No. 733,391. PATENTED JULY 14, 1903.

B. M. W. HANSON.

ADJUSTABLE TOOL POST.

APPLICATION FILED SEPT. 25, 1902.

NO MODEL.

Fig. 1

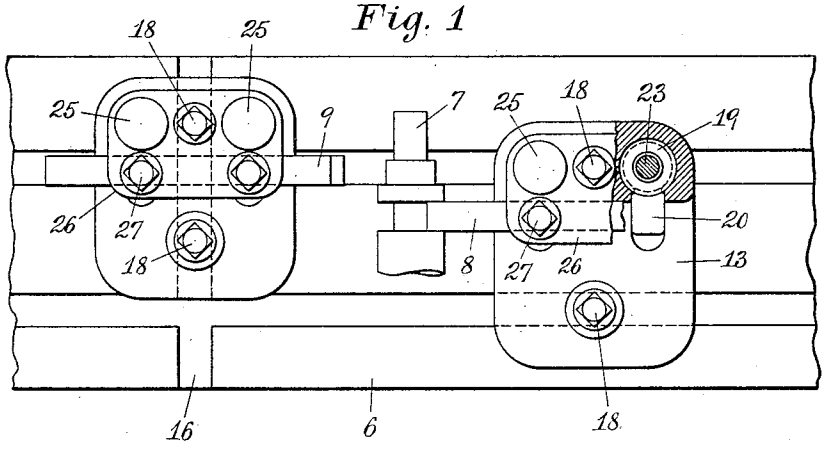


Fig. 2

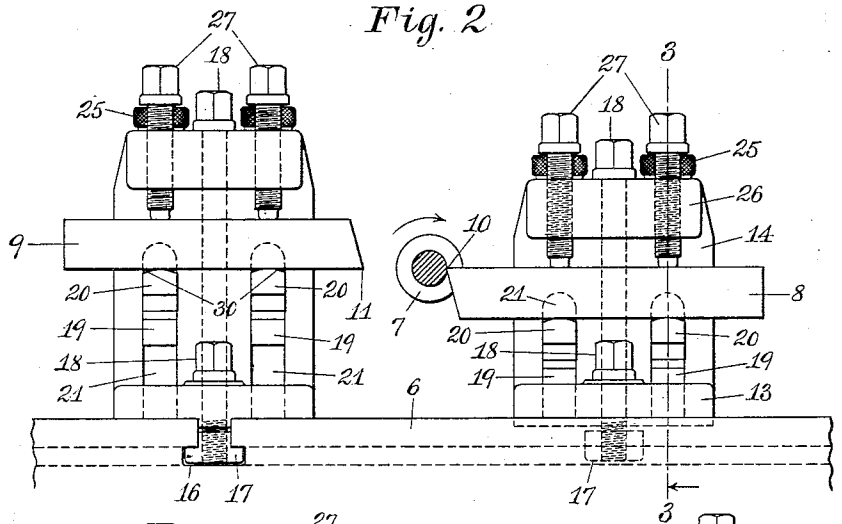


Fig. 4

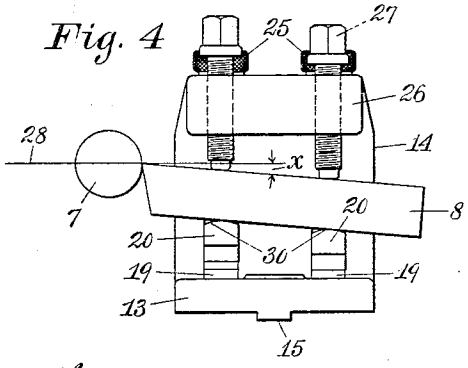
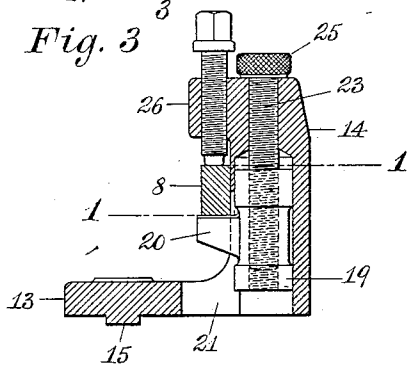


Fig. 3



Witnesses:
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 733,391. Patented July 14, 1903.

UNITED STATES PATENT OFFICE.

BENGT M. W. HANSON, OF HARTFORD, CONNECTICUT, ASSIGNOR TO PRATT & WHITNEY COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF NEW JERSEY.

ADJUSTABLE TOOL-POST.

SPECIFICATION forming part of Letters Patent No. 733,391, dated July 14, 1903.

Application filed September 25, 1902. Serial No. 124,777. (No model.)

To all whom it may concern:

Be it known that I, BENGT M. W. HANSON, a citizen of Sweden, and a resident of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Adjustable Tool-Posts, of which the following is a full, clear, and exact specification.

This invention relates to improvements in tool-posts of the class employed upon lathes, screw-machines, and other machines of that type, the object being to provide a tool-post which is readily adjustable to obtain the desired height and inclination of the tool with relation to the work and which when adjusted will firmly clamp the tool in its adjusted position.

