

C. M. Young,
Cutting Shingles.

N^o 17,347.

Patented May 19, 1857.

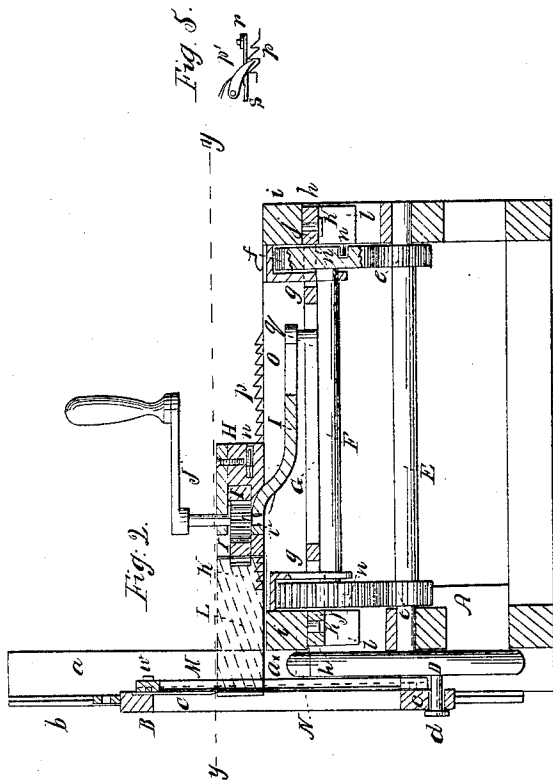


Fig. 2.

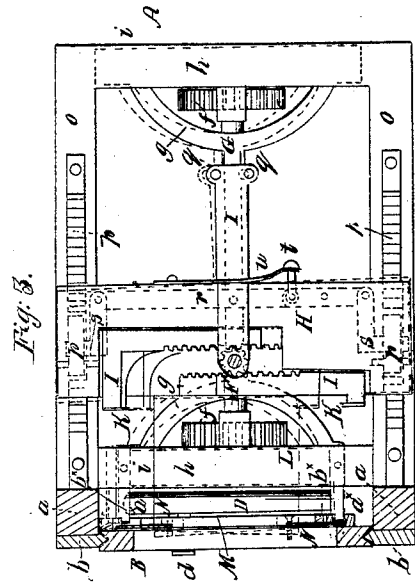


Fig. 3.

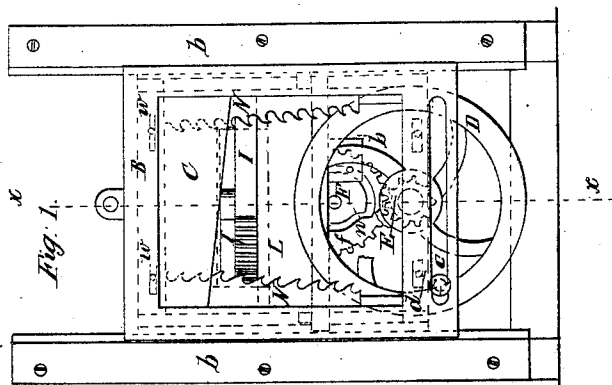


Fig. 4.

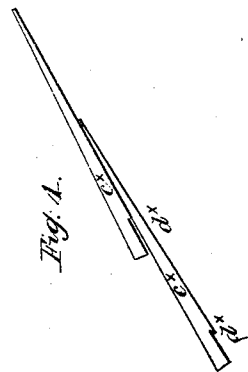


Fig. 5.

UNITED STATES PATENT OFFICE.

C. M. YOUNG, OF SINCLEARVILLE, NEW YORK.

SHINGLE-MACHINE.

Specification of Letters Patent No. 17,347, dated May 19, 1857.

