

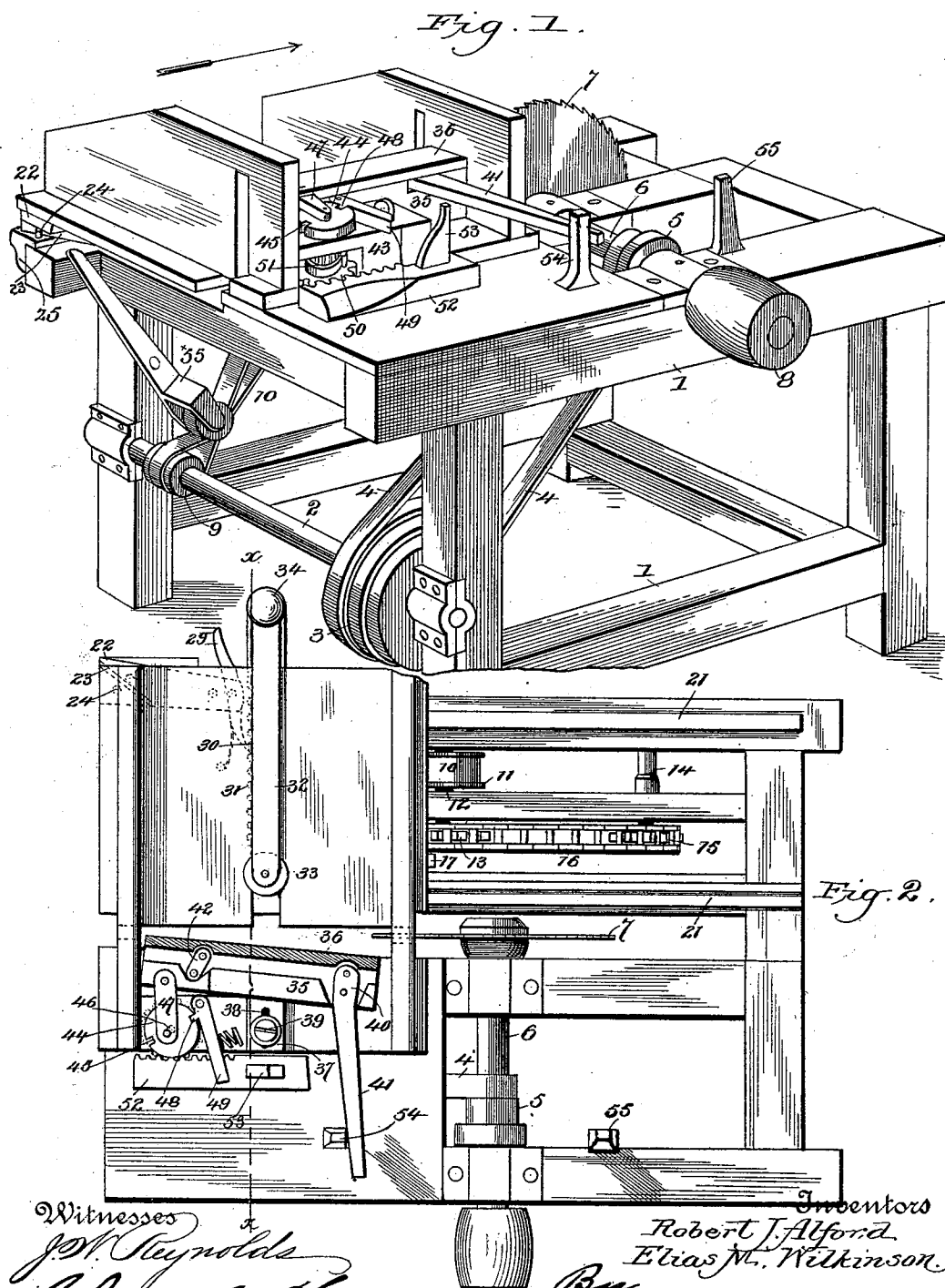
(No Model.)

3 Sheets—Sheet 1.

R. J. ALFORD & E. M. WILKINSON.
SHINGLE SAWING MACHINE.

No. 538,719.

Patented May 7, 1895.



