M. R. Payne,

Cutting Shingles.

No. 5,762. Patented Sep. 12, 1848.

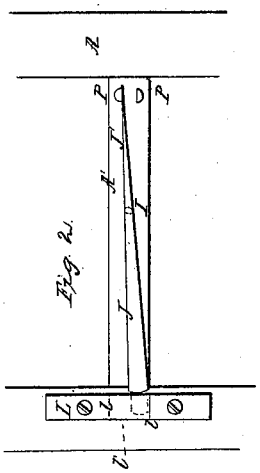

Fig. 2.

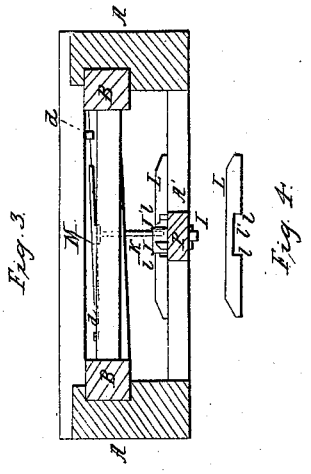

Fig. 3.

Fig. 4.

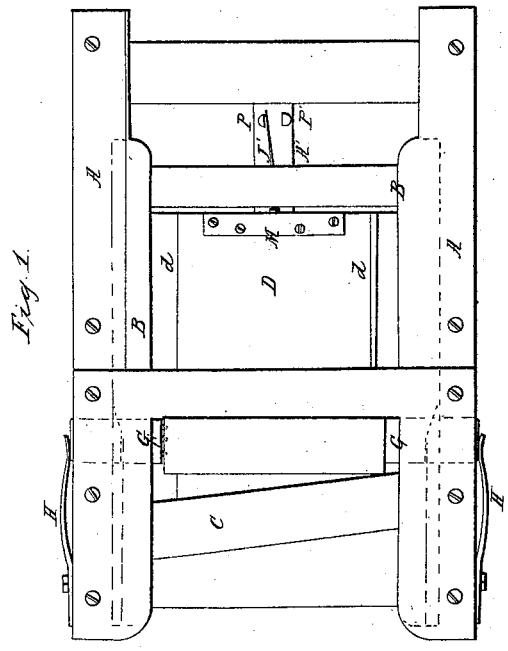

Fig. 1.

Fig. 5.

UNITED STATES PATENT OFFICE.

MILES R. PAYNE, OF WALDO, OHIO.

SHINGLE-MACHINE.

Specification of Letters Patent No. 5,762, dated September 12, 1848.

To all whom it may concern:

Be it known that I, MILES R. PAYNE, of Waldo, in the county of Delaware and State of Ohio, have invented a new and useful Improvement on My Patented Machine for Cutting Shingles, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a top view of the machine. Fig. 2 is a plan of the double-inclined plane vibrating setting bar and the central timber of the frame, to which it is attached. Fig. 3 is an end elevation of the machine, showing the setting arm attached to the vibrating panel. Fig. 4 is an elevation of the clamp. Fig. 5 is a sectional view of the knife.

Similar letters in the several figures refer to corresponding parts.

In the use of my former machine for cutting shingles, laths, &c., patented on the 30th day of October, 1840, I experienced much difficulty and inconvenience in cutting shingles by the use of two parallel rests, placed at a given distance apart, between which the shingle bolt was placed, which limited the machine to the reception of a given sized bolt, between them; and consequently limited the size of the shingles to be cut, on account of there not being room between the rests, without a previous adjustment of one of them, for the admission of large bolts and when a single knife was used having no means of cutting the butts and points alternately—the bolt being supported on the sash which moved in the same plane and having no vibratory panel, or other contrivance for adjusting the bolt for cutting the butts and points alternately in opposite directions, this being effected by a particular arrangement of the two knives on the sash.

I have now invented an apparatus for setting the shingle bolt for having the shingles cut therefrom with the butts and points in opposite directions alternately, said apparatus consisting of a vibratory wedge shaped bar arranged and combined with the bed of the machine; and a T-shaped plate fastened to and combined with a vibratory panel, the part of which at right angles to the panel being made like a knife with two sharp edges and slightly elastic and which part is caused to come in contact with the sloped sides of the said vibratory wedge shaped bar at each movement back and forward of the sash, and to incline the panel on which the bolt is placed, alternately first to the right and then to the left, so as to bring the bolt in a proper position in relation to the position of the knife to have the shingle cut therefrom in the manner just mentioned with the butts and points alternately in opposite directions—the vibratory motion of the panel being effected during the operation of running back the sash and knife for a fresh cut, and this arrangement of a vibratory wedge shaped setting bar and elastic setting arm, in combination with the other parts of the machine constitutes my new invention and improvement, for which I now solicit Letters Patent.

