

R. D. Bartlett,

Gage Lathe.

N<sup>o</sup> 5,983.

Patented Dec 26, 1848.

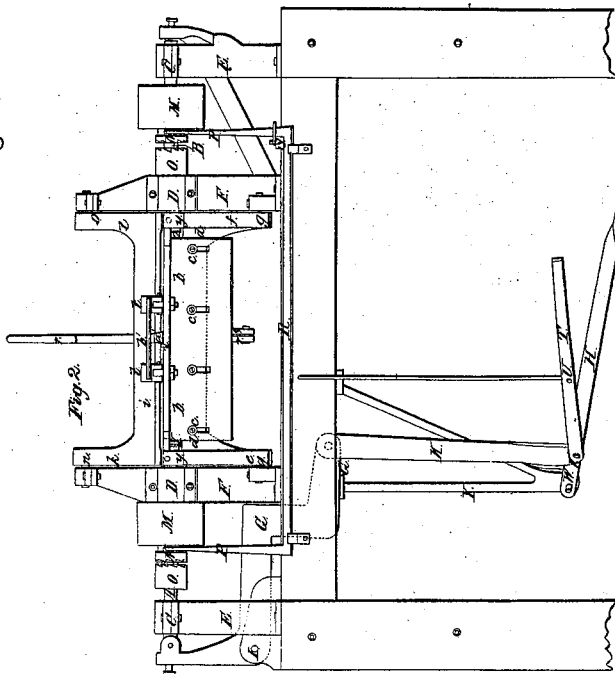
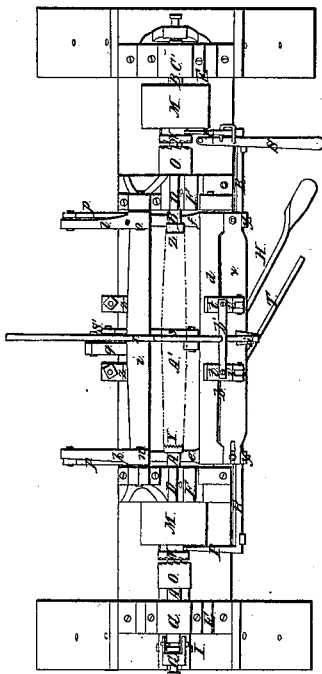
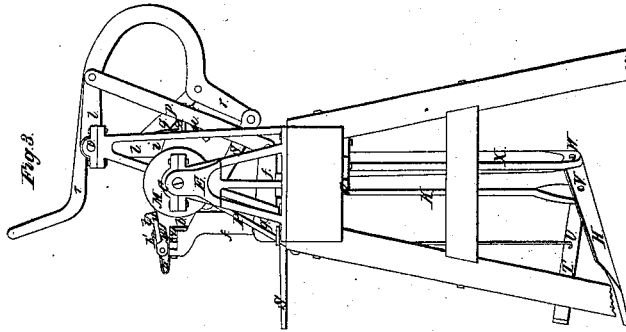
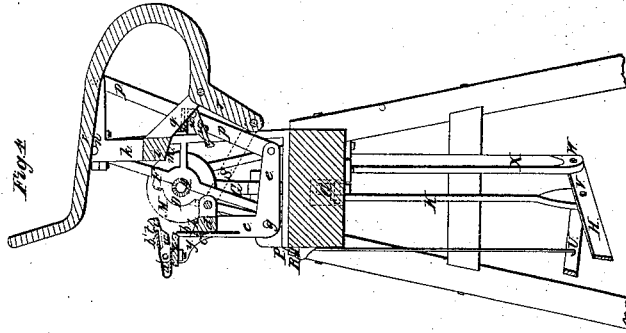


Fig. 1.

Fig. 2.

# UNITED STATES PATENT OFFICE.

RUSSELL D. BARTLETT, OF HARMONY, MAINE.

LATHE FOR TURNING HOE-HANDLES, &c.

Specification of Letters Patent No. 5,983, dated December 26, 1848.

To all whom it may concern:

Be it known that I, RUSSELL D. BARTLETT, of Harmony, in the county of Somerset and State of Maine, have invented a new and useful Machine for Turning Chair-Legs, Hoe-Handles, Shovel-Handles, or Various other Articles of Like Character; and I do hereby declare that the same is fully represented and described in the following specification and accompanying drawings, letters, figures, and references thereof.

Of the said drawings Figure 1, denotes a top view of my improved machine or lathe for turning. Fig. 2 is a front elevation of it. Fig. 3 is an end elevation. Fig. 4, is a central vertical and transverse section of it.

In the said drawings A, B, represent two mandrels each of which is supported and so as to revolve in boxes C, D, applied to puppets or standards E F. The mandrel A, is made to slide longitudinally back and forth a short distance in its boxes, and is jointed at its outer end to a bent lever G, which turns on a fulcrum at I. The said bent lever is connected to a foot lever H, by an upright connecting bar K, which is jointed to both levers. Each mandrel has one of two equal sized pulleys M, M, placed upon it and made to play loosely on the mandrel. Said pulley is connected to one plate N, of a clutch and both said plate and pulley are moved or slid on the shaft in a direction toward the other part O of the clutch (which part O, is fastened firmly to its mandrel) by one of two shifting forks P, P, arranged as seen in the drawings, and made to project upward from a horizontal slide bar R, which is moved sidewise by a shifting lever S, the whole being as seen in the drawings. When the bar R, is moved in one direction the pulleys M, M, shall be clutched to their respective mandrels, so as when put in revolution by bands from a driving drum, to put said mandrels in revolution and each at the same speed. There is also another lever T, connected with the lever H. Said lever T, turns on a fulcrum at U, and is jointed to the connecting bar K, by the same pin V, which joints the lever H, thereto. The fulcrum of the lever H, is a pin W, which passes through one end of the lever and the lower end of a strut X. By placing the foot on the front end of the lever T, the mandrel A, may be made to recede from the other mandrel B, so as to

