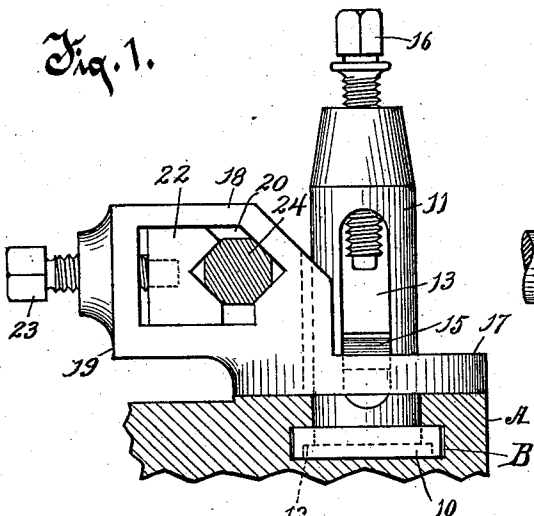


Fig. 2.

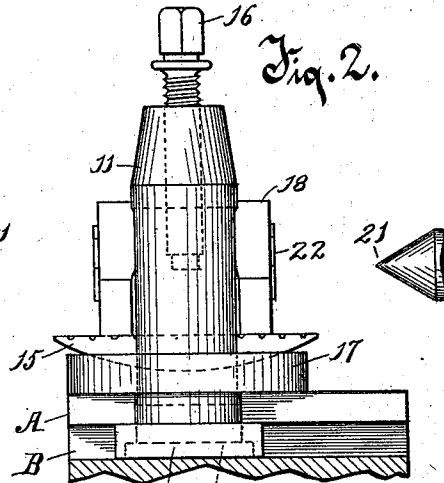


Fig. 3.

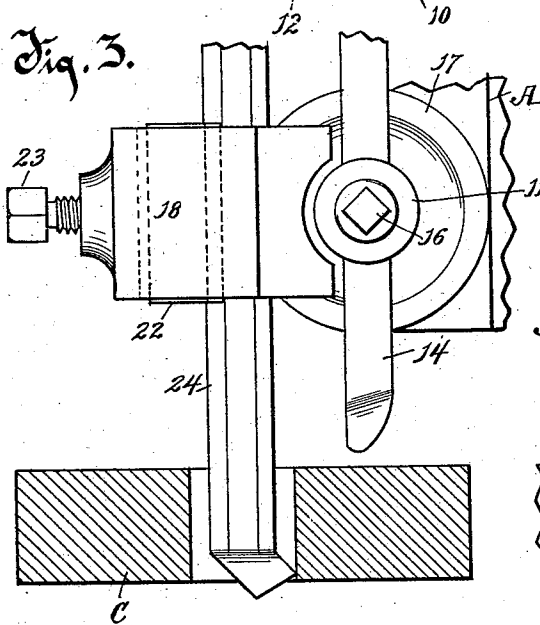


Fig. 4.

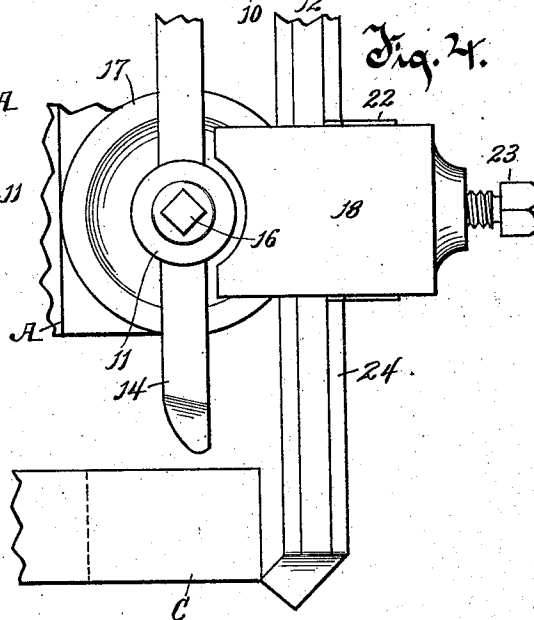
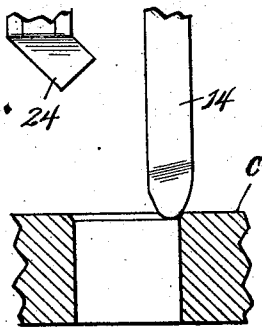


Fig. 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIS S. SHERMAN, OF MILWAUKEE, WISCONSIN.

TOOL-HOLDER.

SPECIFICATION forming part of Letters Patent No. 577,075, dated February 16, 1897.

Application filed April 6, 1896. Serial No. 586,336. (No model.)

To all whom it may concern:

Be it known that I, WILLIS S. SHERMAN, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and useful Improvement in Tool-Holders, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention is of improvements in a tool-holder adapted for use with a lathe.

The object of the invention is to provide means (usually in connection with a tool-post holding a tool of the common form) adapted to receive at different times tools of varying sizes in cross-section, but of a homogeneous form, and center each tool in a common plane, though of different sizes, and preferably to hold the tool in a plane with the stock or chuck centers of the lathes and in a plane parallel with the ways or line of travel of the slide or tool-post support and in a more or less extended position from the supporting device, so as especially to adapt it for boring, turning, drilling, cutting threads, &c., both inside and outside work. This construction obviates the necessity for keeping on hand a large number of tools of the same diameter for work near to or more distant from the tool-holder, as this device takes equally well tools of different diameters.

The invention also includes means for holding a plurality of tools, thus providing for both boring and facing material or doing analogous work without having to remove and replace or change tools.

