C. M. FAIRBANKS.

Circular Saw-Mill.

No. 162,279. Patented April 20, 1875.

FIG. 1.

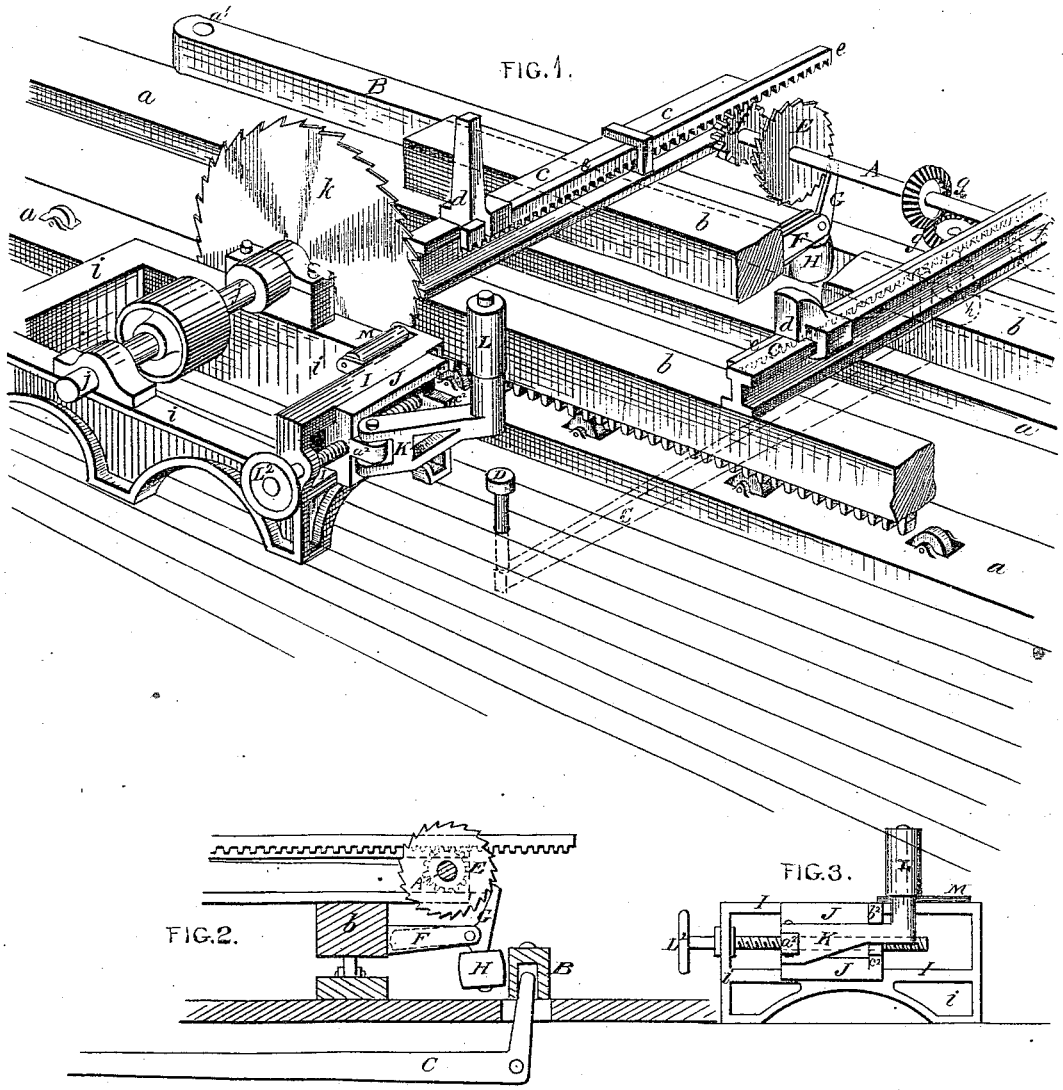

FIG. 2.

FIG. 3.

WITNESSES.

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CHESTER M. FAIRBANKS, OF LEBANON, NEW HAMPSHIRE, ASSIGNOR TO LANE MANUFACTURING COMPANY, OF MONTPELIER, VERMONT.

IMPROVEMENT IN CIRCULAR-SAW MILLS.

Specification forming part of Letters Patent No. **162,279**, dated April 20, 1875; application filed August 20, 1874.

