

(No Model.)

2 Sheets—Sheet 1.

A. I. SANBORN.
WOOD TURNING LATHE.

No. 271,368.

Patented Jan. 30, 1883.

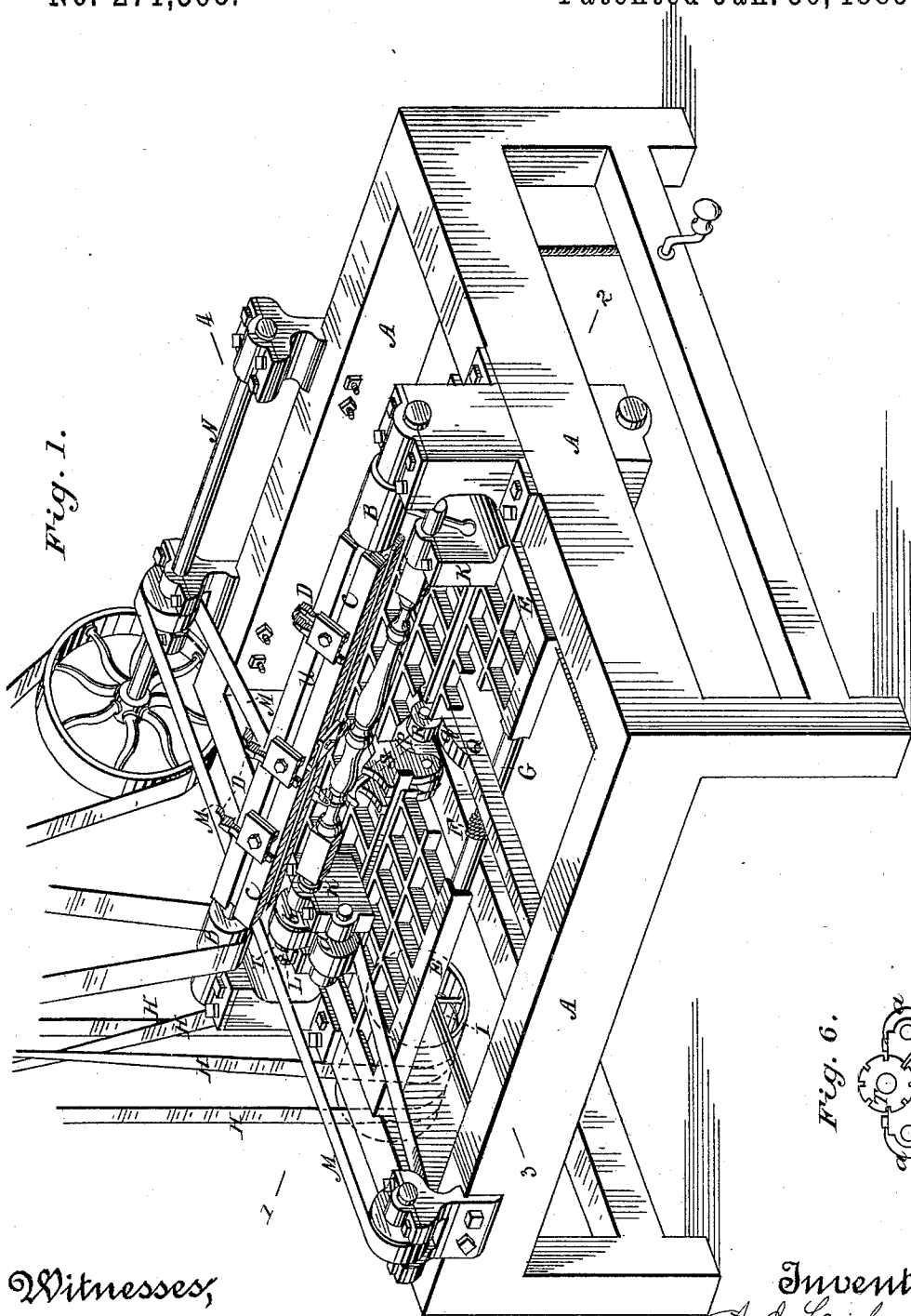


Fig. 1.

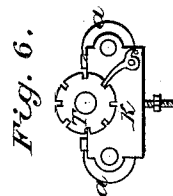


Fig. 6.

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2 Sheets—Sheet 2.

