M. R. Payne,
Making Laths.

No. 1,840. Patented Oct. 30, 1840.

Fig. 1

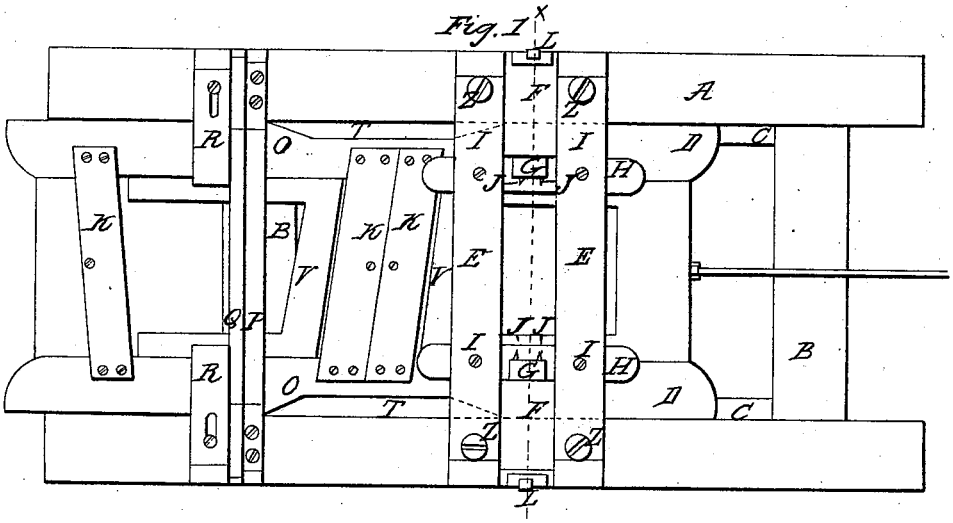
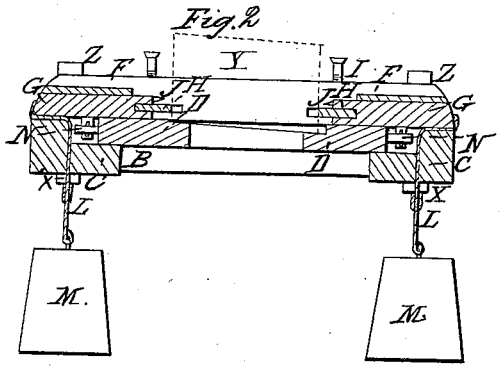


Fig. 2



UNITED STATES PATENT OFFICE.

MILES R. PAYNE, OF ANDERSONTOWN, INDIANA.

MACHINE FOR CUTTING SHINGLES.

Specification of Letters Patent No. 1,840, dated October 30, 1840.

To all whom it may concern:

Be it known that I, MILES R. PAYNE, of Andersontown, Madison county, State of Indiana, have invented a new and useful Improvement in Machines for Cutting Shingles, Laths, and other Thin Pieces of Wood, 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 vertical section at the dotted line *x x* of Fig. 1, the position of the shingle bolt being represented by dotted lines at *y*.

Similar letters refer to similar parts in the figures.

A great evil is experienced in the use of the common shingle machines owing to the rapid destruction of the knives which constitute the principal expense of the machine and the defective form of the shingles cut by them on account of the "shingle-bolt" not being held firmly in one position as the knife passes through it and prevented from descending by its gravity upon the blade which soon destroys the edge of the knife and causes it to pass with much friction and in an imperfect manner through the bolt.

My invention and improvement is designed to remove these evils and produce a more perfect shingle and the principal character of it consists in holding firmly in a suspended position by an arrangement of self adjusting dogs the shingle bolt while, the knife is passing through it and immediately upon the knife leaving the bolt withdrawing said dogs and suffering said bolt to descend the thickness of a shingle and before the opposite knife enters the bolt causing said dogs to enter the bolt by means of a weight or spring and again hold the bolt firmly while another shingle is being cut—thus preventing the shingle bolt pressing upon the edge of the knife and destroying it.

To enable a mechanic to construct this machine the following description is given.

The machine resembles generally some other shingle machines in use. It consists of two large long timbers A A placed parallel to each other at a suitable distance apart according to the length of the article to be cut, united and held firmly together by cross ties B about one third their thickness framed into them upon which, and ribs C, fastened to the sides of said timbers and between the latter, a sash D containing the knives K moves to and fro in cutting the shingles—making a shingle at each movement.

