

(No Model.)

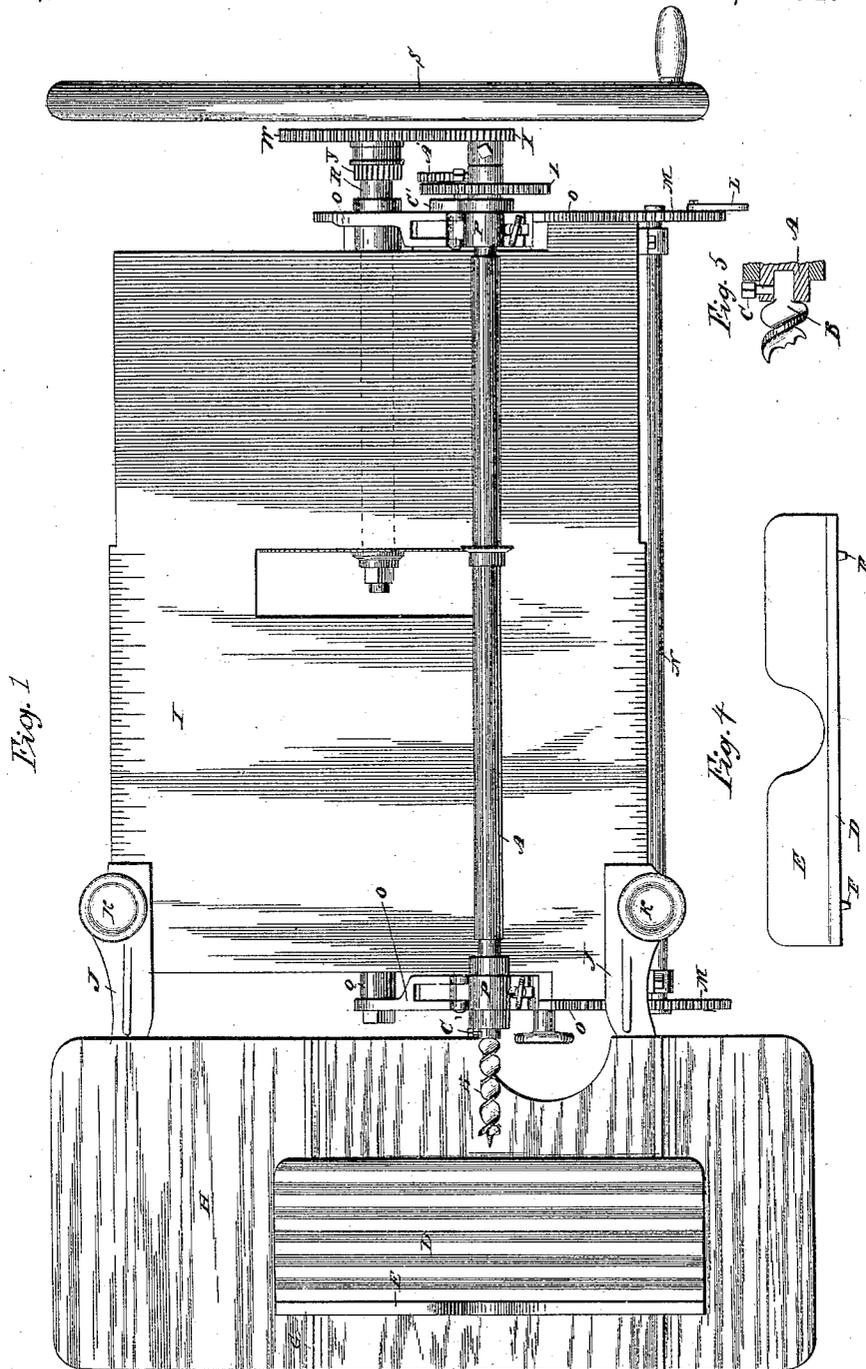
2 Sheets—Sheet 1.

E. F. BARNES.

BORING ATTACHMENT FOR SAWING MACHINES.

No. 448,195.

Patented Mar. 17, 1891.



Witnesses:

