(No Model.)

E. R. OSGOOD.

TAIL STOCK FOR LATHES.

No. 397,564. Patented Feb. 12, 1889.

FIG. 1.

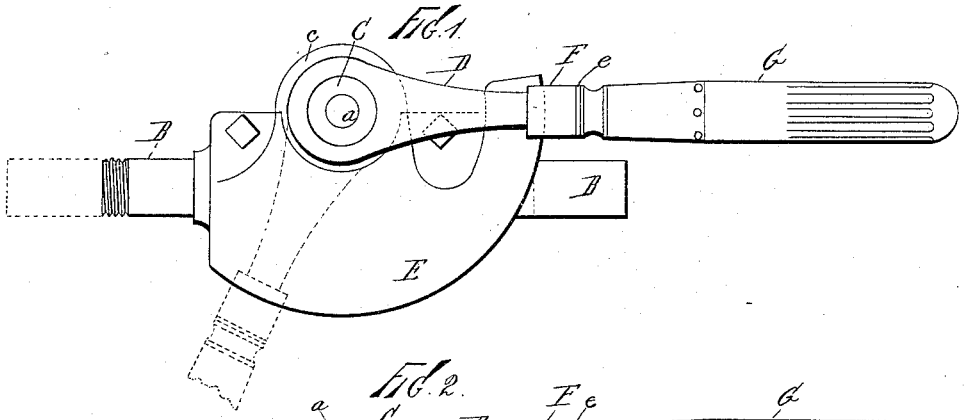

FIG. 2.

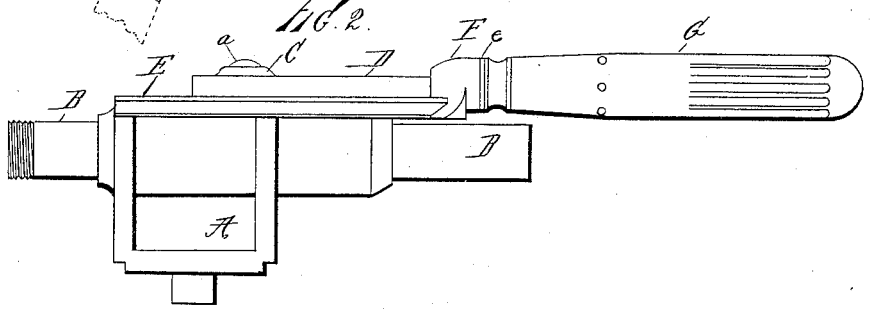

FIG. 3.

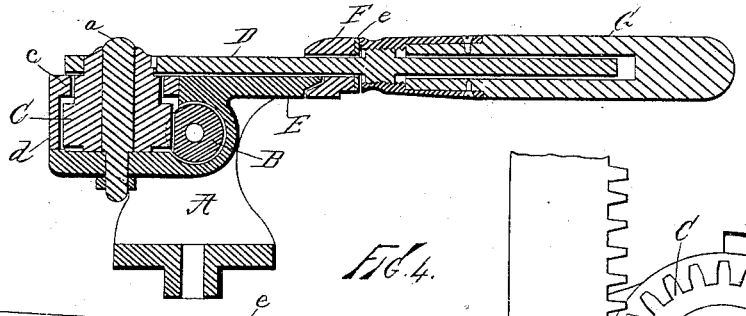

FIG. 4.

Witnesses:
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UNITED STATES PATENT OFFICE.

ELIJAH R. OSGOOD, OF COLUMBUS, OHIO.

TAIL-STOCK FOR LATHES.

SPECIFICATION forming part of Letters Patent No. 397,564, dated February 12, 1889.

Application filed May 31, 1888. Serial No. 275,536. (No model.)

To all whom it may concern:

Be it known that I, ELIJAH R. OSGOOD, of Columbus, county of Franklin, and State of Ohio, have invented certain new and useful Improvements in Tail-Blocks for Lathes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to tail-blocks for lathes, and especially to means for adjusting and holding the spindle.