To all whom it may concern:

Be it known that I, C. M. YOUNG, of Sinclearville, in the county of Chautauqua and State of New York, have invented a new and
5 Improved Machine for Cutting or Riving Shingles; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this
10 specification, in which—

Figure 1, is a front view of my improvement. Fig. 2, is a longitudinal vertical section of ditto (*x*) (*x*) Fig. 1, showing the plane of section. Fig. 3, is a horizontal section of ditto (*y*) (*y*) Fig. 2, indicating the plane of section. Fig. 4, is a detached edge view of two shingles. Fig. 5, is a detached view of one of the pawls of the feed block.

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

My invention consists in the employment or use of a reciprocating knife in connection with a peculiar mechanism for feeding the bolt to the knife; the feeding device being
25 operated automatically from the reciprocating gate in which the knife is secured.

My invention further consists in the employment or use of saws which are fitted or secured in a frame attached to the gate in
30 which the knife is secured, the saws being operated automatically and so arranged that as each shingle is cut or rived from the bolt, its butt will have a kerf cut in it by the saws, the kerf preventing the shingles from checking as they are cut or rived from the bolt,
35 and also serving to prevent the decay of the shingles when laid.

To enable those skilled in the art to fully understand and construct my invention, I
40 will proceed to describe it.

A represents a rectangular frame, at one end of which two uprights (*a*,) (*a*,) are secured. The frame and uprights may be constructed of wood.

45 To the uprights (*a*,) (*a*,) metal guides (*b*,) (*b*,) are secured, and between these guides a rectangular gate B is fitted and work the inner edges of the guides fitting in grooves in the sides of the gate, as shown
50 clearly in Fig. 3.

In the upper part of the gate B a knife or cutter C is secured transversely, the cutting edge of the knife or cutter being slightly inclined or varying a few degrees
55 from a horizontal line, as plainly shown in Fig. 1.

The lower rail of the gate B has a horizontal slot (*c*,) made through it, and a pin (*d*,) is fitted in this slot, said pin being attached to a wheel D near its periphery. The
60 wheel D is placed upon one end of a shaft E which is fitted longitudinally in the frame A, said shaft E having two pieces (*e*,) (*e*,) upon it which pinions gear into toothed wheels (*f*,) (*f*,) on the ends of a shaft F
65 which is placed in the frame A just above the shaft E and parallel with it, see Fig. 2.

G represents a bar which has a segment or bow (*g*,) attached to each end, the ends of each segment or bow (*g*,) are connected
70 by bars (*h*,) which are fitted against the under sides of the upper end pieces (*i*,) (*i*,) of the frame A. The bars (*h*,) have slots (*j*,) made through them longitudinally and screws (*k*,) pass through the slots into the
75 end pieces, said screws serving as guide pins to the bar G. The bar G and the segments or bows (*g*,) may all be formed of one piece, cast or wrought iron would probably be the most preferable material of which to construct
80 said bar and segments. Each bar (*h*,) has a short pendant bar (*l*,) attached to it and a pin (*m*,) projects from the inner side of each pendant (*l*,) said pins fitting in eccentric grooves (*n*,) which are
85 made in the outer sides of the toothed wheels (*f*,) on the shaft F, see Fig. 2.

To the upper surface of each side piece (*o*,) of the frame A a rack (*p*,) is secured, and a rectangular block H is placed on the
90 side pieces (*o*,) said block having pawls (*p*,) secured to its under side, one at each end. A detached view of one of the pawls is shown in Fig. 5, and both are shown by dotted lines in Fig. 3. To the under side
95 of the block H a bar I is attached. This bar projects outward a suitable distance from the block H and has the pins (*q*,) (*q*,) projecting downward from it, the bar G being between the pins (*q*,).

To the under side of the block H a bar (*r*,) is attached and a bent lever (*s*,) is attached to each end of said bar. The ends of these bent levers pass underneath the pawls (*p*,) see Fig. 5 and dotted lines in Fig. 3.
105 A pin (*l*,) is attached to the bar (*r*,) said pin projecting beyond the side of the block H and having a spring (*u*,) attached to it, see Fig. 3.

To the block H two racks I, I, are at-
110 tached. These racks have a pinion (*v*) placed between them, said pinion gearing

into the racks. The axis of the pinion has a crank J attached to it, and the end of each rack has a dog K attached. The bolt L from which the shingles are cut or rived, shown in blue, is clamped between the dogs K, K.

