

*O. Stoddard,
Cutting Shingles.*

No 57,405.

Patented Aug. 21, 1866.

Fig 1

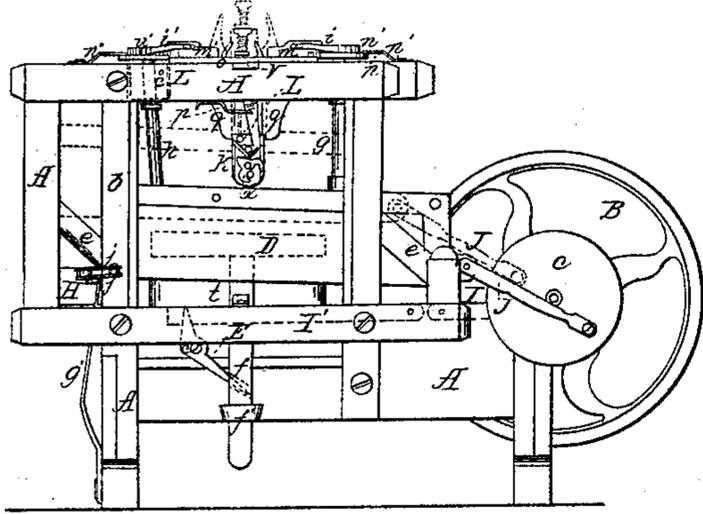


Fig 7

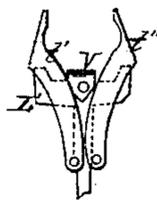


Fig 2

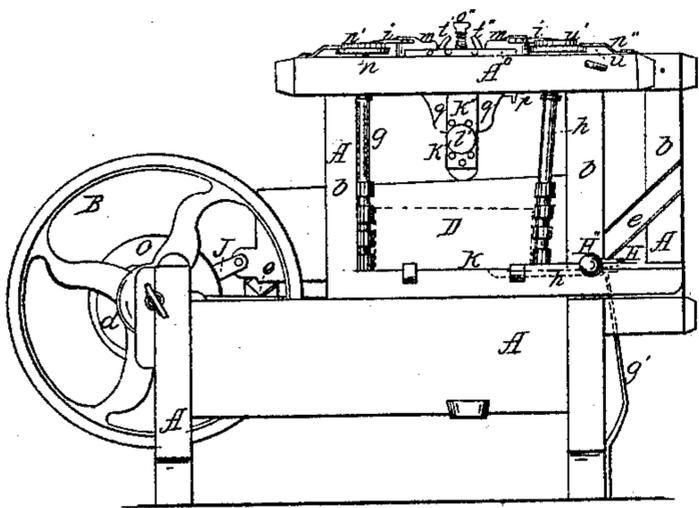


Fig 6

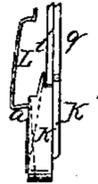


Fig 4

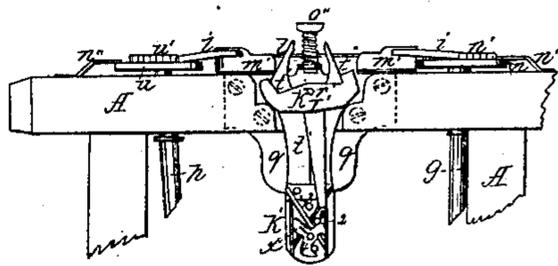


Fig 3

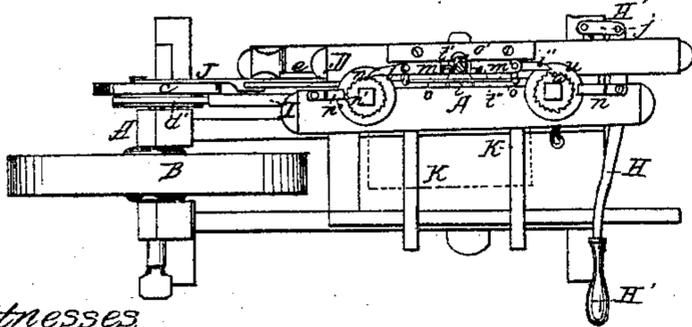
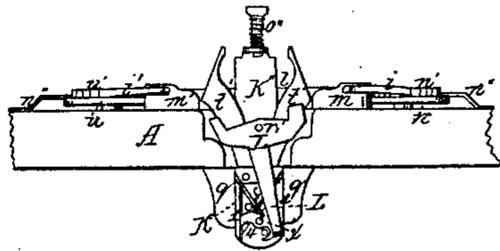


Fig 5



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UNITED STATES PATENT OFFICE.

OREN STODDARD, OF BUSTI, NEW YORK.

IMPROVEMENT IN SHINGLE-MACHINES.

