(No Model.)

D. WILLIAMSON.

TOOL POST FOR LATHES.

No. 414,788. Patented Nov. 12, 1889.

Fig. 1

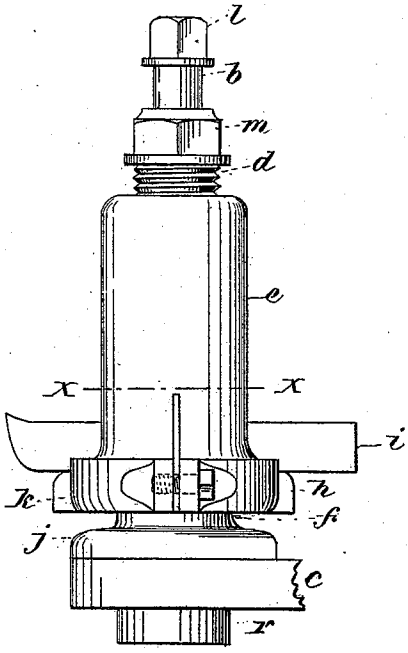


Fig. 4

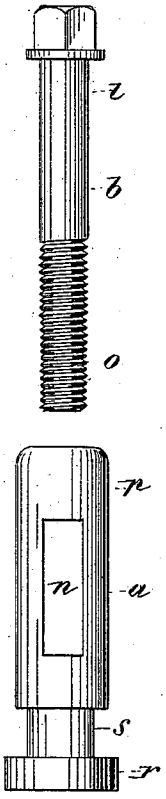


Fig. 2

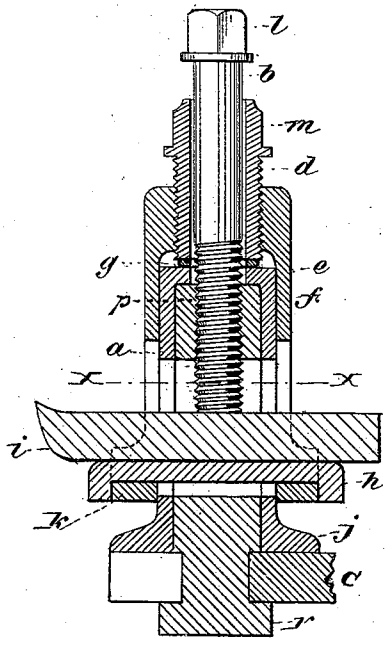


Fig. 3

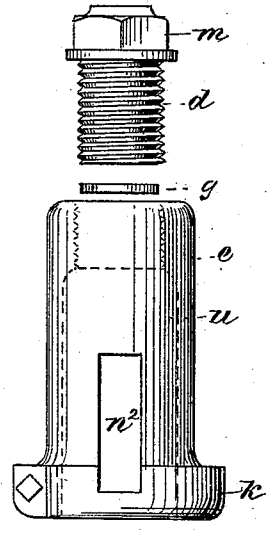


Fig. 6

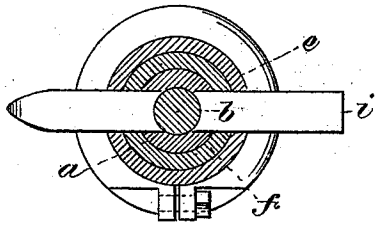
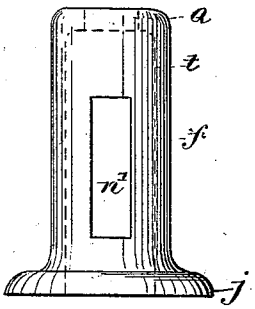


Fig. 5



Witnesses
Jas. E. Warner
F. C. Frost

Inventor
David Williamson
By his Attorney
W. L. Bennett

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

DAVID WILLIAMSON, OF BROOKLYN, NEW YORK.

TOOL-POST FOR LATHES.

SPECIFICATION forming part of Letters Patent No. 414,788, dated November 12, 1889.

Application filed March 2, 1889. Serial No. 301,743. (No model.)

To all whom it may concern.

Be it known that I, DAVID WILLIAMSON, a citizen of the United States of America, residing at Brooklyn, in the county of Kings and State of New York, have invented and made certain Improvements in Tool-Posts for Lathes and Similar Machines; and I do hereby declare that the following is a full, clear, and exact description and specification of the same, reference being had to the drawings forming part thereof.

My invention relates to tool-posts for lathes, and particularly to the method of and devices for tightening the cutting-tool in its supporting post or standard, and also for fastening the standard or post in the lathe rest or carriage; and it consists in certain devices or elements fully set forth in and claimed at the end of this schedule.

