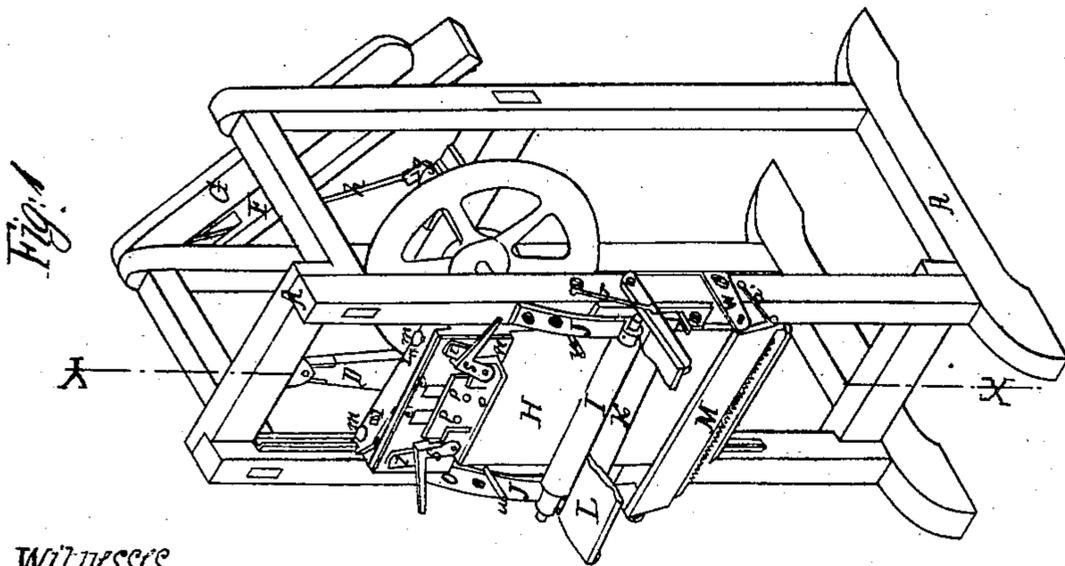
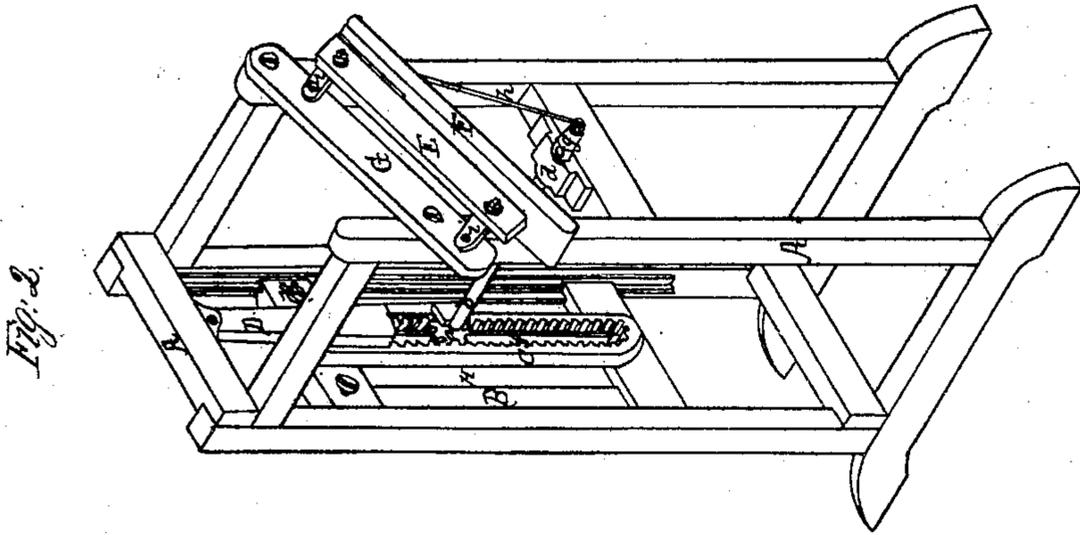
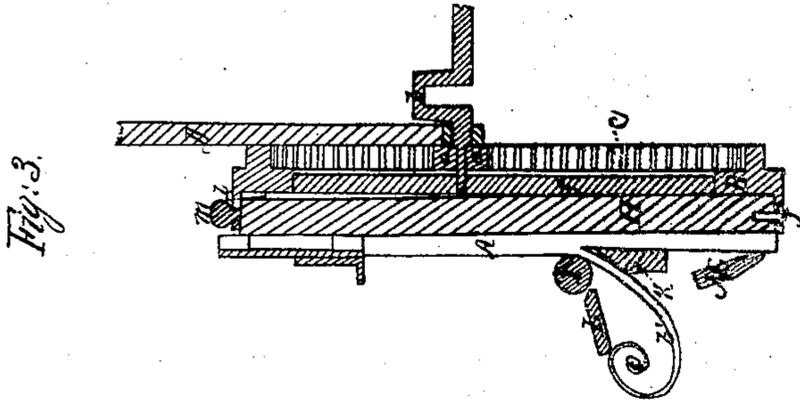


