No. 637,084. Patented Nov. 14, 1899.

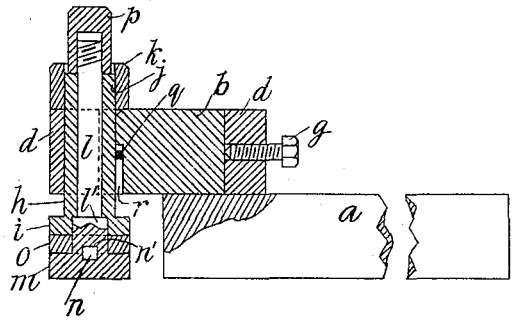
H. J. S. CASSAL.

LATHE TOOL HOLDER.

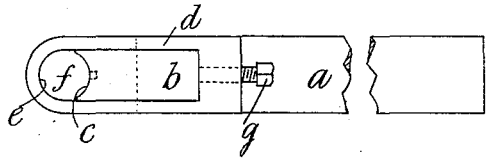
(Application filed July 14, 1899.)

(No Model.)

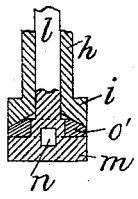
— Fig. 1. —



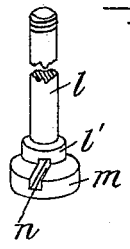
— Fig. 2. —



— Fig. 4. —



— Fig. 3. —



Witnesses:-
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UNITED STATES PATENT OFFICE.

HANS JOHN STEPHEN CASSAL, OF LONDON, ENGLAND.

LATHE TOOL-HOLDER.

SPECIFICATION forming part of Letters Patent No. 637,084, dated November 14, 1899.

Application filed July 14, 1899. Serial No. 723,860. (No model.)

To all whom it may concern:

Be it known that I, HANS JOHN STEPHEN CASSAL, a subject of the Queen of Great Britain and Ireland, residing at 20 St. Georges Square, Primrose Hill, London, England, have invented new and useful Improvements in Lathe Tool-Holders, (for which I have applied for an English patent, No. 8,640, bearing date April 25, 1899,) of which the following is a specification.

This invention relates to improvements in lathe tool-holders, and has for its principal object to enable one holder or body to be used with any number of differently-shaped tools or cutters in such a manner that operations at present carried out in the lathes by means of solid forged tools may be carried out with one solid body or cutter-bar and one of a number of small tools or cutters similarly shaped as to their bodies, but variously shaped as to the cutting edges, fixed into, but easily removable from, the said solid body.

It has for an additional object to enable a workman to quickly set any such tool or cutter for the time being in the cutter-bar or holder at any desired angle to the work to be operated on without altering the position of the holder on the slide-rest of the lathe and without altering or in any way interfering with the height of the cutting edges of the tool.

It has also for an object to enable the workman to quickly adjust the edge of the tool to a height suitable for the work without altering the angle of such tool to the work and without altering the position of the main body on the slide-rest or disturbing such position in any way whatsoever.

I attain these objects in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section of the complete implement, and Fig. 2 a plan of the holding part only, Fig. 3 being a perspective view of the tool-post hereinafter mentioned and Fig. 4 being a longitudinal section of a modified portion of the invention.

Similar letters refer to similar parts.