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Fig. 2

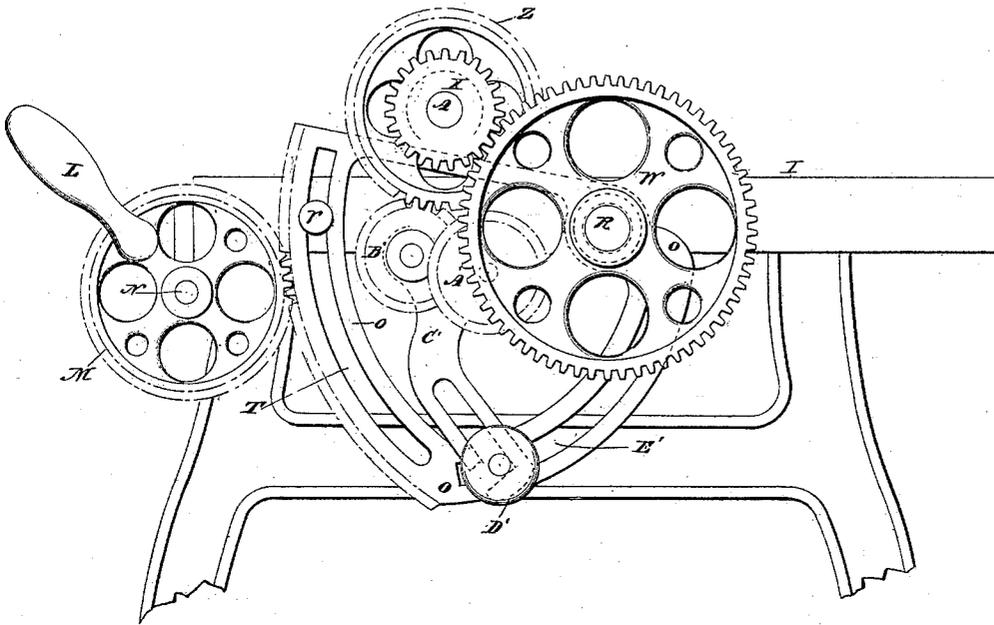
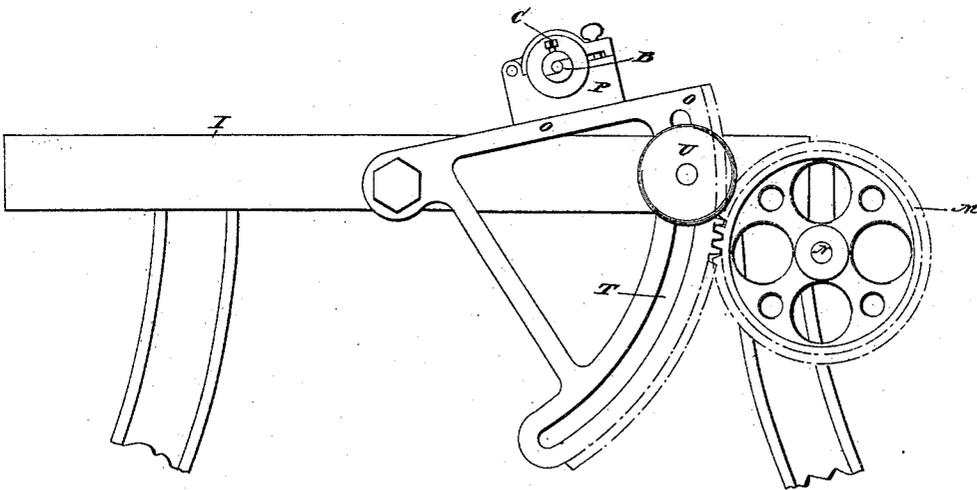


Fig. 3



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# UNITED STATES PATENT OFFICE.

ELBRIDGE F. BARNES, OF NEW HAVEN, CONNECTICUT.

## BORING ATTACHMENT FOR SAWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 448,195, dated March 17, 1891.

Application filed April 8, 1889. Serial No. 306,360. (No model.)

To all whom it may concern:

Be it known that I, ELBRIDGE F. BARNES, residing at New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Boring Attachments for Sawing-Machines; and I do declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improvement in wood-working machinery, the object being to produce a compact, cheap, convenient, and efficient boring attachment for a sawing-machine.

With these ends in view my invention consists in a machine having certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of a machine embodying my invention. Fig. 2 is an enlarged broken view thereof in end elevation and showing the driving-connections of the machine. Fig. 3 is a similar view of the other end of the machine and looking at the end of the bit. Fig. 4 is a detached view in inside elevation of the movable guide of the boring-table, and Fig. 5 is a sectional view showing the end of the feed-shaft and the bit.

As herein shown, my invention is applied to the sawing-machine for which Letters Patent of the United States No. 219,139 were granted to me on the 2d day of September, 1879; and it consists in part in boring out the end of the feed-shaft A of the patented machine to adapt it to receive the shank of a bit B, which is held in place by a set-screw C, entering the bore in the shaft and engaging with the shank of the bit. The stock to be bored is preferably placed upon or against a reversible guide D, having an upright fence E at one edge and two parallel ribs F F projecting from its lower face and entering corresponding grooves G G, formed in a removable boring-table H, located at one end of the sawing-table I, to which it is secured by clamping-arms J J, each carrying a hand-clamp K. Under the described construction the guide is movable upon the boring-table toward and away from the bit in the line thereof, and

