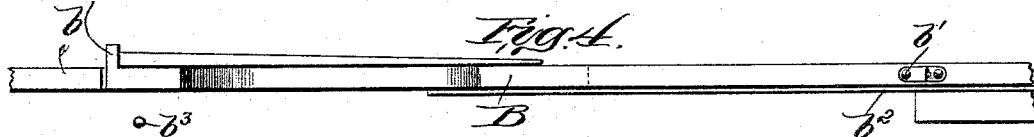
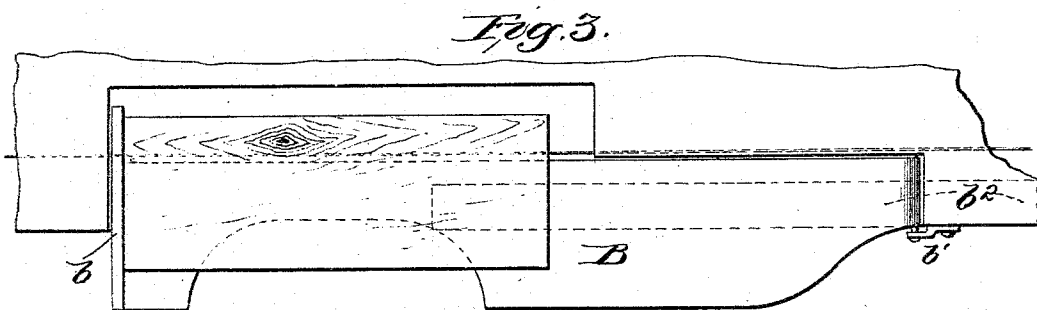
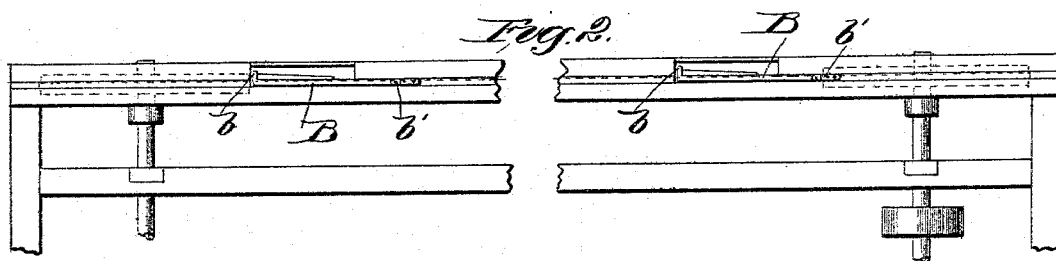
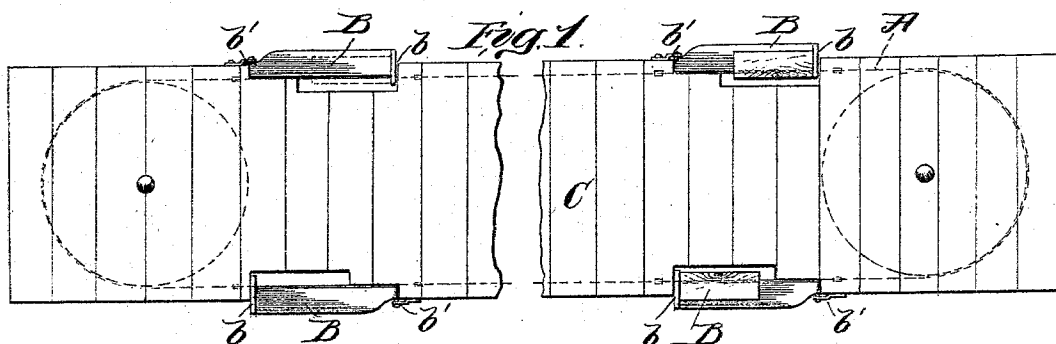


(No Model.)

H. A. & B. U. HILLS.
SHINGLE EDGING MACHINE.

No. 494,922.

Patented Apr. 4, 1893.



Witnesses:
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Fig. 6.
By

Inventors
Henry A. Hills
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UNITED STATES PATENT OFFICE.

HENRY A. HILLS AND BURTON U. HILLS, OF FRANKFORT, MICHIGAN, ASSIGN-
ORS OF ONE-HALF TO JOHN W. HILL, OF CHICAGO, ILLINOIS.

SHINGLE-EDGING MACHINE.

