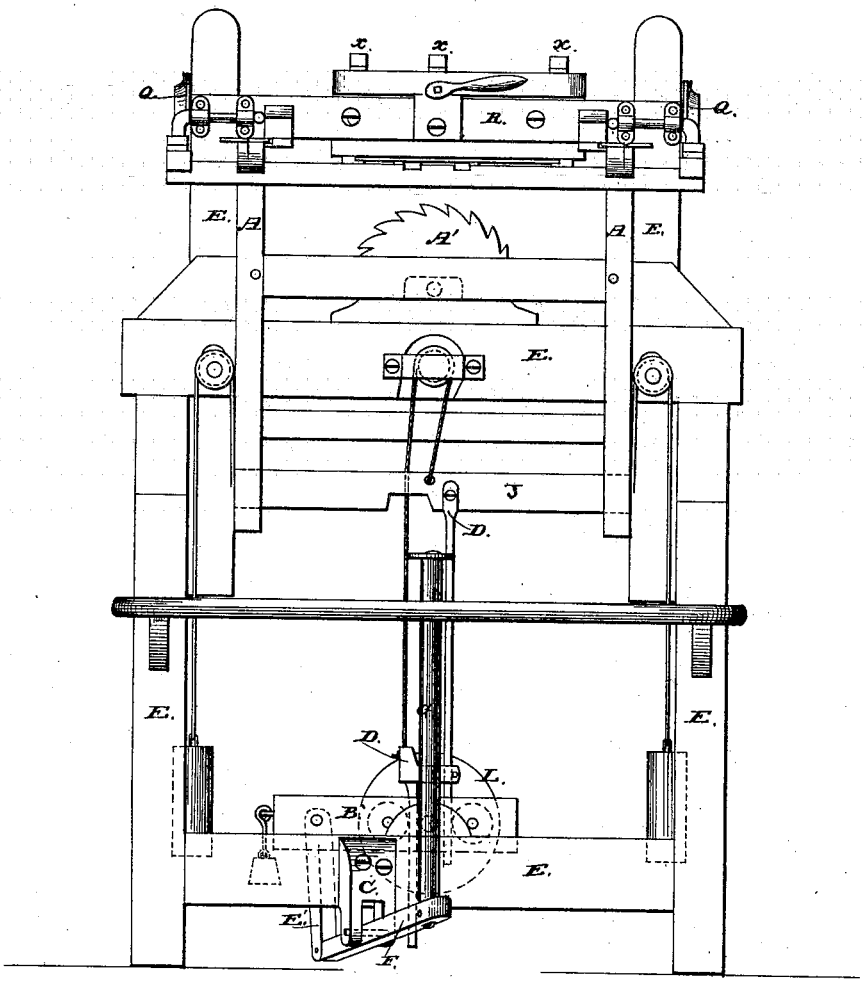
3 Sheets—Sheet 1.

W. J. SHERBURNE.

Machine for Sawing Shingles.

No. 199,939. Patented Feb. 5, 1878.

Fig. 1.



Attest:

C. B. Spencer

Robert Whitman

Inventor:

William J. Sherburne.

W. J. SHERBURNE.

Machine for Sawing Shingles.

No. 199,939. Patented Feb. 5, 1878.

Fig. 2.

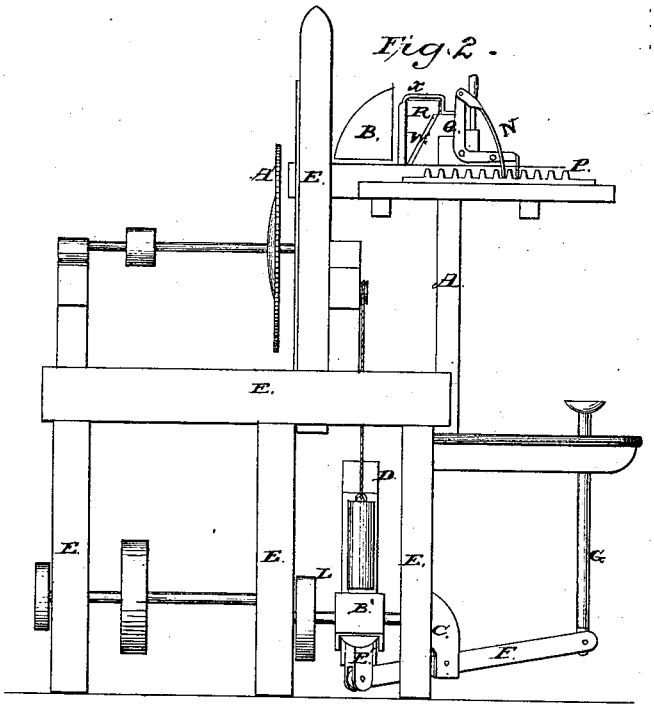


Fig. 3.

