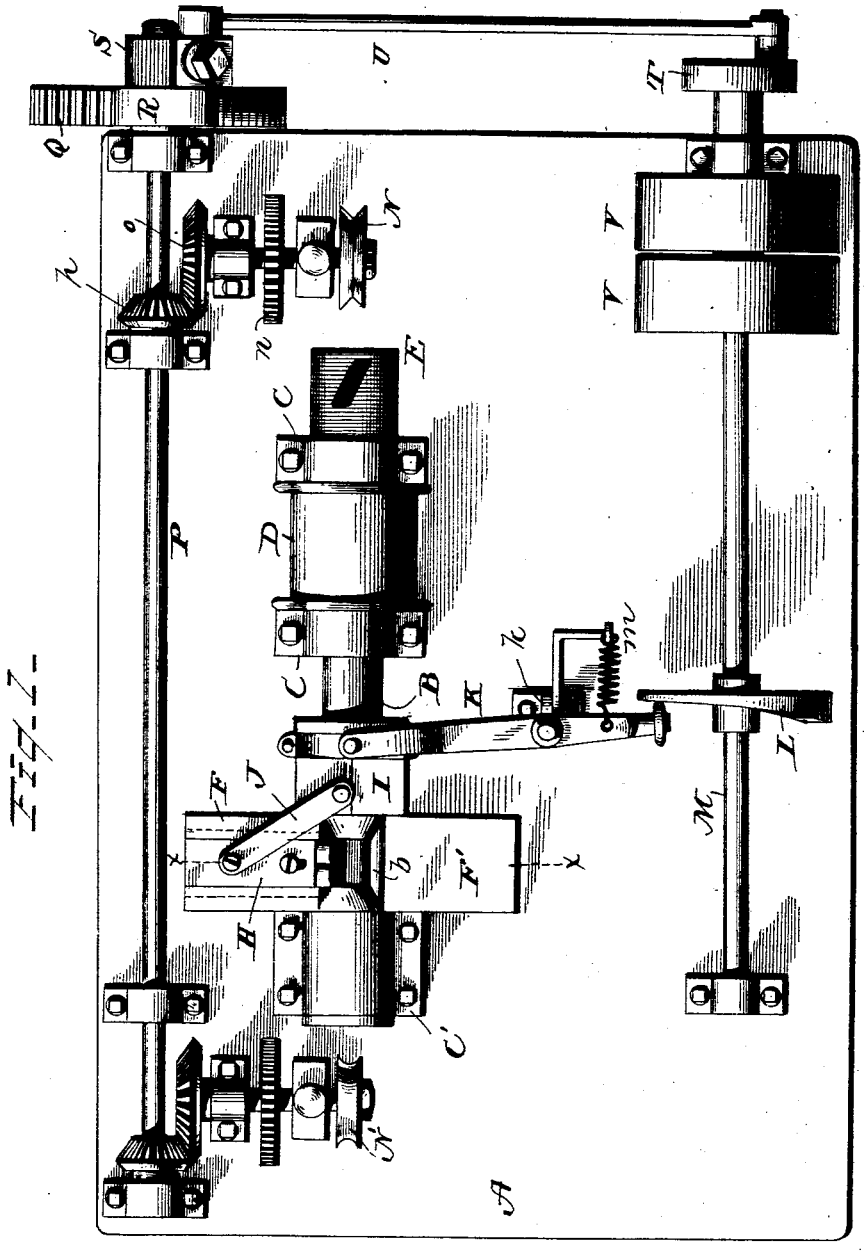
(No Model.) 4 Sheets—Sheet 1.

D. HEPP.

WOOD TURNING LATHE.

No. 541,275. Patented June 18, 1895.



Witnesses
C. J. Williamson.
Wm. F. Bagood.

Inventor
Daniel Hepp.
per Chas. N. Fowler
Attorney.

(No Model.) 4 Sheets—Sheet 2.

