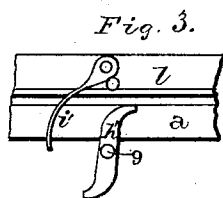
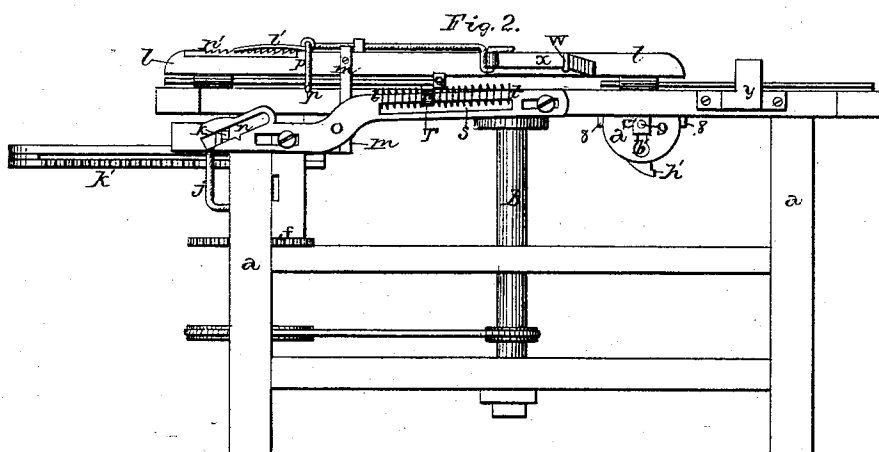
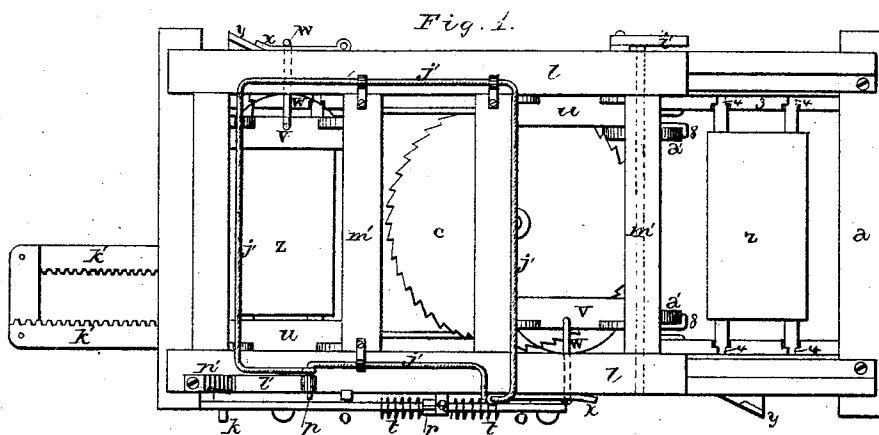


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Shingle-Machines.

No. 151,820.

Patented June 9, 1874.



Witnesses

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J. W. Garner.

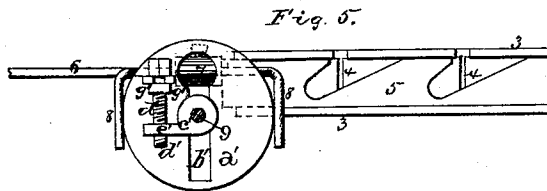
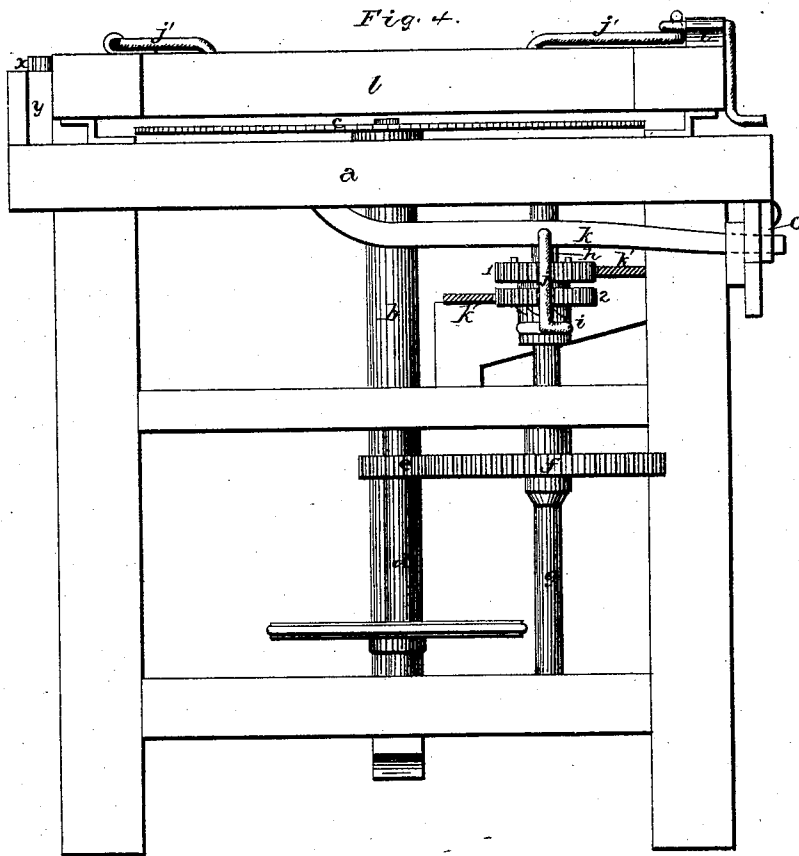
Inventor