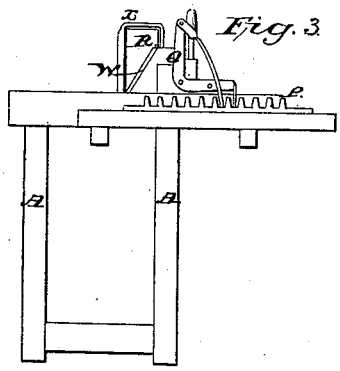


Fig. 6.

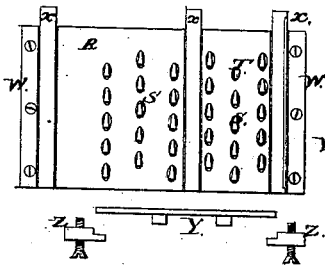


Fig. 7.

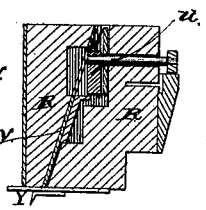
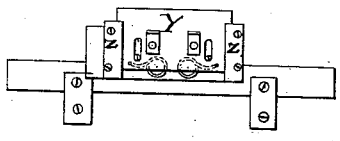


Fig. 8.



Attest:

C. B. Spencer.

Robert Whittaker

Inventor:

William J. Sherburne

3 Sheets—Sheet 3.

W. J. SHERBURNE.

Machine for Sawing Shingles.

No. 199,939. **Patented Feb. 5, 1878.**

Fig. 4.

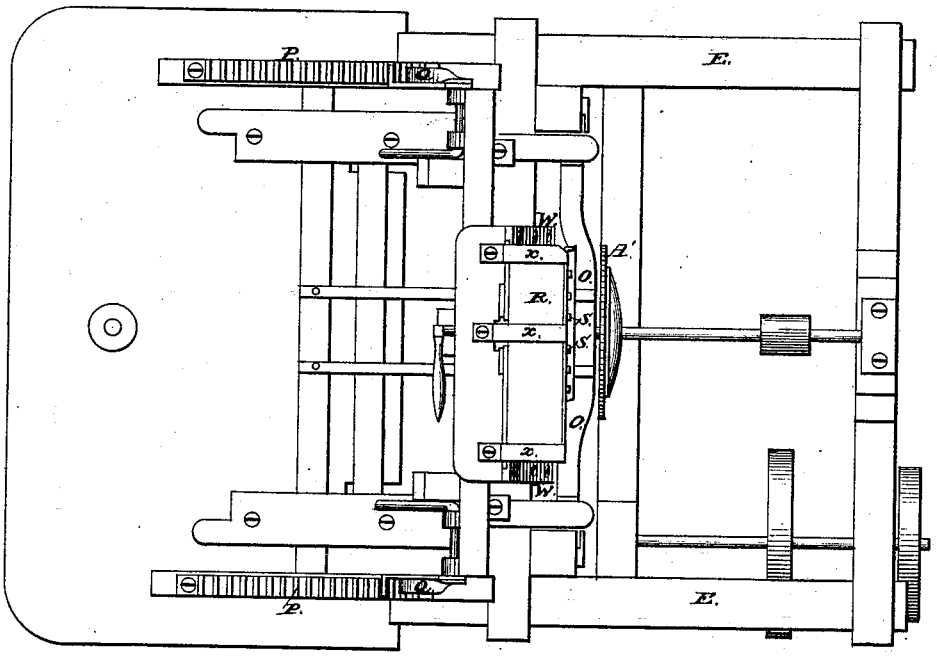
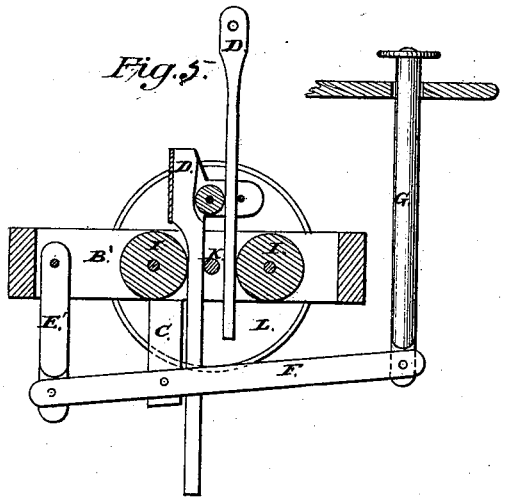


Fig. 5.