D. HEPP.

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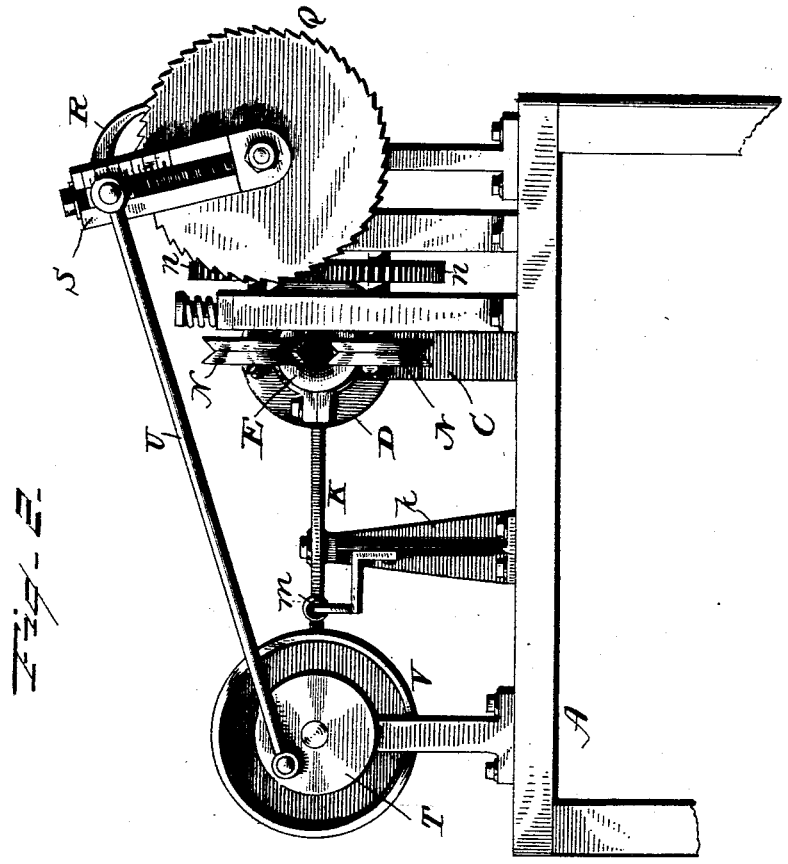

Fig. 2.

Witnesses
J. Williamson.
Chas. F. Peyser.

Inventor
Daniel Hepp.
per Chas. N. Fowler
Attorney.

(No Model.)

4 Sheets—Sheet 3.

D. HEPP.

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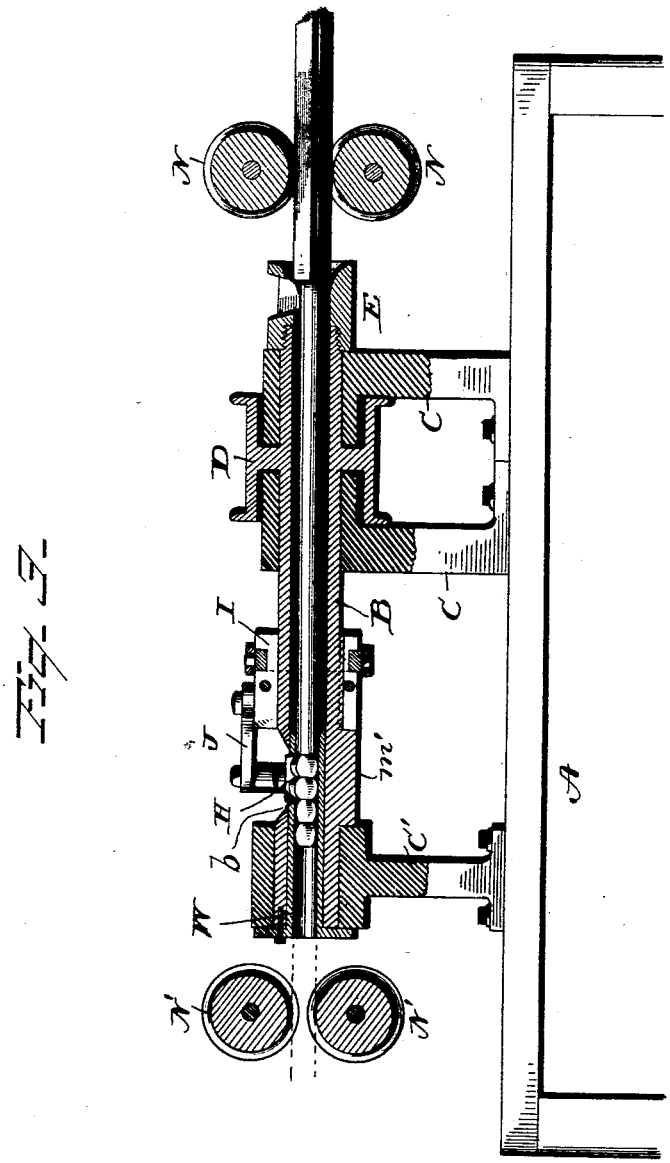


Fig. 3.