may be reversed edge for edge, so as to bring its fence adjacent to the bit or otherwise, as desired. If desired, also, the guide may be removed from the boring-table and the boring done without it. The boring-table, it will be understood, is stationary when in position for use and clamped upon the sawing-table, to which it is very readily attached, and from which it is as readily removed. The boring-table being stationary, the bit is raised and lowered, and that very readily, by means of a manual or lever L, attached to one of two pinions M M, respectively secured to the opposite ends of an adjusting-shaft N, and meshing into the adjacent toothed edges of two segments O O, carrying boxes P P, in which the shaft A is mounted, one of the segments being centered on a stud Q and one on the driving-shaft R, which is provided with a large hand-wheel S, by means of which the machine is driven. The said segments are provided with segmental slots T T, one of which receives the stem of a hand-clamp U, (see Fig. 3,) whereby the segments and hence the feed-shaft and bit are sustained in any desired position of adjustment, and the other a button V, (see Fig. 2,) which guides the corresponding segment. It will thus be seen that by loosening the hand-clamp *u* and operating the manual L the feed-shaft and hence the bit may be very readily brought into position for boring within the range of the machine, and this with more expedition and with less labor than would be required for adjusting the boring-table, as has been done heretofore. The outer end of the driving-shaft is provided with a large gear-wheel W, permanently secured to it, while the outer end of the feed-shaft has removably secured to it a small pinion X, meshing with the wheel W and by me called the "converting-pinion," for its use or dispensation converts the machine for boring or for sawing. When the said converting-pinion is in place upon the feed-shaft, the same is directly geared with the driving-shaft, which drives it at a suitable rate of speed for boring. The driving-shaft is also provided with a pinion Y and the feed-shaft with a gear-wheel Z, the said pinion and wheel being connected by means of two pinions A' and B', mounted upon a carrier C', pivotally hung from the feed-shaft as a center and provided at its

lower end with a hand-clamp D', entering a segmental slot E', formed in the adjacent segment M, with which the carrier is thus coupled to hold it in position for its pinion A' to mesh into the pinion Y on the driving-shaft. The said pinion Y, gear-wheel Z, and the pinions A' and B' are provided for driving the feed-shaft when the machine is fulfilling its primary function of sawing, while the provision for setting the carrier in different positions enables the pinion A' to be changed for increasing or decreasing the rate of the shaft. When the converting-pinion is secured to the feed-shaft, the said hand-clamp is loosened to allow the arm to drop down and permit the pinion A' to disengage from the said pinion Y. Then when the converting-pinion is removed from the feed-shaft the pivotal arm is swung back to re-engage the pinions Y and A' and clamped to the segment with the said pinions in mesh.

My improved boring attachment as a whole does not interfere with the use of the machine for sawing and its readiness of adjustment by raising and lowering the bit instead of the boring-table makes it very convenient in use and economical of time.

I would have it understood that I do not limit myself to the exact construction shown and described, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

I am aware that a wood-working machine provided with an auger attached to one of its horizontal shafts, with a boring-table and with a bed carrying the boring-table and made vertically adjustable to vary the distance between the auger and the same, is old. I do not, therefore, broadly claim a wood-working machine having an auger and a boring-table.

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

1. The combination, with a table, a horizontal shaft located directly above the same, two toothed segments respectively carrying the opposite ends of the said shaft and connected together for simultaneous operation by a single manual, an auger mounted in one end of the shaft and projecting beyond one end of the table, an independent boring-table

secured to the table before mentioned for co-operation with the auger, which is raised above or lowered toward it, as desired, by raising and lowering the shaft through its segments, and means for driving the shaft, substantially as described.

2. The combination, with a table, a horizontal shaft located directly over the same, two toothed segments respectively carrying the opposite ends of the said shaft and connected together for simultaneous operation by a single manual, an auger mounted in one end of the shaft and projecting beyond one end of the table, an independent boring-table provided with two inwardly-projecting hand-clamps, by which it is removably attached to one end of the table before mentioned for co-operation with the auger, which is raised above and lowered toward it by means of the segments carrying the shaft, a guide reversible edge for edge, combined with the said boring-table, and means for driving the shaft, substantially as described.

3. The combination, with a sawing-table, of a driving-shaft, a feed-shaft, two toothed segments respectively carrying the opposite ends of the feed-shaft and connected together for simultaneous operation under one manual, an auger mounted in one end of the feed-shaft and projecting beyond one end of the table, an independent boring-table attached to one end of the sawing-table for co-operation with the auger, which is raised above and lowered toward it, as desired, by means of the segments carrying the shaft, gearing for connecting the two shafts for running them for sawing, a gear-wheel permanently attached to the driving-shaft, and a removable pinion for attachment to the adjacent end of the feed-shaft and meshing into the said fixed gear, the other gearing between the two shafts being retired when the removable pinion is put in place to mesh with the permanent gear-wheel, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ELBRIDGE F. BARNES.

Witnesses:

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L. CLARENCE HUBBARD.