Edwin Anderson
per
F. A. Lehmann, Atty.

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UNITED STATES PATENT OFFICE.

EDWIN ANDERSON, OF HERKIMER, NEW YORK.

IMPROVEMENT IN SHINGLE-MACHINES.

Specification forming part of Letters Patent No. **151,820**, dated June 9, 1874; application filed April 13, 1874.

To all whom it may concern:

Be it known that I, EDWIN ANDERSON, of Herkimer, in the county of Herkimer and State of New York, have invented certain new and useful Improvements in Shingle-Machine; and I 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

The nature of my invention relates to an improvement in shingle-machines; and it consists in the arrangement and combination of parts, which will be more fully described hereafter.

The accompanying drawings represent my invention.

a represents an ordinary frame, of any desired shape or size, near the center of which is placed the vertical shaft *b*, to the top of which is secured the horizontal revolving saw *c*. On the shaft *b* is placed a small pulley, from which passes a belt to the large pulley on the vertical shaft *d*. Near the top of this shaft is secured a pinion, *e*, which imparts motion to the wheel *f*, placed on the vertical shaft *g*. Upon the upper end of this shaft *g* are two loosely-revolving pinions, 1 2, above and below which are placed the clutches *h i*, feathered to the shaft, and which clutches are connected together by means of the bent rod *j*, which causes them to always move at the same time, and holds them always the same distance apart. To this bent rod is fastened the lever *k*, by which the clutches are alternately raised and lowered, so as to alternately throw the pinions in and out of gear, and cause them to revolve with the shaft *g*. These two pinions are placed inside of the oblong toothed frame *k'*, one side of which is raised higher than the other, so that, while one pinion gears with one side, the other pinion gears with the other, and, as the pinions are alternately made to revolve with the shaft *g*, they keep this frame moving back

and forth during the whole time the machine is in motion. As this toothed frame is connected to the frame *l*, placed upon suitable ways or tracks upon the top of the frame, by means of the arm *m*, the same reciprocating motion is imparted to the frame *l*. The outer end of the lever *k* projects through a slot, *n*, formed in the end of the lever *o*, which is caused to move horizontally back and forth along the side of the frame *a*, by having the bent arm *p* and lug *q*, secured to the sliding frame *l*, alternately strike against the lug *r*, which moves back and forth on the lever in the slot *s*, and has a spring, *t*, placed upon each side of it. In the slot *n*, through which the end of the lever *k* projects, there are formed two notches, in which the end of the lever catches as the lever *o* is moved back and forth, so that the lever *k* will be held in each with sufficient force to require a decided movement on the part of the lever *o* to dislodge it. As the sliding frame *l* moves along, and the arm *p* or lug *q* strikes against the lug *r*, they move the lug toward one end of the slot *s*, compressing one of the springs *t* as it moves, until the lever is moved, so as to either raise or lower the end of the lever *k*, and thus alternately move the clutches and change the motion to the opposite direction.

There is a time during each movement of the carriage that both of the clutches are out of gear with the pinions 1 2, and, were it not for the spring *t*, there would be nothing to carry the clutches any farther, and the carriage would, of course, stop; but, just at the time the clutches are out of gear, one of the springs *t* has been compressed, and, as these springs are sufficiently strong, the tension of the spring continues the movement of the clutch, and throws it in gear with its pinion.

The blocks from which the shingles are to be sawed are placed in each end of the sliding frame, so that one comes on each side of the saw, and thus a shingle is cut at each movement of the frame, whether back or forth. In each end of the frame there is placed a stationary dog, *u*, on one side, and a movable

spring-dog, *v*, upon the other, the spring-dogs being allowed a horizontal sliding movement back and forth, and have attached to them an arm, *w*, which projects outward through the frame. The ends of these arms are turned upward, so as to clasp the latches *x*, which consist of flat plates hinged at one end to the frame, and have their other ends bent outward. As the sliding frame gets near the end of its movement in either direction, the out-turned ends of these latches catch against the wedges *y*, which act as levers to open the latches, thus drawing back upon the sliding dogs, so as to cause them to release the block, and let it drop down on the tilting tables *z* below.

