

W. GOLDIE.
SHINGLE CUTTING MACHINE.

No. 386,878.

Patented July 31, 1888.

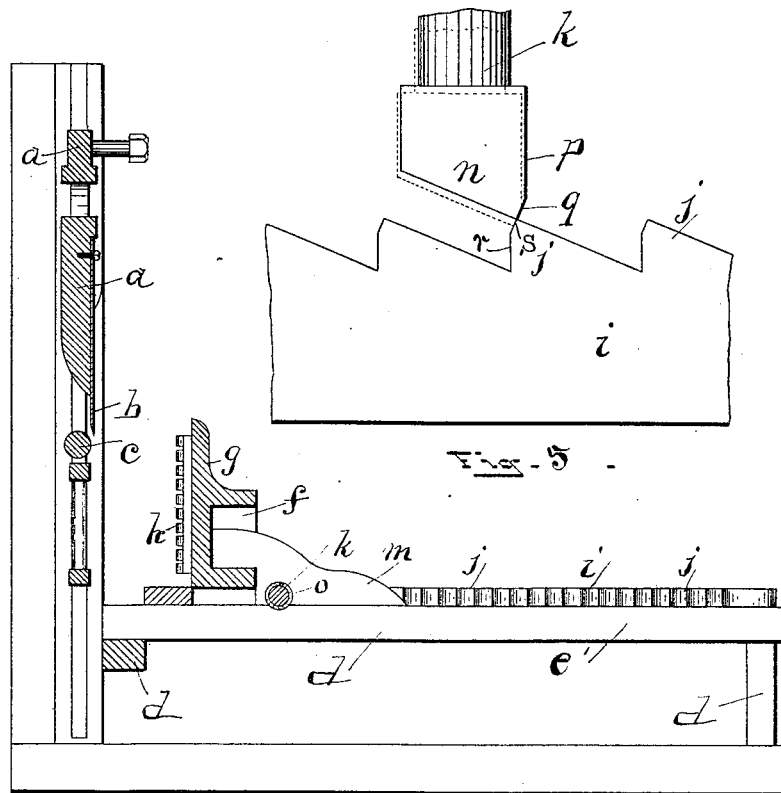


Fig. 1 -

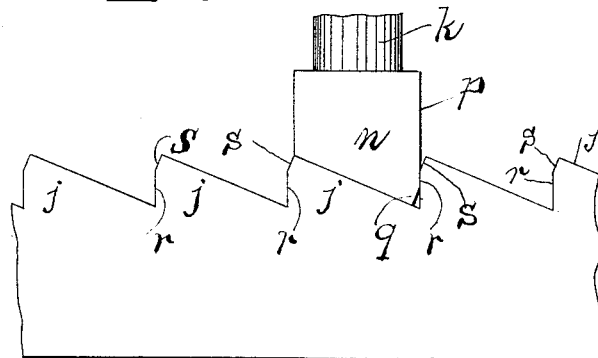


Fig. 2 -

ATTEST:

J. P. Thomas.

W. H. Power.

INVENTOR:

William Goldie.

By
Jas. E. Thomas.
Atty

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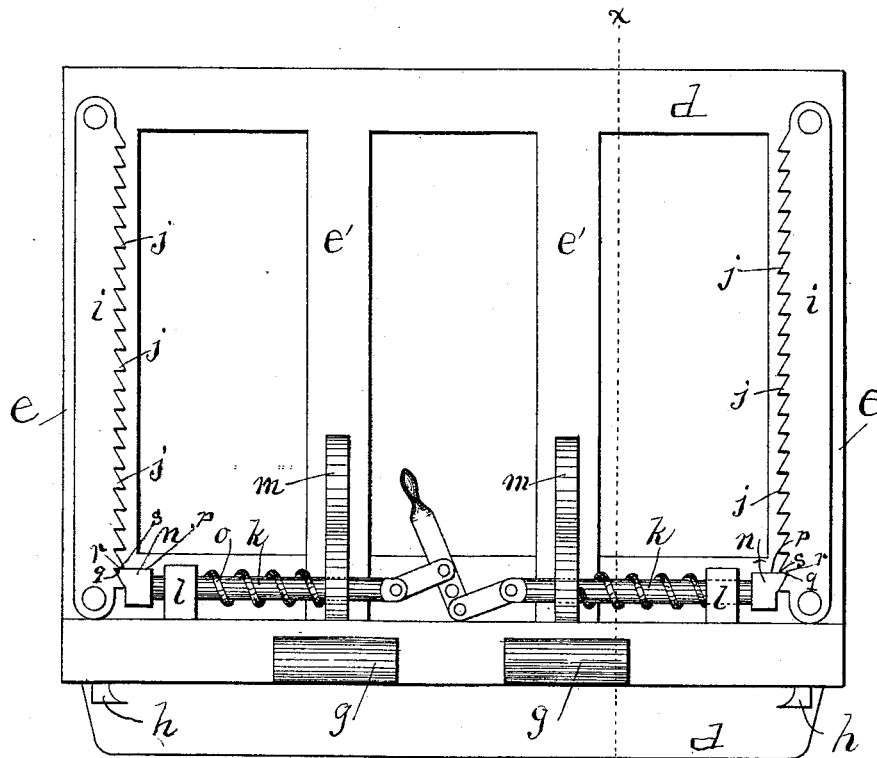


Fig. 2 . x

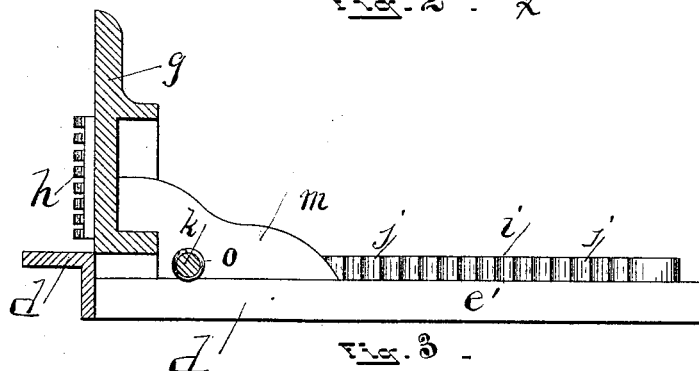


Fig. 3 .

