J. C. Gillett,

Cutting Shingles.

No. 3382. Patented Dec. 20, 1843.

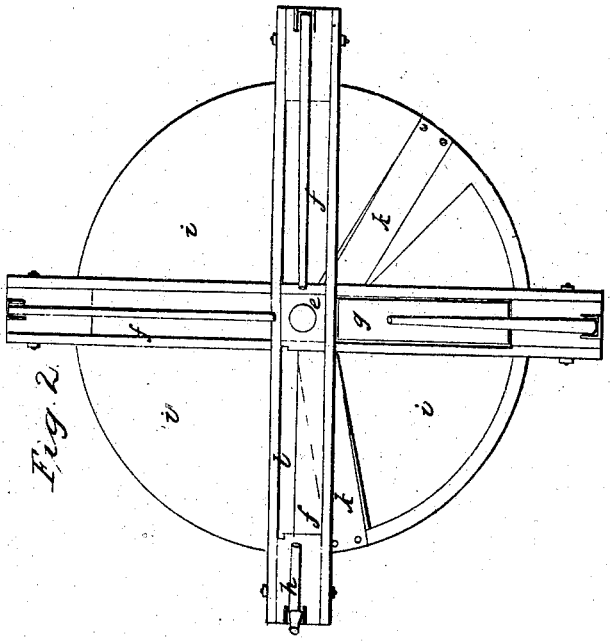

Fig. 2.

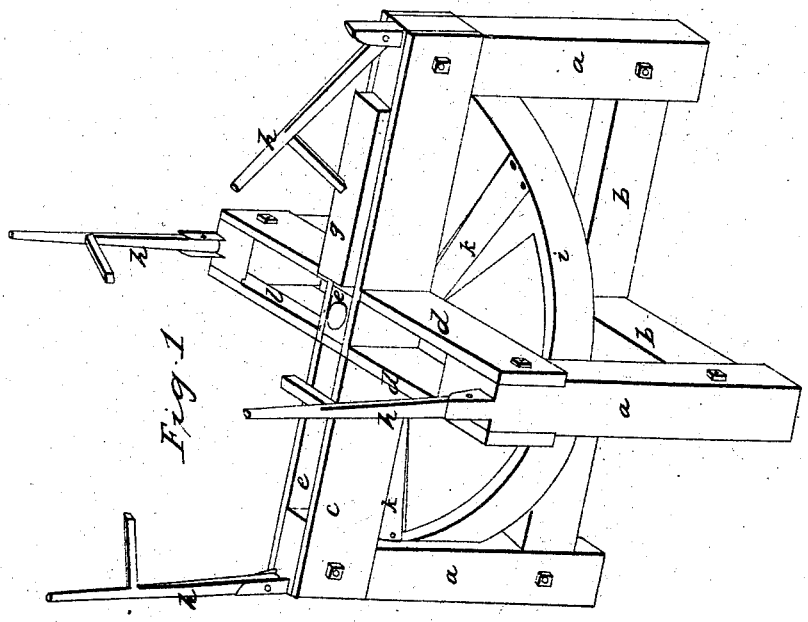

Fig. 1

UNITED STATES PATENT OFFICE.

JASON C. GILLETT, OF BLOOMFIELD, MICHIGAN.

MACHINE FOR CUTTING SHINGLES.

Specification forming part of Letters Patent No. 3,382, dated December 20, 1843; Reissued April 30, 1844, No. 62.

To all whom it may concern:

Be it known that I, JASON C. GILLETT, of Bloomfield, in the county of Oakland and State of Michigan, have invented a new and Improved Machine for Cutting Shingles; and I do hereby declare that the following is a full and exact description thereof.

The nature of my invention consists in the construction of a machine which will cut perfect shingles from solid timber.

Drawing No. 1, is a perspective representation of the machine in all its parts. No. 2, is a view of the upper framework of the machine and the wheel.

In each, like parts are designated by like letters of reference.

a represents the posts of the frame; *b*, the ties near the foot of the posts, interlocking at the center and forming a support to the step of the shaft of the wheel; *c c* are two of the upper parts of the frame; they are bolted at each end to the posts and are placed sufficiently distant from each other to admit of receiving the block which is to be cut, between them; *d d* are two like parts which cross the other at right angles and are helped into them, forming at their connection an opening in which is placed *e* the box of the journal of the wheel; *f* represents the boxes or hoppers formed by the parts *c* and *d* for holding the block to be cut; *g* is a block in one of the hoppers; *h* represents the hammers designed to fall upon the blocks and press them upon the wheel; the action of one of them is seen on block *g; i* is a wheel which rotates horizontally; its lower journal turns in a box in the ties *b b*, and the upper one in the box *e;* its diameter is to be such as is suited to the purpose of the machine; it is to be of sufficient thickness to secure to it the necessary strength and is to be fitted on the circumference for receiving a band by which it is to be propelled.

