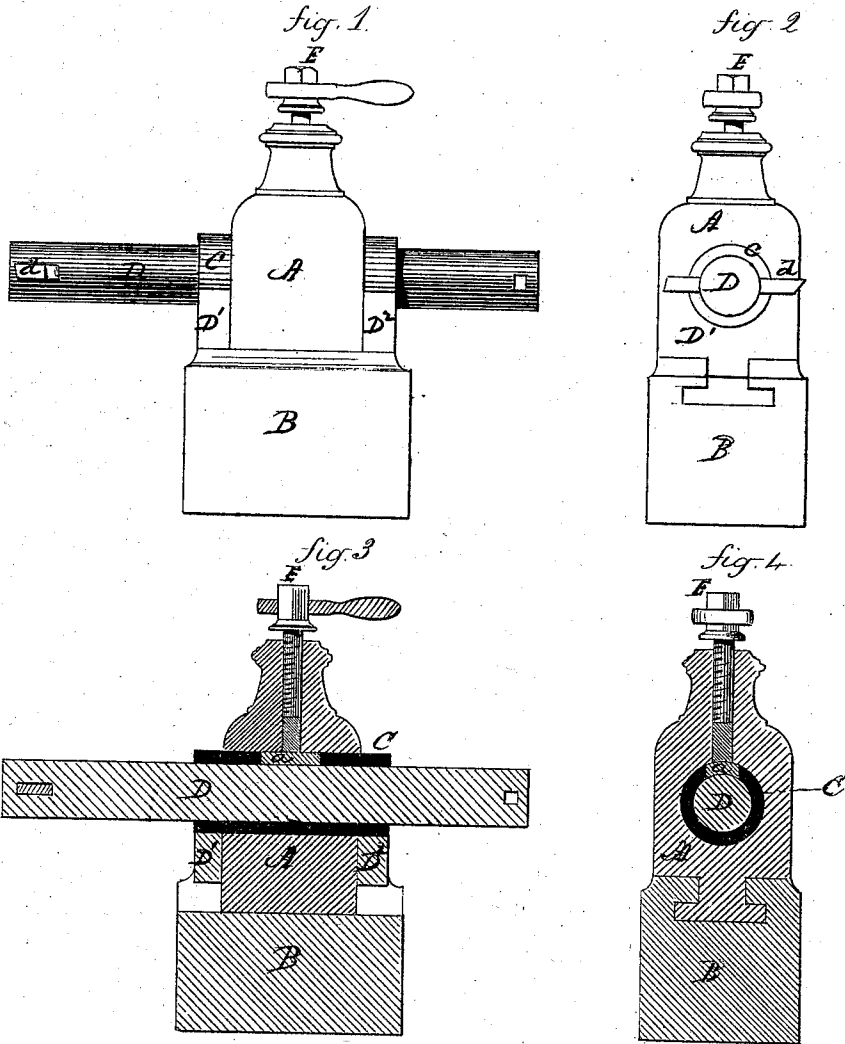


W. COULTER.

Tool-Holders for Lathes.

No. 133,833.

Patented Dec. 10, 1872.



Witnesses.

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# UNITED STATES PATENT OFFICE.

WILLIAM COULTER, OF BIRMINGHAM, CONNECTICUT.

## IMPROVEMENT IN TOOL-HOLDERS FOR LATHES.

Specification forming part of Letters Patent No. 133,833, dated December 10, 1872.

*To all whom it may concern:*

Be it known that I, WILLIAM COULTER, of Birmingham, in the county of New Haven and State of Connecticut, have invented a new Improvement in Tool-Holder for Lathes; and I do hereby declare the following, when taken in connection with the accompanying drawing and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification, and represents, in—

Figure 1, a front view; Fig. 2, an end view; Fig. 3, a longitudinal central section; and in Fig. 4, a vertical central section.

This invention relates to the construction of a device for boring cylinders, or other internal cutting or dressing in metal working, the object being to use a boring-spindle of a diameter nearly the size of the hole to be bored, and to always insure a proper axial position of this spindle; and the invention consists in the combination of a perforated tool-post, with parallels or guides upon opposite sides to support a sleeve, the said sleeve passing through the perforation of the tool-post and fitted to receive a spindle, the axial line of the sleeve being in line with the centers of the lathe so that a set-screw in the tool-post, made to bear upon the spindle through the sleeve, will hold the said sleeve and spindle firmly down upon the said parallels, so as to insure the proper axial position of the said spindle, whereby the usual raising and lowering of the tool-seat or other adjustment of the tool is avoided.

A is the tool-post, arranged in ways or carriage B, in substantially the usual manner, so that the tool-post may be adjusted thereon. Through the tool-post a cylindrical or other opening is formed in axial line with the lathe or engine centers. Through this opening a sleeve, C, is passed, as denoted in solid black Figs. 3 and 4, resting at its outer ends upon parallels or blocks D<sup>1</sup> D<sup>2</sup>. These parallels, setting firmly upon the carriage, support the sleeve, and are constructed of a height to bring the axial line of the said sleeve in line with the center of the lathe. The internal diameter of the sleeve corresponds to a mandrel or spindle, D, which fits closely therein, but yet so as to be easily moved longitudi-

nally when free. A set-screw, E, is arranged through the tool-post, in substantially the usual manner, which bears upon a shoe, *a*, fitted into an opening in the sleeve, as in Figs. 3 and 4, this shoe bearing in the spindle, so that turning the screw down onto this shoe the spindle is firmly held in position upon the said parallels. The spindle is armed with a suitable cutter, *d*, for performing the work required of it.

The largest spindle which may be used will be a little less than the full diameter of the opening through the post. In that case the sleeve is dispensed with, but the spindle is set upon the parallels in the same manner by means of the screw.

The spindle should be proportioned to the hole to be dressed so that the space between the cylinder and the surface of the hole may be only sufficient to allow the free passage out of the chips. For smaller diameters smaller spindles will be used, each provided with its own sleeve, the sleeve always fitting the parallels, so that whatever the diameter of the spindle its central position is always insured.

If the operator desires to make the cut of the tool up or down from any given point, or at any particular point around the surface cut, it is only necessary to turn the spindle from its bearing by loosening and resetting the screw after turning. If required to grind or sharpen the tool it is simply necessary to remove the cutter *d* from the spindle, where it is held by any suitable device, and replaced again; the relative position of the cutter to the work will not be changed, the spindle not being changed.

It will not be necessary here to mention the various uses to which this device is adapted, as machinists skilled in the use of turning and boring tools will readily understand it; but I will refer only to internal screw-cutting, in which, with the ordinary tool-post, it is exceedingly difficult to remove and reset the tool while cutting a thread, which difficulty, by this device, is entirely overcome, as the relative position of the tool-holder is in no way changed in resetting.

I claim as my invention—

A tool-post, A, with the set-screw E held at its lower end in the carriage B, and com-

bined with a sleeve, C, spindle D, and parallels D<sup>1</sup> D<sup>2</sup>, the said spindle and sleeve extending through an opening in the said tool-post, and the said parallels forming the bearing for the under side of the sleeve, so as to support the said sleeve in an axial line with the centers of the lathe, and the set-screw ex-

tending through the sleeve to bear upon the spindle, all substantially as set forth.

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Witnesses:

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