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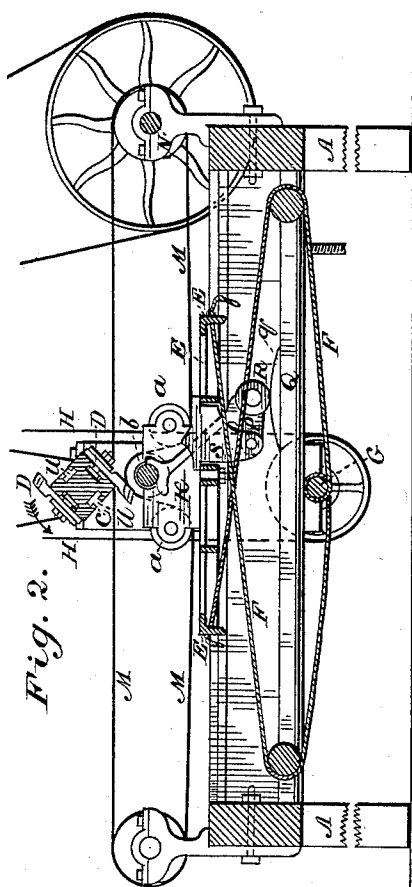


Fig. 2.

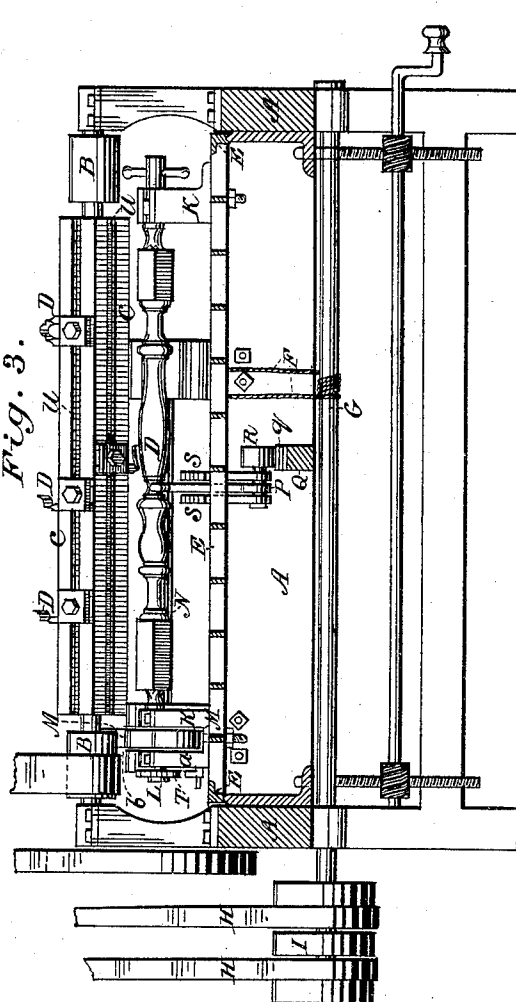


Fig. 3.

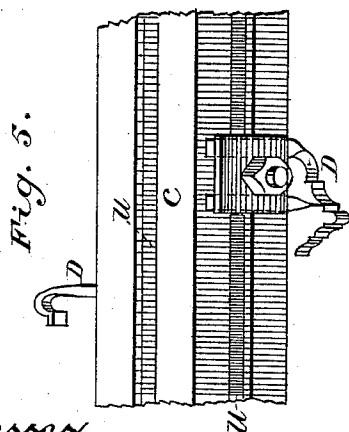


Fig. 5.

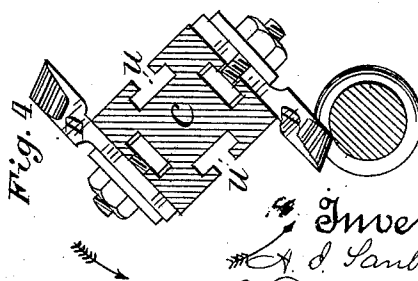


Fig. 4.

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UNITED STATES PATENT OFFICE.

ALBION I. SANBORN, OF SAN FRANCISCO, CALIFORNIA.

WOOD-TURNING LATHE.

SPECIFICATION forming part of Letters Patent No. 271,368, dated January 30, 1883.

Application filed September 18, 1882. (No model.)

To all whom it may concern:

Be it known that I, ALBION I. SANBORN, of the city and county of San Francisco, State of California, have invented an Improved Wood-Working Machine; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain improvements in wood-working apparatus; and it consists of a horizontal bed having a head and tail stock for holding the wood to be turned. The head and tail stock, with the article to be turned, are moved forward and back upon the frame, and are rotated at the same time, so that the article will be subjected to the action of peculiarly-constructed revolving cutters as it passes beneath them. In connection with these I employ a back-rest with a cam and roller, by which the rest is made to follow the wood as it is reduced in size, and prevent shaking or trembling.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a perspective view of my device. Fig. 2 is a section on the line 3 4, Fig. 1. Fig. 3 is a section on the line 1 2, Fig. 1. Fig. 4 is an enlarged cross-section of the cutter-head C; Fig. 5, an elevation of the cutter-head; Fig. 6, an elevation showing the dial-plate.

