2 Sheets—Sheet 1.

O. L. JENKS.

CIRCULAR SAW-MILL.

No. 193,004. Patented July 10, 1877.

Fig. 1.

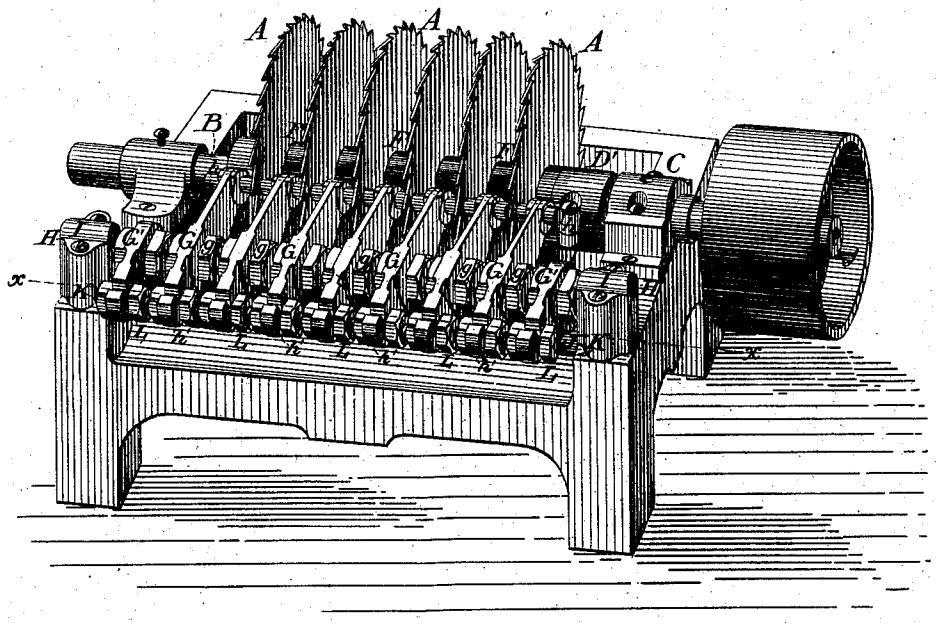
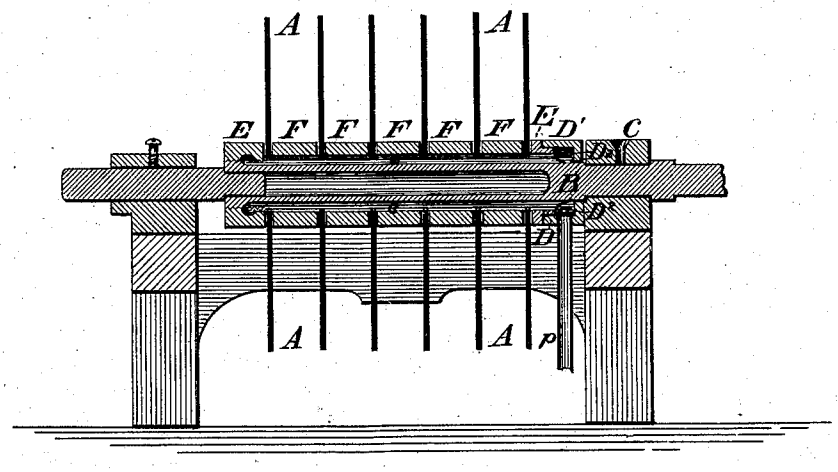


Fig. 2.



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2 Sheets—Sheet 2.

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Fig. 3.

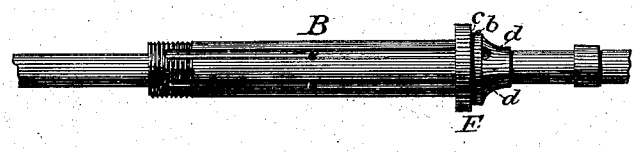


Fig. 4

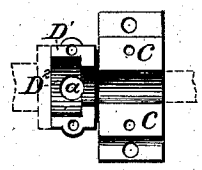


Fig. 5.

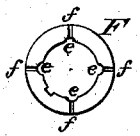
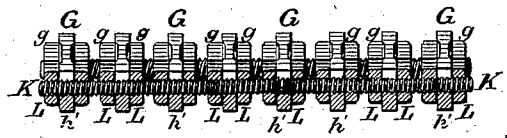


Fig. 6.



Fig. 7.



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UNITED STATES PATENT OFFICE.

ORRIN L. JENKS, OF PORT HURON, MICHIGAN, ASSIGNOR TO HIMSELF AND WILLIAM S. JENKS, OF SAME PLACE.

IMPROVEMENT IN CIRCULAR-SAW MILLS.

Specification forming part of Letters Patent No. **193,004**, dated July 10, 1877; application filed September 22, 1876.

To all whom it may concern:

Be it known that I, ORRIN L. JENKS, of Port Huron, in the county of St. Clair and State of Michigan, have invented a new and useful Improvement in Circular-Saw Mills; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The improvement which I have in view is the more convenient cooling of circular saws running in gangs, the more ready and accurate adjustment of the saws in their relative positions to each other, and the preservation of the saws from buckling, or change of their plane surfaces when in use; and my invention therein consists, first, in the means employed for introducing water through a journal-box into grooves in the gage-collars and saws, and thence distributed through grooves upon said collars upon the surfaces of the saws, near the center thereof, in a thin film; second, in the means employed for adjusting the relative spaces between the saws, and preserving them from buckling, consisting of certain pivoted arms with wooden guide-pins, said arms having a limited lateral adjustment; third, in the novel combination of the various operative parts, constructed and arranged as more fully hereinafter explained.

