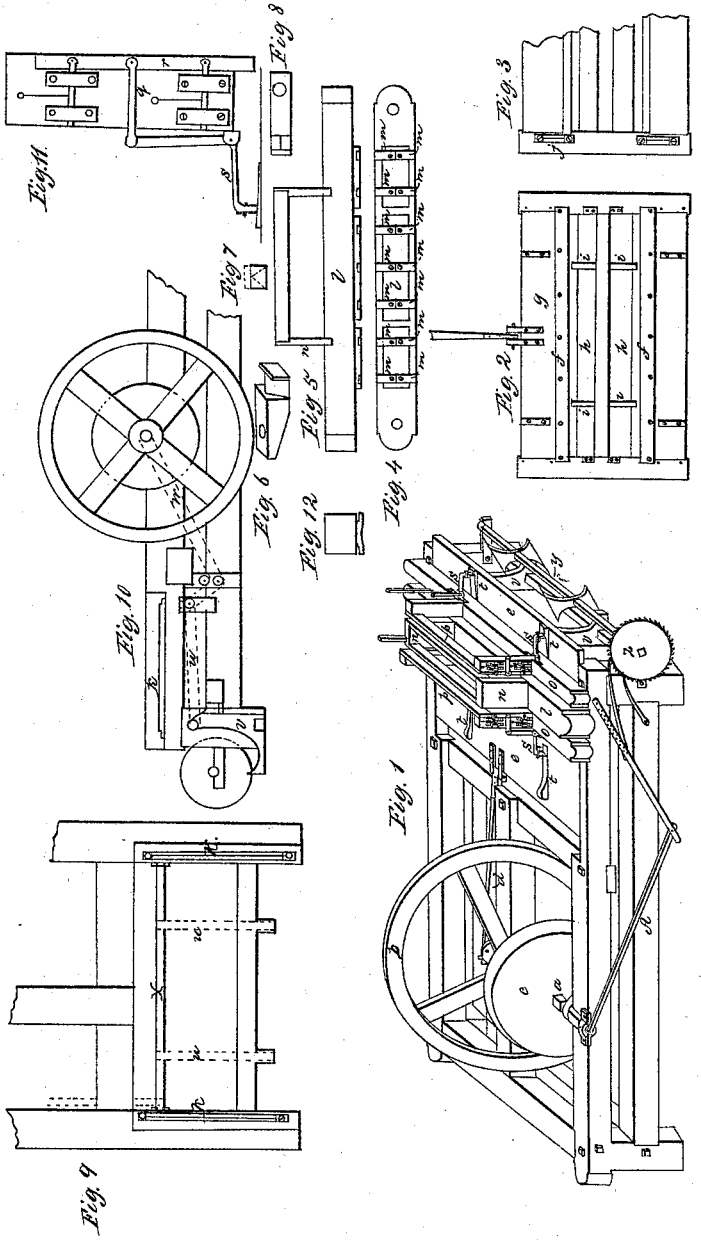
S. Cheney,

Making Laths.

No. 4,206. Patented Sep. 27, 1845.



UNITED STATES PATENT OFFICE.

SAMUEL CHENEY, OF CLEVELAND, OHIO.

MACHINERY FOR CUTTING LATHS.

Specification of Letters Patent No. 4,206, dated September 27, 1845.

To all whom it may concern:

Be it known that I, SAMUEL CHENEY, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Machine for Cutting Laths; and I do hereby declare that the following is a full and exact description.

The nature of my invention consists in cutting laths from plank, of a uniform thickness without wasting the timber and in numbering the laths and depositing them in parcels without the labor of counting.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