The frame A, sliding sash B, oblique knife C, vibrating panel D, for sustaining the shingle bolt and moving on center pins in the sash, the parallel ribs for gaging the thickness of the shingle and upon which the bolt is placed, the sliding dogs G for holding the bolt during the operation of cutting the shingle and sliding in openings in the frame, the springs H for moving the sliding dogs toward the bolt being all made and arranged in the manner represented in the annexed drawings, or, in any convenient way, renders a more particular description of these several parts unnecessary.

The double inclined plane setting bar J against which the double edged elastic setting arm K connected to the vibrating panel D, strikes, for vibrating and holding the panel in the required position, is made of steel or other suitable material in the form of a wedge with a thin elastic point, having a vertical bolt I passed through it near the middle and into the central bed piece A′ of the frame and on which it vibrates in the manner and for the purpose hereafter described. The butt end is clamped or embraced by a clamp L just so tight as to cause it to move with the requisite degree of friction and to hold it from moving while the elastic setting arm K is moving against it from the butt end toward the elastic point as the sash is moved forward with the knife toward the bolt. The tapered portion of the setting bar from near the fulcrum to the point is made slightly elastic so that it will yield and allow the arm K attached to the panel D to pass between it, and a fixed pin P to the opposite side of the elastic end of the bar.

The clamp L is a bar of wood, or metal,

having a notch l' cut in its under side which admits the butt end of the setting bar, the shoulders l, l, forming stops against which the butt end of the setting bar strikes alternately during its vibratory horizontal motion. The setting arm K attached to the vibrating panel for vibrating the same in cutting shingles is made thicker in the middle than at its two edges which are made like a double edged knife, as shown at K Fig. 5. It is connected to a metallic plate M screwed, or otherwise secured, to the panel D and has sufficient elasticity to yield or give when it comes in contact with the setting bar J, and continues to yield, or bend, until the said elastic setting arm K has passed by the center of the setting bar, in running back the sash; and has come in contact with the larger portion of the bar when the pressure of the setting arm increases to such a degree as to cause the bar to vibrate on its center I and bring the butt end against the opposite shoulder or stop l in the clamp L and the elastic point of said bar against the opposite fixed cog or pin P inserted into the bed piece A′ of the frame upon which the bar vibrates.

The operation of my improved machine is as follows: The shingle bolts being properly softened by steaming, or otherwise, and the sash with the knife put in motion in the usual manner, by any convenient power, the bolt is placed upon the ribs d d of the vibrating panel D between the dogs G G which are driven into or against it by the springs H H, the panel being inclined to the required angle to form the taper of the shingle. The sash B, advances with the knife C, takes off a shingle of the required taper which passes through the opening below the knife to a suitable receiver, the sash carrying the knife beyond the bolt and at the same time carrying the setting arm K past the small end of the setting bar J J′. The sash is then moved in an opposite direction, the bolt remaining between the dogs G G and resting upon the end of the sash, until the knife passes from under the bolt the setting arm at the same time coming in contact with the opposite side of the setting bar and bearing against it with a gradually increasing pressure until it passes beyond the central bolt I on which it vibrates; when its increased pressure causes the setting bar to vibrate, the panel being caused to vibrate simultaneously with the movement of the setting bar by the action of the setting arm attached to the panel and in contact with the bar as aforesaid. The sash is again moved forward toward the bolt taking off another shingle having its point in an opposite direction from that of the shingle previously cut. On the arrival of the setting arm at the small end of the setting bar it passes by it to the opposite side thereof. The sash is then carried back to the opposite end of the frame and in thus running back the setting arm is caused to act on the side of the setting bar to which it has previously passed and acts on this side in the same manner that it acted on the opposite side as above described, causing the setting bar to turn on its central bolt I and the panel to vibrate in a contrary direction; and in this manner the action of the machine is kept up causing the setting bar and panel to vibrate simultaneously the former horizontally and the latter vertically, as the sash is moved back for a repetition of the cut, the setting arm holding the panel from moving during the operation of cutting by its bearing against the setting bar.

The machine thus arranged and operated becomes self setting in regard to the position of the bolt for cutting the shingles with the butts and tips in alternate order to the right, &c., left.

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

The combination of the wedge shaped vibrating setting bar J J′ and spring setting arm K arranged and operated in the manner and for the purpose set forth.

In testimony whereof I have hereunto signed my name before two subscribing witnesses this 24th day of November 1847.

MILES R. PAYNE.

Witnesses:
WM. P. ELLIOT,
A. E. H. JOHNSON.