W. H. WILLIAMS & J. WORRALL.

Shaft-Turning Attachments for Lathes.

No. 150,271. Patented April 28, 1874.

Fig 1

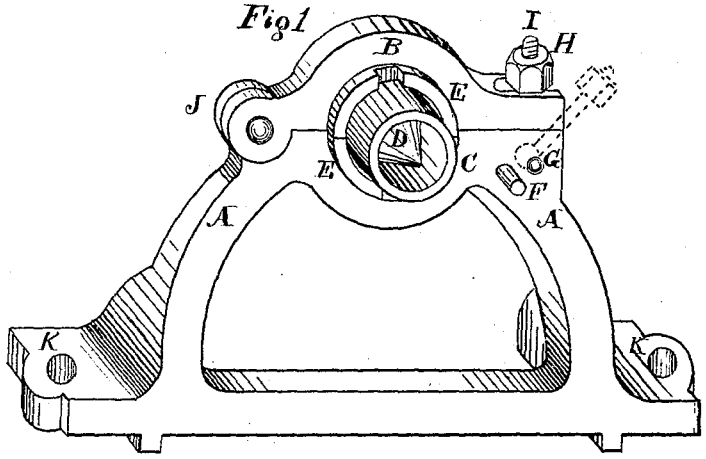


Fig 2

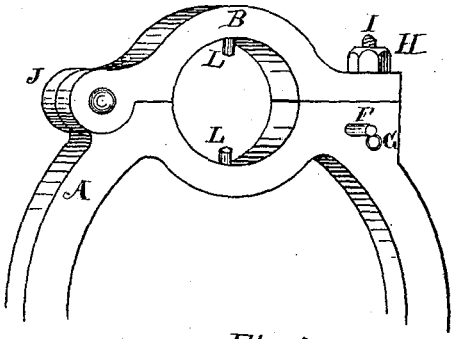


Fig 3

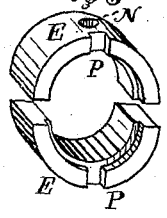


Fig 5

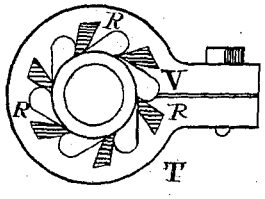
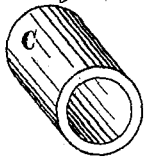


Fig 4



Witnesses

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UNITED STATES PATENT OFFICE.

WATKIN H. WILLIAMS AND JAMES WORRALL, OF RICHMOND, INDIANA.

IMPROVEMENT IN SHAFT-TURNING ATTACHMENTS FOR LATHES.

Specification forming part of Letters Patent No. **150,271**, dated April 28, 1874; application filed March 16, 1874.

To all whom it may concern:

Be it known that we, WATKIN H. WILLIAMS and JAMES WORRALL, of Richmond, county of Wayne and State of Indiana, have invented certain Improvements in Lathe Attachments for Turning Shafting, of which the following is a specification:

Our invention relates to an improved attachment to lathes, whereby we use a "sizing-burr" in turning shafting, the attachments being arranged in a manner to avoid the necessity of first turning the end of the shaft in order to start the sizing-burr, as is now done, the burr resting on a loose collar that is placed on the dead-center of the lathe in starting. A follower-rest is attached to the carriage of the lathe, said rest being hinged and fitted with open or divided collars, said collars fitting snugly on the solid collar, which carries the sizing-burr in starting, and after the shaft has pushed the solid collar out the open collar fits the shaft to steady it as the work progresses, as hereinafter described.

Figure 1 is a perspective view of the follower-rest with the collars attached and slid back over the dead-center of the lathe. Fig. 2 is a perspective view of the follower-rest without the collars, and showing the pins which hold the collars in place. Fig. 3 is a perspective view of the open or divided collars, which hold in place the solid collar shown in Fig. 4. Fig. 4 is a perspective view of the solid collar. Fig. 5 is a plan view of the sizing-burr.

A A is the follower-rest attached, by means of bolts through the holes K, to the carriage of the lathe. B is the top of the rest, hinged at J, and held down in place by the bolt I and nut H. The bolt I, being pivoted at G, swings outward, as indicated by the dotted lines, to allow the top B to be thrown back, in order to remove or insert different-sized collars, as may be required. The open or divided collars are represented in Fig. 3, having holes N, which fit onto the pins L, Fig. 2, when the top B is closed down and clamped by the bolt I and nut H.

These open collars being placed in position, the sizing-burr V, Fig. 5, is placed over the outer or projecting end of the collar, the end T of the burr resting on the pin F, the solid collar C holding the burr V completely centered, the burr following the cutting-tool of the lathe as the follower-rest A moves with the carriage. As the follower-rest carrying the collars advances, the end of the shaft to be turned pushes the solid collar C out of the open collar E, and leaves the collar C lying upon the center D of the lathe, and leaves the burr V properly upon the shaft to finish it as it follows the cutting-tool, the collar E snugly fitting and steadying the shaft as the work advances. The gains P in the collar E allow the chips to pass out freely and prevent clogging. The teeth R in the sizing-burr V are inserted instead of being made solid with it, thus allowing us to make the teeth cheaply of the very finest quality of steel, and they can be removed for dressing and replaced with great facility, and the body of the burr will thus last indefinitely. The open-hinged follower-rest may be used with great advantage in conjunction with the collar E and without the sizing-burr in many kinds of work where the burr is not required.

We are aware that open-hinged steady-rests are common simply as steady-rests, but not as follower-rests, in conjunction with a sizing-burr or open or divided collars, which may be removed and replaced with any size to suit the work being done.

Another advantage in this construction of open or divided collars is, that the shaft will frequently heat and expand. In that case it is only necessary to loosen the nut H, and all is regulated to suit circumstances.

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In combination with the sizing-burr V, the solid collar C and divided collar E, substantially as shown and described, for the purpose specified.

2. The open-hinged follower-rest A, having the pins L, in combination with the divided collar E, bolt I, and nut H, all arranged substantially as shown and described.

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Witnesses:
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