

November 1, 1913.

DRAWING

2,120

A careful search has been made this day for the original drawing or a photolithographic copy of the same, for the purpose of reproducing the said drawing to form a part of this book, but at this time nothing can be found from which a reproduction can be made.

Finis D. Morris,

Chief of Division E.

AWK

UNITED STATES PATENT OFFICE.

JAS. B. LOWRY, OF NORTH EAST TOWNSHIP, ERIE COUNTY, PENNSYLVANIA, AND
PHILANDER EGGLESTON, OF MAYVILLE, NEW YORK.

SAWMILL.

Specification of Letters Patent No. 2,120, dated June 11, 1841.

To all whom it may concern:

Be it known that we, JAMES B. LOWRY, of the township of North East, Erie county, and State of Pennsylvania, and PHILANDER EGGLESTON, of Mayville, Chautauqua county, and State New York, have invented a new and useful Improvement in Sawmills for Sawing Timber; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification.

Figure 1 is a perspective view of the saw mill. Fig. 2 is a section showing the lower vibrating beam, chains, feeding rods, &c. Fig. 3 is a section showing one of the lower slides and stirrups; Fig. 4 one of the upper slides and stirrups.

Similar letters refer to corresponding parts.

The frame A may be the same as that used for similar purposes, and may be varied in the construction to suit circumstances. There must be two beams b , b , above the saws and two below them; said beams must be about twenty inches wide and ten inches thick and secured to posts c , c , by means of tenons made to fit into mortises made in the posts so that each pair of beams will have about 15 inches space between each beam (this however will be governed by the width of the saw) and they must be a suitable distance apart to sustain the guides d in their proper position (to be described hereafter). This will be governed by the length of the saws, the lower beams b b must be placed with the upper edge level and parallel with the joists. About 4 feet from the center of the beams transversely there are metallic guides d inserted and secured to the inside of the beams by arms Y, Y, passing over the edges of the beams in notches made for the purpose, in the upper edges of the beams b b to receive them and in blocks Z attached to the lower edges of the beams b , b , when the beams are not sufficiently wide to support the guides d without the blocks Z. Said guides d must be sufficiently long to hold the stirrups to their places when the saws are in motion, their length being determined by the length of the crank; and they must be placed parallel to each other and perpen-

dicular to the floor so that the stirrups E will work freely. Said guides d may be from two to 4 inches wide and about one inch thick.

In the center of the space between the guides d on each beam there is a post e inserted in the upper edge of each beam b , b . Said posts may be about two feet long and tenoned into the beams b , b , with a space cut out of their center to receive the boxes F with mortises to receive keys g inserted nigh the beams b , b , and parallel with them. Said keys g pass under the boxes F and serve to raise or depress them, and serve also to tighten the saws as will hereafter more fully be described. There are two posts, e^2 Fig. 2 being one of them, attached to the lower pair of beams b^2 b^2 projecting downward about four feet from the lower edge of said beams b^2 , or sufficiently far to allow the lower working beam H^2 to work freely (as will be hereafter more fully described). Said working beams H H^2 must be made of such length that when supported at their center and resting on pivots or gudgeons, the ends of said beams will receive the chains i to be hereafter described. To do which the most outward surface of the segments at K^2 described as being fixed on the ends of the working beams H H^2 will be nearly perpendicularly under the guide d . The working beams H may be constructed of wood or metal and must be made of a size suited to the material of which they are constructed and in reference to the power to be applied.

On the ends of the arms of each beam H described as radiating exactly from the center of the working beams H are fixed the segments K, which segments ought to be about 3 feet long, or such length as will correspond with the stroke of the saws, said segments must be smooth on their surface and sufficiently thick to support the chains.

The lower working beam H^2 may be placed between two posts e^2 , Fig. 2, formed in the same manner as the posts e above described, and corresponding with them in every respect except their length and position. Both working beams have journals or pivots l at the center of sufficient strength to sustain them firmly against the pressure arising from tightening the saws and also

from the operation of sawing. Said journals or pivots work in boxes F (metal or wood) inserted in the posts *e e* in the upper pair of beams *b, b* and in the posts *e² e²*, of the lower pair of beams (*b b²*). Said boxes must be made adjustable by means of keys *g* and slides so arranged as to keep the said boxes from moving in a lateral direction.

