(No Model.) 3 Sheets—Sheet 1.

H. J. COLBURN.

WOOD TURNING LATHE.

No. 244,741. Patented July 26, 1881.

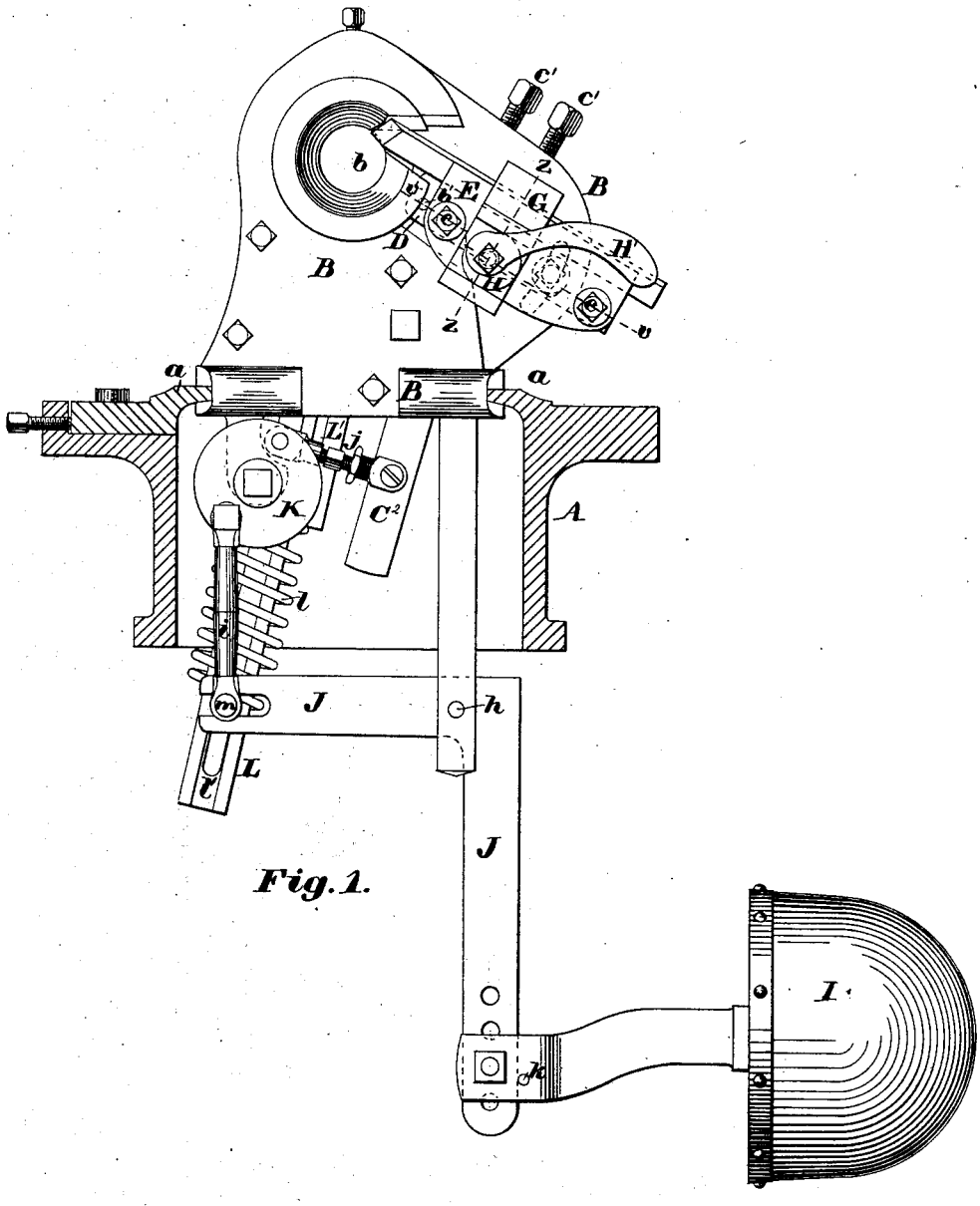

Fig. 1.

Witnesses:
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H. G. Olmsted

Inventor:
Henry J. Colburn
by
W. W. Swan Atty.

(No Model.)

3 Sheets—Sheet 2.

H. J. COLBURN.

WOOD TURNING LATHE.

No. 244,741. Patented July 26, 1881.