To all whom it may concern:

Be it known that I, CHESTER M. FAIRBANKS, of Lebanon, county of Grafton and State of New Hampshire, have invented certain Improvements in Circular-Saw Mills, of which the following is a specification:

My invention raletes to circular-saw mills; and consists in a novel construction, combination, and arrangement of parts, which have for their object to improve and facilitate the operation of the mill, as will be fully hereafter set forth.

Figure 1 is a perspective view of a circular-saw mill embodying my improvements. Figs. 2 and 3 are sectional views of portions of the mill.

a represents the rails on which travels the log-carriage, consisting of the beams *b b* and base-beams *c c*, on which latter travel the set-beams *d d*, which are operated by the racks *e*, attached to them, and meshing with the pinion *f* on the shaft A, that has its bearings in the outer extremities of the beams *c c*. This shaft is rotated by means of the bevel-gears *g g*, one secured on it and the other on an upright arbor, *h*, to the lower extremity of which a friction-wheel is secured, which is operated, as the carriage reciprocates, by bringing the friction-rail B, pivoted at *a'* to the floor of the mill, in contact therewith. This rail is operated by the lever C and treadle D. On the shaft A is secured a ratchet-wheel, E, and between bearings F, projecting from the beam *b* of the carriage, is pivoted the pawl or dog G, which is so hung as to keep engaged with the ratchet by its own weight. H is a friction-roller turning on a pin extending downward from the under and outer end of the pawl by the side of the movable friction-rail B, so that as the rail is operated by the lever it will come in contact with this roller, and disengage the pawl with the ratchet, and leave the shaft A free to revolve in the reverse direction. *i* is the saw-frame; *j*, the saw-mandrel, and *k* the saw. At the front end of the frame *i* are formed guides I, between which slides the box J. From one extremity of this box projects a bearing, a^2, to which is pivoted the arm K. This swinging arm is formed, as shown, with a vertical hub or cylinder at its outer end, on which is pivoted the roller L. When the arm K is closed on the box, its forward extremity enters between the projections b^2 c^2 on the box J, so as to prevent any vertical movement. L^2 is a hand-screw for setting the roller up to the log-carriage to determine the thickness of stuff to be cut. M is a horizontal roller situated inside the saw-frame, for supporting the board cut as it travels along. Another roller, similar to M, may be placed on the other end of the saw-frame.

The operation of the parts will be as follows: The log is placed on the base-beams *c c*, and having been squared, the roller L is swung into place and set to the desired thickness of stuff to be cut, which is readily done by a scale on the frame *i*. The carriage is now run back past the saw, and begins to be gradually fed forward. The operator places his foot on the treadle D, and pushes it down, operating the lever C, which brings the friction-rail in contact with the wheel, and at the same time with the roller H on the pawl G, and disengages the pawl with the ratchet-wheel. The carriage, still moving forward, revolves the friction-wheel and the shaft A, thus running the log up to the roller L, when, the treadle being allowed to rise, the rail B springs back, and the pawl engages with the ratchet-wheel E, thus preventing any backward movement of the head-blocks. When the carriage is moving back, the rail B is applied, which disengages the pawl and allows the shaft to revolve in the reverse direction. A hand lever-set like that patented to me November 5, 1872, may be applied to the shaft A, and the lever-set may be used, when desired, for sawing thin boards requiring but little movement of the log upon the head-blocks. It is of great importance to have the roller L rigid as regards vertical movement, which rigidity is obtained by the arms being confined, when closed, between the projections b^2 c^2 on the box. It also saves time to have the roller L capable of being swung out of the way when squaring or slabbing logs, and by having it on a pivoted arm this is accomplished.

I claim—

1. The projections b^2 and c^2 on sliding box J, in combination with the vertical and swinging gage-roller L, as a means of holding the gage-roller truly in position, and preventing displacement thereof, substantially as described.

2. The sliding box J, having projections b^2 c^2, and the lug a^2, to which the horizontal arm K, that carries the gage-roller L, is pivoted, in combination with the stationary slides I I, carrying the horizontal roller M, as and for the purposes described.

3. The movable pivoted friction-rail B, in combination with the friction-roller H and pivoted gravitating-pawl G, as and for the purposes described.

CHESTER M. FAIRBANKS.

Witnesses:

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