Attest:

C. B. Spencer,
Robert A. Whiteman

Inventor:

William J. Sherburne,

UNITED STATES PATENT OFFICE.

WILLIAM J. SHERBURNE, OF HASTINGS, MINNESOTA.

IMPROVEMENT IN MACHINES FOR SAWING SHINGLES.

Specification forming part of Letters Patent No. **199,939**, dated February 5, 1878; application filed June 15, 1877.

To all whom it may concern:

Be it known that I, WILLIAM J. SHERBURNE, of Hastings, in the county of Dakota and State of Minnesota, have invented certain Improvements in Shingle-Machines, of which the following is a specification:

The first part of my invention relates to the combination for moving the sash-carriage, head-block, and shingle-bolt up and down perpendicularly by the pressure of the foot. There are two weights by which the sash-carriage and head-block are balanced, having cords passing over pulleys, equally balancing the carriage and head-block. There is a brake-box fixed and pivoted on a shaft running through the center of said box, having pulley on the same, and driven by belt from main shaft or otherwise. Said brake-box has two rollers fixed on journals in the brake-box, on a parallel line with the shaft on which the box is pivoted. There are two perpendicular boards or straight pitmen passing and playing up and down between the rollers and the shaft. Near the center of the sash-carriage there is fixed a cross-rail, to which the boards or pitmen are attached, so as to balance the carriage evenly in the slides when pushed or pulled on by the board-pitmen acting simultaneously but in opposite directions. One of the boards is fixed with head-piece at the upper end of the board, having two friction-rollers, through which the opposite board runs, and having a cord attached to the upper end, and passing up over a pulley, and brought down and fastened to the center cross-rail of the sash-carriage, thus moving the carriage in an opposite direction to its motion. The opposite one on the shaft is pivoted and attached directly to the center rail in the sash-carriage.

There is a perpendicular post passing up through the floor or platform upon which the foot rests, at the lower end of which it is pivoted to the long arm of a lever extending directly under one end of the brake-box, having a fulcrum-block attached to one of the lower rails or frame of the machine. The short arm of the lever is attached to an upright post, and is hinged to one end of the brake-box, so that pressing down with the foot on the end of the post carries one end of the brake-box up, or swings it around on its fulcrum-shaft, and thus the rollers in the brake-box press the boards against the revolving shaft, and it is carried up or lowered down, as the case requires, by a light or heavy pressure of the foot.

The second part of my invention relates to the combination of head-block by which the shingle-block is held while being sawed. The head-block is moved back and forward horizontally to and from the saw, and runs in slides held with ratchets and dogs in the ordinary way. On the front edge of said block there is fixed another block in a wedge-like form, at an angle of fifteen degrees from the perpendicular line. In the face of said block there are set several rows of teeth. Said teeth are made and shaped wedge-like at the points, so as to hug the shingle-block up to the face of the head-block. Under each tooth there is an oval-shaped concave, to prevent sawdust or chips from getting under the teeth. The front part of the head-block is so fixed as to run up and down in slides.

Between the front and main block there is fixed an eccentric, pivoted on a shaft protruding through the back part of the head-block, upon which a lever or handle is fixed. By reversing or swinging the lever or handle from left to right the front part of the head-block, in which the teeth are set, is pushed or driven down, and at the same time, and by the same motion, it is launched ahead, and drives the teeth into the shingle-block one-half the depth of an ordinary shingle. The face of the head-block is also provided with three metallic guards sunk in, passing down and around the front head-block, and attached or fastened to the back part of the head-block.

One end of the shingle-bolt rests against one of the end guards, having the edge turned up. It forms a stop, so that the last piece left on the face of the head-block is a perfect shingle.

On the under side of the back head-block there is fixed a metallic sliding rest, protruding out beyond the front face of the head-block, upon which the shingle-bolt rests while the teeth are being inserted. On the under side of this rest there are two stops. As the head-block approaches the saw both of these stops strike against the sash-stay, and the slide is driven or moved back from under the shingle bolt or block.

