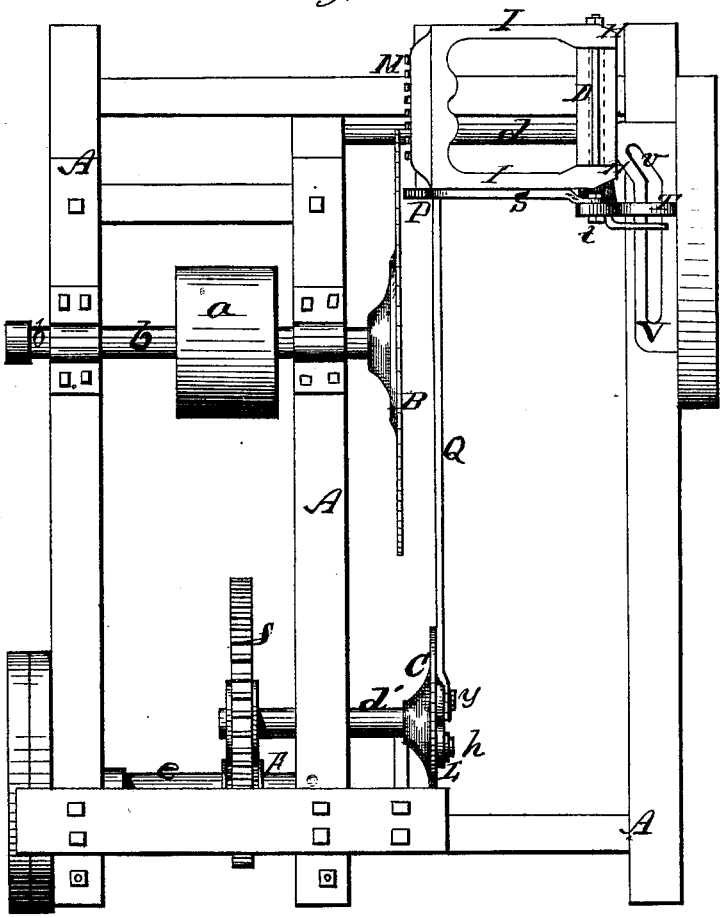
3 Sheets—Sheet 1.

H. J. MORTON.

MACHINES FOR SAWING SHINGLES.

No. 189,638. Patented April 17, 1877.

Fig. 1.



Witnesses,
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F. C. Lyons

Inventor,
Horace J. Morton
By his atty.
J. S. Brown

3 Sheets—Sheet 2.

H. J. MORTON.

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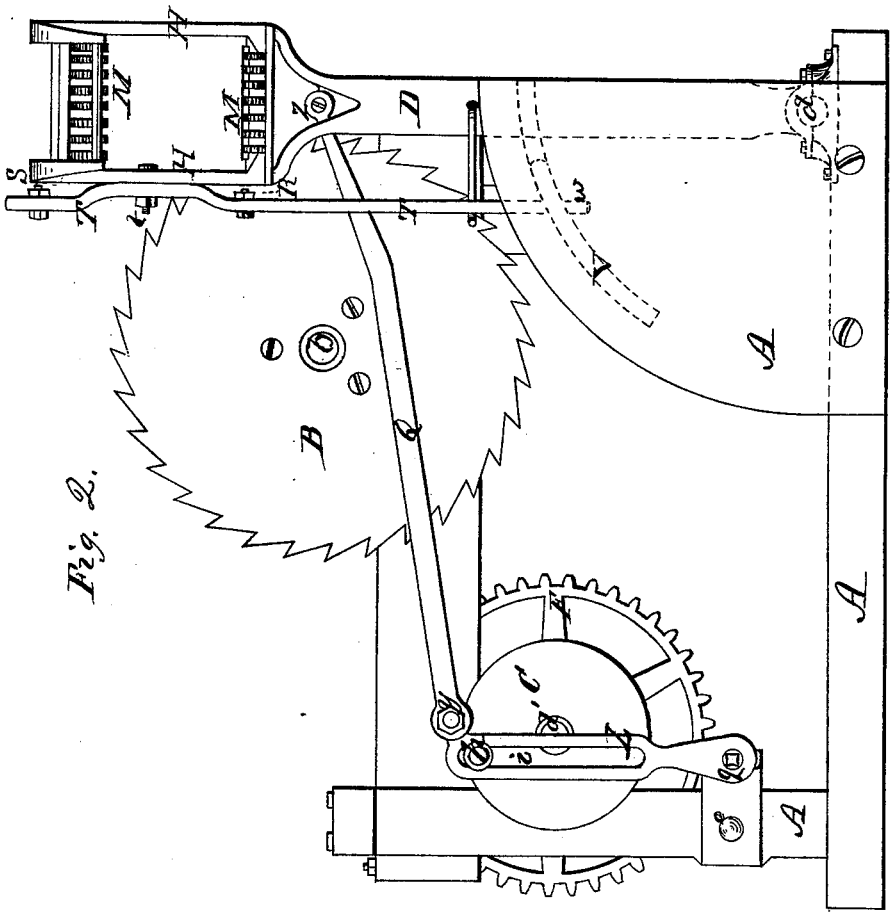