The invention consists of the devices and their parts and combinations of parts hereinafter described and claimed or their equivalents.

In the drawings, Figure 1 is an elevation of my improved tool-holder shown in connection with a fragment of the slide of the tool-carriage on which slide my tool-holder is mounted. Fig. 2 is an elevation of my improved tool-holder as seen at a right angle to the elevation shown in Fig. 1, centers of the chucks or stocks of the lathe being shown in connection therewith to show the relation of the tools thereto. Fig. 3 is a plan view of my improved tool-holder in connection with a metal block or article in section, a central aperture in which block is being enlarged by

one of the tools in the holder, thereby showing a method of the operation of the tool in connection with my holder. Fig. 4 is another top plan view of my improved holder in connection with a block of material, showing the operation of my improved device in another position and as used for planing a surface. Fig. 5 shows fragmentary parts of the tools as they may be held in my improved holder, in connection with a block of material, illustrating the manner of reaming or countersinking an aperture in the material.

In the drawings, A is the slide of a tool-carriage of a lathe. This slide is provided with transverse ways B therein. A block 10 is fitted and travels in the ways B. A tool-post 11 is provided with an enlarged faced or rectangular foot 12, that fits in a suitable recess therefor in the under side of the block 10, through which block the tool-post extends upwardly, the tool-post being thus secured in the block. The tool-post and block, which block is itself essentially the foot of the tool-post, are adjustable on the slide in the ways therefor in which the post and block are fitted.

The tool-post 11 is provided with the diametrically-extending elongated slot 13, adapted to receive the tool 14 therein. A bolster 15, preferably of segmental form, is preferably provided, which is inserted in the slot 13 for supporting the tool 14 thereon. The curved surface of the bolster rests movably upon the correspondingly-curved surface of the member 17, hereinafter described. By means of the curved bolster 15 and the length of the slot 13 the tool 14 may be tilted slightly upwardly or downwardly, as desired. A holding-screw 16, turning into the outer end of the post 11, is adapted to turn against the tool 14 and thus clamp the parts together and to the slide A.

In connection with the tool-post 11 I provide an auxiliary tool-holder in the form of a tool-post arm 18. This tool-post arm comprises a member 17, which rests on the slide A, so as to swivel about the tool-post 11, and a member 19, projecting laterally therefrom and provided with a laterally-elongated slot 20, the inner end of which is V-shaped, the angle of which is preferably disposed in the plane of the chuck or stock centers 21 and is

parallel with the ways or line of motion of the post-supports. A movable jaw 22 is inserted and travels on ways in the slot 20 toward and from its front V-shaped end or stationary jaw, the jaw 22 being provided with a complementary V-shaped inner end opposite the stationary V-shaped jaw of the inner end of the slot 20. A set-screw 23, turning into the member 19, bears against the movable jaw 22, the construction being adapted to clamp a tool 24 in the tool-post arm 18. The disposition of the parts is such that a tool having a round, square, or octagonal body or shank homogeneous throughout its length will be automatically centered, preferably in the plane of the chuck-centers 21 and travel of the post-support when inserted in the tool-post arm 18 by the action of the jaws bearing against it when being clamped in the tool-arm. The form of the jaws may be changed to adapt them to tools having bodies or shanks of other forms in cross-section, as triangular, hexagonal, or the like.

The drawings Figs. 3, 4, and 5 illustrate different methods of using the tool-holder, Fig. 3 showing the tool 24 in the act of enlarging an aperture in an article C, Fig. 4 showing the tool-holder with the arm 18 on the other side of the tool-post 11 from that shown in Fig. 3 and the tool 24 as in the act of facing the surface of the block C, while in Fig. 5 the tool 14 is shown as reaming out or countersinking the aperture in the block C, the tool 24 having been withdrawn rearwardly in the tool-holder therefor.

The bolster 15 is not a necessary part of the construction, as the bolster may be removed and the tool 14 be permitted to rest and bear directly on the member 17. In fact, for the mere purpose of securing the arm 18 to the slide A, the tool 14 may also be removed and a key or mere block of iron may be inserted in the tool-post in its place to take the thrust of the holding-screw 16 and hold the member 17 to the slide.

What I claim as my invention is—

1. A tool-holder for a lathe, comprising a tool-post and a tool-post arm arranged to swivel about the tool-post, and means for clamping the tool-post and tool-post arm to their support.

2. The combination of a tool-post movable in its support, the support, a tool-post arm resting on the support and swiveling about the tool-post, a bolster and a tool in the tool-post, and means for clamping the tool-post and the arm to the support.

3. The combination with a support and a tool-post thereon, of a tool-post arm swiveling about the post, means for clamping the tool-post and the arm to the support and means in the arm for holding a tool therein.

4. The combination with a support, of a tool-post, a tool-post arm swiveling about the post, V-shaped jaws in the tool-post arm disposed to center the tool in a predetermined plane and at a right angle to a radius from the axis of the tool-post arm, and means for clamping the jaws.

5. The combination of a tool-post movable in its support, the support, a tool-post arm resting on its support and swiveling about the tool-post, a tool or its equivalent on the tool-post and means for clamping the tool-post, the tool, and the tool-post arm to the support.

6. A tool-holding device comprising a tool-post, a tool-post arm, swiveling about the tool-post and having a jaw or jaws and means for clamping the tool thereto, so that tools of different sizes and forms may at will be inserted and clamped therein in such manner that the axis of the tool will be in a predetermined horizontal plane parallel with the ways of the tool-support and at a right angle to a radius from the axis of the tool-post arm.

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

WILLIS S. SHERMAN.

Witnesses:

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