Witnesses
J. M. Reynolds
Chas. B. Hoyer

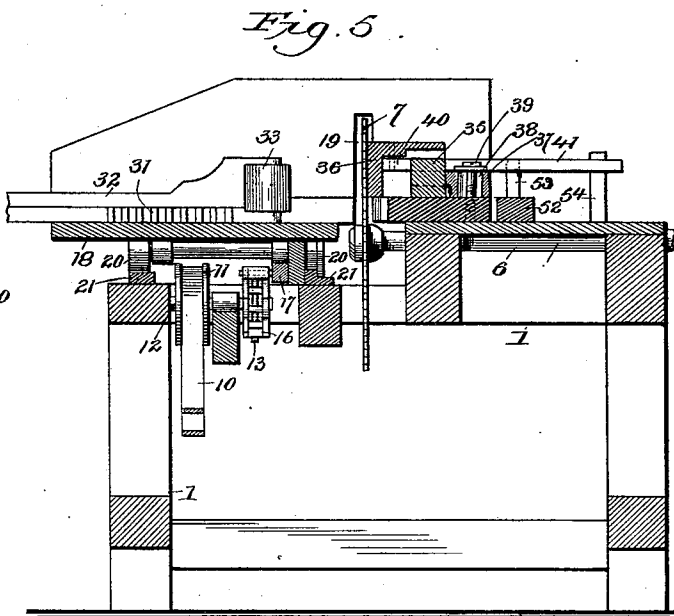
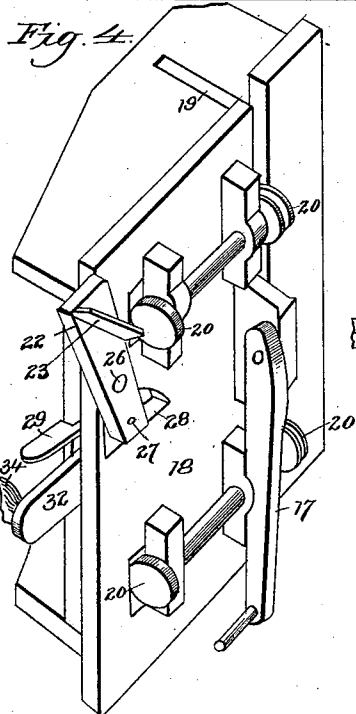
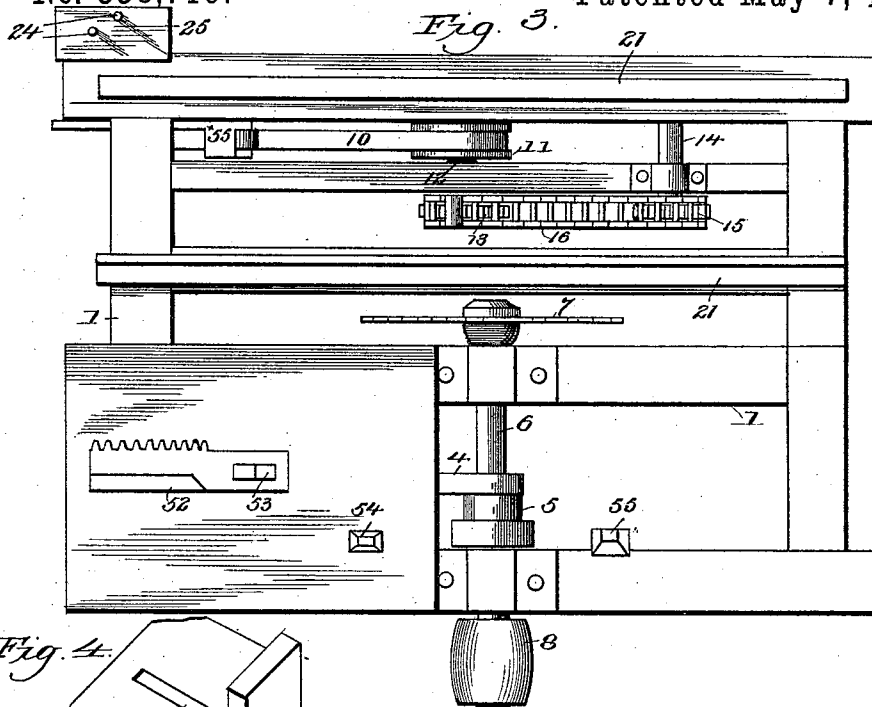
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(No Model.)

3 Sheets—Sheet 3.

R. J. ALFORD & E. M. WILKINSON.
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Fig. 6.

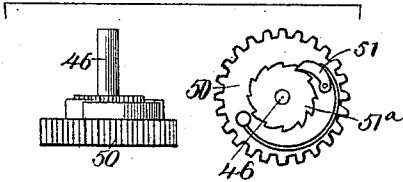


Fig. 7.