Fig. 2.

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H. J. MORTON.

MACHINES FOR SAWING SHINGLES.

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Fig. 3.

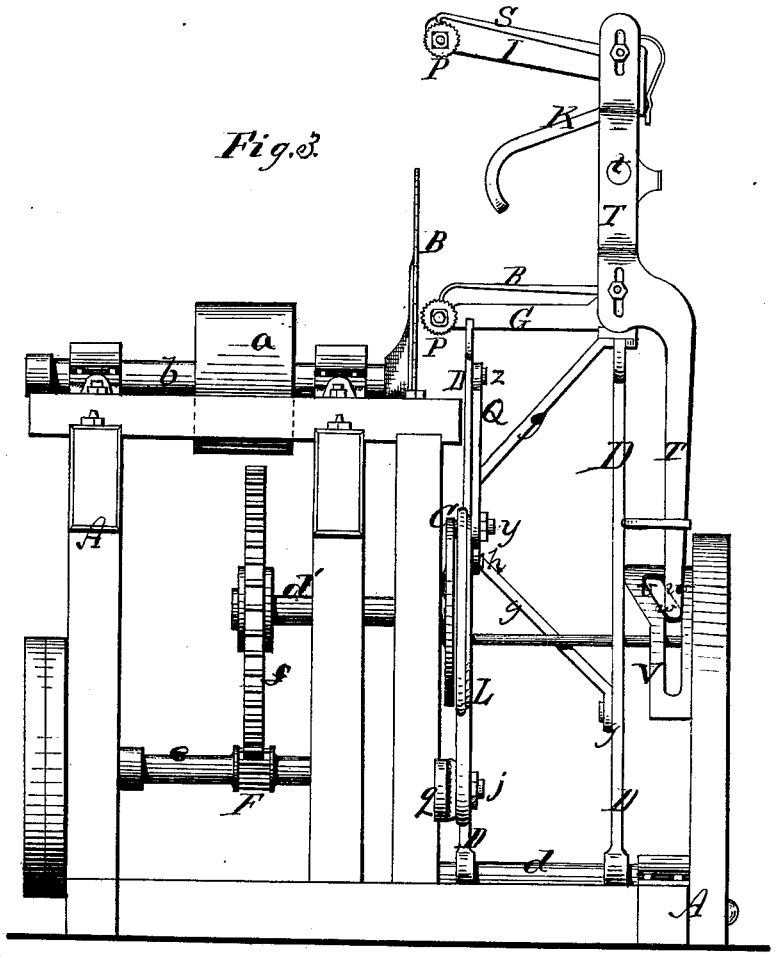
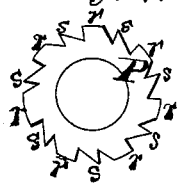


Fig. 4.



Witnesses,
John L. Gallaher Jr.
P. C. Lyons

Inventor,
Horace J. Morton,
By his Attys.,
J. A. Brown

UNITED STATES PATENT OFFICE.

HORACE J. MORTON, OF NORWAY, ASSIGNOR OF ONE-HALF HIS RIGHT TO FREEMAN C. MERRILL, OF SOUTH PARIS, MAINE.

IMPROVEMENT IN MACHINES FOR SAWING SHINGLES.

Specification forming part of Letters Patent No. **189,638**, dated April 17, 1877; application filed February 13, 1874.

To all whom it may concern:

Be it known that I, HORACE J. MORTON, of Norway, in the county of Oxford and State of Maine, have invented an Improvement in Machines for Sawing Shingles; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a top view of the machine embodying my improvement; Fig. 2, a side elevation thereof; Fig. 3, an end elevation of the same; Fig. 4, a view of a part detached.