Witnesses
C. J. Williamson.
Wm. J. Osgood.

Inventor
Daniel Hepp.
per Chas. N. Fowler
Attorney.

(No Model.) 4 Sheets—Sheet 4.

D. HEPP.

WOOD TURNING LATHE.

No. 541,275. Patented June 18, 1895.

Fig. 4.

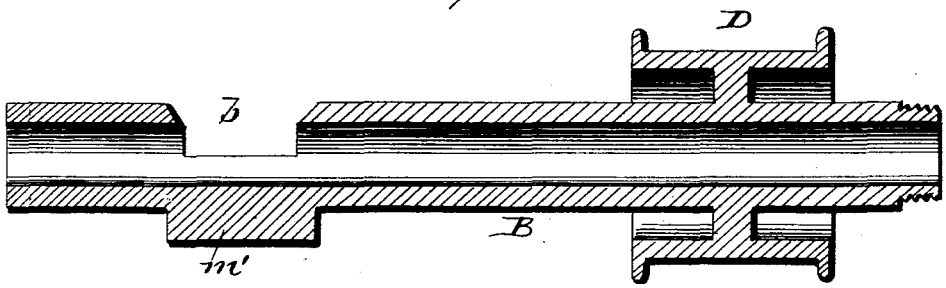


Fig. 5.

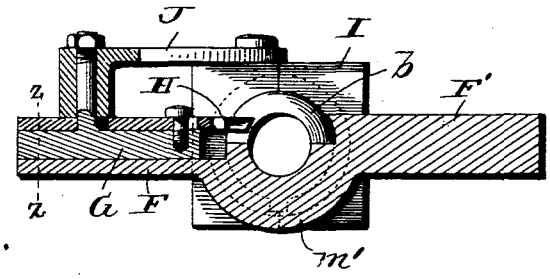
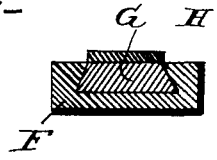


Fig. 6.



Witnesses
L. J. Williamson.
Wm. F. Bryard.

Inventor
Daniel Hepp.
per Chas. N. Fowler
Attorney.

UNITED STATES PATENT OFFICE.

DANIEL HEPP, OF CHICAGO, ILLINOIS.

WOOD-TURNING LATHE.

SPECIFICATION forming part of Letters Patent No. 541,275, dated June 18, 1895.

Application filed February 10, 1894. Serial No. 499,757. (No model.)

To all whom it may concern:

Be it known that I, DANIEL HEPP, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Wood-Turning Lathes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

The present invention relates to wood-working machines of the class which turn round rods from square stock by passing the latter through a tubular or hollow mandrel provided with a suitable cutter and it has for its object the provision of a simple and efficient machine that in addition to producing the rod will turn or produce thereon a beading, and thus by the operation of one machine, rapidly make what is known as beaded or turned moldings.

With the objects named in view the invention consists in the machine having the construction and combination of parts hereinafter specified and claimed.

In the annexed drawings, Figure 1 is a plan view of my machine. Fig. 2 is an end view. Fig. 3 is a longitudinal section. Fig. 4 is a detail longitudinal section of the hollow mandrel. Fig. 5 is a cross-section on line *x x* of Fig. 1. Fig. 6 is a section on line *z z* of Fig. 5.

In the drawings A designates a suitable frame for supporting the parts of the machine which frame may be of any preferred construction.

B designates a tubular or hollow shaft or mandrel, that is journaled in boxes at the upper ends of three standards, C, C and C′, the former being placed close together at one end and the latter at the other end thereof. The boxes of the standards C C are extended inward toward each other as shown, and encircling them is a pulley D that is cast upon the mandrel and affords the means for rotating the same. By thus extending the boxes into the pulley the machine is rendered compact and yet ample bearings for the mandrel are provided. At one end the external diameter of the mandrel is reduced and threaded to receive a cutter head E of ordinary construction that is adapted to turn a square stick to a round rod, while near its other end said mandrel has a lateral extension F that supports and carries a reciprocating knife holding block G. The knife H secured to the latter, is shaped to form the bead or molding on the rod and the reciprocations of said block are to place it into and out of position for the performance of this function. The rod or stock is fed to the cutters intermittently, by mechanism to be described, and the movements and positions of the cutter or knife H are regulated accordingly.