Specification forming part of Letters Patent No. 57,405, dated August 21, 1866.

To all whom it may concern:

Be it known that I, OREN STODDARD, of Busti, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in a Machine for Cutting Thin Lumber, Shingles, &c.; and I do hereby declare that the following is a full and complete 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 side elevation of the machine. Fig. 2 is a view of the side opposite from Fig. 1. Fig. 3 is a top view. Figs. 4, 5, 6, and 7 are sectional views, that will be referred to in the description.

Like letters of reference refer to like parts in the different views.

The nature of my improvement relates to an arrangement of devices for the purpose of cutting shingles from a bolt, which bolt is fed more or less alternately at each end, so as to give the desired taper and thickness to the shingle, the said mechanism being also so arranged that thin stuff may be cut of a uniform thickness from the bolt or log, and, by means of a mechanical arrangement connected and operating with the machine, the stuff is so held or supported as to prevent its checking or splitting when it is being cut and discharged from the machine.

A represents the frame of the machine, that is of a suitable construction for the operating parts.

B is a driving-wheel, the shaft of which is supported in the frame. On the shaft of this wheel is secured a crank-wheel, C, to one side of which a connecting-rod, J, is pivoted, that is hung at the other end to a cutter or blade, D, as shown in Figs. 1 and 2. This blade slides between upright posts *b* in a diagonal direction by the revolution of the crank-wheel, and is kept in place and made to move easily by friction-rollers attached to one side of the blade, moving in guides *e*, arranged on the frame.

On the inside of the crank-wheel there is an eccentric, *d*, that a band, *d'*, passes around, and is attached to an arm, I, that is pivoted to a sliding arm, I', as indicated by the dotted lines in Fig. 1, which slides back and forth in the frame as the crank-wheel revolves.

E is an angular lever, (seen and indicated by the dotted lines in Fig. 1,) that is pivoted at *c* to the frame, one end of which extends into the horizontal arm I', and the other fits into a slot cut out in a vertical arm or slide, *f*, as indicated.

The lower end of the slide *f* passes through a guide, *f'*, secured to the frame, and to the upper end is attached a cross-piece, *t*. As the cam turns with the crank-wheel, moving the arm I', it turns the lever, moving the slide, with the cross-piece *t*, into the position indicated in Fig. 1.

Inside of the posts *b* of the frame are feed-rollers *g* and *h*. The lower end of the roller *g* has its bearing in the frame, and the roller *h* in a slide indicated by the dotted lines *h'* in Fig. 2. The slide is secured at the outer end to a lever or handle, H, that is pivoted at H' between pieces *j*, connected to the frame.

H'' is the handle of the lever, by which it is moved back and forth.

g' is a spring attached to the frame, the upper end of which presses against the outer end of the slide, whereby the roller *h* is moved along so as to hold a block between it and the other roller on the table K, (seen in Fig. 3, and as noted by the red lines in Figs. 2 and 3.)

The upper end of the roller *h* passes through an adjustable bearing, L, as indicated by the dotted lines in Fig. 1, that is pivoted at *c'* to the frame, so that it can be turned to suit the inclination of the roller. On the upper end of the roller, above the frame, is secured a flange, *u*, and ratchet-wheel *u'*. The other roller, *g*, extends up through the frame, and on the top is secured a similar flange, *n*, and ratchet-wheel *n'*.

In the ratchet-wheels *u'* *n'* pawls *i* *i'* catch, that are pivoted in the slide *m* *m'*, which move in guides *o* *o'* on each side, there being lips projecting from the slides that fit into grooves in the guides, whereby the slides are retained down in place as they move back and forth.

K' is a head secured at the upper end to an arm, K'', that extends up through the frame, and is turned at right angles at the top, in which there is an adjustable screw, *o''*. The side edges of this arm are grooved out, into which the edges of guides *q* *q*, secured to the frame, fit, by which the arm is kept in place as it is moved up and down.

Figs. 4 and 5 are enlarged views of the upper portion of the machine, with part of the frame removed to show more clearly some of the operating parts. To the head K' and arm K'' , at r , are pivoted arms $t' t''$, that are curved and shaped as represented in Figs. 4 and 5, and fit into a suitable space cut out in the frame.

L' is a lever hung to the arm K' at r , that is shaped as shown in Figs. 4 and 5, the lower part of which extends down, and from the end, projecting inward, is a pin, a , (shown in Fig. 6, which is a side view of the head and a portion of the lever and arms.) This pin fits into and moves in grooves 1 2 3 4, cut out in the face of the head, as shown in Figs. 4 and 5 and indicated by the dotted lines in Fig. 6. The grooves 1 2, from the top to the lower end, are inclined inward, being much deeper at the lower end than at the top, and the cross or diagonal grooves 3 4 are deeper at the upper than the lower end, as indicated by the dotted lines in Fig. 6. To the center of the head is pivoted a shifter, X , shaped as represented, whereby the lever is guided in the desired manner in the grooves, as will be described.