A is the frame of the machine.

B B are the pulleys to drive the rotary cutter-head C, upon which the cutters D D are secured.

The sliding bed E is drawn back and forth by the rope F, which is wound around the shaft G, driven by the belts H H, which are slipped alternately onto the fast pulley I by an adjustable shipper.

K K are the head and tail stock, which fit a groove in the sliding bed, so as to be adjustable to the length of the wood.

The spindle L is made to revolve in opposition to the rotary cutters D by the endless belt M, and is driven by the shaft N. The endless belt passes beneath the pulleys *a a* and over the pulley *b*, which drives the wood to be turned. This gives plenty of grip to drive the pulley, and at the same time allows the bed carrying the head and tail stock to move to and fro and pass the stationary revolving cutters, while the revolution of the block is kept up as the pulleys are moved along the belt.

The operator must stand at the right-hand end of the machine and put a blank wood into the head and tail stocks K K. When the sliding bed E is near the front or rear of the frame A, and after it has passed the revolving cutters, remove and renew the wood alternately at the front and rear. The cam P is carried along the guide Q by the roller R until the revolving cutters D reduce the size of the wood, when the cam P is raised by the roller R, which passes over an elevation, *q*, in the guide Q, thus forcing up the slide S obliquely in such a manner as to hold the wood firm in the center while it is being cut. This forms a rest to support it and prevent trembling when the heaviest part of the cut is being made.

To turn octagon or other forms having straight sides, I first remove the back-rest P R S and endless belt M and use the dial-plate T by introducing a spring-catch into a slot in the dial-plate, revolving the dial-plate T to the next slot in the same after each passage of the wood by the cutters until finished.

The cutters D D are made of a piece of square steel, forged thin after they leave the cylinder, and bent up at the end, with the shape of the molding formed on the outside, and easily sharpened by whetting or filing on the inside, whereby they retain their form.

Instead of being bolted upon the back side of the cutter-head C in the usual manner, which gives them a lifting cut, they are bolted onto the front side of the cutter-head C, thereby securing a drawing cut, making perfect work. The cutters are made in sections, and are bolted or clamped to the cutter-head by means of bolts, the heads of which are held in the slots U, which extend the whole length of the head. The cutters are clamped to the cutter-head, preferably in pairs, at opposite sides, so as to balance them and make the cuts successive instead of simultaneous, and this relieves the strain when the work reaches the cutter. Every pattern to be turned in a round piece or formed in an octagonal or other polygonal post or piece is made complete from end to end by these short sections of cutters, secured as before described, so as to make a continuous cut from end to end. Each cutter is so formed that its cut will commence at the highest part of its section, and, from the peculiar shape and manner of securing them to

the cutter-head, they make a drawing cut like that made by a knife, in contradistinction to that made by a chisel or a tool which is fixed to the back of the cutter-head, which is a lifting cut. This drawing cut is especially perfect in turning or working wood across the grain, as it has no tendency to roughen up the fibers, but leaves the work perfectly smooth and polished. This construction also enables me to turn or finish the whole length of any post or piece of irregular work at one operation.

I am aware that a revolving shaft carrying a series of cutter-heads provided with adjustable cutting-knives, in connection with a work-support carrying a revolving disk, and also a revolving and reversible frame operated by belting in connection with rotary cutters, are old in wood-working machines, and such I do not wish to be understood as claiming broadly as my invention.

I do not wish to be understood as claiming broadly the construction of cutter-head and cutters, as herein shown and described, as they will form the subject-matter of a subsequent application.

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

1. In a wood-working machine, the horizon-

tally-movable bed E, upon which the head and tail stocks K K are fixed, the spindle L, and pulleys *a a b*, the horizontal endless belt M passing over the pulleys, so as to drive the spindle and allow it and the bed to be moved from end to end of the frame A, in combination with the revolving cutter-head C and cutters D, substantially as herein described.

2. The cam or block P, hinged to the bed E, and having the adjustable arm and rest S, and the roller R, in combination with the guide Q, with the elevation *g*, substantially as and for the purpose herein described.

3. In a wood-working apparatus, the horizontally-moving bed E, carrying the head and tail stocks K to support the work, and the spindle L and pulleys *a a b*, in combination with the horizontal driving-belt M, passing over the pulleys, as shown, the cutter-head C, revolving in stationary boxes above the bed and carrying the cutters D, and the adjustable rest S, supported by the cam P and guide Q *g*, substantially as and for the purpose herein described.

In witness whereof I hereunto set my hand.

ALBION I. SANBORN.

Witnesses:

G. W. EMERSON,

S. H. NOURSE.