(No Model.)

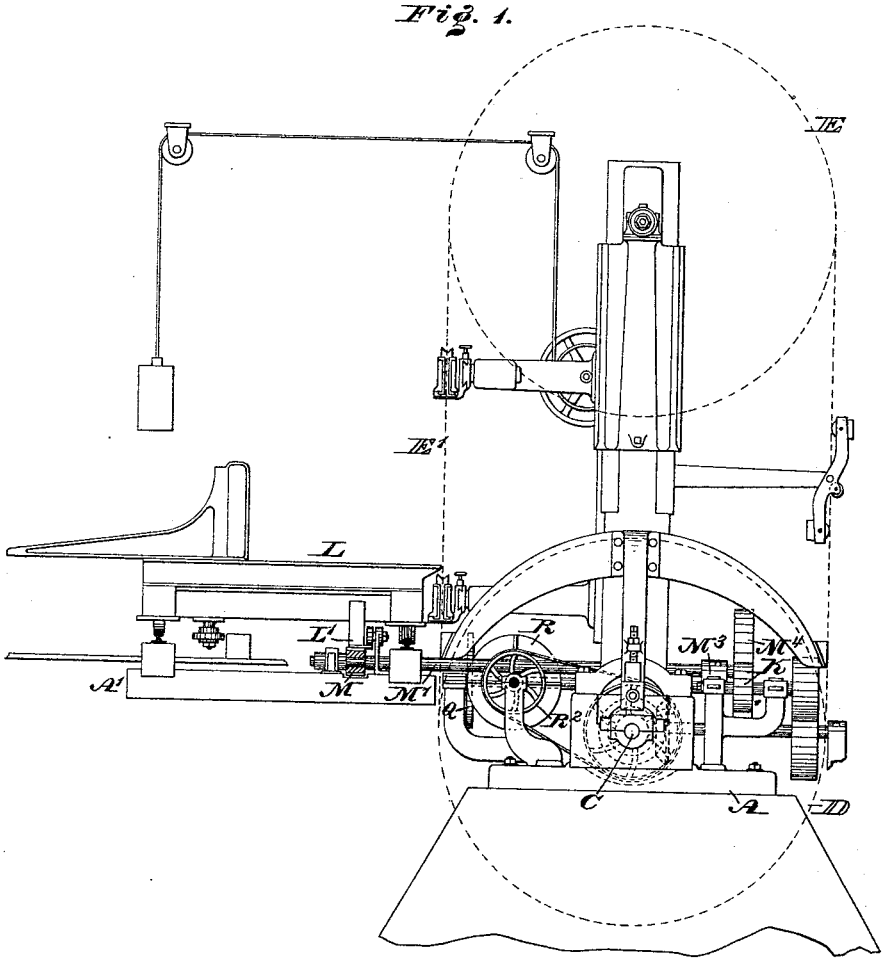
2 Sheets—Sheet 1.

L. O. ORTON.

SAW MILL.

No. 346,383. Patented July 27, 1886.

Fig. 1.



WITNESSES:

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

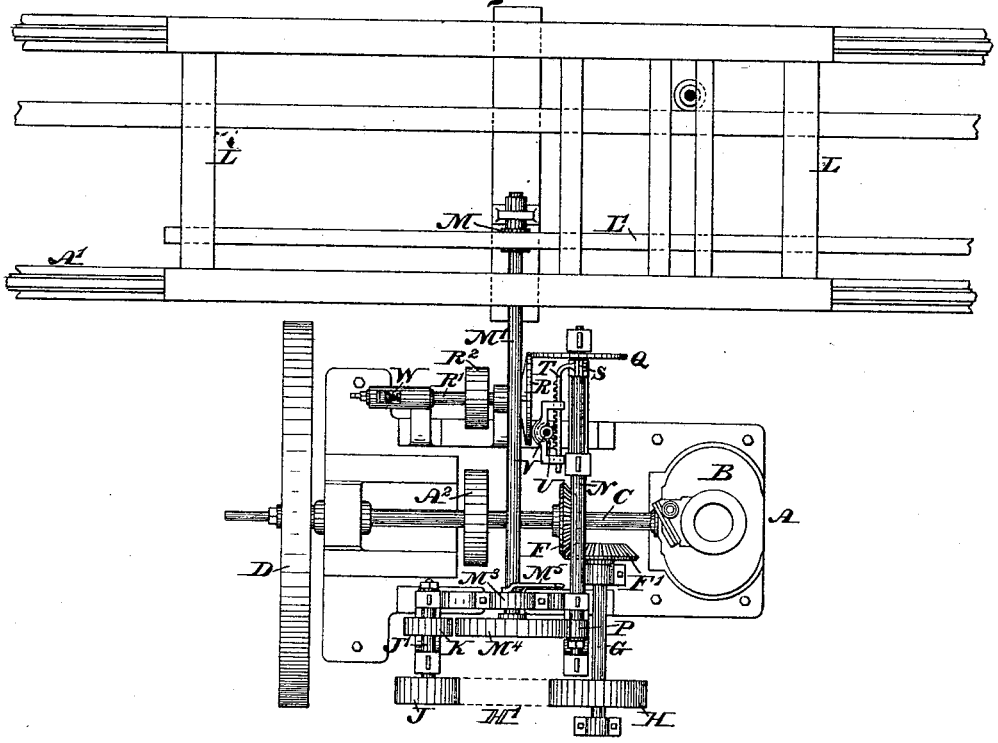
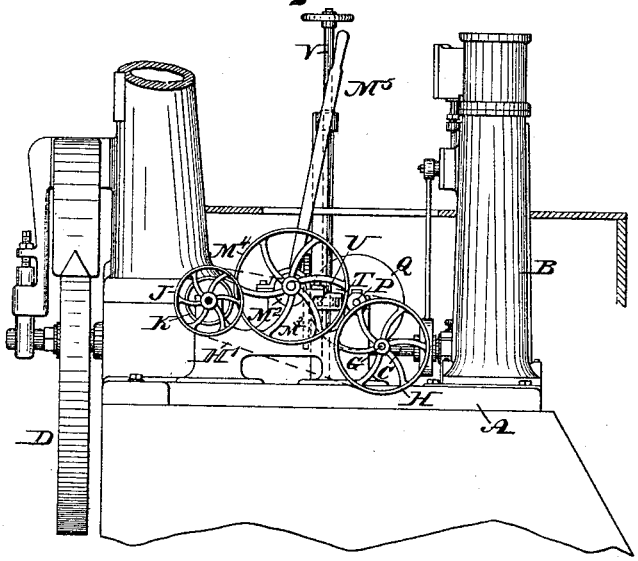


Fig. 3.



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UNITED STATES PATENT OFFICE.

LYMAN O. ORTON, OF PHILADELPHIA, PENNSYLVANIA.

SAW-MILL.

SPECIFICATION forming part of Letters Patent No. 346,383, dated July 27, 1886.

Application filed August 6, 1885. Serial No. 173,682. (No model.)

To all whom it may concern:

Be it known that I, LYMAN O. ORTON, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Saw-Mills, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 represents a side elevation of a saw-mill embodying my invention. Fig. 2 represents a top or plan view thereof. Fig. 3 represents a side elevation at a right angle to Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of a saw-mill having a steam engine or motor mounted on the bed which supports the working parts of the mill, whereby the mill is compact and strong and may be readily set up.

It also consists of means for imparting motions to the carriage in reverse order.

Referring to the drawings, A represents the bed of a saw-mill, and B represents a steam-engine, which is secured to said bed and transmits its power to the driving-shaft C, which is mounted in suitable bearings on said bed.

D and E represent pulleys, around which passes a band-saw, E′, said pulley D being connected with the driving-shaft C, and said pulley E mounted on a standard or column which rises from the bed A.

On the shaft C is keyed or otherwise secured a bevel-wheel, F, with which meshes a bevel-wheel, F′, on a counter-shaft, G, the latter carrying a pulley, H, which, by means of a belt, H′, communicates motion to a pulley, J, the shaft J′ whereof carries a friction-pulley, K, the shafts G J′ being properly mounted on the bed A. The carriage L has a rack, L′, on its under side, and with the same engages a pinion, M, whose shaft M′ is mounted at one end on the bed A′ of the carriage, and has the other end fitted in an eccentric sleeve or box, M^2, which latter is rotatingly mounted on a bearing, M^3, rising from the bed A, said shaft carrying adjacent to the sleeve a friction-pulley, M^4, and said sleeve having a handle, M^5, whereby rotation may be imparted to the sleeve M^2. On the bed is also mounted a shaft, N, which extends parallel with the counter-shaft G, and is adjacent thereto. One end of said shaft N carries a friction-pulley, P, and at the other end a friction-wheel, Q, it being noticed that the friction-pulleys P and K are on opposite sides of the friction-pulley M^4, so that either pulley may be engaged by said pulley M^4. The friction-wheel Q engages with a friction-wheel, R, the latter being secured to an arbor, R′, which is mounted on the bed A, and carries a pulley, R^2, whereby, by means of a pulley, A^2, on the driving-shaft C, power may be communicated to the arbor R′, and consequently to the friction-wheels R Q, it being noticed that the periphery of the wheel Q is in contact with the face of the wheel R. By moving the wheel Q nearer to or farther from the center of the wheel R the speed of the wheel Q, and consequently of the shaft N, may be adjusted, and thus provision is made for adjusting the speed of the forward motion of the carriage L relatively to the nature of the timber and other requirements.

