2 Sheets—Sheet 1.

J. BLACK.

Lath-Sawing Machine.

No. 219,678. **Patented Sept. 16, 1879.**

Fig. 1.

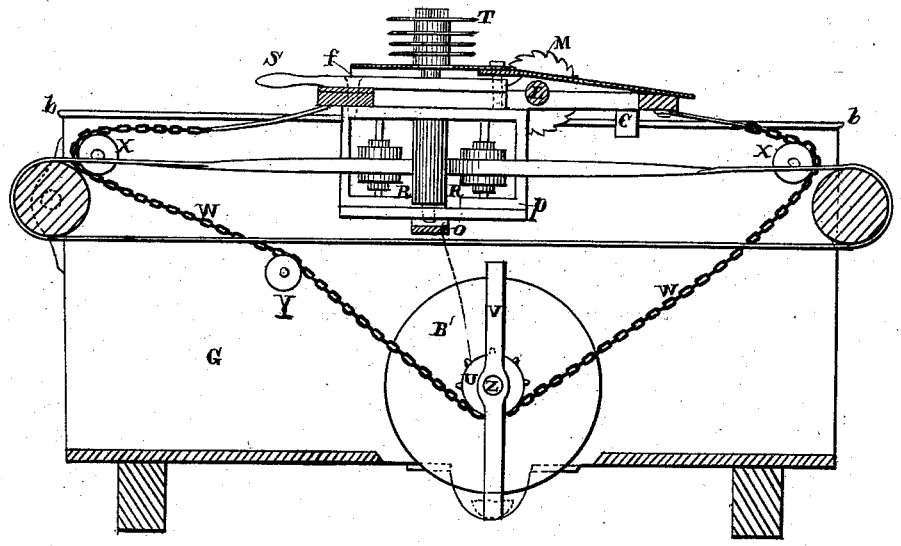
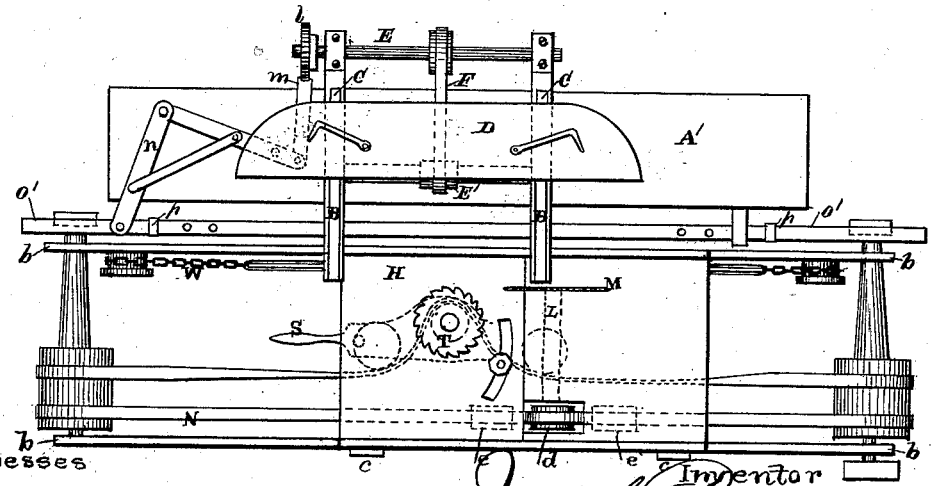


Fig. 2.



Witnesses

Geo. H. Strong.

Frank A. Brooks

Inventor

Josiah Black

By Dewey & Co.

Attys

2 Sheets—Sheet 2.

J. BLACK.

Lath-Sawing Machine.

No. 219,678. Patented Sept. 16, 1879.

Fig. 3.

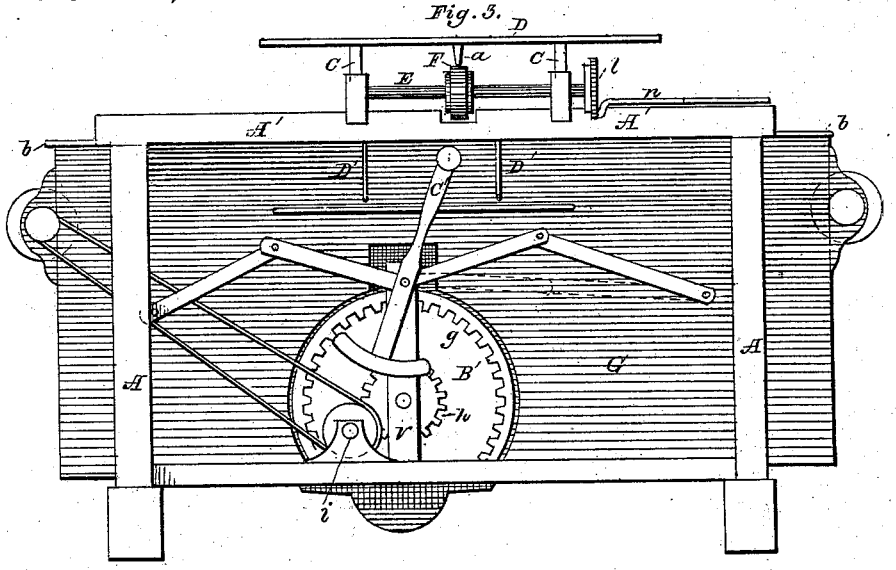


Fig. 4.