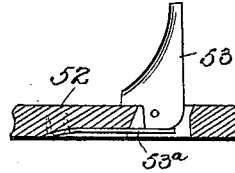


Fig. 8.

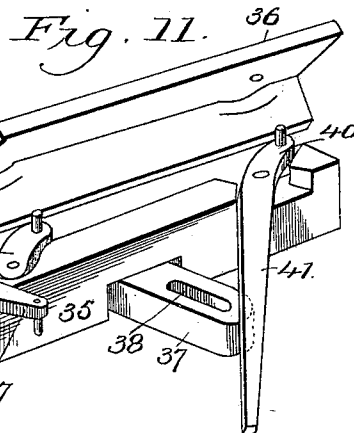
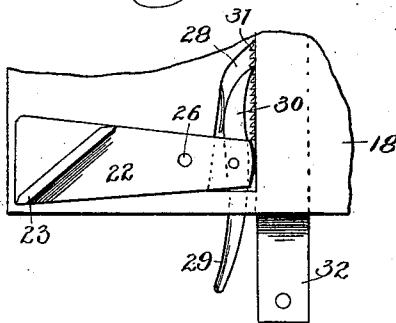


Fig. 10.

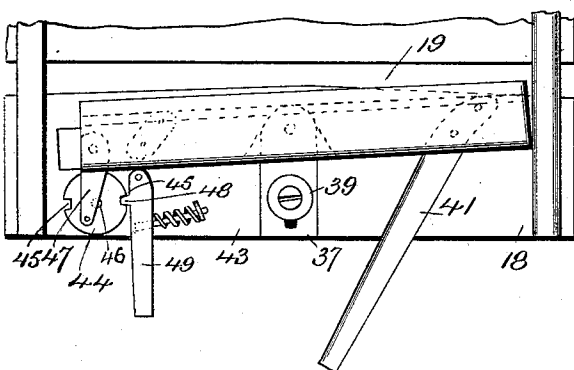
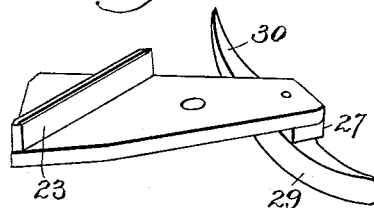


Fig. 9.



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UNITED STATES PATENT OFFICE.

ROBERT J. ALFORD AND ELIAS M. WILKINSON, OF PATTERSON, VIRGINIA.

SHINGLE-SAWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 538,719, dated May 7, 1895.

Application filed June 8, 1894. Serial No. 513,892. (No model.)

To all whom it may concern:

Be it known that we, ROBERT J. ALFORD and ELIAS M. WILKINSON, citizens of the United States, and residents of Patterson, in the county of Wythe and State of Virginia, have invented certain new and useful Improvements in Shingle-Sawing Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a shingle sawing machine, and has for its object to provide an adjustable mechanism in connection therewith of a simple, cheap and substantial nature, which will saw the shingles the same thickness from start to finish, and requires but comparatively little power to run it.

A further object is to provide a self feeder wherein the head block will only run as far as the saw.

With these and other objects and advantages in view, the invention consists of the construction and arrangement of the several parts which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a perspective view of a machine embodying the invention. Fig. 2 is a top plan view of the same. Fig. 3 is a similar view with the carriage removed. Fig. 4 is a detail perspective view of the carriage, looking toward the bottom thereof and showing it broken away in part. Fig. 5 is a section on the line *x x*, Fig. 2. Fig. 6 is a detail view of the shaft carrying the detent mechanism for the shingle-gages and parts co-operating therewith. Fig. 7 is a sectional detail view of the pivoted folding stop for engaging the releasing-lever of the detent mechanism. Fig. 8 is a bottom plan view of a portion of the under side of the carriage, showing the lever and a step-by-step movement to the head-block. Fig. 9 is a detail perspective view of said lever with the pawl co-operating therewith attached. Fig. 10 is a detail top plan view of one end of the carriage. Fig. 11 is a detached perspective view of the two parts of the shingle-gage and their co-operating parts.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

Referring to the drawings, the numeral 1 designates a frame of suitable construction and of a portable nature, having a drive shaft 2 adjacent to one end thereof supplied with a cone pulley 3 having a belt 4 running to a similar pulley 5 on the saw mandrel 6 carrying at its inner end a saw 7, and at its outer end a pulley 8, to which power is applied for driving the entire machine. The shaft 2 is a secondary shaft which serves the function of driving the major part of the mechanism and has thereon a small belt pulley 9, engaged by a belt 10 which runs to an upper pulley 11 on a feed shaft 12, the latter also carrying a sprocket wheel 13.