In the upper surface of the wheel are two knives *k*, *k*, the edges of which are even with the surface of the wheel, and, in the revolution of the same, pass within a sixteenth of an inch below the bottom of the hoppers. The form of the shingle is in the wheel, the surface of which between the knives, is reduced below the edge of the same, equal to the thickness of the shingle. Before one knife the back of the shingle is toward the circumference of the wheel—before the other it is toward the axis, so that, there being four hoppers to the machine, each knife cuts four shingles at each revolution. The knives enter the block at the end nearest the axis of the wheel and cut the shingle diagonally to the course of the grain, but one knife being in the blocks or in the operation of cutting at the same time. The shingles, as cut, pass through the wheel and drop below.

The wheel may be constructed of wood or of cast iron; in the former the width of the knives requires to be seven inches, in the latter, five. The under side of the knife bevels three sixteenths of an inch to the inch, the first three inches back from the edge being slightly concave; the upper side bevels one sixteenth of an inch to the inch one inch back from the edge, the remainder of the surface being even with the surface of the wheel; the knives are secured to the wheel by two bolts at each end.

The drawings represent a machine the wheel of which is 5 ft. in diameter. The dimensions of its respective parts are as follows, to wit: The posts are $5\frac{1}{2}$ inches square by 2 ft. 8 in. in length; the ties are the same size square by 5 ft. 1 in. in length, and, are tenoned into and bolted to the posts; the hopper timbers are 2 by 7 inch plank 6 feet in length; the hoppers are $18\frac{1}{2}$ inches in length by $4\frac{1}{4}$ inches in width, the size calculated for four by eighteen inch shingles; and the shaft of the wheel is cast iron, three inches in diameter. When made of wood the wheel is of uniform thickness, the circumference being thick enough for a band, when made of iron a flanch is cast upon the circumference for the band. When a wheel of different dimensions is used, the other parts of the machine are to be correspondingly varied. The width of the shingles is varied by varying the width of the hoppers. In the same machine the width of the hoppers is varied by the insertion of slides into them of such thickness as will reduce them to the width of the shingles required. *l* represents a slide as designed to be used, it being held in one side of the box by a groove at each end into which it is dropped.

My leading design has been to invent a machine for cutting shingles, and I have styled it, when used for this purpose, the self feeding shingle cutter. But the machine is calculated for a more general use. By making the depression in the wheel of

the same depth below the edge of the knives from the axis to the circumference, stuff may be cut of uniform thickness and suited to every variety of use. In this general adaptation of the machine I have termed it, the self feeding wood cutter.

The machine may be propelled by any adequate power, whether of steam, water horse or hand. The power is applied by a band to the circumference of the wheel.

The manner of using the machine is, when the power is applied, to raise the hammers, place the blocks to be cut into the hoppers and let fall the hammers upon them. As rapidly as the blocks are worked through, others are thrown into the hoppers. The shingles or stuff cut drop beneath the machine and are thence removed as fast as necessary. When the blocks are first thrown into the hoppers, their weight is sufficient to feed the machine. To provide for the reduction which takes place in their weights as they are reduced in size, the hammers are so adjusted as to increase, in descending into a horizontal position, their weight of bearing upon the blocks, in the same ratio that the weight of the blocks diminishes, thus securing a uniform weight of the blocks and a uniform feed of the machine.

I have perfected one of the machines and claim for it the property of cutting any even the hardest woods, when properly steamed, without, in any respect, splitting, checking or breaking the grain. The superiority, in this respect, which it possesses over other machines designed for the same use, is due, to the bevel of the upper surface of the knife, the nearness of the passage of the knife beneath the bottom of the hoppers, the diagonal entry and passage of the knife through the block and the shape of the shingle or article cut which is entirely in the wheel. It is a principle well known to workers in timber, that when a thin portion is to be cut off, the fiber is less broken when the part removed is of uniform thickness, than when its thickness increases. In accordance with this principle, I have given the upper surface of the knife the requisite bevel to prevent its tendency to feed deeper into the block. The knives are so adjusted as to cut alternately the opposite ends of a shingle from either end of the block, which allows them to pass so near the bottom of the hoppers that they do not split nor break the edge of the shingle in passing out of the block. This adjustment of the knives together with the bevel of their upper surface and the construction of the shape of the shingle or article cut in the wheel, are distinguishing peculiarities of my machine. Its superior advantages over other machines are, it cuts eight shingles at a revolution; by the operation of the hammers it is entirely self feeding; and the shingles or the stuff cut are a perfect article.

Having thus fully described my machine and the manner of using it, what I claim as new therein and desire to secure by Letters Patent is the following, that is to say:

I do not claim the use of a horizontal wheel, rotary cutting knives or any parts or arrangement of parts, not herein set forth and described; but

I do claim as my invention and improvement—

The manner in which I have arranged and combined the hoppers, or boxes, to receive the stuff to be cut, the horizontal revolving table and the knives attached thereto; said knives being so arranged as that one shingle shall be cut by one knife before the second knife begins to operate; the butt being cut by one knife toward the shaft, and by the other toward the outer periphery, the respective parts being arranged and combined substantially as hereinbefore specified and described.

JASON C. GILLETT.

Witnesses:
LELAND KELSEY,
JAS. GONN.

[FIRST PRINTED 1913.]