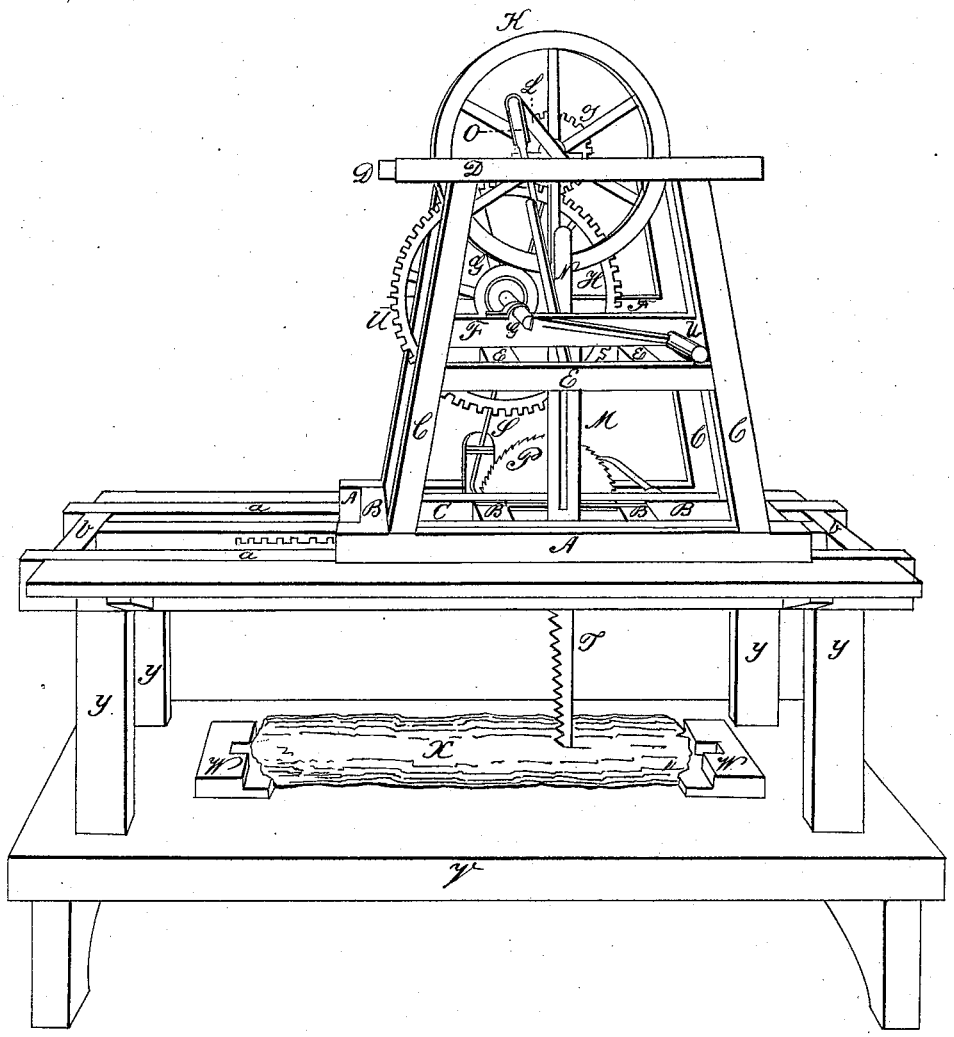
J. Hamilton,

Reciprocating Saw Mill,

No. 1,652, Patented June 27, 1840.



Witnesses
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JAMES HAMILTON, OF NEW YORK, N. Y.

PIT-SAWING AND SLITTING MACHINE FOR SAWING LOGS INTO LUMBER AND BOARDS.

Specification of Letters Patent No. 1,652, dated June 27, 1840.

To all whom it may concern:

Be it known that I, JAMES HAMILTON, of the city, county, and State of New York, have invented a new and useful Improvement in the Mode of Sawing Logs into Timber, Boards, and Slitting and Pit-Sawing and Applicable to Various Useful Purposes, and that the following is a full and exact description of the construction and operation of my machine, reference being had to the drawings annexed hereto and making part of these presents, wherein—

Figure 1 is a perspective view of said machine.

A A are two pieces of timber or joists, 5 inches square, 6 feet long, more or less.

B, B, B, B, B are the end and cross-pieces strongly framed into A A and screwed together, making the frame three feet wide, more or less.

C, C, C, C are four posts about six feet long, more or less, and framed into the sills or pieces of timber A A and the top-timbers or beams D D; the top pieces D D are framed together in the same manner as the sills below, making the top of the frame about three feet square, more or less, the posts C, C, C, C standing angularly.