SPECIFICATION forming part of Letters Patent No. 494,922, dated April 4, 1893.

Application filed February 4, 1892. Serial No. 420,351. (No model.)

To all whom it may concern:

Be it known that we, HENRY A. HILLS and BURTON U. HILLS, citizens of the United States of America, residing at Frankfort, in the
5 county of Benzie and State of Michigan, have invented certain new and useful Improvements in Shingle-Edging Machines, of which the following is a specification.

Referring to the accompanying drawings,
10 wherein like reference letters indicate like parts, Figure 1. is a top plan of the machine; Fig. 2. a side elevation of the same; Fig. 3. a top plan of the table; Fig. 4. a side elevation of same, in normal position; Fig. 5. the same
15 depressed; Fig. 6. a side elevation of a modified form of table.

In the manufacture of shingles the proper edging is a factor that has much to do with the value of the same in the market. Two
20 methods are now in general use, viz: the jointer and knot saw, but both, as is well known, have objections that it is desirable to eliminate, for the purpose of increasing the market value of the shingle, economizing the
25 timber, and, perhaps the most important, that of increased safety to the operator.

To accomplish all the above, and also to attain other advantages not possible in the present methods, in a machine of economical
30 construction and operation, is the object of our invention.

Because of the form or shape of a shingle, it has been found difficult to edge it at right angles to its butt, the thin end cutting faster
35 in jointing the same, causing a wedge shaped shingle narrower at the point than at the butt, and because of its slight resistance to a circular knot saw it is liable to be damaged in the same manner. If from any cause the
40 shingle is thus formed, it is depreciated in value, and the roof laid with such shingles is not so durable nor so valuable as a protection from the weather. Jointers also in cross-grained shingles often chip out a part, in the
45 vicinity of knots, and because of the rapidity with which shingles are edged, more is jointed away than is necessary, and there is a consequent waste of timber. Circular knot saws, cutting directly down through the thin end of
50 a shingle, tear it, giving the edge a rough surface, and frequently this is made greater by

tearing out a part where the shingle is cross-grained, as near a knot. Edging shingles on a circular knot-saw is also attended with great danger to the operator, as is attested by nearly
55 every operator of any extended experience, in severe wounds, loss of one or more fingers, or perhaps of the entire hand. In edging shingles by our improved method, we use a band-saw A., running in a horizontal plane, teeth upward. 50
Over one or both of the parallel sides of the saw, we arrange the tables B. B., upon which the shingles are placed to be presented to the saw. At the end of the table, in the direction
65 toward which the saw is running, we arrange the transverse butting-guide, or piece *b*., against which the butt of the shingle is placed. This butting-piece is sufficiently high and long to extend over and beyond the saw; a
70 channel being cut part way into it, where the saw runs. The other end of the table B., we hinge or pivot, as at *b'*. Under the said table, for the purpose of holding it up, we arrange a suitable spring, preferably a bar-
75 spring *b*², upon the free end of which the free end of the table rests while the other end of said spring is fastened to the frame of the machine in any suitable manner. The spring
80 *b*² may act as the pivotal agent if desired. The free end of the table may be depressed a fixed distance, adapted to the different thicknesses of shingles, and regulated by any satisfactory means for such adjustment; shingles now being manufactured in sixteen inch
85 and eighteen inch lengths, and corresponding thicknesses; only one length, however, being manufactured at a time. The distance the table may be depressed should be enough to allow the upper surface of the shingle to become parallel to the points of the saw-teeth, 90
while said saw-teeth should project about the said upper surface of the shingle only far enough to clearly cut through the shingle the entire length of the same. When the table
95 is in its normal position, the points of the saw-teeth should run slightly below the surface of the table.

The table with the shingle in its normal position, and ready to be edged is illustrated in Fig. 4, and is shown in Fig. 5., as it appears
100 at the instant when the edging has been completed. A comparison of the two figures will

show that in Fig. 4. the upper surface of the shingle inclines downward from the butt to the point, both ends lying above the line of the saw-teeth (shown at *a.*), while in Fig. 5. the upper surface of the shingle is parallel with and slightly below the line of the saw-teeth.