In order to shift or adjust the wheel Q, the same is connected with a sliding sleeve, S, which is fitted on the shaft N, and having connected with it a rack, T, with which meshes a pinion, U, the latter being secured to an operating-rod, V, said rack, pinion, and rod being properly mounted on the bed A. The arbor R′ has bearing against its end a spring, W, whereby the friction-wheel R is properly held against the wheel Q, and permits said wheel R to yield should the wheels bind, clog, &c.

When the engine is in operation and power communicated to the shaft C, the mill is set in motion. When the pulley M^4 is in contact with the pulley P, the carriage L advances and the timber is fed to the saw, the proper rotation of the pinion M being accomplished by means of the friction gearing or wheels Q R, pulley R^2, and pulley A^2. When the carriage is to be run back, the eccentric sleeve M^2 is rotated by means of the lever M^5, thus throwing the friction-pulley M^4 into contact with the friction-pulley K, which latter, being operated from the driving-shaft by means of the gearing F F′, pulleys H J, and belt H′, reverses the motion of the pulley M^4, and thus, by means of the shaft M′, pinion M, and rack L′, the carriage makes its return motion.

It will be seen that as the engine or motor

is mounted on the bed A, and the other parts of the mill, excepting the saw-carriage L, are supported on said bed, the parts are compact and the space which they occupy is small, and the mill is stronger and cheaper, and likewise better, as it runs more steadily and firmly than when the parts thereof are spread over different beds and the power received from a distant source.

In lieu of the pinion M, for operating the carriage, I may use a friction-wheel, in which case the rack L′ is dispensed with.

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

1. In a saw-mill, the shaft provided with the wheel F and means to rotate the same, in combination with the counter-shaft G, having pulley H mounted thereon, the shaft J′, having pulley J and friction-wheel K thereon, the band H′, connecting said pulleys J and H, the shaft M′, having friction-wheel M^4 on one end and provided with an eccentric bearing at the same end as said wheel M^4, and having on the other end the pinion M, and the carriage L, having rack L′ meshing with said pinion M, substantially as and for the purpose set forth.

2. A saw-mill having a driving-shaft with the pulley A^2 mounted thereon, a shaft, R′, having pulley R^2, connected by a band to pulley A^2 and wheel R, the rotary shaft N, having adjustable sleeve S, with wheel Q and friction-wheel P, the shaft M′, having wheel M^2 and pinion M, and a carriage operated by said pinion M, all of said parts being combined and operated substantially as described.

3. In a saw-mill, the shaft C, having pulley A^2 thereon, with means for rotating the same, in combination with gearing on said shaft C, connected to gearing on the counter-shaft G, the counter-shaft G, carrying a pulley, H, connected by the band H′ with a pulley, J, mounted on the shaft J′, the friction-wheel K, also mounted on the said shaft J′, the shaft M′, having at one end an eccentric bearing and a wheel, M^4, the shaft R′, having friction-wheel R and pulley R^2 mounted thereon, the said pulley R^2 being connected by a band to the wheel A^2 on said shaft C, the counter-shaft N, with the wheel P, and friction-wheel Q, the latter engaging with said wheel R and the former being adapted to engage with the wheel M^4, the carriage L, having rack L′, engaging with the pinion M on said shaft M′, substantially as described.

4. A saw-carriage, the rack L′, connected therewith, and the pinion M, which engages with said rack, in combination with the shaft M′, which carries said pinion, the pulley M^4, the eccentric sleeve M^2, in which said shaft M′ is fitted, the pulley P, shaft N, friction-gearing Q R, and operating-pulleys R^2 A^2, substantially as described.

5. In a saw-mill, the rotary shaft C, having means for imparting rotary motion thereto, shaft M′, having the wheel M^4 mounted on one end thereof, wheel K, mounted on the shaft J′, train of gearing, substantially as described, connecting said shaft C to said wheel K, counter-shaft N, having wheel P, gearing, substantially as described, connecting said shaft C and wheel P and eccentric sleeve M^2, forming a bearing for said shaft M′, and rotatingly mounted on the bearing M^3, substantially as and for the purpose set forth.

LYMAN O. ORTON.

Witnesses:
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