B. Day.
Shingle Machine.

N^o 71714

Patented Dec. 3, 1867.



WITNESSES

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BENJAMIN DAY OF BANGOR, ASSIGNOR TO HIMSELF AND A. L. SMITH,
OF ORRINGTON, MAINE.

Letters Patent No. 71,714, dated December 3, 1867.

IMPROVEMENT IN SHINGLE-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, BENJAMIN DAY, of Bangor, in the county of Penobscot, and State of Maine, have invented a new and useful or improved Machine for Shaving Shingles; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a front perspective view,

Figure 2 is a back perspective view, and

Figure 3 is a vertical section taken on the line X Y.

Similar letters of reference indicate the same parts in the several figures.

The nature of my invention consists in a shingle-shaving machine, light and portable, adapted to various lengths and widths of shingles, the manual labor of operating which consists in feeding the rough splits to the machine, when they are automatically dressed upon one side, and, by a simple change in the position of the forming-board, the machine is ready to complete the process by shaving the other side, producing an article superior to hand-work, and at a much less cost.

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

In the drawings, A A represent the frame, which consists of four pillars, secured in foot pieces, and by bars at the top, all secured firmly together. B is a metallic frame, fitted with grooves at its edges, and to slide up and down upon guides secured to the two front pillars of frame A. Upon the back side of frame B is secured an endless rack, C, into which meshes the pinion *a*, which is attached to crank-shaft *b*. This shaft, at its back end, is secured in bearings *d*, while the front end is supported in the pendulum-bar D, a part of which is broken away in fig. 2. The connecting-rod between the machine and the motive-power is attached to crank *b*, fig. 3, thus imparting a rotary motion to pinion *a*, which, being held in position by the parting-guide *f* in rack C, imparts to sliding frame B a uniform rising and descending movement. Upon the back end of shaft *b* is another crank, *g*, to which is connected the rod *h*, which is connected with the edger-blade E, which latter is connected to the stationary bar G by two rods, *i i*. Thus the motion of crank *g*, through the agency of rod *h* and the rods *i i*, imparts to blade E, throughout its length, a uniform rising and falling motion, by which the edges of the shingles placed upon bed F are cut straight and true.

The edging-device, as also the method shown and described for imparting motion to the sliding frame, are shown only as auxiliary to the invention claimed, and as being but one of the many well-known methods of accomplishing the same results.

H is the forming-board, which is pivoted at its lower end in the sliding frame B, as shown at *j*, fig. 3, while the upper end is adjusted in the following manner: The set-screws *k k*, fig. 2, which pass through the sliding frame, are adjusted so that when the upper end of the forming-board H bears against them, the machine will be in order to shave the first side of the shingle; when, to adjust it for shaving the other side, the top of the forming-board is moved forward enough to admit the keys *l l* between the sliding frame and the forming-board. The set-screws *m m*, which pass through a flange upon the upper end of the sliding frame, serve to hold the forming-board in the position in which it may be placed. *n* is a projecting metallic plate, extending across and secured to the forming-board. *o* is another metallic plate, having a projecting flange at its lower edge. This plate slides up and down upon plate *n*, and is secured against it by two pins, P P, secured in plate *o*, and which slide in slots *c' c'* in plate *n*. Two levered dogs, *s s*, are pivoted to plate *o*, as shown. These dogs, by the weight of their levers, when the forming-board is run up, catch under two studs, *t t*, upon plate *n*, which are wider apart than the pivots of the dogs, so that any upward pressure upon plate *o* cannot release the dogs from the studs; but when, by the descent of the forming-board, the dogs are brought in contact, by their levers, with pins *u u*, in frame A, the dogs are released, and the plate *o* rests upon the pins *u u* until again taken up by the ascent of the forming-board, when the dogs again catch under the studs as before. I is a roller, which is pressed against the forming-board by the springs J J, in the ends of which it revolves, in eyes, as shown. K is the knife, which is firmly secured to the front pillars of the frame, and is adjusted by set-screws relatively to the