In each end of the frame *a*, on each side, is secured a metal way, 3, having a dovetailed groove made in their inner sides, and two vertical notches, 4, in which the studs or projections, extending outward from the ends of the tables, rest. Moving back and forth in these dovetailed grooves in the sides of the ways or guides 3 are the slides 5, which have two inclined recesses made in their upper edges, through which recesses the studs or projections on the tables pass. As these slides are moved back by the movement of devices which will be presently described, the inclined sides of these recesses act as levers upon the under sides of the studs on the table, and cause the tables to tilt or rock, so as to present the block from which the shingles are cut to the saw at such an angle that the shingle will be cut at its proper bevel and thickness. Extending from one slide to the other, on the same sides of the frame, is a rod, 6, which binds them rigidly together, so that they move together. Over this rod, at one end, is slipped a slide, 7, which can be adjusted back and forth on the rod by means of a set-screw, and which slide is provided with the two arms 8. Placed upon a shaft, 9, which extends across the frame at right angles, are two eccentrics, *a'*, which, as they revolve, or partly revolve, in between these two arms, move the slides back and forth, to tilt the tables, as already described. Across the center of these eccentrics are cut slots *b'*, by means of which the eccentrics are moved back and forth on their stationary hubs *c'*, so that the degree of eccentricity, and consequently the length of the throw of the slides, can be increased or diminished at will, by the set-screw *d'*. On the hub is formed a lug or ear, *e'*, while upon the eccentric are formed two small studs, *g'*, which clasp the head of the screw, and hold it stationary. By turning the screw the eccentric is moved back and forth. Upon the end of the shaft 9, outside of the frame, is secured a cam or lever, *h'*, against which the latch *i'*, pivoted to the sliding frame or carriage *l*, strikes as it moves in one direction,

and thus turns the shaft 9 with the eccentrics half-way around, tilting the tables. As the carriage moves back in the opposite direction the latch passes over the top of the cam or lever *h'* without moving it, and in this manner the slant of the blocks is changed at each cut.

In order to change the thickness of the shingles, as may be required, the slide 7 is loosened on the rods 6 until the rods can pass freely back and forth through them, when the slides are moved, so as to let the tables sink below the saw far enough to allow the butt of a shingle of any desired thickness to be cut; then move the set-screw on the eccentric until the eccentric is adjusted, so as to give the proper throw to the slides; fasten the slide 7 in position on the rod 6; when the machine is ready for operation.

Where there is no provision made for adjusting the length of the movement of the carriage according to the width of the shingles being sawed, it takes as much time to cut narrow shingles as it does wide ones, and, as a consequence, in cutting narrow shingles much time is uselessly wasted. In order to prevent this waste I attach to the top of the carriage a sliding rectangular frame, *j'*, which is formed from a bar of metal, bent into suitable shape, and which is fastened to one of the latches for operating the movable dog *v*. It is also provided with a pawl, *l'*, which catches in the ratchet *n'*, secured to the top of the carriage *l*, so that after this frame *j'* has been adjusted to any desired position it will be securely held there. Attached to it, also, is the bent arm *p*. After the blocks have been placed in position this frame *j'* is moved forward so as to press them against the cross-pieces *m'* of the carriage, and as the frame is moved forward it also moves forward the latch for operating the spring-dog and the bent arm *p*. These two devices being moved forward, the latch comes just so much the sooner in contact with the wedge which operates it, and the arm so much the sooner in contact with the lug *r*, for reversing the motion of the carriage.

For barrel-heading, it is only necessary to turn up the latch *i'*, so that it will not tilt the tables, set the tables level, and the machine is ready.

Having thus described my invention, I claim—

1. The combination of the gears *e f*, pinions 1 2, clutches *h i*, rod *j*, lever *k*, and toothed frame *k'*, substantially as set forth.
2. The combination of the lever *o*, having the slot *n*, lug *r*, springs *t*, and the arm *p*, and lug *Q*, attached to the carriage *l*, substantially as shown.
3. The combination of the tilting tables, vertically-slotted ways, and recessed slides, substantially as shown and described.
4. The combination of the rod 6, slide 7,

arms 8, adjustable eccentrics, and slides 5, substantially as set forth.

5. In a shingle-machine, the eccentrics a' , having a slot through their faces, so that they can be moved back and forth on their hubs by means of a set-screw or other device, to adjust the throw of the slides, and thereby adjust the tilting of the tables, substantially as shown.

6. The shaft 9, carrying the eccentrics for operating the slides, in combination with the lever h' and latch i' , substantially as specified.

7. In combination with a carriage, l , a mov-

able frame, j' , for regulating the length of stroke of the carriage, substantially as described.

8. In combination with the carriage l and frame j' , the arm p and latch for operating the spring-dog v , substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 3d day of April, 1874.

EDWIN ANDERSON. [L. s.]

Witnesses:

PETER I. LEPPER,

JOHN P. HELMER.