I construct a frame of timber ten inches square. The frame is twelve feet long—eight feet, three inches wide, and three feet high—built in a strong and permanent manner and fastened together at the joints with screw bolts or otherwise. This frame with its appendages is represented in the drawings by Figure 1. There is a shaft of wrought iron, not less than two and a half inches square passing horizontally across the frame about two and a half feet from the end opposite the knives, Fig. 1, letter *a*. To this shaft is attached the balance wheel, letter *b*, which should be five feet in diameter, weighing one thousand pounds. The driving pulley letter *c*, is from 24 to 30 inches in diameter. The crank to which is attached the pitman, and a short wrist on the outer end of the main shaft which gives motion to the counting index, will be fully described hereafter. The inner or crank end of the main shaft rests on a beam running lengthwise of the frame, the front end of which rests upon a cross-beam immediately in front of the balance wheel. The pitman *d* is attached to a sash or sliding frame *e*, *e*, similar to the sash of a common saw mill. In this sash or sliding frame, the knives are placed. The whole of this part, with a portion of the pitman is represented by Fig. 2, drawn on a scale of one fourth the size of the model. The knives are marked *f f*. This sliding frame or sash should be made very substantially; that part to which the pitman is attached Fig. 2, letter *g*, should be twelve inches and six inches thick, for the purpose of withstanding the pressure to which it is subjected in the operation of the machine. In the center of this sliding frame or sash, are two pieces of timber, Fig. 2, letters *h*, *h*, running parallel with the knives, these two pieces of timber are six inches wide and three inches thick, with the edge inclining to the edge of the knife beveled; these timbers are let into the sides of the sliding frame, Fig. 2, letter *g*, and elevated or depressed by the use of "wood" screws placed along the sides of the sliding frame, and passing through the timbers into said frame; two at each end, one above and the other below, the upper ones serving to depress the timbers, and the lower ones of course to elevate them and thus being elevated or depressed to acommodate any desired thickness of lath. Bars of iron, Fig. 2 letters *i i i i* form a slight elevation on those timbers, upon which the plank descends and rest previous to being cut by the knives.

On the under side of the sash at each end, are attached iron slides as represented in Fig. 3 letters *j*, *j*; these slides are grooved, and run upon iron ways, Figs. 9, and 10, letter *k*, *k*. These ways are bolted to the bottom of a rabbet in the forward end of the timbers forming the plates of the main frame; so that the top of the sliding frame or sash is about one inch below the top of said timbers. The knives are six feet three inches long, and four and a half inches wide, and are fastened to the sliding frame with screws, as shown in Fig. 2. The knives should be made of good iron and steel half an inch thick at the back, and a true bevel from the edge to the center on the under side. The upper side of the knives should form a true plane with the upper side of the sliding frame. The distance this frame moves forward and backward is six inches, which motion is produced by a crank of three inches formed by putting a wrist into a circular plate, which is fastened upon the inner end of the main shaft. This crank is connected to the sliding frame by a pitman as before described. Each revolution of the crank will cut two lath.

There is a piece of timber ten by twelve inches diameter, Figs. 1, 4, and 5, letter *b*, which I call the cutting block, bolted across the top of the main frame, exactly over the center of the sliding frame or sash, when the crank is perpendicular with the axes, or on its line center. The object of this piece of timber is to form a rest against which the plank is pressed by an apparatus, hereafter described, which the knives are in the act of cutting off the lath. On the under side of this block or timber is a series of "cams" or

"self clearers," made of iron and steel, and placed upon each side so that the ends face toward the edge of the knives. Fig. 4 presents a view of the bottom of this cutting block with the cams screwed on and marked *m*. Fig. 5 is a side view, and Fig. 12 an end view of the same part, which show a small space between the edge of the cams and timber sufficient for the edge of the knife to enter after the lath is cut off. Figs. 6, 7, and 8 present this cam or self-clearer detached from the timber, and drawn the full size of the model for the purpose of showing more plainly its particular construction; by which it will be seen (particularly Fig. 6, which is drawn in perspective) that the part over which the knife passes forms a sharp edge, which part is made of steel as above stated, for the purpose of cutting off any slivers which might chance to lodge in this place while the machine is at work.