There are four flat chains *j j j j* which connect the saws with the ends of the working beams H. Said chains are fastened to the beams H by attaching one end of the chains to each end of the working beams at the upper end of the segment K on the upper beam H by bolts or staples at *m, m*. The other end of said chains are fastened to the stirrups *s* by passing a link between two loops of the stirrups S at the upper end in S and by passing a bolt or pin through the loops and link. Said chains *j* ought to be as wide as the saws and made strong with as short links as possible. The chains *j, j* are attached to the lower working beam H² at the lower end of the segment at *n, n*, in like manner to those described above.

The slides E and stirrups *s, s* before alluded to for guiding and supporting or connecting the saws are as follows, viz. The upper slides E, E are constructed in part of a piece of flat metal in such form that their length will be about eight inches and their breadth about twelve inches or of sufficient width to extend from the guides of one beam to those on the opposite beam, with a groove in the middle of each edge to admit the guides *d* or to allow the slides to move freely up and down the guides; the grooves are made wider, or reduced in width as occasion may require, one side being made movable, and is governed by, and secured to the other portion of the stirrup by screws and nuts, *s s* the object of which is to keep them snugly to the guides, *d* should the grooves become enlarged by use. They are to be made to fit by this process. They should be made as tight as possible, but must have sufficient strength to keep the saws from deviating from a right line. The iron strap or stirrup *s* which composes another section of this connection of the saws and chain, is made out of a bar of iron about five eighths of an inch square and about five feet long, the ends of which are then brought and welded together to an oblong form, the sides being straight and parallel to each other, about seven inches apart, the ends forming a loop, the ends are brought over the slide until nearly together to admit the saws between them, leaving a loop of about two inches below the slide to admit the iron pin which unites the slides and chain together. This form of bending produces two loops at the other end of the slide, through which a bolt passes to connect it with the chain

above described. The iron bars straps or stirrups, above described may be secured to the slides by nuts and screws.

The lower slide E², Fig. 3 differs from those above described by being formed to run on two guides in front, and one in the rear of each stirrup, the distance between the two grooves should be about eight or nine inches forming nearly a semi-circle at *x*.

The feeding or propelling the carriage is performed by rods W W in Fig. 2 made of iron or wood or both, and attached to the lower working beam on each side of the fulcrum and about one third of the distance from said fulcrum toward the segments, said rods are attached (by being split to pass on each side of the beam) with a bolt passing through eyes formed in the end of each portion of the rod, and into the said beam. Or they may be made with a joint or hinge fastened to the top of said beam H, and secured by bolts or staples. Said rods W W pass upward through the floor, and also through mortises in knees *p* such as are commonly used to work the hands on the rag wheel with holes in the upper end to regulate the feed. There is also a lever T projecting downward from the lever working beam at the center, about four feet long and six inches square said lever is secured to said beam by a tenon and braced by rods of iron passing from the segment on the end of said beam at *n, n* to near the end of said lever T. To the lower end of said lever is attached a horizontal pitman *w* which communicates with the balance crank L which may be propelled by a belt passing from a drum wheel or may be propelled by any power used to propel other machinery.

When one saw is to be used the place of the other may be supplied by an iron rod.

The advantages derived from this improvement consists in lessening the friction, dispensing with the weight of the saw gate and applying all the power to cutting lumber. The weight being thus taken from the crank, it will wear much longer as well as also the boxes in which it runs. Where two saws are used, it will be seen that one is ascending and the other is descending which serves to regulate the motion, consequently better adapted to being propelled by strap or cogs, put in motion by horse or any other power, than any other kind of mill driven by crank motion, also the saws being balanced, the velocity may be increased to any extent desired without injury to the parts, or danger arising from fire or any other inconvenience, other than what would arise from any rotary motion, and from the increased motion it is susceptible of, in this arrangement, the feed may be light and consequently the saws may

be thinner than in the ordinary way, and the work be done better, more even and smooth. The power being applied to cutting in place of raising the saw gate is a
5 saving of from one half to three fourths of the power so used. This arrangement, combination and improvement possesses all the advantages of a rotary motion with a perpendicular stroke and well strained saws
10 leaving nothing in the way to obstruct the free and open passage of the mill excepting the saws and feeding works.

What we claim as our invention and which we desire to secure by Letters Patent is—

The combination of the slide E and stir-
rup S by which the chain and saw *a* are
united as herein set forth.

JAS. B. LOWRY.
PHILANDER EGGLESTON.

Witnesses:

WM. P. ELLIOT,
SILAS LAMSON.