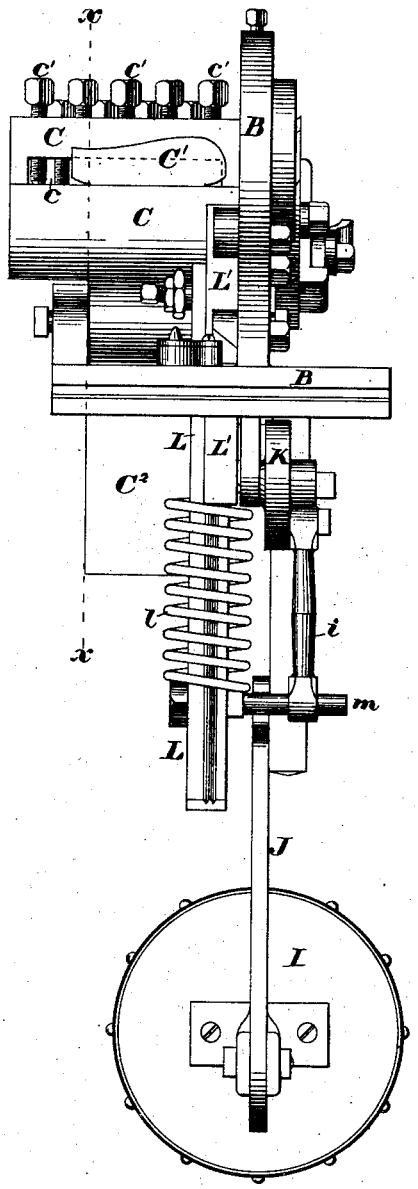

Fig. 2.

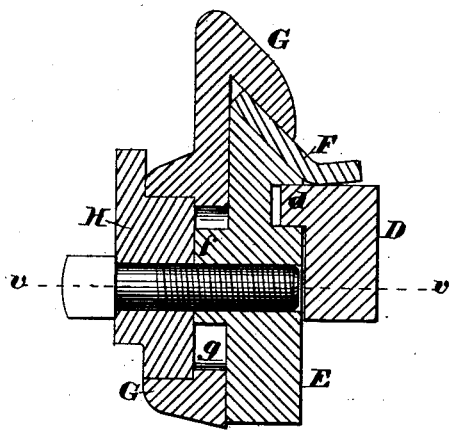

Fig. 5.

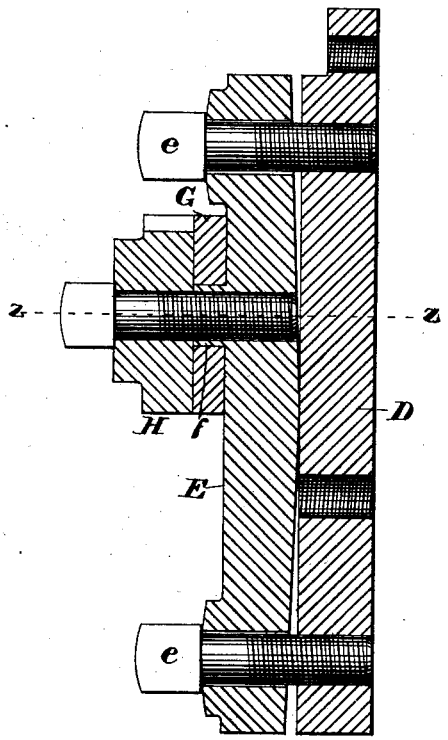

Fig. 6.

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(No Model.)

3 Sheets—Sheet 3.

H. J. COLBURN.

WOOD TURNING LATHE.

No. 244,741. Patented July 26, 1881.