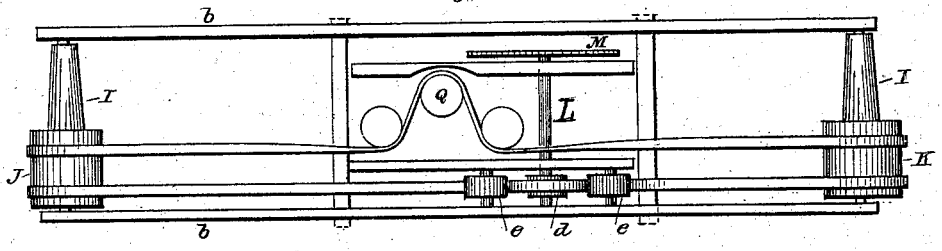


Fig. 5.

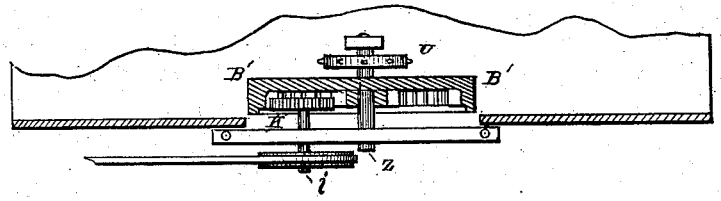
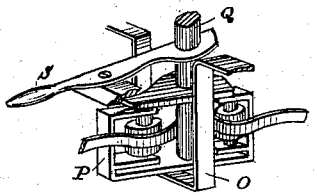


Fig. 6.



Attest:

W. F. Morrell

D. P. Cook

Inventor:

Josiah Black

by A. H. Evans & Co

Atty's

UNITED STATES PATENT OFFICE.

JOSIAH BLACK, OF OAKLAND, ASSIGNOR OF ONE-HALF HIS RIGHT TO COLLINS PARK, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN LATH-SAWING MACHINES.

Specification forming part of Letters Patent No. **219,678**, dated September 16, 1879; application filed March 3, 1879.

To all whom it may concern:

Be it known that I, JOSIAH BLACK, of Oakland, county of Alameda, and State of California, have invented an Improvement in Lath-Sawing Machines; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings.

My invention relates to that class of wood-sawing machinery such as is used for sawing out laths; and my improvements consist in providing a moving table, on which the saws are placed, while the log remains stationary, only feeding forward enough for a new cut of the saws.

It also relates to a method of mounting the saws, so that some of them may be thrown out of action, if desired, and to certain details of construction, whereby the feed of the log is accomplished automatically.

Figure 1 is a vertical section of my device. Fig. 2 is a top view. Fig. 3 is a side view. Fig. 4 is a skeleton plan, showing the arrangement of the pulleys. Fig. 5 is a section through the wheel B′. Fig. 6 is a perspective view of the frame and carrier.

Let A represent the main frame, and A′ the the table, on which the carriage carrying the bolt or log is placed. On the table A′ are formed two grooved slides, B, in which the runners C of the carriage D fit. This carriage has the necessary dogs for holding the logs, as shown.

Extending between the grooved slides is a shaft, E, on which is a pulley, and another pulley, E′, is placed in the table A′ under the carriage. Around these two pulleys passes a belt or chain, F, and a pin, *a*, on the under side of carriage D is arranged to engage with suitable holes in this chain or belt. Then, when this belt is rotated around the pulleys by the rotation of the shaft E, the carriage feeds forward toward the saws, carrying the log with it, as hereinafter described.

On the sill-pieces of the main frame is placed an open-ended box, G, on the upper edges of the two sides of which are the guides or slides *b*. On these guides is fitted the saw-carrying table H, arranged to slide back and forth on them, and bearing the clamps *c*, which catch under the edges of the guides and serve to steady the saw-table in position and prevent it getting off the guides.

On each end of the box G is placed a shaft, I, having pulleys J and K, respectively. These pulleys have also loose pulleys beside them, so that the belts may be shifted, if desired.

On the under side of the saw-table is placed the shaft L, having upon one end the vertical saw M, and on the other end a small pulley, *d*. There are also on the under side of the frame of the saw-table two small rollers or pulleys, *e*, one on each side of the pulley *d* on the shaft L. An endless belt, N, passes around the pulleys J and K, under one of the pulleys or rollers *e*, over the pulley *d*, and again under the other roller *e*, so that as the saw-table is moved back and forth, as hereinafter described, the shaft carrying the saw will be rotated at all times, the belt being kept tight by its peculiar arrangement wiih regard to the rollers *e* and *d*, as described.

On the under side of the saw-table is an open frame, O, in which is fitted a carrier, P, arranged so as to slide within the frame laterally with relation to the movement of the saw-table. On this carrier is a vertical shaft, Q, at the upper end of which are the horizontal saws T above the table. There are also on this carrier two loose pulleys or rollers, R, the endless belt N′ from the pulleys J and K passing first around one of these rollers, then around the shaft Q, and then around the other roller, as shown. In this way the belt is always kept tight as the saw-table moves back and forth, and also as the carrier is moved laterally.

