D. J. MARSTON.

GANG SAW MILL.

No. 186,742. Patented Jan. 30, 1877

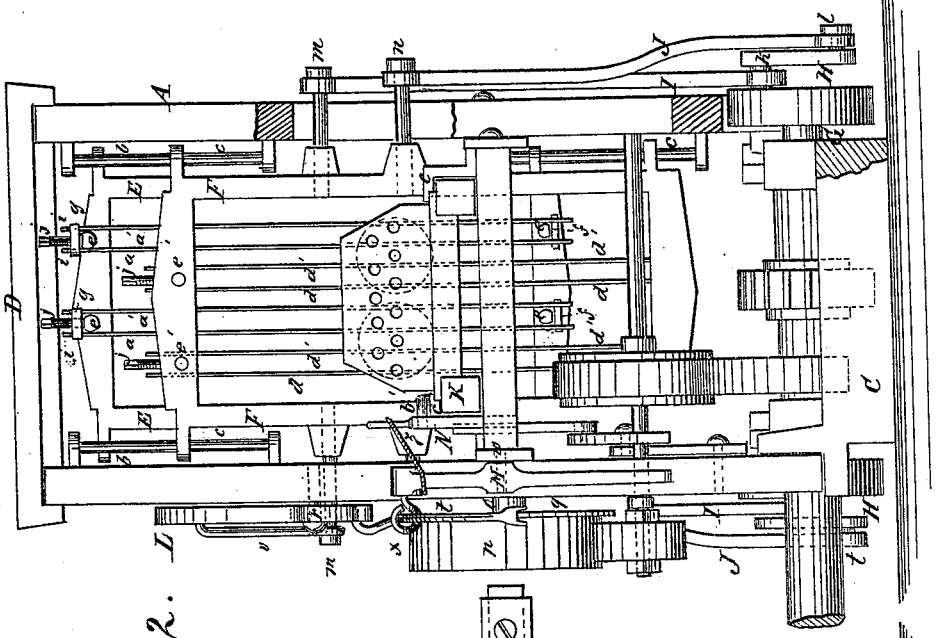

Fig: 2.

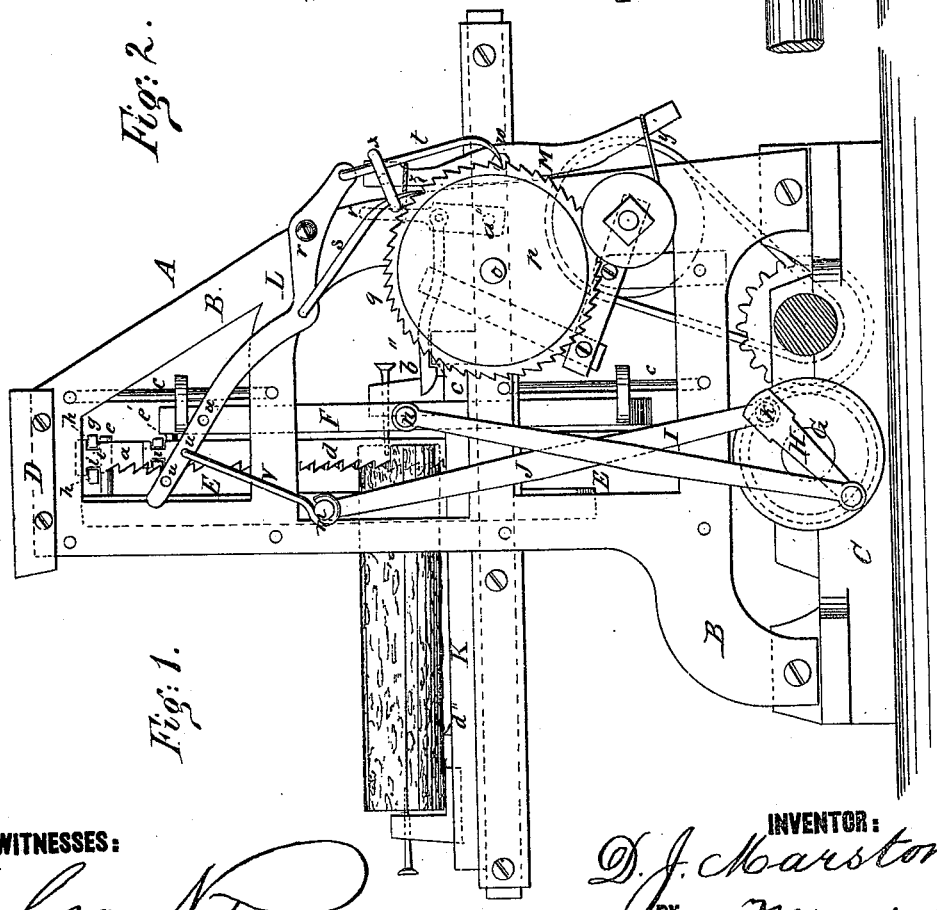

Fig: 1.