On the frame at a distance from the shaft 12 is another shaft 14 carrying a sprocket wheel 15, and over the said sprocket wheels 13 and 15 a chain belt 16 travels and thereto is connected the rear end of a connecting bar or rod 17 whose opposite end is movably attached to the under side of a carriage 18. The said carriage 18 has a slot 19 extending through the bottom and a portion of the sides thereof to permit the said carriage to travel over the saw, and to the under side of the carriage are pivotally or movably attached track wheels 20 which engage tracks 21 on the frame on opposite sides of the feed mechanism. The under outer corner of the carriage is supplied with a flat lever 22 having a depending, obliquely arranged flange 23 at its outer free end adapted to engage pins 24 rising from a bracket 25 secured to the outer corner of the frame. The said pins on the bracket are spaced apart and permit the flange on the lever to pass between the same, and as the carriage moves backwardly, the said flange passes between the pins and throws the rear end of the lever inward on its pivot 26. The rear end of the said lever has an upwardly projecting lug 27 which projects through a slot 28 in the bottom of the carriage and is pivotally attached to a pawl or dog 29 mounted in the outer open end of the carriage, and having a nose 30 which is normally held in engagement with ratchet teeth 31 along the adjacent edge of a head block shank or presser bar 32 held in connection with the bottom of the carriage and adjustable therein.

The inner end of the head block shank, or that nearest the saw, is provided with a head

block 33 in the form of a roller, which is vertically disposed and has an antifrictional bearing on the material being cut. The outer portion of the head block shank is provided with an operating handle 34 by which the head block may be adjusted inward or outward. At the opposite part of the carriage, and with which the head block coacts, is a shingle gage, consisting of two sections 35 and 36, and extending across the width of the said carriage. The section 35 is pivotally secured to the block 37 adjustably secured to the bottom of the carriage the said block 37 being slotted at 38, and therefore adjustable to and from the head block by a set bolt and screw 39. The said section 35 remains stationary, until the mechanism is operated to rotate it at intervals on its pivot, and the section 36 is movably mounted on the section 35, and has attached thereto at one end the head 40 of an outwardly extending lever 41, while the opposite end of said movable section 36 has a link 42 connected thereto to equalize the movement in adjusting the said movable section. Of course, it will be understood that this movable section is for the purpose of regulating the inclined planes of the shingles, and the slotted hinge block when adjusted to move the stationary section 35 toward the head block, regulates the thickness of the shingle.

On a block 43 is mounted a disk 44 having oppositely disposed notches 45 which are diametrically arranged, the said disk being carried on the upper end of a short vertical shaft 46, and having eccentrically attached thereto a link 47, whose opposite end is pivotally connected to the adjacent portion of the upper surface of the stationary section 35 of the shingle gage. Normally engaging one or the other of the notches in the disk is a tooth 48 carried by a spring pressed lever 49, whose end projects outwardly from the carriage similarly to the lever 41, though not to such a great extent, and for a purpose which will be presently described.

On the lower end of the shaft 46 is loosely mounted a pinion 50 which projects from the end of the carriage and has secured thereto a spring pawl 51 engaging a ratchet wheel 51^a on said shaft, whereby connection is made with said pinion 50 and shaft 46 in one movement of said ratchet wheel and the same is broken in the other movement of said ratchet, or, in other words, to hold the disk on the upper end of the shaft stationary in one of the movements of the carriage. On the top of the frame adjacent to the inner edge of the carriage, is secured a toothed block or bar 52 which is engaged by the pinion 50, and in connection with the said block is a vertically disposed finger 53 adapted to swing down in one direction and to be normally retained in its upright position by the spring 53^a. It is also in the path of and adapted to engage the lever 49.

On the forward movement of the carriage

in the direction of the arrow, Fig. 1, the lever 41 strikes against a short post 55 rising from the frame in the path of movement of the said lever to adjust the shingle gage gradually in accordance with the desired inclination of the face of the shingle, and again strikes a similar post 54 on its return movement to loosen the shingle and permit it to fall to the floor. In the same movement of the carriage, the lever 49 also engages the outer side of the finger 53 passing over the same by depressing it, and holds the adjacent end of the shingle gage in adjustment, but on the return movement of the carriage, the said lever 49 again engages the finger and is mounted on its pivot to release its tooth from the disk and permit the pinion 50 to revolve the shaft 46 and change the adjustment of the adjacent end of the shingle gage. This operation becomes automatic in the successive movements of the carriage, and in addition to the operation of the head block as heretofore described, the whole mechanism uniformly coacts in connection with the material being operated upon and requires the attention of but one person to run it.