The drawings accompanying this specification illustrate two of these tool-posts for supporting two different tools as they are commonly employed upon the cross-slides of screw-machines.

Figure 1 is a plan view, partly in section, taken on the line 1 1 of Fig. 3, and Fig. 2 is a side view of two of these posts representing them as arranged to support two tools in proper relation to the opposite sides of a piece of work. Fig. 3 is a front view of one of the tool-posts of Figs. 1 and 2 in section taken on the line line 3 3 of Fig. 2. Fig. 4 is a side view of one of the tool-posts, showing it adjusted for holding the tool at an inclination with its direction of feeding movement.

Tool-posts of this class are commonly mounted upon a cross-slide 6, a fragment of which is shown in the figures. The work 7, which is held in a rotating chuck, usually turns in the direction indicated by the arrow, the tools 8 and 9 being supported upon opposite sides of the work, the front tool 8 facing upwardly, while the rear tool 9 faces downwardly. The cutting edges 10 and 11 of these tools are usually adjusted to the same horizontal plane as the axis of the work. Hence the body of the rear tool 9 must be higher than that of the front tool 8, as shown in Fig. 2, although the latter tool may also be reversed and lowered to the level of the tool 8 when the work is to be rotated in a direction opposite to that indicated by the arrow. As these tool-posts are alike in construction, although shown to be differently adjusted, a description of one will suffice for all.

The post consists of an angular body having the base 13, which rests upon the surface of the cross-slide 6 and is provided with a tongue 15, fitting in the T-shaped slots 16, which extend lengthwise and crosswise of the slide, and these slots receive the nuts 17, into which bolts 18 are screwed after passing them through holes in the base 13. By this arrangement the tool-bases may be adjusted upon the slides to their required positions. The vertical portions 14 of the post are bored out from below in two places to form seats to receive the vertically-sliding tool-supports 19. The upper and lower ends of these supports are cylindrical, fitting their respective bored seats, and from the intermediate portion the arm 20 projects through the slots 21, which prevent the supports from turning in their seats. The supports are axially bored and threaded to receive the adjusting-screws 23, which are passed down through holes from the top of the tool-post and are suspended by their heads 25, thereby also suspending the tool-supports 19 adjustably, so that by turning the screws 23 the support may be adjusted vertically.

For convenience of manufacture the intermediate portions of each tool-support 19, from which the arm 20 projects, are smaller in diameter than the cylindrical ends of the support, so that those intermediate portions need not be turned or machined in any way, thus making it a simple matter to turn only the cylindrical ends for fitting the supports to their respective seats.

Each tool-post is provided with two of the supports 19 and their adjusting-screws, and each may be adjusted independently of the other to locate the tool at the proper height and inclination. As a means for clamping the tools readily in their adjustable positions, the tool-post is provided with the boss 26, projecting over the tool, as shown in Fig. 3, and provided with the set-screws 27, which are located directly over the arms 20 of the tool-supports. By loosening these screws the supports may be raised and lowered and the

tool slid forward or back and readily tightened in its adjusted position.

For the proper cutting of different metals it is desirable to adjust the inclination of the tool so as to obtain the proper "top rake" or clearance of the tool, as illustrated in Fig. 4, in which the tool 8 is inclined at the angle x, with the line 28 representing the direction of feed of the tool from the outside of the axis of the work. The adjustment of the tool-supports and set-screws to obtain this inclination will be already understood from the figure. In order to accommodate the varying inclinations of the tool, the supports 20 are preferably rounded, as shown at 30 in Fig. 4.

Each of the set-screws 27 when clamped upon the tool 8 operates also through that tool to clamp the tool-support 19 tightly in its adjusted position. Therefore each of those screws performs the double function of clamping the tool in its support and of clamping that support in the upright, so that neither the tool nor its support can be moved by strains thrown upon the tool-slide during its work.

I claim as my invention—

1. In combination with a tool-post provided with a seat, an adjustable tool-support guided in said seat, and having an arm projecting from the seat for supporting a tool, and clamping means independent of said support arranged to bear upon the tool and clamp it to the support.

2. In a tool-post the combination of a base, an upright integral therewith, a plurality of independent supports for a tool mounted for vertical adjustment in the upright, independent adjusting-screws for each support, and a coöperating set-screw above and independently of each support for clamping that support and its tool at one operation.

3. In combination with a tool-post provided with a cylindrical seat, a tool-support having a substantially cylindrical body fitting the seat, and having a projecting arm for supporting the tool, and a coöperating set-screw mounted above the projecting arm at one side of and independently of the support for clamping the tool and its support at a single operation.

4. The combination of a tool-post having two vertical cylindrical seats, each having a slot through the side walls of the seats, a tool-support for each seat, each having a cylindrical body fitting the seat, and a tool-supporting arm projecting through the slot, each tool-support being provided with an independent adjusting-screw extending axially through the body, and means mounted above and independently of each tool-support for clamping the tool and its support at a single operation.

Signed at Hartford, Connecticut, this 16th day of September, 1902.

BENGT M. W. HANSON.

Witnesses:
H. E. BAILEY,
WM. H. HONISS.