J. C. & J. L. Nutt,

Reciprocating Saw-Mill.

No. 45,516. Patented Dec. 20. 1864.

Fig. 1.

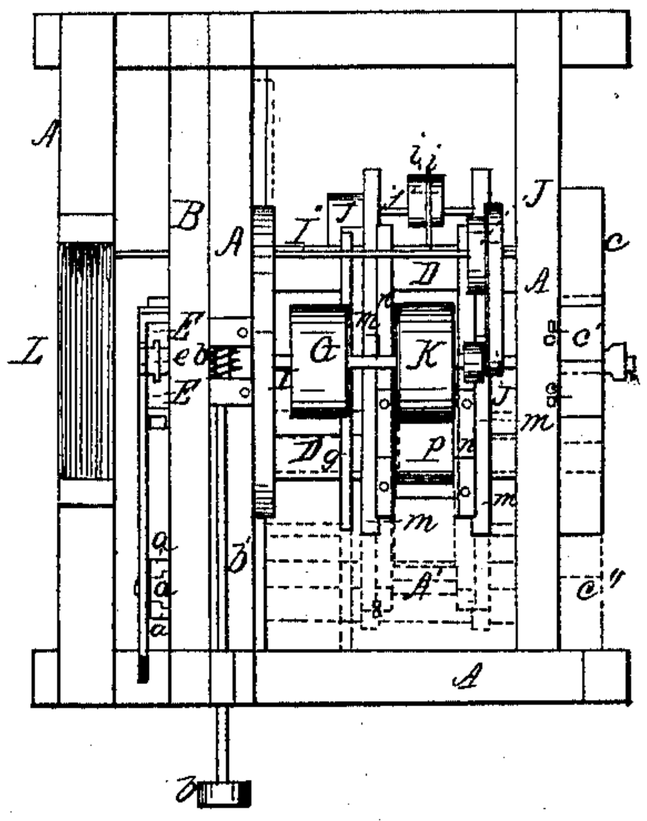


Fig. 2.

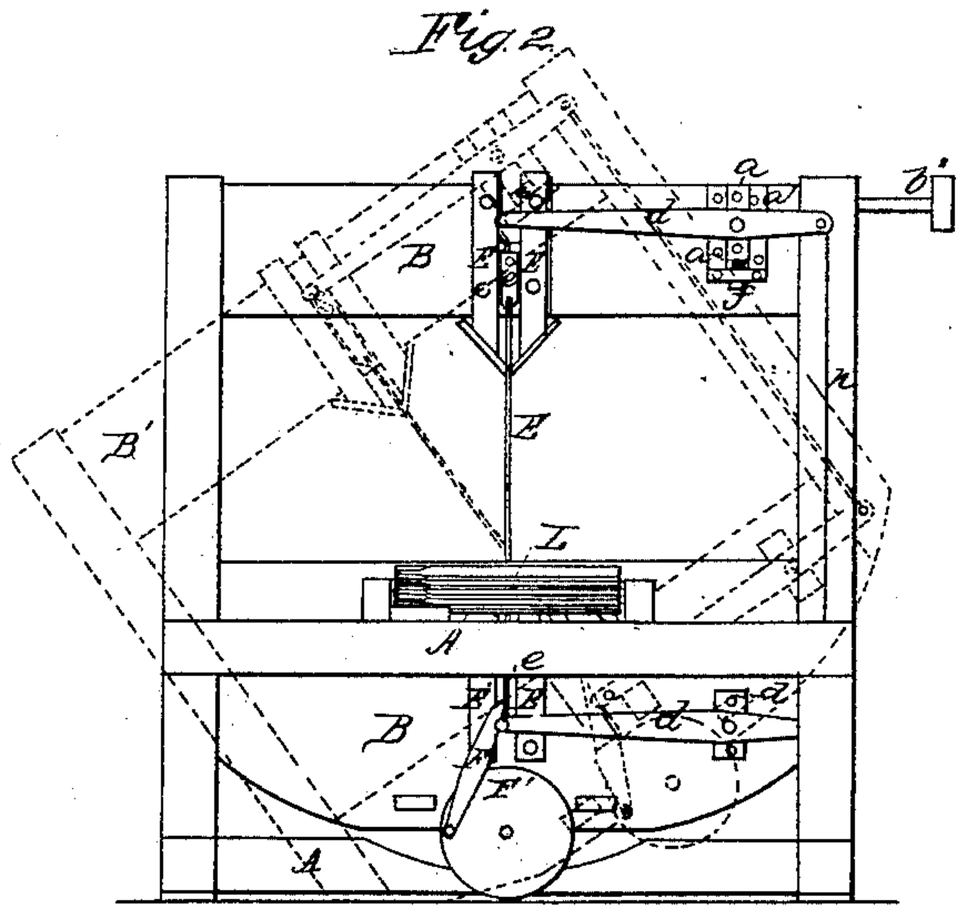


Fig. 3.