It is obviously apparent that many minor changes in the construction and arrangement of the several parts might be made and substituted for those shown and described, without in the least departing from the nature or spirit of the invention.

To control the movement of the carriage, a belt tightener 55^x is employed whose operation will be readily understood.

Having thus described the invention, what is claimed as new is—

1. In a shingle sawing machine, the combination with a frame having a circular saw mounted therein, carrying mechanism for transmitting power, and having a bracket with two projecting pins therein, of a carriage having a slot therein for the passage of the saw therethrough, a movable presser-bar for holding the material to be sawed, and mechanism for imparting a step by step movement to said presser-bar, the same consisting of a lever pivoted to the under side of said carriage having an obliquely arranged flange engaging the pins on said bracket, and a spring actuated pawl at the other end of said lever engaging notches on the side of said presser-bar, whereby upon the reciprocation of the carriage the said lever is vibrated on its pivot and through the pawl thereon, a forward movement of said presser-bar is given at each backward movement of said carriage, substantially as and for the purpose described.

2. In a shingle sawing machine, the combination with a frame having a circular saw mounted therein, and carrying mechanism for transmitting power, of a carriage adapted to reciprocate on said frame having a presser-bar thereon, an adjustable gage-block for the shingles made in two parts, one of which is pivotally secured to the bottom of said carriage for gaging the angles of the sides of the

shingles, and the other adapted to move in a horizontal direction from the first part but held at all times parallel thereto, substantially as and for the purpose described.

5 3. In a shingle sawing machine, the combination with a frame having a circular saw mounted therein and carrying mechanism for transmitting power, of a carriage adapted to reciprocate on said frame having a presser
10 bar thereon, an adjustable gage-block for the shingles made in two parts, one of which is pivotally secured to the bottom of said carriage and the other flexibly secured to the first part and adapted to move in a horizontal
15 direction therefrom but at all points parallel thereto, detent mechanism for holding said first part at its limit of pivotal movement in both directions and means for moving the second part relatively to the first part, substantially as and for the purpose described.

20 4. In a shingle sawing machine, the combination with a frame having a circular saw mounted therein and carrying mechanism for transmitting power, of a carriage adapted
25 to reciprocate on said frame having a presser bar thereon, a gage block made in two parts, mounted upon an adjustable block, one of which parts is pivotally secured to said adjustable block and the other flexibly secured to
30 the first part and adapted to move in a horizontal direction therefrom but at all points parallel thereto, detent mechanism for holding said first part at its limit of pivotal movement in both directions, consisting of a shaft having
35 secured thereto a notched disk which notch is engaged by a dog on a spring-actuated lever secured to the bottom of said carriage, and means for moving said second part relatively to the first part consisting of a lever pivoted
40 to the said first and second parts and adapted to reciprocate, releasing mechanism for said disk consisting of an upright on the frame of

the machine which engages the detent lever, mechanism for rotating said disk upon one movement of the carriage and for keeping it
45 stationary upon the reverse movement thereof, which consists of a rack bar secured in the frame of the machine engaging a pinion loosely mounted on the shaft carrying said
50 disk, which pinion carries a pawl engaging a ratchet secured on said shaft and means for moving the first part of the gage-block consisting of two uprights rising from the frame which lie in the path of and engage the operating
55 lever therefor at both ends of the movement of said carriage.

5. In a shingle sawing machine, the combination with a saw, of a carriage having a slot therein, a shingle gage mounted on said carriage and consisting of two sections, a lever
60 having an eccentric head attached to the uppermost section, a slotted hinge block secured to the lower section, a link attached to the upper section, a notched disk adjacent to said shingle gage, a link secured to said disk and
65 to the shingle gage, a toothed lever adapted to engage the said disk, a pinion and ratchet and pawl mechanism on the same shaft with the disk, a toothed bar adapted to be engaged by the said pinion, and having a movable
70 finger in connection therewith adapted to bear upon the lever engaging the disk, and posts on the frame adapted to be engaged by the first mentioned lever, substantially as and for the purposes specified.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

ROBERT J. ALFORD.
ELIAS M. WILKINSON.

Witnesses:

STEPHEN WILKINSON,
H. FARMER.