(No Model.) 2 Sheets—Sheet 1.

E. F. BARNES.

CONVERTIBLE MACHINE FOR GROOVING AND SAWING WOOD.

No. 404,377. Patented June 4, 1889.

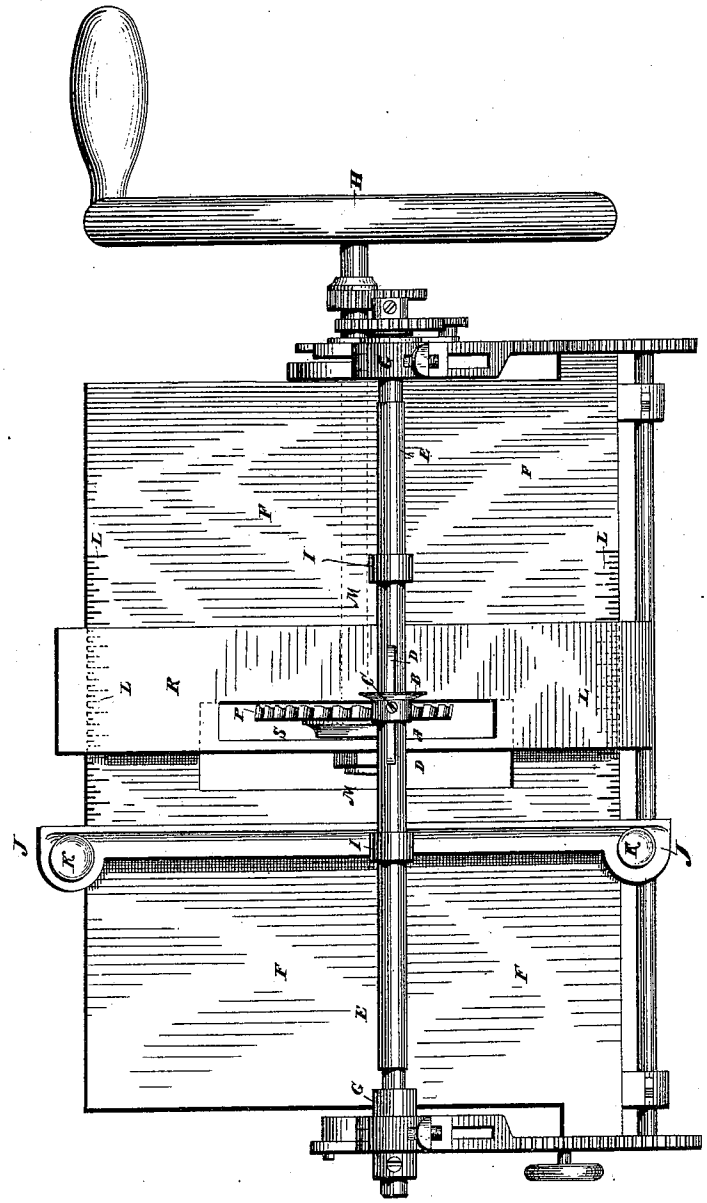


Fig. 1

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(No Model.) 2 Sheets—Sheet 2.

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FIG. 2

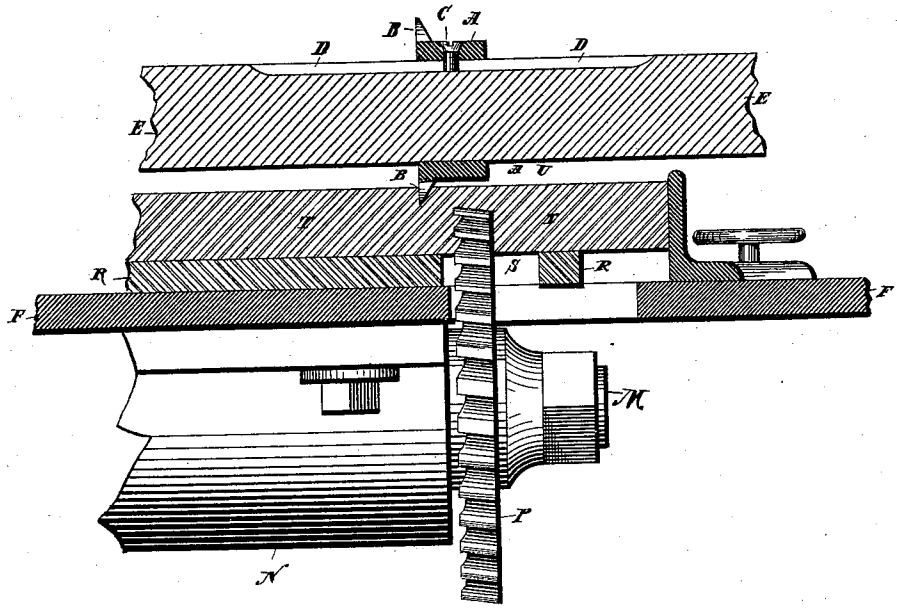
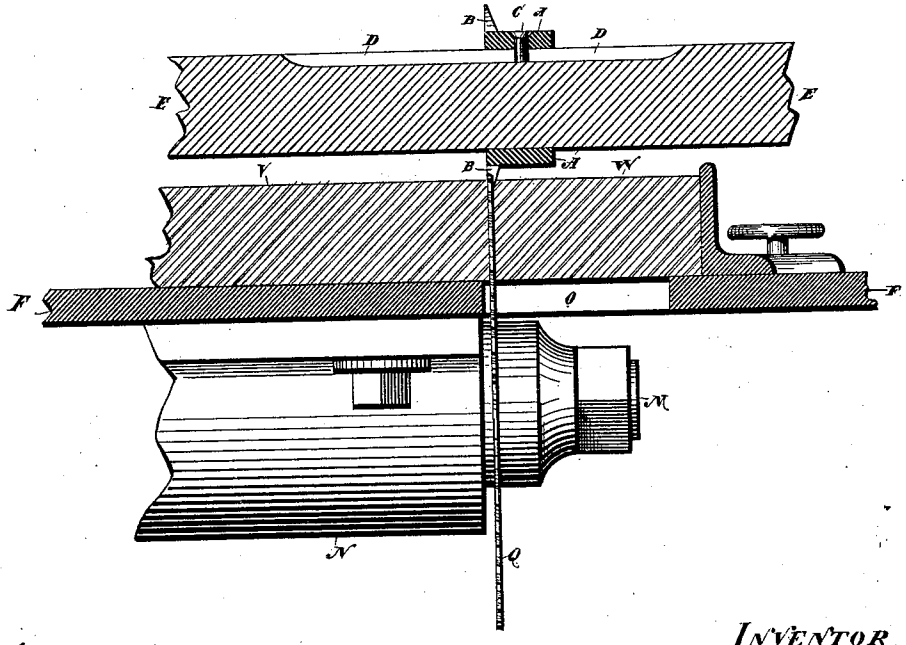