On the upper side of the carrier and under the saw-table is a hand-lever, S, having a fulcrum-pin, *f*, the inner end of said lever being attached to the carrier, so that the carrier and horizontal saws may be moved to or from the log-carriage, as hereinafter described.

This machine is designed to operate automatically from the reception of the bolt until said bolt is cut into laths.

On the inner part of one side of the box is a sprocket-wheel, U, mounted on a shaft, Z,

which is journaled in a swinging frame, V. A chain-belt, W, passes beneath this sprocket-wheel and up over the pulleys X, the two opposite ends being then secured to the under side of the saw-table H, as shown. A pulley, Y, serves to keep the chain-belt tight.

The shaft Z is journaled in the swinging frame V, as shown, and on this shaft is a wheel, B′, provided with both internal and external gears, *g h*, as shown.

A small shaft, *i*, is placed outside the box, on which is a pinion, *k*, said pinion being between the internal and external gears of the wheel B′. This shaft is driven by a belt or chain from the main driving-shaft I.

The movement of the saw-table is effected in the following manner: As the main chain-belt attached to the saw-table passes over the pulley on the shaft Z, when said shaft is rotated the saw-table is moved along on the guides. Pivoted on the upper end of the swinging frame is a lever, C′, having a weight on its upper end and a curved bar on its lower end. Attached to the fulcrum-pin of the lever-bar C′ is a system of jointed rods on each side, which serve to steady the swinging frame in either position. Fastened to the saw-table, and hanging downward, are two lugs on rods, D′, fittted to engage with the lever-rod C′. Now, as the chain-belt W draws the saw-table along on its guides in feeding the saws to the log the lever-bar is gradually moved over by the lugs on the rods D′ until it passes the perpendicular. The said lever then falls over, and by this movement the curved bar on the lower end of the lever throws up the jointed rods and swings the swinging frame over so as to bring the internal gears, *g*, in contact with the pinion on the shaft *i*. This action reverses the motion of the chain-belt, and the saw-table is run quickly back, and as it gets back the same process is repeated, the pinion then engaging with the outer gears on the wheel B′ and feeding the saw-table and saws forward again.

The log or bolt from which the laths are made is placed on the carriage D, which is constructed as described. On the end of the shaft E is a ratchet-wheel, *l*, and a pawl, *m*, which engages with it, is connected with a bell-crank lever, *n*, one end of said lever end being connected with a shifting-bar, *o′*. This shifting-bar *o′* rests on guides attached to the main frame, and has lugs *p* upon it, which may occupy different positions on the bar. As the saw-table moves near its rear position the table strikes one of these lugs or pins, moves the bar, operates the bell-crank lever, and rotates the shaft E, thus feeding the carriage carrying the log or bolt forward, as described. As the saw-table comes to its forward position it again moves the shifting-bar *o′* and draws back the pawl, ready for a new hold on the ratchet-wheel.

It will be seen that the horizontal saws are placed somewhat in front of the splitting-saw. The gang of horizontal saws cut the log into thicknesses, and the other saw follows and cuts these different pieces off, the main one making laths of them. The laths then slide off the saw-table to the floor. In this way the log does not have to be moved back and forth for each cut. The saws and saw-table are moved forward slowly for cutting, and return more rapidly for a new cut.

If it is desired to use the machine simply to cut off one piece, the small saws may be thrown back out of the way by means of the lever, as described.

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

1. In a lath-sawing machine, the table or carriage H, carrying a gang of saws and moved alternately back and forth, in combination with a transversely-moving automatic log-holding table D, for the purpose set forth.

2. The log or bolt carriage D, moving upon the guides B transversely to the movement of the saw-carriage, and provided with the lug *a*, which engages with the chain or other feeding belt, F, in combination with the bell-crank lever *n*, sliding bar *o′*, and the pawl and ratchet, whereby the movement of the saw-carriage operates the feed, substantially as herein described.

3. The carriage D, mounted upon the guides B and carrying the vertical and horizontal saws T M, in combination with the driving and reversing gear for moving the carriage, as shown, and the belts N N′ and pulleys J K, whereby the saws may be driven continuously while the carriage is moving longitudinally with the bolt, substantially as herein described.

4. The carriage H, moving longitudinally in front of the stationary log or bolt, and having the dividing-saws T upon the vertical arbor, and the horizontal saw M, whereby the strips or laths are separated from each other and cut from the bolt at one operation, substantially as herein described.

5. The carriage H, moving longitudinally in front of the stationary bolt or log, and provided with the horizontal saw M and the vertical gang of saws T, the arbor of said gang being mounted upon a carrier, P, with the driving-pulleys R R and the lever S, whereby the gang may be adjusted to cut to any depth or be moved away and thrown out of action, substantially as herein described.

In witness whereof I have hereunto set my hand.

JOSIAH BLACK.

Witnesses:
CHAS. G. YALE,
FRANK A. BROOKS.