enable a person to place the piece of wood to be turned between the dogs or points Y, Z, of the two mandrels. On removing the foot from the lever T, the weight of the lever H, or its front arm should be such as to cause the lever to descend, and to move the mandrel A, forward sufficiently to cause the two dogs to grasp the piece of wood A', with a force which will prevent its falling and still enable the attendant to adjust the wood to a correct position or to "center it" to use the phrase of turners. This being done the foot is to be borne down on the front arm of the lever H, with a degree of power that will cause the dogs or points of the two mandrels to enter the ends of the wood to the extent necessary to enable them to revolve it under the operations of the cutter.

The next part of the apparatus to be described is that for cutting or reducing the wood and preventing it from springing out of place while under the operation of the cutter.

The knife or tool by which the wood is reduced to shape is calculated to be of a length sufficient to cut or reduce at one operation the entire length of a piece of wood whatever it may be destined for whether a hoe handle or chair leg or anything else. In the drawings said knife is shown at *b*, and is fastened by screws *c*, *c*, &c., to a bed or bar *d*, which is supported by two bent or right angle levers *e*, *f*, each of which has its fulcrum at its angle as seen at *g*. The said knife should have its cutting edge curved longitudinally to the shape which may be necessary for it to have in order to produce the article which it may be desirable to produce, or reduce the wood to the shape of.

The bar or bed *d*, besides serving as a support for the cutting knife also performs the office of a cam bar; that is to say its edge directly under the cutting edge of the knife is beveled down as seen at *h*, in Fig. 4.

There is also another and similar cam bar *i*, arranged and supported by two levers *k*, *l*, as seen in the drawings. The said cam bar has one edge *m*, beveled down as represented in Fig. 4. The bent levers *k*, *l*, turn on fulcra at *n*, *o*, in such manner as to impart to the bar, when said levers are moved on their fulcra, a motion either toward or away from the piece of wood to be turned. The rear end of the lever *k*, is connected to that of the lever *e*, by a connecting bar *p*. So the rear

ends of the two levers *l*, and *f*, are similarly connected by a bar *p*, as seen in Fig. 3, the two ends of each bar *p*, being jointed respectively to the two levers with which it is connected. An arm *q*, extends from the rear side of the bar *i*, as seen in Fig. 4, and has a bent lever *r*, jointed to it so as to play on the joint pin as a fulcrum. The lower end of the lever is connected to the middle of the bar *d*, by a link or bars, jointed at its ends to both the lever *r*, and bar *d*. By applying the hand to the front end of the lever *r*, and depressing said lever the two bars *d*, and *i*, and the cutting knife will be moved simultaneously toward the piece of wood to be cut. By moving the lever *r*, in the opposite direction the opposite effect is produced. In conjunction with each of the two bars *d*, *i*, any suitable number of bearers *t*, *t*, or *u*, *u*, act, the same being arranged with respect to the bars as seen in the drawings. Each of the said bearers is composed of two parts *v*, *w*, one of which is made to slide on the other and be confined to it by a screw, in order that the bearer may be made longer or shorter as occasion may require. The bearers *t*, *t*, of the bar *d*, are jointed to the long bar *x*, which is secured to struts *y*, *y*, extending from the levers *e*, *f*, as seen in the drawings. The other bearers *u*, *u*, are respectively jointed to projections *z*, *z*, extending from the bar *i*, as denoted by the figures, the joints of said bearers being such as to allow of their movement in vertical planes. When the two bars *d*, *i*, are made to approach one another so as to carry the knife against the piece of wood to be cut, the ends of the bearers of the one bar, are brought into contact with the beveled part (*h*, or *m*,) of the other bar, and by said beveled part are forced against the piece of wood. The bearers of the two bars are thus made to operate or close toward one another and upon the piece of wood, in such manner as to hold it firmly and prevent it from springing away from the cutting tool or knife; and during the cutting operation or progress of the knife, they are continually made by the beveled parts *h*, *m*, to press upon and hold the wood. The bearers of the

front bar are raised by a spring *a'*, made to act against a cross bar *b'*, while those of the rear bar fall by their own gravity.

By the employment of two mandrels and putting them in operation with the same velocity, and by separate pulleys and belts as above described, the wood is turned to much better advantage, than it is when the turning power is applied to only one of the mandrels, while the other is made to serve as a stationary center, to hold the end of the wood. As my machine is for the purpose of turning very long articles and such as have a small diameter in proportion to their length, that is to say such articles as chair legs, hoe handles or shovel handles, it is desirable to reduce the effects of torsion while manufacturing them or during the operation of the knife. By employing in conjunction with the long knife two movable mandrels rotated simultaneously and with the same degree of velocity a great advantage results over the use of a single rotative mandrel and stationary center as used in the ordinary turning lathe.

I therefore claim as my invention—

1. The combination of two rotary mandrels and one cutting knife (or its equivalent) as arranged and made to operate together as above specified.
2. And I claim in combination with the said two rotatory mandrels and cutting knife, or machinery for rotating and reducing the wood, the two sets of bearers and cam bars or cams *h*, *m*, as arranged and made to operate substantially as above specified.
3. And I claim, in combination with the connecting bar of the lever *G*, the two foot levers *T*, and *H*, the same being arranged and made to operate together essentially as specified.

In testimony whereof I have hereto set my signature this nineteenth day of April A D 1848.

RUSSELL D. BARTLETT.

Witnesses:

RICHMOND TUCKER,  
ELIAS MOSES,