Upon each lower edge of the cutting block is a rabbet three quarters of an inch square and traversing the whole length of the block or beam. The cams or self clearers are let into the bottom of the cutting block, so that they are level with the bottom of the block (within one-eighth of an inch;) the ends coming flush with the face of the timber; and that part of the cam which has the angle or edge will be directly under the top part of the rabbet, and distant from it one-eighth of an inch; and thoroughly fastened by a common wood screw, two inches long, and in size not less than No. sixteen. From the upper side of this cutting block, rise two perpendicular posts which are fastened together at the top,—Fig. 1, letter *n* and Fig. 5, letter *n*, which serve to keep the plank in their place while descending into the machine. Upon each side of this cutting block is a piece of timber six inches square, bolted to the top of the main frame Fig. 1, letters *o*, *o*, leaving a space of about two inches, in which the planks descend to the knives. From each of these timbers also rise two perpendicular posts, two feet high, and each pair connected at the top, as shown in Fig. 1, letters *p*, *p*. To each of these posts is attached a compound lever which works on a pivot fastened to the timber at the foot of the post. One arm of this lever rises perpendicularly with the post, till it reaches about half way to the top of the post, where it is attached to an iron clamp by a connecting rod, Fig. 11 letter *q* which figure is drawn on a scale as large as the model. This clamp, Fig. 11 letter *r*, is eighteen inches long, reaching within one eighth of an inch of the knives, and is pressed against the plank by means of the horizontal arm of the lever, Fig. 1, letter S curving downward and resting upon an inclined plane which is fastened to the top of the sliding frame, Fig. 1, letter *t*, by which operation the plank is held firmly against the cutting block until the lath is cut off and the knife passes out from under it; when it releases its hold and the plank drops down and rests upon its proper bearers before described. These levers act alternately at each stroke of the knives. The perpendicular arms of those levers are twelve inches long, one and a fourth wide, and half an inch thick. The horizontal parts of these arms have their flat surface lying parallel with the face of the sliding frame, and are made of spring steel, two inches wide and one fourth of an inch thick. As fast as the laths are cut, they fall upon two horizontal parallel revolving straps, Figs. 9 and 10 letter *u*, being represented by dotted lines, and are by these straps carried forward and deposited in concave receivers Figs. 1 and 10 letter *v*. These straps are put in motion by a strap or belt leading from the main shaft Fig. 10 letter *w*, and is carried under the cross beam by friction pulleys, and puts a shaft in motion immediately in front of the cross beam; Fig. 9 letter *x* around which the carrying straps or belts pass. The forward extremity of these carrying belts pass over a pulley in the top of the concave receivers. When the lath are deposited in these receivers they are taken up by two concave arms attached to a shaft in front of the machine, Fig. 1, letter *y*, which shaft is put in motion by means of a ratchet wheel, Fig. 1, letter *z* upon which feeding hands work; one of these feeding hands is attached to compound levers by an eccentric wheel, (which is formed by putting a pin near the edge of the outer end of the main shaft or such a distance from the center as will give a motion of two inches to the compound levers at each and every revolution of the main shaft. The other which also serves for a holder or dog to the ratchet wheel, is fastened by a bolt to the main post or to any other convenient part of the frame; similar in all respects to the feeding hand of a saw mill.

This apparatus is so constructed that a longer or shorter motion may be given to the feeding hand attached to the compound levers, by raising or depressing the feeding hand by the use of a bolt being changed from one pin hole to another in the compound lever as represented in Fig. 1 letter A. The raising or depressing of this feeding hand govern the revolution of the ratchet wheel, and thus, the deposit of lath brought forward on the revolving belts, and deposited in the concave receivers, or in being lifted thence by the concave arms attached to the shaft of the ratchet wheel are determined as to numbers by the motion of the ratchet wheel. Ordinarily, the half revolution of the ratchet wheel makes

the desired number in the concave arms, when the lath are lifted off and disposed of.

The manner of using this machine is as follows: The machine being in motion—the lumber from which the lath are to be cut should be sawed the proper length from plank one and a half inches thick or less, according to the desired width of the lath. The plank are then placed in the machine on each side of the cutting block, with the edge of the plank toward the knives. Their own gravity causes them to descend into the machine. When one set of plank are partly cut, others may be placed on them, so that the machine is kept constantly supplied with lumber, without stopping its motion.

What I claim as my invention, and desire to secure by Letters Patent is,

1. The combination of the gripping bars, bent levers, and inclined planes for gripping the block for cutting the lath as herein set forth.

2. The combination of the "self clearers" with the rest and knife as herein described.

3. The counting apparatus constructed substantially as herein described, in combination with the lath cutting machine.

SAMUEL CHENEY.

Witnesses:
E. BURKE FISHER,
WM. WATERMAN.