No. 617,721. Patented Jan. 17, 1899.

W. S. DAMON.

WOOD TURNING LATHE.

(Application filed Sept. 2, 1897.)

(No Model.)

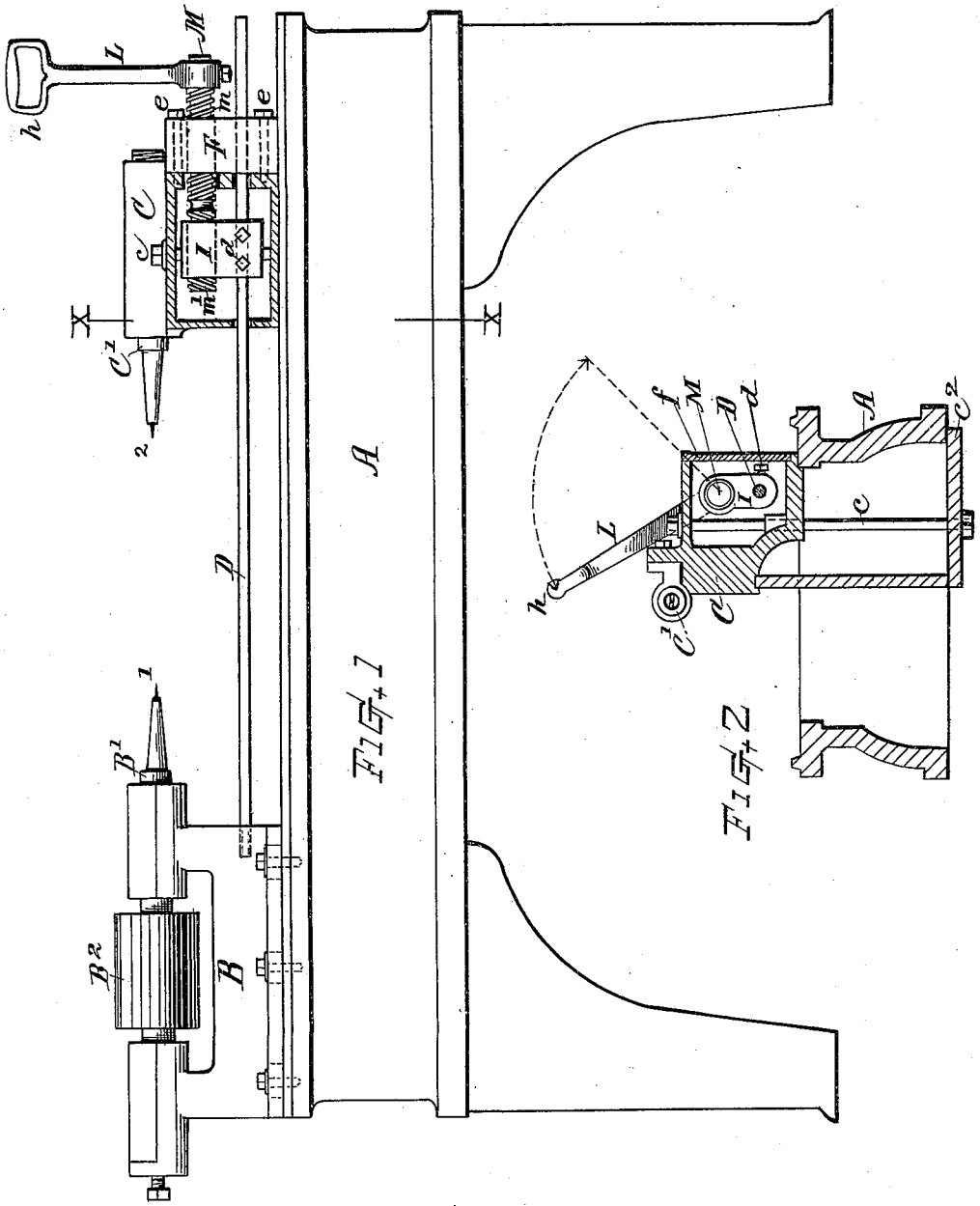

FIG. 1

FIG. 2

Witnesses:
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UNITED STATES PATENT OFFICE.

WALTER S. DAMON, OF RINDGE, NEW HAMPSHIRE.

WOOD-TURNING LATHE.

SPECIFICATION forming part of Letters Patent No. 617,721, dated January 17, 1899.

Application filed September 2, 1897. Serial No. 650,356. (No model.)

To all whom it may concern:

Be it known that I, WALTER S. DAMON, a citizen of the United States, residing at Rindge, in the county of Cheshire and State of New Hampshire, have invented a new and useful Improvement in Wood-Turning Lathes, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

This invention appertains to that class of wood-turning lathes known as "gage-lathes" and employed for turning patterned wood spindle-work, chair-rounds, balusters, and other similar classes of work; and my improvement relates to the means for operating the center supports toward and from each other when introducing and removing the work from the centers, the object of my invention being to provide a convenient, efficient, and desirable mechanism for quickly effecting the movement of the head toward and from the tail-stock, or vice versa, and in which the movement-actuating mechanism is combined with the body of the tail-stock to be worked by an operating-lever that swings in a direction transverse to the axis or bed of the lathe, said mechanism embodying a mode of operation that can be readily manipulated by the hand of the operator and that will not interfere with his convenient handling and placing of the stick or piece of material to be operated upon in the lathe with his other hand. I attain these objects by the mechanism illustrated in the drawings, wherein—

Figure 1 is a front view of such parts of a gage-lathe as will show the nature of my invention, and Fig. 2 is a transverse section at line X X.