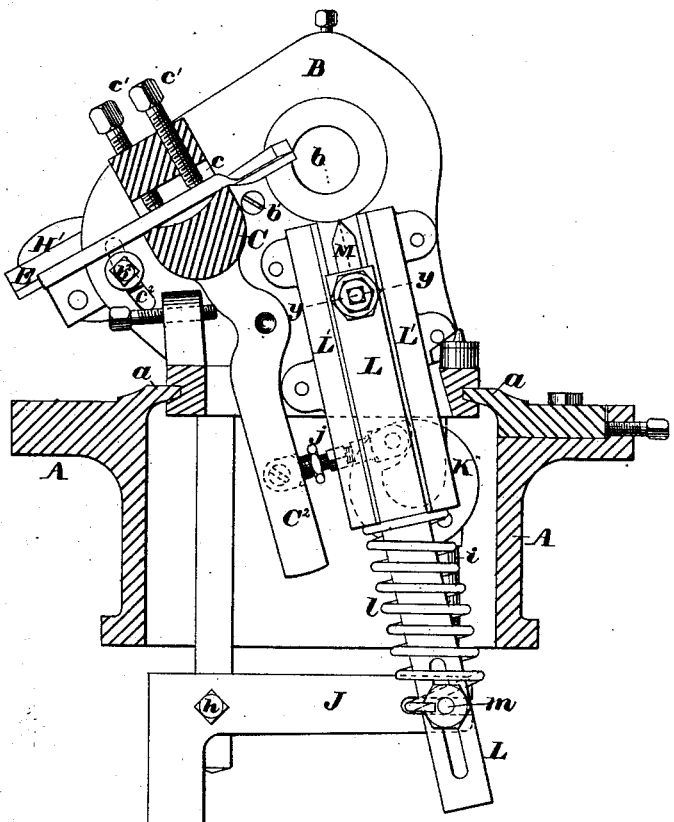

Fig. 3.

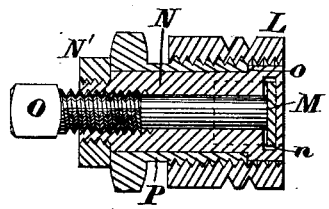

Fig. 4.

Witnesses:
Saml W Bates
H. G. Olmsted

Inventor.
Henry J. Colburn
by
W. W. Swan Atty

UNITED STATES PATENT OFFICE.

HENRY J. COLBURN, OF FITCHBURG, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO H. F. COGGSHALL AND C. F. CROCKER, OF SAME PLACE.

WOOD-TURNING LATHE.

SPECIFICATION forming part of Letters Patent No. 244,741, dated July 26, 1881.

Application filed March 7, 1881. (No model.)

To all whom it may concern:

Be it known that I, HENRY J. COLBURN, of Fitchburg, in the State of Massachusetts, have invented certain new and useful Improvements in Wood-Turning Lathes, of which the following is a specification.

My invention relates to that class of wood-turning lathes which are provided with a sliding tool stock or rest carrying the several tools by which the piece of stock is brought to the desired shape; and it consists in peculiar contrivances forming part of or secured to the tool-stock for holding the tools, and in an improved device for operating said tools.

In the drawings, Figure 1 is a transverse section through the lathe-bed in a plane between the head-stock and the tool-stock, and showing the tool-stock in elevation. Fig. 2 is a rear elevation of the tool-stock removed from the bed. Fig. 3 is a vertical section on line *x x* of Fig. 2, looking toward the head-stock. Fig. 4 is a section through the devices for holding and adjusting the cut-off tool on line *y y* of Fig. 3. Fig. 5 is a transverse section through the roughening-tool holder on line *z z* of Figs. 1 and 6; and Fig. 6 is a longitudinal section of the same on line *v v* of Figs. 1 and 5. Figs. 4, 5, and 6 are enlarged views.

A is the bed of the lathe, provided with guide-ways *a a*, upon which the tool-stock or carriage B is mounted, so that it may be moved along said bed toward or from the head-stock (not shown) in a well-known manner. The tool-stock B is provided with an opening, *b*, in axial line with the spindles of the head and tail stocks for the passage of the piece of wood to be operated upon, and has pivoted to its rear or right-hand side the tool-holder C, provided with the slot *c* and set-screws *c' c'*, arranged to receive and hold a broad pattern-cutter, C', as shown, or a series of narrow cutters of different shapes, according to the design to be turned, all in a well-known manner.

D is a metal bar provided, with the projecting rib *d*, and pivoted at *b'* to the inner face of the upright portion of the tool-stock B, and adjustably secured at its outer end by the bolt b^2 passing through the slot c^2, as shown in Fig. 3.

Upon the rib *d* is fitted the tool-carrying plate E, the upper edge of which is beveled to receive the inclined portion of the roughening-tool F, as shown in Fig. 5, and the back or inner face of which tapers slightly from its center toward either end, as shown in Fig. 6, that the said plate may be rocked upon its center in either direction by loosening one of the bolts *e* and tightening the other bolt *e* for the adjustment of the tool. This tool F is firmly clamped to the beveled edge of the plate E by means of the clamping-hook G and the eccentric H, provided with the handle H', said clamp being held in position lengthwise of the plate E by the boss *f*, cast on said plate, and projecting into the vertical slot *g* formed in the clamp G, as shown in Figs. 5 and 6.