In order that those skilled in the art may understand how to make and use this device, I proceed to describe the same, having reference to the drawings, in which—

Figure 1 is an elevation, in perspective, of my device; Fig. 2, a vertical central section through the arbor; Fig. 3, a separate view of the arbor, showing grooves upon it; Fig. 4, a top view of the journal-box at the driving end of the arbor; Fig. 5, a separate view of one of the movable gage-collars; Fig. 6, a separate view of one of the guide-bars; Fig. 7, a vertical section through the line *x x* of Fig. 1, showing the means of adjustment of the outer end of the guide-bars.

Like letters denote corresponding parts in each figure.

A gang of circular saws, A A, is mounted in a suitable frame upon an arbor, B, constructed in the usual way, except as to the grooves hereinafter mentioned, and provided at the driving end with a pulley. The driving end of the arbor is journaled in a proper box, C, to the inner side of which is secured (or has cast with it) a water-box, D, having a suitable covering-box, D^1, within which two portions is a chamber, D^2, through the bottom of which is an opening, *a*. Upon the arbor is placed a collar, E, having a shoulder, *b*, which shoulder fits closely, and turns in the inner end of the water-box, the extreme end of which, in turn, fits closely against the side *c* of the collar, so that this shoulder forms a portion of one side of the water-chamber D^2. Through this shoulder, or along the outer portion of the arbor, openings *d* lead into corresponding grooves *e*, upon the outer surface of the arbor, extending up to the collar E upon the opposite end of the arbor.

Instead, however, of the grooves just mentioned, it is apparent that the operation will be the same if grooves *e* are made in the inner surfaces of the movable collars hereinafter mentioned, and corresponding grooves *e'* in the eye of the saw.

The positions of the saws upon the arbor are determined by the movable collars F, which also serve as guides, and are of a thickness to separate the saws, as may be required, for sawing various dimensions of lumber, and one, two, or more of them may be used, as may be found most convenient. These collars have grooves upon their faces leading radially from the grooves *e* to the outer surfaces of such collars.

The interior surfaces of these collars F may be grooved or not, as may be convenient, when the arbor is grooved, but must be grooved, as indeed the eyes of the saw must be, when the arbor is not grooved.

The water which leads through a suitable pipe is introduced through the opening *a* into the water-chamber D^2, passes thence through the openings *d*, and along the surface of the arbor, through the grooves *e*, and then out of the grooves *f*, and spreads itself in a thin film upon the faces of the saw near its center, whence it is distributed equally over the whole area of the surface of the saw by its centrifu-

gal motion, cooling and lubricating the same most efficiently.

At the front end of the same frame is placed the device for the adjustment of the saws, and to preserve them from buckling, and consists of a series of guide-bars, G, placed side by side upon a threaded shaft, H, which is journaled in suitable bearings I, which bearings may be connected by a cross-bar, J.

These guide-bars, made preferably of cast metal, are separated a proper distance apart by washer-nuts *g*, having rounded outer surfaces, and have passing laterally through their front ends *h* guide-pegs, preferably of wood, of the length required for the desired distance of the saws from each other.

The opposite or outer ends *h'* of these guide-bars may have openings, through which the guide-rod K passes, or may be hooked for convenient removal, so as to partially embrace such guide-rod.

This guide-rod is threaded, and nuts L placed upon the same, one on each side of the outer end of each guide-bar, may be turned so as to move such outer end laterally along such guide-rod, and hold it firmly in position at any desired point, the rounded inner faces of the washer-nuts *g* presenting no obstacle to such movement.

In order to give a firmer support to these guide-bars described, and to the guide-rod, a half guide-bar, G', may be placed on the two outsides of the group of guide-bars G, in the outer ends of which half guide-bars G' the ends of the guide-rod are secured.

When the guide-bars are in position the guide-pegs are so arranged that when the saws run truly, the ends of the pegs do not quite touch the surfaces of the saws. When the saw buckles or gets out of shape, its surface will press against the end of one of the pegs, and be restrained from further deviation in that direction, and so prevented from serious injury, as it may at a convenient time be removed and put in proper condition.

By means of the washer-nuts upon the threaded shaft N the guide-bars may be placed in the desired position relative to the saws, and by means of the nuts upon the guide-rod K the front ends of the guide-bars and the guide-pegs may be adjusted with perfect accuracy while the saws are in motion.

If it is desired to change the guide-pegs in any one of the guides, by loosening the washer-nuts *g* and the nuts L belonging to such guide-bar, the same may be turned up out of the way of the saws while in motion, and the desired change effected.

Having thus described my improvement in circular-saw mills, and explained the mode of operation thereof, what I claim as new therein, and my own invention, is—

1. In a circular-gang-saw mill, the combination, with the saw-arbor B and the grooved passages *e*, of the water-box D, having an opening for a water-pipe, and the collar E, provided with openings *d*, substantially as described and shown.

2. In combination with the adjustable guide-bars G, the guide-rod K and nuts L, substantially as and for the purposes set forth.

This specification signed and witnessed this 19th day of September, 1876.

ORRIN L. JENKS.

Witnesses:
R. N. DYER,
L. W. SEELY.