WITNESSES:

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DUDLEY J. MARSTON, OF AMESBURY, MASSACHUSETTS.

IMPROVEMENT IN GANG-SAW MILLS.

Specification forming part of Letters Patent No. **186,742**, dated January 30, 1877; application filed December 11, 1876.

To all whom it may concern:

Be it known that I, DUDLEY J. MARSTON, of Amesbury, in the county of Essex. and State of Massachusetts, have invented an Improvement in Gang-Saw Mills, of which the following is a specification:

Figure 1 is a side elevation of my improved machine. Fig. 2 is a rear elevation.

Similar letters of reference indicate corresponding parts.

My invention relates to that class of gang-saw mills that employ a series of vertically-reciprocating saws for cutting a number of boards simultaneously from a log.

The invention will first be described in connection with the drawing, and then pointed out in the claim.

Referring to the drawing, A is the main frame of the machine, consisting of the side pieces B, the bed-piece C, and the top piece D. E is a gate for carrying the saws *a a'*, which slide upon the ways *b*, attached to the side pieces B. F is a gate similar to E, that slides upon ways *c*, also attached to the side pieces B, and carries the saws *d d'*. Studs *e e'* project from the rear of the upper and lower cross-bars of the gate E, to support the saws *a a'*. Each pair of saws, *a a'*, is connected at the bottom by means of the pin *f*, which is drawn against the under side of the stud *e* by the straining device at the upper end of the saw, which consists of a block, *g*, that is recessed at each side to form lugs *h*, that are fitted to notches *i*, cut in the edges of the saw near its upper end. A screw, *j*, passes through the block *g*, and bears upon the stud *e*. The teeth of the saws *a* are arranged to cut as the gate ascends, and the teeth of the saws *a'* cut as the gate descends.

The studs *e'*, that carry the saws *d d'*, project from the front of the gate E, and the saws *d d'* are oppositely arranged, and supported and strained in the same manner as the saws *a a'*. The saws *a a'* and *d d'* alternate in their arrangement on the gates, and their teeth face toward the front of the machine.

G is a shaft, journaled in the bed-piece C, and carrying at each end similarly-arranged double cranks H, the wrist-pins of which, *k l*, are arranged diametrically opposite. I I are rods that connect the wrist-pins *k* and studs *m*, that project from the sides of the gate E; and J J are rods that connect the wrist-pins *l* and the studs *n*, that project from the sides of the gate F. The gates E F are, by this arrangement of cranks and connecting-rods, made to move in opposite directions.

K is the log-carriage, which is constructed in the usual way, and is provided with head-blocks and dogs for engaging the log between each pair of saws, so that the saws may run completely through the log and leave no stub. The log-carriage is provided with racks, that are engaged by pinions on the shaft *o*. This shaft is journaled in the side pieces B, and to it a friction-wheel, *p*, and ratchet-wheel *q* are attached. A double-acting pawl-lever, L, is pivoted at *r*, and provided with the pawls *s t*, which engage with the ratchet-wheel *q*. The long arm of the lever is provided with three holes, *u*, into either one of which the right-angled end of the connecting-rod *v* may be placed for adjusting the rate of the feed, the said connecting-rod being connected to the stud *m*. M is a lever, pivoted to the frame of the machine at *w*, and provided at its upper end with an oblong loop, *x*, through which the pawls *s* and *t* work in moving the wheel *q*. A spring, *y*, is attached to the lower end of the lever M, which tends to draw it toward the side piece B. The upper end of the lever M is connected to a lever, N, by the strap *z*. The lever N is pivoted at *a''*, and is provided with a catch, *b''*, which engages with one of the guides *c'* of the carriage K. An inclined plane, *d''*, is attached to the carriage, in such a position as to disengage the catch when the log is sawed entirely through. When this is done, the spring *y* draws the lower end of the lever M, and the upper end, in moving outward, lifts the pawls *s t* from the wheel *q*.

The ordinary friction apparatus for gigging the log-carriage back, consisting of a friction-wheel, *e''*, that is driven by a power taken from the main shaft, and the lever *f'*, for throwing the said wheel into contact with the wheel *p*, is used to drive the carriage back into position to receive another log.

The shaft G may be driven by a belt or gearing from any convenient motor, or an engine may be arranged to drive the shaft directly.

The advantages claimed for my improved

mill are, that with it long and slender logs may be sawed without difficulty, as the force is exerted equally from above and below. The gates, having oppositely-arranged cranks, counterbalance each other, so that jarring is avoided, and the speed may be increased, and the strain on the frame being lessened, it may be made lighter than the frames of ordinary mills.

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

The combination of two sets of gang-saws running and having teeth in opposite directions, arranged in reversely-reciprocating gates, and cutting simultaneously, but in different directions, as and for the purpose specified.

DUDLEY J. MARSTON.

Witnesses:
CHAS. H. WALES,
THOMAS E. BOUTELLE.