The cutter C' is moved toward the work by means of the soft upholstered knee-pad I, attached to the elbow-lever J, pivoted at *h*, and acting through the link *i* to turn the disk K, which, in turn, is connected by the link *j* to the arm C^2 of the tool-holder C. The knee-pad I is pivoted to the elbow-lever J, and provided with a stop-pin, *k*, as shown, this method of attachment permitting the knee-pad to move with the operator's knee without slipping, as it frequently does when the pad is rigidly attached to the lever J and moved in an arc described from the center of the pivot *h*.

L is a bar, carrying at its upper end the cutting-off tool M. It has a vertical motion in slides L' L', which are bolted to the outer face of the tool-stock B, as shown. A stud, *m*, with which the slotted end of the horizontal arm of the elbow-lever J engages, as shown in Figs. 1, 2, and 3, connects the bar L and the link *i*, before mentioned. Accordingly an upward movement is also imparted to the cutting-off tool by the knee-pad I, through the elbow-lever J, a spring, *l*, carrying the bar L downward in the slides L' L', and with it the cutting-off tool M, when the operator's knee is removed from the knee-pad. The bar L has a deep groove, *l'*, in its inner face, as shown in Fig. 1, and also enlarged in dotted lines in Fig. 4, to receive the cut-off tool M and permit its adjustment to and from the tool-stock. For the purpose of this adjustment a threaded hole is cut transversely through the bar L, near

its upper end, to receive a threaded sleeve, P, through which works a closely-fitting bolt, N, having a slot, *n*, cut transversely through it to receive the cutting-off tool, which is there held by set-screw O. The bolt N is provided with a shoulder, *o*, and a nut, N′. To make the adjustment the sleeve P is turned in either direction by means of its flanged head. The bolt N is fixed in its position relatively to the sleeve P by tightening the nut N′, the cutting off tool moving with the bolt.

It is obvious that the cutting-off tool has a longitudinal adjustment as to itself by means of the set-screw O.

The cutting-off tool has the two adjustments above described, and it is essential that it shall have but these two adjustments, since it is obvious that the cutting-edge should always occupy a fixed radial position relatively to the center of the opening *b*. The groove *l* in the bar L accordingly prevents the tool from turning in either direction about the axis of the set-screw O. This fixed radial position of the cutting-edge is, however, liable to be disturbed by cutting away too much on one side or the other of the tool when the tool is sharpened; and to prevent this I have on the face of the tool made a mark or line on the radius required, as indicated upon the tool M by a dotted line in Fig. 3, which mark or line serves as a guide for fixing the operating edge or point.

I claim—

1. In a wood-turning lathe, the elbow-lever J, with knee-pad I pivoted thereto, and stop *k*, in combination with a tool-carrier and tool and connecting mechanism, substantially as described, for the purpose specified.

2. The plate E, with suitable devices for holding the roughening-tool, and having its lower edge inclined from the middle toward either end, in combination with the adjustable bar D and the tool-stock, substantially as described.

3. The combination of the bar D, the plate E, having its upper edge beveled and its inner or back side tapered from its middle toward either end, the bolts *e e*, clamping-hook G, and eccentric H, all arranged and adapted to operate substantially as described.

4. The combination of the pivoted bar D, the tool-stock B, provided with slot c^2, clamping-bolt b^2, the plate E, having its upper edge beveled and its inner or back side tapered from its middle toward either end, the bolts *e e*, the roughening-tool F, the clamping-hook G, and the eccentric H, substantially as described.

5. The combination of the bar D and the plate E, having its inner or back side beveled from the middle toward either end, with the bolts *e e*, the roughening-tool F, and a clamping device for securing the roughening-tool to the plate E, substantially as described.

6. The grooved bar L, the cutting-off tool M, the bolt N, provided with the transverse slot *n*, the nut N′, and shoulder *o*, the set-screw O, and the threaded sleeve P, in combination with the tool-stock B, the tool M, prevented from turning in either direction about the axis of the set-screw O, but having a longitudinal adjustment to compensate for wear, and a broad side adjustment to and from the tool-stock, substantially as described.

H. J. COLBURN.

Witnesses:
W. W. SWAN,
H. G. OLMSTED.