

UNITED STATES PATENT OFFICE

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TOOL-HOLDER FOR ENGINE-LATHES.

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To all whom it may concern:

Be it known that I, KARL J. PIHL, a subject of the King of Sweden, residing at Brooklyn, in the county of Kings and State of New York, have invented a new and useful Tool-Holder for Engine-Lathes, of which the following is a full, clear, and exact description.

The object of this invention is to provide a simple and efficient device which will afford means to retain cutting-tools in proper position to engage work on a lathe and enable the quick adjustment of a tool or its release to substitute another tool therefor.

To this end my invention consists in the construction of parts and their combination, as is hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional side elevation taken on the line 1 1 in Fig. 2. Fig. 2 is a plan view of the tool-rest. Fig. 3 is an exterior side view of an upper portion of the rest broken away below, showing the handle-bar adjusted to secure a tool for use. Fig. 4 is a broken plan view of the device, taken on the line 4 4 in Fig. 1, showing the construction of the base-plate of the tool-rest. Fig. 5 is an inverted plan view of the handle-bar detached; and Fig. 6 is a plan view of the locking-washer, which is one feature of the improvement.

The device which is the subject of this invention is designed to take the place of an ordinary tool-post on an engine-lathe slide-rest, of which A is the upper portion. (Shown broken in Fig. 1.)

B is the base-plate of the improved tool-rest, and is preferably made square in contour, although other forms may be given to its edge. Near the center of the base plate B a transverse rib *a* is formed, which is of proper width to allow it to enter and fit the groove *a'* in the top plate A of the lathe slide-rest.

A standing bolt C is provided for the device, which retains all parts together, said bolt passing upwardly through a perforation in the rib *a* of the base-plate B near its center, which bolt has its head *b* engaged with a slot in the slide-rest top piece A, as shown in Fig. 1, and serves to bind the base-plate se-

curely upon the top piece named by adjustment of the nut *c* on its body above the base-plate and upon it.

The tool-holding block D is preferably made to correspond in outline and lateral dimensions with the base-plate B, and is centrally perforated to pass over the bolt C, having a recess *d*, of proper size, formed on its lower surface around the bolt-hole to admit the nut *c* freely and allow a suitable space above said nut within for the accommodation of a stout spiral spring *e*, that encircles the bolt-body and engages the adjacent surfaces of the tool-block and nut with its ends.

On the upper surface of the base-plate B a recess *g* is formed, which is square in outline and has its outer margin near to the sides of the base-plate, the edges of said recess having an inclination of proper degree toward the bottom surface on all of the four sides, forming the rectangular-shaped channel, so as to adapt it to receive easily a correspondingly-shaped rib *h*, produced on the lower surface of the tool-holding block D.

There is a channel *i* formed in each side wall of the tool-holding block D, of a sufficient depth, laterally considered, to receive a lathe-tool G in either channel, wherein said tool is held by set-screws *m*, there being several of such screws provided for each tool-channel to insure the proper retention in place of lathe-tools of any desired form, which screws are inserted from the upper side of the tool-holder in tapped perforations made for their reception, the number of the screws employed depending on the size of the tools to be held and the character of the work being executed by its use. The upper portion of the body of the standing bolt C is given a hexagonal form where it projects from the tool-holding block D and a short distance within it, and upon this part *n* of the standing bolt a washer I, of circular form exteriorly, is slid, said washer having its aperture made to correspond with the shape of the bolt-body, which it loosely engages, so that it is locked from rotation on the bolt-body.

Above the portion *n* of the standing bolt C a coarse thread *o* is cut on said bolt, extending a short distance below the upper surface of the washer I, which threaded part is designed to receive the perforated and interiorly thread-

ed end of the handle-bar J. As shown in Figs. 5 and 6, the engaging faces of the washer I and handle-bar J are cut away at opposite points *p* on the washer and *r* on the handle-bar, leaving equal projections *s* and *t* upon these pieces. The notches *p r* are so relatively formed with regard to the pitch of the thread *o* and thickness of the washer I that when the handle-bar J is rotated and drawn so as to bring the faces of its projections *t* in close contact with the tops of the similar projections *s* on the washer the tool-holding block D will be forced down firmly upon the base-plate B and the entire tool-rest rendered rigid to support a tool G, projected for engagement with rotating work in the lathe. (Not shown.)

When the tool-holding block D is to be released, to turn it around and bring another tool or a drill M (shown by dotted lines in Fig. 2) into proper position for service the handle-bar J is partly revolved to loosen it and bring the high parts *t* thereon over the notches *p* in the washer I, which will release the tool-holding block D, that will be forced upwardly by the spring *e*, so that said block may be partly or entirely revolved on the standing bolt C, and thus bring a different tool into position, which the reversed movement of the handle-bar will clamp into a fixed position, as has been previously explained. If at any time the handle-bar J should fail to bind the parts as stated by reason of wear on the engaged faces of the handle-bar and washer I, the latter-named should be removed as well as the handle-bar and the washer changed in position, so as to bring its projections in a different place with regard to the pitch of the screw-thread *o*, when the lever or handle-bar will, if drawn up, be adapted to clamp the parts together tightly.

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

1. A tool-holder for lathes, comprising a rotatable carrier having tool-holding grooves, a bolt extending up through the carrier, headed at its lower end and screw-threaded at its upper end and having a polygonal portion *n* adjacent to its screw-threaded end, a washer resting on top of the carrier, recessed on its upper edge and having a polygonal

opening through which the portion *n* of the bolt passes, and the handle-bar having a head provided with a threaded aperture working on the threaded end of the bolt and two recesses on its under face to register with those of the washer, substantially as set forth.

2. In a tool-holder, the combination, with the lathe-slide, of a base-plate thereon, a bolt extending up through the slide and base, with its head engaging the under face of the slide, and a nut-screwed on the bolt between its ends and engaging the upper face of the base to clamp it on the slide, with a rotatable carrier mounted on the bolt above the base and having tool-holding grooves and means for clamping the carrier to its base, substantially as set forth.

3. A tool-holder for lathes, having a rectangular base-plate grooved on top and having a rib on its lower face engaging a groove in the slide-rest of the lathe, a rectangular laterally-channeled tool-holding block having projections to correspond with the grooved top of the base-plate, a standing bolt passing up through the center of the base-plate and tool-holding block and adapted to secure the base-plate on the slide-rest of the lathe, a spring on the bolt seated in a recess on the lowerside of the tool-holding block, set-screws in the edge portion of the tool-holding block to bind tools therein, a grooved washer on the standing bolt and seated on the tool-holding block, and a handle-bar having a perforated and threaded head notched to correspond with the grooved top face of the washer and adapted to lock or release the head-block to or from the base-plate, substantially as described.

4. The combination, with the base having a rectangular groove on its upper side, of the rotatable carrier having a similar projection on its lower face entering said groove, a bolt projecting up through the base and carrier and having a screw-threaded portion between its ends provided with a nut engaging the upper face of the base, and a recessed locking-handle and washer on the upper end of the bolt, substantially as set forth.

KARL J. PIHL.

Witnesses:

JACOB RINGHEIM,
OSCAR HULT.