E, E, E, are cross timbers framed into the posts C, C, C, C, and correspond with the frame work between the sills A A; F, F are pieces of timber framed into the posts C, C, C, C, for the arbor or shaft G, to rest and bear on. On the shaft G is a spur wheel H about thirty-two inches diameter, more or less, the cogs of which take hold and match into the pinion or wheel I, which is sixteen inches diameter, more or less, with one-half the number of teeth or cogs which are in the spur-wheel H. The pinion I and the fly wheel K are fastened to the revolving crank L, which rests on two of the top pieces of the frame, one of which is near the center.

M is the guide or slide box through which the sliding bar N passes and secures exactness and truth in its up and down movement. At the top and bottom of the guide box M, are arms extending out each way and resting on the cross-pieces E E and B B to which they are firmly bolted. Through the sides of the guide box M are slots as long as the stroke given by the crank L, which is two feet, more or less.

O is the pitman or connecting rod made with forked sides and works each side of the guide box M, and is connected to the sliding bar N, with a pin running through the ends of the pitman and bar. The upper end of the pitman is attached to the crank by a pivot screwed into the crank, which can be altered at pleasure to give a greater or less stroke.

P is a ratchet wheel running on a shaft or arbor, on the end of which is a pinion which matches into and takes hold of the rack 2.

R is a pawl or click to prevent the ratchet wheel P from returning back.

S is a pawl, click, or arm, taking hold of the ratchet wheel P and is moved up and down by an eccentric wheel or cam running on the shaft of the crank L. This click or arm is borne up by a spring and made to follow the cam. A slide is put on this arm which can be moved up or down and made fast at any place to give more or less feed or cut as the machine passes on.

T is the saw firmly screwed or bolted to the lower end of the sliding bar N.

U, U, are hand cranks to work the machine.

V is the foundation frame or platform for the head pieces or head stocks W, W to rest on.

X is the log to be sawed, resting on the head pieces W, W and fastened at each end in the usual way in other saw mills.

Y Y Y Y are four posts, five or six feet long, more or less firmly framed into the foundation timbers or platform V, and sustain the frame on which the machine is placed to perform its operations in sawing. This frame is required to be made of timber of sufficient strength and firmness to insure accuracy in the operation of the machine, it constituting slide ways on which the machine moves, as follows: *a a* are two timbers resting on the four posts Y, Y, Y, Y, and framed together by the end-pieces *b b*. *c* is a timber placed near the center and framed into the endpieces *b b* for the purpose of attaching to it the rack 2, in which the pinion on the end of the shaft to which the ratchet wheel P is attached works and moves the machine forward, when the power for working the machine is applied. *d d* are arms framed into the sliding ways or beams *a*, *a* on which to place the flooring for the workman to stand and move forward upon, as the machine operates and advances forward.

The machine is to run on a V or in grooves to insure its running on a straight line. Rollers may be attached to the four corners of the machine to run on the slide ways whereby ease will be given to its forward and backward movements.

When the machine is put in motion, it moves forward and saws through the log; the man or men who turn the machine, *j*, operated by the hand, move on as it saws, and when the log is sawed through the two pawls R, and S, are disengaged from the ratchet wheel P and the machine is run back to commence its operation anew, the log is then set up and another piece or board is sawed off, and so on till the log is sawed up into boards.

It may readily be perceived that instead of the guide box and sliding bar, that two posts may be placed on the sides of the machine so that a common saw gate or frame may be made to run in grooves and work between these posts and perform the operation of sawing the same as heretofore described. But I intend to test this method by practical operation and experiment and then, if advisable to secure the same by Letters Patent, in combination with the other parts of the machine.

If it should be desirable to work the machine by any other power than that of the hand, a pulley may be substituted for the small cog wheel or pinion and a drum running lengthwise of the machine either above or below it, a band may then be put on, which will move as the machine moves on, to which any power, steam, water or other power, may be easily applied.

I intend this machine as a portable saw mill; but it may be advantageously introduced into all saw mills. The saving of power is great inasmuch as the log is never to be hoisted above the level of the ground, and no power is required to move the log back and forth when sawing, as is the case in common saw-mills.

I do not claim as my invention and improvement any of the parts of said machine taken separately and without their connection in said machine, or application to the purpose aforesaid; but

I do claim as my invention and improvement—

The mode above substantially described of mounting the working machinery and moving the same above the log or timber to be sawed in manner aforesaid or in any other manner substantially the same so that the saw works through the log by its own travel, while the log is secured on stationary headstocks nearly on a level with the ground line.

JAMES HAMILTON.

Witnesses:
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