The invention comprises two main portions, a vertically and horizontally adjustable tool-post and a holder therefor. The holder consists of a bar *a* or equivalent part of convenient shape for fixing in the tool-box of the slide-rest in the usual manner. Integral with or attached to one end of the said bar is a block or projection *b*, overhanging somewhat the end of *a* and having a vertical groove *c* in its outer face. The block *b* is embraced by a sling *d*, the inner formation of the outer end of which is curved, as at *e*, so as to constitute, with the groove *c*, the hole *f*. The rear end of *d* is thickened and has passed through it a set-screw *g*, by the rotation of which a certain amount of lateral movement can be given by pressure of the point of *g* on the back of *b*, and the hole *f* thereby increased or diminished in area. The tool-post portion consists of a tubular bolt *h*, having a head *i* and a screw-threaded upper end *j*, provided with a nut *k*. Fitting into the tubular part of the bolt *h* is a post *l*, having a head *m*. The part of *l* immediately above the head *m* is increased in diameter, as at *l'*, and in this enlarged part is the aperture *n* to carry the tool in use, the upper surface of the head *m*, where it projects around *l'*, being grooved to form a continuation of the lower half of the aperture *n*. Threaded on *l'* and situated between the under surface of the head *i* and the upper surface of the head *m* is a comparatively thick washer *o*, having in its lower face a groove *n'* to receive the upper side of the tang of the tool passed through the aperture *n*. The upper end of the post *l* is prolonged above the upper end of the bolt *h* and is screw-threaded and provided with a nut *p*, rotatable by any suitable means, but preferably by a permanently-attached sliding tommy. By slackening the nut *p* the post *l* can be rotated so as to adjust the tool to the required horizontal position, and by tightening the said nut *p* the tool is retained in position. To raise or lower the tool, the set-screw *g* is slackened, which allows the bolt *h* to be raised or lowered, and when the required position is attained the set-screw *g* is again tightened up, thus pinching the bolt *h* between the end of the sling *d* and the groove *c*. The bolt *h* is prevented from rotating under the action of the nut *k* by a pin or feather *q*, free to run in a groove or feather-way *r* provided in the groove *c*. I sometimes omit the grooved washer *o* and replace it by a comparatively thin and ungrooved washer of ordinary character. It is

proposed to have the head *i* of softer material than that of the washer *o*, the upper surface of *o* being roughened to increase the grip of the opposing surfaces *k* and *o* on one another.

As a modification of the above, the washer may be of truncated-cone shape, as shown at *o'*, Fig. 3, the under side of the head *i* being correspondingly hollowed out to fit over *o'*.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A vertically and horizontally adjustable lathe tool-holder comprising a bar to fit into the usual slide-rest box; a block overhanging the outer end of the bar and having a vertical groove at its outer end provided with a feather-way; a sling surrounding but of greater length than the said block; a set-screw passed through the rear end of the said sling; a tubular and headed bolt free to move vertically within the outer end of the said sling; a feather on the said bolt and entering the said way at the outer end of the said block; a nut on the screw-threaded upper end of the said bolt; a headed post passing axially through the said bolt; a nut on the upper end of the said post; the post being provided with a transverse tool-hole and a groove in the upper face of its head; a comparatively thick washer roughened on its upper face threaded on the post above its head and having a groove to partly hold the tool in the said tool-hole, the whole substantially as described and shown.

2. A vertically and horizontally adjustable lathe tool-holder comprising a bar to fit into the usual slide-rest box; a block overhanging the outer end of the bar and having a vertical groove at its outer end provided with a feather-way; a sling surrounding but of greater length than the said block; a set-screw passed through the rear end of the said sling; a tubular and headed bolt free to move vertically within the said outer end of the said sling; a feather on the said bolt and entering the said way at the outer end of the said block; a nut on the screw-threaded upper end of the said bolt; a headed post passing axially through the said bolt; a nut on the upper end of the said post; the post being provided with a transverse tool-hole and a groove in the upper face of its head; a comparatively thin ungrooved washer threaded on the post above its head, the whole substantially as described.

3. A vertically and horizontally adjustable lathe tool-holder comprising a bar to fit into the usual slide-rest box; a block overhanging the outer end of the bar and having a vertical groove at its outer end provided with a feather-way; a sling surrounding but of greater length than the said block; a set-screw passed through the rear end of the said sling; a tubular bolt having a head conically hollowed on its under face and free to move vertically within the outer end of the said sling; a feather entering the way provided at the outer end of the said block; a headed post passing axially through the said bolt; a nut on the upper end of the said post; the post being provided with a transverse tool-hole; a comparatively thick washer having a truncated-cone-shaped upper surface to enter the hollow head of the said bolt, a grooved under face and a roughened upper face, the said washer being threaded on above the head of the post, and having a groove to partly hold the tool in the said tool-hole, the whole substantially as described and shown.

HANS JOHN STEPHEN CASSAL.

Witnesses:
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