The movements of the knife H are given it by means of a sliding sleeve I that is mounted upon the mandrel and is connected to the knife carrying block G by a bar or link J, so that as said sleeve is moved back and forth said block will be moved to and from the stock. The sleeve is keyed to the mandrel to cause it to rotate therewith, while being free to slide thereon as in case of an ordinary clutch. A lever K pivoted upon a standard *k*, has at one end a swiveled connection with the sleeve, and at its other end bears against the face of a cam L, keyed to a shaft M, that by its rotation swings said lever and through it slides the sleeve. The lever is yieldingly held to the face of the cam by means of a spring *m* and preferably is provided with a roller to engage said face to reduce friction.

The side of the mandrel is cut away at *b* to permit the knife H to operate and to compensate for the material thus removed the portion of the mandrel immediately opposite is thickened at *m′*, while to counterbalance the weight of the extension F and the parts carried thereby and thus insure regularity in the revolution of the mandrel, the latter has another extension F′ diametrically opposite the other. The extensions F, F′ are cast integral with the mandrel and as the sleeve is placed between said extensions and the pulley D, which is also integral therewith, such sleeve is made in halves which are united by rivets or bolts after being placed upon the mandrel. By casting all of said parts in one piece the strength and rigidity of the machine are greatly augmented.

For feeding the stock to the mandrel and through the same, two feed wheels N, N, of ordinary form are journaled in suitable bearings so as to engage the stock above and be-

low, and as is customary, being adapted, one or the other, to yield to any inequalities or irregularities in the stock. The upper wheel drives the lower through gear wheels *n*, *n*, and in turn is rotated by means of a bevel gear *o* on its shaft that receives motion from a pinion *p* on a shaft P. Keyed to the shaft P is a ratchet wheel Q that is rotated intermittently by a pawl R that is carried by a vibratory arm S that is pivoted to the shaft, and receives its motion from a crank or eccentric wheel T on the shaft M to which it is connected by a rod or bar U. To vary the throw of the arm S and thus the amount of movement of the wheel Q, the point of connection of the rod U with said arm is adjustable toward and from the shaft P, and preferably, to enable the amount of feed to be definitely and accurately fixed the face of the arm will have a scale or graduation, with reference to which the position of the connection of the rod with the arm will be adjusted. At the discharge end of the mandrel the finished product is supported and guided by wheels N', N' with round grooves, but operating together, and driven from the shaft P precisely like the wheels N, N.

Fast and loose pulleys V, V, are provided on the shaft M for engagement by a belt from a suitable source of power. It will be observed that said shaft M operates both the feed mechanism and the knife H.

The operation of the machine will be apparent. The mandrel is revolved continuously by the pulley D carrying with it the cutters. The stock, by the feed devices described, is fed intermittently, and the cutter or knife H moved to the same to bead the round rod during the time it is stationary, and moved away therefrom while it is being fed along.

By employing different forms of knives the beading or molding can be varied, and it will be obvious that the amount of feed of the stock will depend on the width of knife employed. It will also be seen that by removing the knife the product of the machine will be simply the round rod.

To adapt the machine to work of less diameter than that of the interior of the mandrel, I propose to employ a bushing W as shown, which is introduced into the rear end of the mandrel and is secured thereto by screws, and which has its front end flared to readily admit the rod. The knife of course will be made adjustable to adapt it to work of varying diameter.

While I prefer the embodiment of my invention illustrated and described I wish it understood that I do not limit myself thereto, as changes can be made which will not involve a departure from the scope of such invention.

What I claim is—

1. In a wood turning lathe, a hollow shaft or mandrel B, having the pulley D, recessed at each end, and formed integral therewith and provided with the opening *b*, and the thickened portion *m'*, combined with the standards C, C, C', the upper ends of the two standards being extended horizontally toward each other, and made to fit in the recesses in the pulley D, and the upper end of the standard C' being made to bear against one end of the enlargement *m'*, substantially as shown.

2. A revolving hollow shaft or mandrel, having the opening *b* through one side and the thickened portion *m'* just opposite, combined with the two extensions F, F' extending horizontally outward from opposite edges of the opening, a sliding slotted knife H, recessed in the extension F, a connecting rod J, pivoted at one end to the knife, the sleeve I, having a longitudinal movement upon the shaft, a pivoted, spring actuated lever K, a cam on the driving shaft, and an intermittent feeding mechanism, whereby the knife is moved forward against the rod while it is at rest, and retracted when the rod is being fed forward, substantially as set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

DANIEL HEPP.

Witnesses:
LOUIS F. MUELLER,
SIEGMUND AUGUST WEBER.