In order that persons skilled in the art may understand, construct, and use my invention, I will proceed to describe it by referring to the drawings, in which—

Figure 1 represents a vertical side view of my invention with the parts in position ready for use. Fig. 2 is a vertical central section of the same as it would appear were the front half of Fig. 1 removed. Fig. 3 is a vertical side view of the tool-tightening sleeve and adjusting-screw, showing the slot for the cutting-tool. Fig. 4 is a vertical side view of the main tool-clamping screw and tool-post. Fig. 5 is a vertical side view of the tool-post-clamping sleeve also. Fig. 6 is a horizontal cross-section on line $x\,x$ of Fig. 1. Figs. 3, 4, and 5 are views at right angles to Figs. 1 and 2, and show the tool-slots in front view.

a represents the main tool-post, and b the usual tool-clamping screw. b is threaded at the portion o with male thread, and a is threaded at hole p with female thread, Fig. 4. a is provided with a groove s and a flange r at its lower end to bite and take into the usual T-groove in a lathe-carriage. c represents a portion of the said lathe-carriage, into which the tool-post a takes.

n is the tool-slot through post a.

i is the cutting-tool held or clamped by screw b onto a gib h, placed under the cutting-tool i in slot n.

f is the tool-post-clamping sleeve. It surrounds and an internal flange rests upon the top of tool-post a. A central hole is bored through it for the clamping-screw b to pass through. It is flanged outward at j, and it is free to move upon tool-post a. A tool-slot n' is cut through it to match with tool-slot n in tool-post a.

e is a tool-tightening sleeve, which surrounds the sleeve f. It has a tool-slot n^2, matching or coinciding with tool-slots n and n'. It is flanged outwardly at its bottom k, and at its top it is tapped out, and the threaded tightening-plug d screws through it and bears upon the top surface of sleeve f, between which surfaces a washer g is placed. Plug d is bored throughout its whole length, and tool-clamping screw b passes through it. Clamping-screw b has a nut-shaped head at l, and plug d also is shaped at m to allow the use of a wrench upon it. The shell of tool-tightening sleeve e is split near the bottom and flanged vertically, so that it can be tightened up to make it fit closely at all times to its place around the tool-post-clamping sleeve f. The tool i rests upon gib h, and gib h rests in tool-slot n^2 in tightening-sleeve e. Tightening-sleeve e rests upon the top of tool-post-clamping sleeve f through the mediation of the adjusting or tightening screw d, and sleeve f rests upon the top of tool-post a. Therefore, since the clamping-screw b, when it is screwed downward through the top of tool-post a, bears upon the top surface of cutting-tool i, the clamping-sleeve f is forced downward, and the flange j is forced toward the flange r, thus clamping them upon the metal c of the lathe-carriage, and thus the tool-post is held tightly. The adjusting-screw d in tightening-sleeve e, when it is screwed downward upon the top of sleeve f, which rests upon post a, forces the sleeve e, gib h, and cutting-tool i upward and binds said tool tightly against the end of clamping-screw b. This holds the tool i more firmly than can be done by any other means, and is vastly more advantageous than the usual method of using shims under the tool at each side of the tool-post. Thus it will be seen that my invention provides for fastening the tool-post in the lathe-carriage firmly without the use of keys and for tightening the cut-

ting-tool in the tool-post without the use of shims or any temporary devices, and it provides a convenient and simple method and device for accomplishing a desirable result.

When it is desired to raise the tool *i* for adjustment to any required position, screw *b* is loosened or screwed upward and screw *d* is screwed downward, thus throwing the tool *i* upward, tightening it, as before, against screw *b*. To lower it the reverse movements are employed.

Having now fully described my invention and the manner in which I have embodied it, what I claim as new, and desire to secure by Letters Patent, is—

1. The annular tool-supporting sleeve *e*, having the tool-slots n^2 cut through its sides, and provided with an adjusting-slot and screw at its base, and threaded through its upper internal flanged surface to receive an annular adjusting-screw *d*, substantially as and for the purpose set forth.

2. The tool-post *p*, the set-screw *b*, the annular flanged sleeve *f*, the tool-supporting sleeve *e*, and the annular adjusting-screw *d*, all combined and arranged to operate substantially as set forth, to tighten the tool-post in the lathe-carriage, to adjust the height of the tool in relation thereto, and to bind the tool in a fixed position.

3. The combination, substantially as hereinbefore set forth, consisting of the central main tool-post, the clamping-screw, the annular flanged tool-post-clamping sleeve, and the annular tool-supporting sleeve provided with an annular adjusting-screw, all the said sleeves being provided with tool-slots substantially coinciding with each other and with the slot in the main post or standard, and supported upon and surrounding said main standard, and arranged to operate substantially in the manner and for the purposes hereinbefore set forth.

DAVID WILLIAMSON.

Witnesses:
W. L. BENNEM,
JAS. E. WARNER.