forming-board. L is a hinged shield, partly broken away to show the knife, which is secured to the pillars, and is drawn upwards against roller I by the elastic loop *v*. M is a narrow apron, pivoted in brackets *w w*, and its lower edge is held closely to the face of the forming-board by an elastic loop, *a'*. Upon the lower edge of this apron is secured a serrated metallic plate, as shown. The forming-board H, as will be seen, is slightly concave in the line of its length, for the purpose hereinafter stated.

The use and operation of this machine are as follows: The splits A', which it is intended to shave, are "rived," by splitting from bolts sawn from the log, of the right length. These splits have a true straight line across the end where the riving-tool enters the bolt, but the rest of the sides of the splits is rough and uneven, according as the grain or laminations of the wood may be more or less irregular. This true end is of the right thickness for the thick end of the shingle. When the machine is put in motion, the operator, standing in front, when the sliding frame reaches its full ascent, places one of the splits A' against the forming-board H, with the true end resting upon roller I, when, as the sliding-frame descends, the projection *n* comes in contact with the top of the split, forcing it downward between the forming-board and the roller, which, by the action of springs J J, yields to the pressure of the split, which latter comes in contact with knife K, and is shaved true and smooth upon one side, when, after passing below the knife, it drops from the machine, and the sliding frame again rises, when the operation is repeated. After the desired quantity have been thus passed through and shaved upon one side, the set-screws *m m* are slackened, the forming-board is swung forward at the top, the keys *l l* are inserted between the forming-board and sliding frame, the set-screws *m m* are again tightened, when the machine is ready to shave the other or last side of the splits. Should the splits be winding—which results from the spiral direction of the fibres of the wood—then, when the end of the split first passes between the roller and the forming-board, one of the upper corners of the split would be thrown out from the projection *n*, leaving insufficient bearing to drive the shingle past the blade. To obviate this, the auxiliary movable projection *o* is provided, which, during the descent of a large part of the length of the shingle, serves as a bearing to the most winding split, and when the shingle has descended so far that the part above the roller is forced back under the shoulder *n*, then the projection *o* is arrested by pins *u*, as before described.

The forming-board is made concave, as described and shown, in order that the shingle may have an equal convexity, for the reason that when "laid" upon the roofs of buildings, about one-third of their length is exposed, and this exposed portion should be of nearly uniform thickness, while the upper end terminates in a wedge-point, and by giving the forming-board the proper concavity the shingle may be thus formed.

The hinged shelf L serves, as shown in fig. 3, to prevent the shaving *b'* from coiling around the roller I, as it otherwise would, thereby obstructing the working of the machine; and the hinged plate M, with its serrated edge, prevents the shingles from being, by their adhesion to the forming-board, carried up, after passing the blade. The teeth of the metallic plate, catching upon the shingle, hold it until the forming-board rises clear of the shingle, when it falls by its own weight. Beneath plate *n* is a slight projection or shoulder of wood, as shown, which, when the sliding frame has made its full descent, comes in contact with the edge of knife K, thus obviating dulling the blade, while at the same time it forces the shingle past the edge.

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

1. The sliding frame B, adjustable forming-board H, knife K, and self-adjusting roller I, all constructed and arranged to operate in the manner and for the purpose substantially as described and shown.
2. The auxiliary bearing *o*, constructed and arranged to move with the forming-board a part of its descent, and to resume its position and office upon the ascent of the forming-board, substantially in manner as and for the purposes specified.
3. In combination with knife K and roller I, the hinged shield L, substantially as described and shown.

BENJAMIN DAY.

Witnesses:

H. L. MITCHELL,
JAMES C. WESTON.