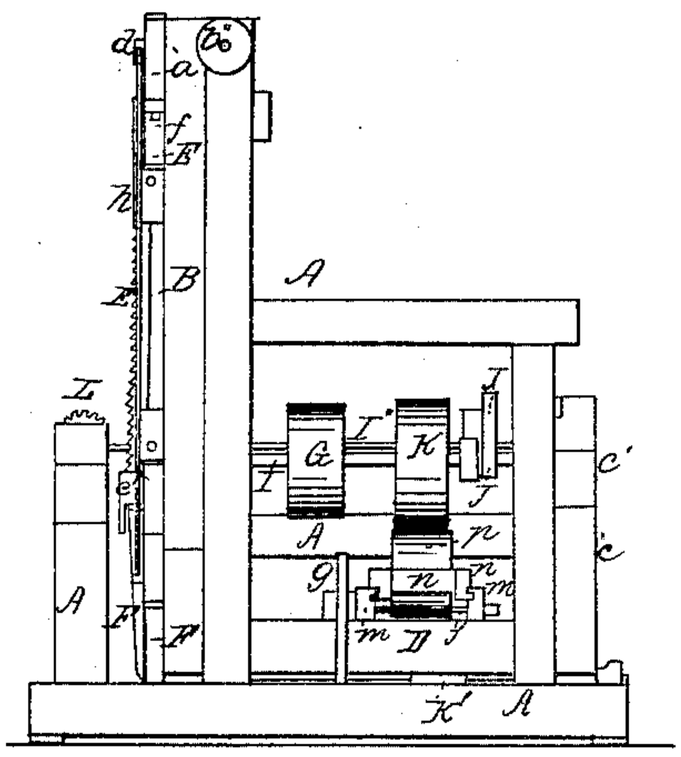


Fig. 4.

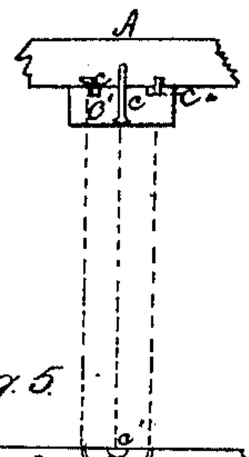
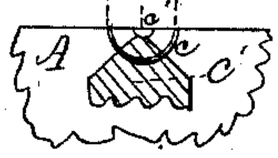


Fig. 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN C. NUTT AND JAMES L. NUTT, OF JEFFERSON, OHIO.

IMPROVEMENT IN SAW-MILLS.

Specification forming part of Letters Patent No. **45,516**, dated December 20, 1864.

To all whom it may concern:

Be it known that we, J. C. NUTT and J. L. NUTT, of Jefferson, in the county of Ashtabula and State of Ohio, have invented certain new and useful Improvements in Saw-Mills; and we do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a top view of the mill. Fig. 2 is an end view. Fig. 3 is a side view. Fig. 4 and 5 are detached sections.

Like letters of reference refer to like parts in the several views.

Our improvement relates to constructing a saw-mill in which timber can be sawed at any desired curve or bevel by an arrangement of devices as herein set forth.

A represents the stationary frame-work of the mill, with which is connected a vibrating frame, that consists of a frame or sash, B, and frame C, connected at the lower end by cross-pieces D. The sash B fits close against an upright part of the frame A, as in Figs. 1 and 3, and on the inner side of the upper part of the sash-frame there is a circular rack, in which an endless screw, *b*, works on the end of the rod *b'*, there being a hand-wheel *b''* on the outer end, by which it is turned, moving the vibrating frame in either direction to any desired angle. To the outside of the frame B is connected the saw E, the head-piece *e* and foot-piece *e'* of which move in guides E', secured to the frame above and below, as represented. To the head and foot pieces of the saw are attached parallel rods *d* and *d'*. The under one is pivoted to a lug, *d''*, secured to the frame, and the upper one is pivoted to an adjustable block, *a*, that can be moved up or down in guides *a'*, on the frame being adjusted either way by means of a screw underneath, (seen at *f*, in Figs. 2 and 3.) The outer ends of these rods are connected by the rod *h*, which is parallel with the saw. By means of these parallel rods, arranged as described, the saw can be tightened or loosened, or a long or short saw can be used, as will be further described.