Two parallel transverse timbers E E are arranged and secured upon the top of the aforesaid longitudinal timbers about the middle of their length and as far apart as to form a space for the bolt to pass down between them to the knives and to admit boxes F in which the sliding dogs G move for holding the bolt. Through these transverse timbers are made horizontal oblong mortises to receive horizontal stop bars H against which the sliding dogs strike and are arrested in their inward movement; which stops are secured and adjusted by screws I passed vertically through the transverse timbers into them and are designed for the purpose of keeping the bolt to its place when the dogs are drawn back from it.

The boxes F in which the dogs move have only a top—two sides—no bottom and no ends—the upper surfaces of the longitudinal timber (into which the lower edges of the sides of said boxes are let into grooves) form the bottoms of the boxes. The transverse timbers E are made adjustable at pleasure to suit any sized bolt by means of screw bolts Z which pass through oblong mortises in the timbers A with nuts X on their lower ends.

The sliding dogs G are rectangular blocks slit at the ends next the bolt to allow them to pass over the stops H and furnished with iron points J which are to enter the bolt for holding it firmly and the opposite ends are made gently curved or convex to which are attached straps L leading back in horizontal grooves to about the middle of the boxes when they descend through vertical openings intersecting the boxes and have appended to them weights M for driving the dogs into the bolts, which weights hang below the longitudinal timbers A. The dogs should not be quite as large as the boxes so as to allow them to move freely back and forth therein. A projection or an antifriction roller N is attached to the under side of the dog against which cams O on the side of the sash strike for disengaging the dog.

At or near the ends of the parallel longitudinal timbers is a third transverse timber P forming a rest for three gages between and against which the bolt is placed to be squared or trimmed before being taken to the shingle knives. One of the gages Q is made longer than the other two and is held

and adjusted in a vertical position against said timber P by two screws passed through oblong mortises in the timber. The other two gages R R are made shorter and lie horizontally upon the longitudinal timbers A and are adjusted by screws passed through oblong mortises in the gages into the timbers. The block to be trimmed is placed between the short gages and against the long one and upon a small frame in the sash and is dressed on the under side by a horizontal knife *k'''* on said sash hereafter described. It is then turned and dressed on the other sides.

The sash D to which the two shingle knives and the trimming knife are fastened is made about the width of the space between the parallel timbers A inside and about two thirds their length and one third their thickness connected together by cross pieces; and with depressions T made in the outside of the side pieces D so as to form two inclined planes O or cams on each side at such a distance apart as the due operation of the sliding dogs may require—which cams incline in contrary directions so that one of them shall move the dog out as the sash moves to the left and operate the same dog as it returns to the right.

The knives for cutting the shingles are made of the best cast steel and placed back to back in an oblique position so as to give a drawing stroke in passing through the bolt. They may be made in one piece with two cutting edges. The knife *k'''* for trimming the bolt is made with one cutting edge and is fixed near the end of the sash and cuts one way only. Between the sides of the sash and on both sides of the knives for cutting the shingles are placed small frames V V adjustable by screws for cutting thicker or thinner shingles as desired arranged so as to have a butt and a point cut alternately—that is one side of one of the frames is depressed below the ways equal to the required thickness of the butt on one side of the sash while the opposite small frame on the other side of the sash is depressed to form the other butt. These frames may be removed entirely when it is required to sharpen the knives. The small frame of the trimming knife is depressed equally at both ends.

The power to move the sash may be applied at either end by means of a pitman rod, or other fixture.

The operation of the machine is as follows: The blocks of timber to be cut up into shingles called "shingle bolts" being properly softened by steaming or otherwise and the machine being put in motion by any convenient power are brought to the end of the machine and trimmed by the trimming knife *k'''* in the manner before described. One of them is then placed upon the sash and the dogs driven into it by the weights. The knife in moving to the right takes off a piece which forms a shingle and continuing to move in the same direction the cams strike the anti-friction rollers and push back the dogs—at the same time raising the weights—the shingle bolt descends upon the sash—the motion of which is reversed—the cam leaves the roller the weights descend and drive the dogs into the bolt—holds it while the other edge of the knife takes off another shingle and continuing to move in the same direction the opposite cams act upon the dogs in the same manner as the others and again draw them from the bolt which descends as before for the first mentioned knife to take off another shingle—the butts and points being alternately on one side and the other and in this manner the operation is continued until the shingle bolt is entirely cut up. Another bolt is then cut up in the same manner and so on. The shingles fall through openings in the sash below the machine.

The sliding dogs may be driven into the bolt by means of springs instead of weights.

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

The arrangement of the sliding dogs for holding the shingle bolt so as to take the weight from the knife as it passes through it in combination with the cams on the sides of the sash for drawing the dogs from the bolt at the moment when it is required to descend for a new cut, all as before described.

MILES R. PAYNE.

Witnesses:
WM. P. ELLIOT,
EDMUND MAHER.