Like letters designate corresponding parts in all of the figures.

My present invention is an improvement on the shingle-machine invented by Merrill Chase, Jr., and Horace J. Morton, and patented April 13, 1869, the object being to make a cheaper and lighter machine than that patented, and yet possessing the same capabilities; and the invention consists in a device by which, instead of the several bolt-holders attached to the polygonal revolving bolt-carrier described in the said Letters Patent, I employ only a single bolt-holder, on a vibratory bolt-carrier, to which a slow forward and quick backward movement is given, substantially as hereinafter specified.

In the drawings, let A represent the frame of the machine; B, the saw, with driving-pulley *a* and arbor *b*; D, the bolt-carrier, on which is mounted the bolt-holder, composed of horizontal stationary arms G G, vertical standards H H, and movable horizontal arms I I, and provided with a clamping-lever, K, feeding-rollers M M, ratchet-wheels P P, (shown separately in Fig. 4,) having ratchet-teeth *r r* and *s s*, alternately at greater and less distances apart, for making alternately a thick and a thin end of a shingle, with pawls R S, vibratory pawl-operating lever T, pivoted on a fulcrum-pin, *t*, attached to one of the holder-standards H H; and V, a stationary lever-vibrating cam, all of the said parts corresponding in function with the parts represented by like letters in the said former Letters Patent.

Instead of the revolving many-sided bolt-carrier described in the said Letters Patent, I make the bolt-carrier D vibratory, upon a stationary pivot, *d*, at the bottom, with a properly-braced frame. This vibration of the bolt-carrier is in the arc of a circle equal to, and situated in relation to the saw B substantially the same as, the circle of the revolving polygonal frames *g g* of the said patented shingle-machine; and the cam-slot V lies in a concentric arc, with an offset or bend, *v*, at one end, in which the heel *w* of the lever T runs, and thereby produces the movements of the pawls R S in manner precisely similar to the corresponding device in the former machine. The vibrations of the bolt-carrier D are produced by the peculiar device, substantially as shown in the drawings, constructed and operating substantially as follows:

A belt communicates a slower movement from the saw-arbor *b* to an intermediate shaft, *c*, on which is a small driving-pinion, F, gearing into a large cog-wheel, *f*, on the shaft *d'* of a disk or wheel, C, whereby the requisite slowness of revolution is imparted to the said disk or wheel to produce a properly-timed vibration of the bolt-carrier D. On this disk or wheel is a crank-pin, *h*, which works in a slot, *i*, of a vibratory slotted arm, L, the lower end of which is pivoted, at *j*, to a stationary holder, *q*, on a suitable part of the frame of the machine. The upper end of the vibratory arm L is pivoted, at *y*, to one end of a rod or pitman, Q, the other end of which is also pivoted, at *z*, to the bolt-carrier D.

The slotted arm L is situated in an upright position, and somewhat to one side of the center of the disk or wheel C farthest from the bolt-carrier. The disk or wheel C revolves in the direction indicated by the arrow in Fig. 2. By this arrangement not only is the bolt-carrier vibrated to the requiste extent for feeding the shingle-bolts to the saw B, but the peculiar position of the slotted arm L, through which the vibratory motion is communicated to the bolt-carrier, is such that when the crank-pin *d* is descending in the slot *i*, the vibration of the slotted arm L caused thereby is much less with a half-revolution of the disk or wheel C than when the crank-pin is ascending in the slot in the other half of

revolution. The effect is to feed the shingle-bolt forward to the saw slowly when the principal power is required, and to carry the bolt back rapidly when no great power is requisite.

The position and movement of the bolt-carrier in relation to the saw B are the same in effect as described in the aforesaid Letters Patent, so that the shingle bolt or blocks sweep by the saw on the farther side of the saw-shaft, whereby the teeth of the saw in all positions of the bolts are caused to cut with the grain of the wood, and never against it, for the same purposes as set forth in the said Letters Patent.

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

In combination with the vibratory bolt-carrier D, the revolving disk or wheel C, vibratory slotted arm L, and connecting-rod Q, substantially as and for the purpose herein specified.

Specification signed by me this 14th day of August, 1873.

HORACE J. MORTON.

Witnesses:
S. FAVOR,
M. WHITCOMB.