The object of my invention is to provide a durable and efficient appliance of few and simple parts by which the spindle may be rapidly, certainly, and easily advanced or retracted and securely held in any position or at any point to which adjusted; and to accomplish all of this my improvements involve certain new and useful arrangements or combinations of parts and principles of operation, as will be herein first fully described, and then pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a plan or top view of a tail-block having my improvements applied thereto, the operating-lever being shown in full lines at one position and in dotted lines at another. Fig. 2 is a front elevation. Fig. 3 is a cross-section upon a plane at right angles to the spindle and passing through the axis of the lever, which axis is adjusted to lie in that plane. Fig. 4 is a plan view, on a scale enlarged beyond previous figures, representing the under side of the adjusting and clamping lever and attached pinion, and showing a fragment of the spindle, these parts being removed from the blocks.

In all these figures like letters of reference, wherever they occur, indicate corresponding parts.

A is the lower portion of the tail-block, which may be of any approved form and arranged to slide directly on the ways of the lathe or on a saddle on the ways, or in any other manner, and which may be intended for a lathe of any size, large or small. B is the spindle, arranged to be moved back and forth in the direction of its length within the tail-block and intended to carry a center or other tool or appliance, as in any other construction. This spindle is provided with a rack or set of teeth with which those of a pinion, C, mesh. The pinion is journaled upon the tail-block at one side, as upon a shaft, *a*, which is rigidly held to the tail-block, as by a nut, *b*.

A lever, D, of sufficient length, is keyed or otherwise secured to the pinion C and travels over a segment, E, of which the edge is an arc of a circle having its center in the axis of the pinion. By moving the lever D in one direction or the other it is plain that the spindle will be advanced or retracted, and the segment E is of such extent that the lever in traversing it will cause the spindle to move from nearly one limit of travel to the other. Surrounding a shoulder upon the pinion is a collar, *c*, the same being prevented from turning with the pinion by an apron, *d*, which bears against the adjacent portions of the block and also operates to keep the pinion clear of foreign matters or obstructions, the collar *c* on the side next the lever bearing against a recess provided for it in the segment E. This collar constitutes one member of a clutch, by which the lever, and therefore the spindle, is securely held at any point to which adjusted.

Upon lever D is a movable clutch piece or block, F, arranged to bear against the beveled or otherwise shaped edge of the segment E. G is a hand-piece or handle of suitable length mounted upon lever D and threaded thereon—that is, the handle is provided with an interior screw-thread or winding which engages with a corresponding thread or winding upon the lever. This handle G bears against the block F, or, better, against a loose washer, *e*, interposed between it and block F, to prevent wear. The clutch parts being loose, the handle G may be instantly moved across the segment E in either direction and to any desired extent. Then by slightly turning the handle in the proper direction (which, being threaded upon lever D, as above explained, is thereby caused to advance) the block F and the collar *c* are forced against their bearings on the segment E, firmly clutching the segment and thereby preventing the lever, and thus the spindle, from further movement. A slight turn of the handle is all that is necessary to release the clutch. The collar *c*, bearing

against the segment E, prevents any clutching strain from being brought upon the shaft *a* and constitutes an enlarged bearing, which obviates any danger of slipping. It also prevents turnings, &c., from collecting in the pinion.

By moving the lever far enough in either direction to clear the segment carrying the clutch-block F beyond its edge the lever and pinion may be detached.

By the simple appliance thus far explained the spindle may be rapidly adjusted and firmly set by what is practically one motion of the hand, thus avoiding the slow movement of the ordinary adjusting-screw and the separate adjustment of the ordinary setting-screw.

The parts are few and simple, not liable to get out of order, and have been found to admirably answer the purpose or object of the invention, as previously set forth.

The ease, accuracy, and certainty with which the adjustment may be made and the work handled will commend the improvements to those skilled in the use of lathes of any form.

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

1. In a tail-block for lathes, a lever, a segment of the block having a circular face, a clutch-piece bearing on said face, and a handle for moving the lever and clutch, said handle being mounted upon the lever, combined substantially as shown and described.

2. In combination with the spindle, a pinion having an attached lever, a collar and a clutch-piece bearing on a segment of the lathe-block, and the operating-lever, substantially as shown, and for the purposes set forth.

3. In an attachment for lathes, a spindle, a pinion, a lever connected with the pinion, the threaded handle mounted on the lever, and the collar and clutch-piece for clamping the segment, combined and arranged substantially as shown, and for the purposes set forth.

4. In combination with the tail-block carrying the pinion and spindle, the collar, and its apron, substantially as shown, and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of two witnesses.

ELIJAH R. OSGOOD.

Witnesses:
HAROLD B. GATCH,
GEO. E. HUNT.