On the under side of the back part of the head-block there are fixed two coil-springs attached to the rest, and so arranged that it moves the sliding rest forward or back to its place, ready to receive another shingle-bolt when the head is slid back on the sash-carriage.

By reversing or moving the handle or lever from right to left the guards hold the shingle, while the reversed motion draws the teeth out and the shingle drops off.

This shingle-machine has great advantages. It saws the shingle bolt or block all up, and leaves no spalt, which is the best part or heart of the shingle-bolt, to be handled over the second time and thrown into the waste or wood pile for fire-wood.

This head-block will hold any length of shingle-bolts, from ten to thirty inches long, without any alteration. It saves the time of one man in trimming the shingle-bolts, and will also hold to saw-mill cuttings, boards, planks, or slabs, without waste.

The sash-carriage is evenly balanced with weights. The shingle-bolts weigh from seventy-five to one hundred pounds each.

To show the advantage of this construction or device, if the sash-carriage, head-block, and shingle-bolt are balanced with weights, it will take the whole heft of a man to move them by and through the cut of the saw. Again, if the sash-carriage alone is balanced with weights, the heft of the shingle-bolt will crowd the cut of the saw and make bad work, and will take the whole strength of any ordinary man to lift the sash-carriage back to place again in order to saw each shingle, so that no one man can stand the labor required to saw all day long without being relieved, while from fifteen to twenty thousand shingles is an average day's work for an ordinary machine.

By pressing lightly with the foot on the top of post G the shingle-bolt and sash-carriage can be lowered gently down as fast as the saw will cut. A little harder pressure with the foot, and the sash-carriage will move up, ready to cut another shingle.

I have thoroughly tested the hereinafter-described machine.

In the accompanying drawings, Figure 1 is a front elevation of a shingle-machine embodying my invention. Fig. 2 is an end elevation of the same, showing the sash-carriage, head-block, shingle-bolt, and saw, and also the way in which the foot operates on the head of the post to work the brake-box, board-pitmen, and sash-carriage. Fig. 3 is a side elevation of the sash-carriage and head-block. Fig. 4 is a plan view of the machine. Fig. 5 is an elevation of the brake-box, with one side taken off, on an enlarged scale. Fig. 6 is a front elevation of the head-block on an enlarged scale, showing the guards, concaves, and sliding rest. Fig. 7 is a sectional end elevation of the same, showing teeth, eccentric lever, concaves, and the end of the sliding rests. Fig. 8 is a view of the sliding rest and the ways in which it moves.

E is the frame of the machine, in which the sash-carriage is hung, and slides up and down. A represents the sash-carriage, upon which the head-block rests, together with the shingle-bolt. It is slid horizontally to and from the saw, and at the lower end of which the boards D D are attached to a cross-rail of the sash, and pass down between the shaft K and rollers I I in brake-box B′.

D D are the pitmen-boards. K is the shaft. L is the pulley, driven by belt from main shaft. I I are the rollers. B′ is the brake-box or tightener. E′ is the connection-post. F is the lever. C is the fulcrum-post. G is the perpendicular post, pivoted to the long arm of lever F, passing up through the floor, on the upper end of which the foot is placed to operate the brake-box B′, as shown in Fig. 2. A′ represents the shingle-saw; B, the shingle-block, from off which shingles are sawed one at a time. *x* represents the guards, against which the shingle blocks or bolts are placed. S S are the teeth of head-block. T T are the concaves under the teeth. Y is the sliding rest attached to the under side of the head-block R by slide-piece Z, upon which the shingle-bolts rest while the teeth S are being inserted. V is the slide-plate that launches the face-part of the head-block R forward. In going down, W W are the slides in which the plate V slides. *w* is the eccentric and lever that presses the face-part of the head-block down, and inserts the teeth S into the shingle-bolt. Y is the sliding rest, having a stop on the under side that strikes against the stay-piece O, which is attached to the top part of the sash-frame. N is a spring-pawl, and P the rack for gaging the shingles. Q is the set-dogs that set the head-block.

Having described my invention and its advantages, what I claim as new is—

1. The post G, brake-box B′, lever F, connection E′, rollers I I, boards D D, and cross-rail J, in combination with the sash-carriage A, substantially as and for the purpose hereinbefore set forth.

2. The combination of the head-block R R, teeth S, concaves T, guards *x*, rest Y, and slide-plate V, substantially as and for the purpose hereinbefore set forth.

WILLIAM J. SHERBURNE.

Witnesses:

C. B. SPENCER,

ROBERT WHITMAN.