FIG. 3



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UNITED STATES PATENT OFFICE.

ELBRIDGE F. BARNES, OF NEW HAVEN, CONNECTICUT.

CONVERTIBLE MACHINE FOR GROOVING AND SAWING WOOD.

SPECIFICATION forming part of Letters Patent No. 404,377, dated June 4, 1889.

Application filed May 29, 1886. Serial No. 203,594. (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 Convertible Machines for Grooving and Sawing Wood; 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 convertible machines for sawing and grooving wood, the object being to produce an efficient, convenient, and cheap machine.

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

In the accompanying drawings, Figure 1 is a plan view of a machine embodying my invention. Fig. 2 is a broken view thereof, partly in vertical section and partly in side elevation, and showing the adjustment of the feed-wheel upon the feed-shaft when the machine is converted for grooving; and Fig. 3 is a similar view showing the adjustment of the feed-wheel upon the feed-shaft when the machine is converted for sawing.

The adjustable check-roller or feed-wheel consists of a collar A and a circular series of teeth B, flat on one side and conical on the other side, and is provided with a set-screw C, located in the said collar and entering a short longitudinal groove D, having tapering ends and formed about midway the length of a horizontal feed-shaft E, upon which the feed-wheel is loosely mounted with a capacity for longitudinal adjustment within the range of such slot, the tapering ends whereof merge into the face of the shaft. The said feed-shaft is located, with a capacity for vertical adjustment, just above and longitudinally across the table F of the machine, the opposite ends of the shaft being supported in bearings G G, and one end being geared to a hand-wheel H, through which the shaft is driven. Loose collars I I, located upon the shaft on opposite sides of the feed-wheel, are employed for holding down and steadying the work to which they are adjusted as occasion demands by moving them upon the shaft and raising and lowering the same.

A gage J, extending transversely across the table, is provided at its opposite ends with binders K K and set to place upon the table by means of scales L L, formed upon the opposite edges thereof. The beveled faces of the teeth of the feed-wheel are on the side of the said gage and operate to crowd the work against the same.

Below the table of the machine, parallel with and a little to the rear of the shaft E, is located a horizontal tool-shaft M, mounted in a bearing N, having one end geared up with the hand-wheel aforesaid and the other extending under an opening O, formed in the table and adapted to have a plow P or a saw Q secured to it.

A groove-gage consisting of a board R, provided with an opening S, is placed transversely upon the table, as shown in Figs. 1 and 2 of the drawings, when the machine is converted for grooving by securing the plow to the tool-shaft.

Fig. 2 shows a section T of lumber being grooved, as at U; and Fig. 3 of the drawings shows a section of lumber V from which a strip W is being sawed off.

When the machine is converted for grooving, as shown in Figs. 1 and 2 of the drawings, the feed-wheel is set with its teeth out of line with the plow and on the opposite side of the same and from the gage. This is necessary to prevent the teeth from breaking through the bottom wall of the groove. The prints of the teeth are in this case left upon the lumber, but being on the reversed side thereof are not objectionable. When the machine is converted for sawing, the feed-wheel is set with the teeth in line with the saw, so that the prints made by the teeth in the wood will be removed by the saw. The short groove located about midway of the feed-shaft provides, without weakening the same, for the adjustment of the said wheel without longitudinally shifting the shaft, which it is impracticable to adjust on account of its being supported at each end in complicated bearings constructed and adapted to be moved for raising it above and lowering it upon the table.

I am aware that a wood-working machine having an adjustable feed-wheel is not new, and that it is old to groove a shaft to adapt it for the adjustment of a wheel upon it. I do not, therefore, claim either of these constructions, broadly; but

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

In a convertible machine for grooving and sawing wood, the combination, with a feed-shaft provided with a short longitudinal groove, of a check-roller having teeth at its edge and flat on one side and conical on the other side, and provided with a collar carrying a set-screw entering the groove in the shaft upon which the check-roller is mounted, a table F, a gage J, loose rollers I, mounted upon the shaft, movable bearings for the opposite ends of the shaft, gearing for rotating the shaft, and a tool-shaft located below the table and adapted to interchangeably carry a grooving-plow and a saw, the described grooving of the feed-shaft and the described construction of the check-roller permitting the adjustment of the roller on the shaft so as to be set for rotation in line with the saw when the machine is converted for sawing and for rotation out of line with the plow when the machine is converted for plowing, substantially as set forth.

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

ELBRIDGE F. BARNES.

Witnesses:
JAMES G. CLARK,
CHAS. B. SHUMWAY.