To the inner side of the gate B a rectangular frame or sash M is secured. This frame has slots made through its top and bottom cross pieces, set screws (w ,) serving as guide pins. The stiles or side pieces (a^x) of the frame or sash M are grooved longitudinally and bars (b^x ,) (b^x ,) fit thereon, said bars being attached to the adjoining segment (g ,) of the bar G. To each slide or side piece (a^x ,) of the frame or sash M a saw N is secured.

The operation is as follows. The bolt L is secured by means of the dogs K, K, to the block H, said block being drawn back so that the front edge of the bolt is just underneath the knife C. A reciprocating motion is then given the gate B in any proper manner and a rotary motion is communicated to the shaft E from the gate B in consequence of the pin (d ,) of the wheel D being fitted in the slot (e ,) in the lower part of the gate.

Motion is communicated to the shaft F from the shaft E by means of the pinions (e ,) (e ,) and wheels (f ,) and a lateral reciprocating motion is communicated to the bar G in consequence of the pins (u ,) on the pendants (l ,) fitting in the eccentric grooves (n' ,) in the wheels (f ,). By this movement of the bar G a vibratory motion is communicated to the block H through the medium of the bar I and the bolt L is consequently fed toward the knife by having the two ends of the block H moved alternately forward toward the knife, the two parts (p ,) catching alternately into the racks, one end of the block being held by its pawl while the opposite end is moved forward. The bolt, therefore, it will be seen is presented obliquely to the knife at each stroke, and the shingles as the knife is forced down upon the bolt are cut therefrom in taper form, the butts being cut alternately from opposite ends of the bolt.

As the gate B is moved up and down, the frame or sash M which contains the saws N, N, has a lateral reciprocating motion given it in consequence of the bars (b^x ,) (b^x ,) fitting in the grooves in the stiles (a^x ,) and these saws being placed adjoining the back side of the knife C will, as the gate B descends, cut a rebate or kerf longitudinally in the butt of each shingle, a saw N, in consequence of the reciprocating movement of the frame or sash M, being pre-

sented to the butt of each shingle. These saw kerfs effect a twofold purpose. In the first place they prevent the butts of the shingles from checking as the shingles are cut from the bolt. This checking frequently occurs and is a serious injury. In the second place the kerfs when the shingles are laid prevent the ends of the bolts from coming in close contact, see Fig. 4, and moisture which penetrates and passes down between the shingles is thereby allowed to evaporate and also to escape more readily from between the shingles, see Fig. 4, in which (c^x ,) indicates the shingles and (d^x ,) the kerfs. The shingles are thereby rendered more durable than those now made.

I would remark, that the pawls (p' ,) are freed from the racks (p ,) when the block H is to be drawn back, by pressing onward the pin (t ,) and thereby causing the levers (s ,) to elevate the pawls.

I am aware that the bolts in various shingle machines have been and are now fed to the cutter in a vibrating manner so that the bolts are presented obliquely to the knife, the two ends of the bolt being advanced alternately as herein described, but I am not aware that the means employed for such purpose as herein described has been previously used. I do not claim therefore the movement of the bolt or the manner in which it (the bolt) is presented to the knife irrespective of the means employed for effecting the purpose. But

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

1. Operating or giving the necessary feed motion to the block H and bolt L by means of the laterally reciprocating bar G actuated by the eccentric grooves (n' ,) in the wheels (f ,); the bar G vibrating the block H through the medium of the bar I, the block H being provided with pawls (p' ,) which catch into the racks (p ,) in the frame A and the whole arranged as described.

2. I also claim the saws N, N, placed in the frame or sash M which is secured at the back of the gate B, and operated from the bar G as described for the purpose specified.

3. I further claim the bar G when arranged as herein shown, so as to be driven or operated from the gate B, whereby the several parts of the machine are all made to work automatically as described.

C. M. YOUNG.

Witnesses:

A. P. AMNOCK,
RICHARD REED.