We do not wish to limit ourselves to the pivoted table above described, as other forms of tables may be used to accomplish the same results. As in Fig. 6. we can use a form of table which, while presenting the shingle in substantially the same way to the saw, is not pivoted. In this form the table moves in a vertical line, and is held in normal position by the springs *b²*, *b²*, and is permitted to be depressed a certain desired distance, as above. In this form it is obvious in order that the shingle may be presented to the saw as above described, that the upper surface of the table must be inclined downward toward the butting guide *b.*, in order that the upper surface of the shingle shall be parallel to the points of the saw-teeth. We prefer to use the pivoted table. In all cases the tension of the springs should be such as to allow the table to be depressed by the hand of the operator without unnecessary effort, and be returned to its normal position immediately upon the removal of such pressure. The upward movement of the table is limited by a suitable stop, and its downward movement by any suitable form of adjustable stop, as the pin or bolt *b³*, see Figs. 4, and 5, extending from the side of the frame, or a cleat screwed or otherwise fastened to the side of the frame, to enable the extent of the downward movement to be adapted to the varying thicknesses of shingles. It is obvious that in either form of table the operator cannot be severely cut, as, if he should place his hand squarely upon the shingle and depress the table to its fullest extent, it could not cut off a finger, or do more than to slightly cut or slit the hand.

Proper, well-known methods for guiding the saw truly, and for stretching the same tightly are used.

It is plain that the machine can be made to accommodate any number of operators, by using a longer saw and frame, and increasing the number of the tables.

The saw is covered by a box covering C., except at the openings for the table B. B. The flat top of said cover, which should be higher than the tables B. B., serving as a table upon which the unedged shingles fall, between the operators at the opposite sides of the machine.

The mode of operation is as follows: The unedged shingle falling upon the top of the cover C., is placed by the operator upon the table B., with the butt against the butting-guide *b.*, and the table and shingle pressed downward. The saw first striking the shingle on its under surface at the butt end, causes it to be firmly held against the guide *b.*, and

hence edged at right angles to the butt. The saw cutting lengthwise the shingle, the timber is braced by the surrounding parts, and is not torn nor split, but is cut evenly and smoothly. The rejected or cut away part drops downward out of the way. Upon the pressure being removed the table at once resumes its normal position, when the operation may be repeated.

By the operation of this improved machine, and as the result of presenting the shingle to the saw in the manner herein described, the edge of the shingle is rendered perfectly straight and smooth—in fact even smoother than it could be planed—and its corners are unsplintered and perfect. The butt end of the shingle is placed against the butting guide, in order that the edging may be done at right angles to it, such being important because in laying shingles the butts are laid in a straight line, and unless the shingle sides be at right angles to the butts, the sides of adjoining shingles will not touch throughout their lengths, which, obviously, would be a serious defect. It will not do to edge with reference to the point of the shingle, because it frequently happens that not more than from ten to twenty per cent. of shingles have their butts and points parallel, so that it would by no means be always the case that edges at right angles to the points will also be at right angles to the butts. Furthermore, it would be undesirable to place the point of the shingle to be edged against the butting guide, as said point is thin, and therefore liable by being pressed by the saw against the guide, to be crumbled or broken, and thus not give a straight face to bear against the guide.

It is obvious that a weighted lever may be substituted for the spring, but as it would be an inferior equivalent, operating more slowly, and with greater jar and strain upon the mechanism, we prefer to use some form of spring for the purpose.

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

1. In a shingle-edging machine the combination of a band saw running horizontally with its teeth upward, a vertically movable table adjacent to the saw, that is inclined during the cutting operation with relation to the line of saw teeth, and has a butt engaging part at its lower end, said table when depressed enabling the saw to first strike the shingle at its butt portion, and its teeth to emerge from the upperside of the shingle simultaneously throughout its entire length, substantially as and for the purpose specified.

2. In a shingle edging machine the combination of a band saw running horizontally with its teeth upward a pivoted vertically movable table having at its free end a butt engaging part, and inclined during the cutting operation with relation to the line of saw teeth, from said butt engaging part up-

ward, said table enabling the saw to first strike the shingle at its butt end, and its teeth to emerge from the upper side of the shingle simultaneously throughout its entire length, 5 substantially as and for the purpose shown.

3. In a shingle edging machine the combination of a band saw running horizontally with its teeth upward, a pivoted, spring table, having on its free end, a butting guide, to- 10 ward which the saw runs, said table when depressed being inclined upward from said

guide, and enabling the saw to first strike the shingle at its butt portion, and its teeth to emerge from the upper side of the shingle simultaneously throughout its entire length, 15 and a stop to limit the depression of the table, substantially as and for the purpose set forth.

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Witnesses:

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