The slides $m m'$ are connected by a spring, l , by which they are drawn back when the pressure is removed from them as the arms $t' t''$ descend.

V is a cam secured in the frame, that turns down at right angles, and is pointed at the lower end, as shown in Fig. 7, fitting in between the arms $t' t''$, by which they are forced apart as the arms move up.

p is a shifter attached to the frame, by which the lever L' can be adjusted in or out of the grooves, as may be desired.

The manner in which this machine, constructed as described, operates is as follows: As the driving-wheel turns, the cutter D , by means of the connecting-rod I and crank C , is moved upward into the position indicated by the dotted lines in Fig. 1, and as it moves upward it comes against a roller, l' , moving the head K' and arm K'' , with the arms $t' t''$, into the position indicated in Fig. 1 and shown in Figs. 5 and 7. As the arms $t' t''$ are thus elevated the cam V causes them to separate or spread apart, as represented in Fig. 7. They are pivoted at the lower end to the head, and as they spread apart they move out the slides $m m'$, which, by means of the pawls $i i'$, turn the ratchet-wheels, whereby the feed-rollers $g h$ are turned in the desired manner for feeding the block to the cutter, the block being placed on the table K , as before stated. The feed-rollers are toothed, as shown in Fig. 2, for taking hold of the block and moving it as the rollers turn.

As shingles are thicker at one end than the other, it is desirable that the block should be moved out more at one end than the other, alternately. To accomplish this the lever L' , pivoted to the arm K'' , is made to vibrate or move up and down by the lower end moving in the grooves 1 2 3 4 on the face of the head

K'' , so that the slides $m m'$ will alternately come against the raised end of the lever instead of the arms $t' t''$, and will not be moved so far; consequently the ratchet-wheel and feed-roller will not be turned so much at one end of the block as the other, and the block will not be moved out so far, but will be placed diagonally under the cutter, when the shingle will be cut off the desired shape as the blade descends, which it does by the continued revolution of the driving-wheel.

The cross-piece t on top of the slide f , connected with a cam on the crank-wheel, as before described, moves up with the blade D , and down also, coming against the side of the block where the shingle is cut off, forming a support and preventing the shingle, &c., from being so liable to split or check as it is being cut off.

The manner in which the lever L' is operated so as to raise each side alternately, for the purpose before stated, is as follows: When the arms are elevated and the lever is in the position shown in Fig. 5 the slide m will come against the lever when the arms descend, as shown in Fig. 4, and the pin a , at the lower end of the lever, will move in the vertical groove 2 in the head, retaining the lever in this position until it passes off the top into the groove 4, which is cut deeper at the upper end. As the arms and head again ascend the lever is guided in the diagonal groove 4, which tips the lever, so as to elevate the other side, when the lever passes off this groove into the groove 1, which is deep at the lower end. The lever is retained in this position as it is guided in the groove 1 until it falls off into the cross-groove, 3, when it will be tipped, so as to elevate the other side, and so on, as the head ascends and descends. The lever guided in the vertical grooves retains each side alternately elevated, and the cross-grooves tip it up, as described.

The shifter X is for directing the lever in the diagonal grooves so as to tip the lever in the desired manner for turning the rollers to feed the block more or less alternately, as may be required for the butt and point of the shingle.

By means of the shifter p the lever L' can be moved entirely out of the grooves and disconnected with the head, when the slides will both come directly against the arms $t' t''$ and be moved the same distance, when the block will be fed equally at both ends to the cutter.

By means of the gage-screw o'' , which comes down upon the top of the cam V as the arms descend, the distance that the arms move vertically can be adjusted so as to determine the stroke of the slides, that will move the feed-rollers more or less, moving the block out so that the pieces will be cut off thicker or thinner, as may be desired. The thickness of the shingles, cut tapering, can also be varied in the same manner.

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

1. The sliding frame *f t*, lever *E*, and arms *I* and *I'*, in combination with eccentric *d'* and knife *D*, arranged as and for the purpose set forth.

2. The slides *m m'*, spring *l*, arms *t t*, and cam *V*, in combination with the dogs *i i'*, ratchet-wheels *n' u'*, and feed-rollers *g h*, substantially as and for the purpose set forth.

3. The lever *L'*, head *K'*, provided with vertical and diagonal grooves 1 2 3 4, and

shifter *X*, in combination with the arms *t t* and cam *V*, substantially as and for the purpose described.

4 The set-screw *o''*, arm *K''*, guides *q q*, lever *L'*, and arms *t t*, arranged and operating in the manner and for the purpose specified.

OREN STODDARD.

Witnesses:

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