It will be understood that all portions of the lathe not herein specifically illustrated and described may be of the usual well-known construction and operation.

In practice the lathe is provided with cutters and cutter supporting and operating appliances; but as such appliances are not of my invention they are not shown in the accompanying drawings.

Referring to the parts, A denotes the bed of the lathe, of usual construction.

B indicates the head-stock, supported on the bed to have endwise movement and having the power-spindle B′ mounted therein, with its pulley B^2 for the driving-belt.

C indicates the tail-stock, consisting of a supporting-body seated upon and adapted to be adjustably but rigidly secured at any position along the bed by means of the bolt *c* and the shoe C^2 beneath the bed and carrying the rotatable tail-spindle C′, mounted therein in the usual manner.

D indicates a rod attached to the movable head-stock B and extending through or past the tail-stock C.

In accordance with my invention a block F, having therein a threaded opening and a rod-guiding opening, is attached to the tail-stock body by bolts *e* or in other efficient manner, said block forming a fixed nut on said tail-stock. Within the tail-stock (which is chambered) there is a movable nut or block I, having a threaded opening and an opening for the rod D and provided with set-screws *d* for adjusting and rigidly securing said rod in the nut.

A screw-shaft M is arranged in the tail-stock, disposed axially parallel with the center spindle C′ and provided with a right-hand screw-thread *m* and a left-hand screw-thread *m′* of coarse pitch, which threads respectively engage with the fixed nut F and the movable nut I, as indicated. A suitable door or slide-plate *f* is provided in the front of the tail-stock for inclosing and affording access to the movable nut I and the clamp-screw *d*. An operating lever or handle L is fixed on the projecting outer end of said screw M, which lever projects upward perpendicular to the axis of the lathe-spindle, and its free end, which is furnished with a suitable grip *h*, swings or moves forward and backward in a direction transverse to the position of the bed, (see dotted line, Fig. 2,) thereby rocking the screw M, the threads of which, acting in the fixed nut F and the movable nut I, convert this lateral swinging movement into a longitudinal action on the rod D and shortens or lengthens the distance between the head and tail stock (and center points) by the sliding movement of the head.

The operation of the hand-lever being a forward-and-backward action, the mechanism can be conveniently manipulated by the op-

erator with one hand while placing the stick of wood in the lathe between the points 1 and 2 with the other hand, and this without awkward strain or interference with the ready and convenient handling of the work, while the screw action for moving the head renders the movement powerful and easy, thus avoiding undue labor by the operator in working the hand-lever for retracting and advancing the centers in changing the work.

I do not herein claim the invention of a movable head-stock in a gage-lathe; but my invention refers to the specific combination in means for effecting the movement as herein defined.

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

1. In a wood-turning gage-lathe, the combination with the supporting-bed the tail-stock and a movable head-stock, of a connecting-rod, attached to said head, a fixed nut attached to the tail-stock, a movable nut attached to said rod, a longitudinally-disposed screw mounted on the tail-stock body and having right and left threads respectively fitting said nuts, and the operating lever or handle fixed on said screw at the end of the tail-stock and arranged to swing transversely to the axis of the lathe centers, substantially as set forth.

2. In a wood-turning lathe of the character specified, the combination of the chambered tail-stock provided with a rigidly-attached nut and rod-guide thereon, the movable nut arranged within the chamber, the head-stock carrying the operating-spindle, mounted to have endwise movement, the head-connecting rod passing through said rod-guide, means for adjustably securing said rod in said movable nut, the screw-shaft having right and left threads that respectively engage in the two nuts, said screw-shaft disposed axially parallel with the tail-spindle, and the operating-lever fixed on the projecting end of the screw, substantially as and for the purpose set forth.

3. In a wood-turning lathe having the endwise-movable head-stock, the adjustable rigidly-secured tail-stock, and a connecting-rod for operating the head-stock movement from the tail; the combination with said tail-stock and connecting-rod, of the upwardly-projecting operating lever or handle swinging transversely to the axis of the lathe, and the oppositely threaded take-up screw for converting the lateral motion of said handle into a longitudinal action on said rod, substantially as set forth.

4. In a lathe for turning wood, having a head-stock and tail-stock, one of which is capable of sliding on the bed of the lathe and the other is adjustably attached thereto, the mechanism for varying the distance between said head and tail stocks consisting of a screw provided with a right-hand screw-thread and a left-hand screw-thread, one of said screw-threads engaging a nut having a fixed relation to the bed of the lathe and the other screw-thread engaging a nut capable of moving parallel with the axis of the screw and connected with the sliding stock, substantially as described.

5. In a lathe for turning wood, the combination with a tail-stock adjustably attached to the bed of the lathe, and a head-stock capable of sliding thereon, of a screw having a right-hand screw-thread engaging a nut carried by said tail-stock and a left-hand screw-thread engaging a nut capable of moving longitudinally on said screw, and a rod connecting said movable nut with the head-stock of the lathe, substantially as described.

Witness my hand this 30th day of August, A. D. 1897.

WALTER S. DAMON.

Witnesses:
CHAS. H. BURLEIGH,
BAXTER D. WHITNEY.