The vibrating frame is hung and turns on sections of circles *c*, at the center of motion, (represented in Figs. 4 and 5,) the circles being secured to the stationary frame. There is one supporting the sash end B of the frame, and one the rear end, (seen in Fig. 3,) the frame extending up, as at C', and there is a pivot, *c'*, in the center of the circle supporting the sash end, (shown in Figs. 4 and 5,) that aids in keeping the frame in its central position, and upon which the timber rests as it is being fed into the mill.

The saw is operated by means of a pitman, F, attached to the crank-shaft F'.

G is a driving-pulley on the shaft I, which is supported in the stationary frame, below the center of the vibrating frame, so as not to interfere with the timber that is being sawed.

K is another pulley on the driving-shaft, connected by a belt to a pulley, K', below on the crank-shaft, which operates the crank. The crank-shaft is supported in the vibrating frame and moves with it.

L is a feed-roller in front of the saw, which is operated by an endless screw, working in one end of the roller. This screw is on the end of a shaft, I'', which is turned by a pulley, J, on the shaft, being connected by a belt to a pulley, J', on the shaft of the driving-lley.

Across the pieces D, connecting the front and back part of the vibrating frame, are secured guide-frames, *m*, to which is connected a moving frame, *n*, as seen in Fig. 3, that slides back and forth in the frames *m*. In the frame *n* is arranged a pulley, *p*, that presses against the belt extending from the pulley K to the pulley K', by means of which the belt is adjusted, according to the position of the vibrating frame. For as the pulley K on the driving-shaft is below the center on which the vibrating frame moves, it follows that the more the lower pulley, K', in the vibrating frame, is moved to either side from a vertical position under the pulley K, the greater will be the distance between the pulleys, and the belt will have to be lengthened accordingly. To produce this and keep the belt always adjusted to the same tension over the pulleys is the object of the pulley *p* in the sliding frame which forms a belt-tightener being made to press more or less on the belt by means of a spring, *g*, connected to the sliding frame, and operating it in the desired manner. To the end of the spring is attached a cord or chain that is secured to an arm, *j*. This arm is on

a shaft, j', that turns and is supported in the guide-frames m, and on this shaft is another arm i, extending reversely from the arm j, and this arm is connected to the sliding frame by means of a cord or chain, i', as shown in Fig. 1.

The pulley p, by means of the spring, presses uniformly on the belt, and perfectly compensates for the slackening of the belt, keeping it at the same tension over the pulleys K and K′, whatever may be their position in relation to each other by the moving of the vibrating frame.

In practical operation the different parts of this mill, constructed and arranged as described, operate as follows: The timber is fed into the mill on the fluted roller L, and rests on the stationary frame and pivot c, as may be required. The driving-pulley operates the saw and turns the feed-roller by means of pulleys, as described. The saw can be adjusted to any angle by the vibrating frame, and operates with equal facility in any position. The vibrating frame can be turned more or less from a vertical to an inclined position, as indicated by the dotted lines B′ and C″ in Figs. 1 and 2, and the frames m and n on the cross-pieces D are carried round with it, as indicated by the dotted lines A′ in Fig. 1, all the parts operating with the same facility in whatever position they may be placed. As the saw can thus be adjusted and operated at any angle, and by means of the fluted roller on which the timber rests and is fed into the mill, the timber can be sawed out in curved forms, and at any angle or bevel that may be desired.

A long or short saw can be used by means of the adjustable block a in the guides a', to which the parallel rod d is pivoted, as described, for, as the block can be moved up or down, the distance between the parallel rods can be lengthened or shortened, according to the length of the saw, the rods d and d' being always parallel, and the tension-rod h parallel with the saw.

What we claim as our improvement, and desire to secure by Letters Patent, is—

1. The adjustable block a, screw f, or its equivalent, in combination with the parallel rods d d' and tension-rod h, as and for the purpose set forth.

2. The arrangement of the sectional circles c c and pivot c', in combination with the vibrating sash-frame B, operating conjointly as and for the purpose described.

3. The arrangement of the sliding-frame n, spring g, in combination with the arms i j, pulley p, and vibrating frame, operating as and for the purpose described.

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Witnesses:
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