ATTEST:
J. P. Thomas.
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INVENTOR:
William Goldie.
By
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UNITED STATES PATENT OFFICE.

WILLIAM GOLDIE, OF WEST BAY CITY, MICHIGAN, ASSIGNOR TO GEORGE A. GAGE, OF CHICAGO, ILLINOIS.

SHINGLE-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 386,878, dated July 31, 1888.

Application filed September 30, 1887. Serial No. 251,088. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GOLDIE, a citizen of the United States, residing at West Bay City, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Shingle-Cutting Machines; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to that class of shingle-cutting machines in which the cutting operation is performed by a reciprocating knife, a compression-roller being attached to the knife-carrying frame in a suitable manner, so that the roller moves with the reciprocating knife and preserves the solidity of the timber of the shingles being cut, and for which reissued Letters Patent were granted to me, dated June 15, 1880, and numbered 9,251 and 9,257; and the invention herein described pertains especially to the feeding devices of the said machine, and which I hereinafter more fully describe, and especially point out in the claim.

The object of my invention is to provide devices to be used in connection with the said reciprocating knife and compression-roller, by means of which a more even, regular, and firm feeding action of the shingle block will be acquired, whereby shingles will be produced which are more perfect and uniform in thickness and free from shakes, checks, and slivers, and which will have perfectly smooth and plain surfaces and similar to surfaces which have been finished with a planing-machine. I attain this object by the devices illustrated in the accompanying drawings, in which—

Figure 1 is a vertical central section of a shingle-cutting machine containing my improvements. Fig. 2 is a plan view of the carriage supporting the shingle-block and showing my improvement. Fig. 3 is a vertical transverse section of the same at X X. Fig. 4 is a detached portion of the feeding-ratchet with the pawl-pieces in full engagement with the teeth. Fig. 5 is the same with the short in-

clined surfaces of the pawl-pieces and ratchet-teeth in engagement.

a represents a reciprocating frame or gate, carrying a cutting-knife, *b*.

c is a compression-roller, journaled to the gate *a* in the rear of the knife *b* and located at a point just in advance of the knife-edge, and the space between the roller and the knife is arranged to be slightly less than the required thickness of the shingle to be cut, which causes the roller as it passes over the face of the blocks to impinge heavily against the said face and support the wood fiber of the blocks at a point just in advance of the cutting-edge of the knife. This action of the roller operates to retain the fibers of the wood firmly and rigidly in position during the cutting operation, and prevents any tendency of the knife to sliver or check the shingle.

d is a frame having the end bed-pieces, *e*, and the central bed-pieces, *e'*, lying at right angles with the line of the reciprocating movement of the gate *a*; and upon this frame *d* is placed a carriage, *f*, which is arranged to slide upon and lengthwise of the bed-pieces *e*, and may be held against displacement from the bed-pieces by any suitable means, as desired, and the carriage is also provided with an upward-extending portion, *g*, against the rear or face side of which the block to be cut into shingles is placed and is secured in position by the dogs *h*, which are forced by any proper means into the ends of the blocks and are of any desired construction.

Suitable mechanism, which is illustrated in the said former patents, is provided for feeding the carriage intermittently toward the knife at the proper time; and *i i* are racks provided with ratchet-teeth *j* and secured to the bed-pieces.

k k are pieces passed through lugs *l* and the brace-piece *m*, and their outer ends, *n*, are so formed as to engage with the ratchet-teeth *j* after the manner of a pawl or dog. Springs *o* are attached to the pieces *k*, which operate to propel the ends *n* outwardly and retain them in engagement with the teeth *j*.

As the success of the machine depends largely upon the even thickness and uniformity of the shingles cut, it is necessary to secure

and hold the carriage rigidly and solidly in position while the cutting operation is being performed, and the racks *i* and the spring pawl-pieces *k* are arranged to operate to attain this result. The feeding mechanism propels the carriage toward the knife to a distance corresponding with the thickness of the shingle, and the spring pawl-pieces *k* are so arranged as to then catch into the teeth *j* of the racks, and the carriage is by this means held rigidly in position while the shingle is cut from the block, and the thickness of all of the shingles cut are uniform and alike, and the accuracy of action of the pawl-pieces *k* is provided for by slightly beveling or rounding off the outer corner of the perpendicular side *r* and forming thereon the short inclined side *s*, and by forming on the outer corner of the perpendicular side *p* of the pawl-pieces *k* the short inclined side *q*. The action of this form of retaining device is that upon the carriage being propelled forward the pawl-pieces *k* recede until the extreme points of the pieces and the teeth pass each other and the inclined sides *q* and *s* engage with each other. The springs *o* then operate to propel the pawl-pieces *k* outwardly, and when the inclined sides *q* and *s* have nearly passed each other, as shown in Fig. 5, the feeding mechanism ceases to operate upon the carriage and the action of the springs *o* carries the pieces *k* into position with the perpendicular sides *p* and *r*, engaging with and bearing solidly and firmly against each other, which retains the carriage rigidly in position during the cutting operation. The action of this form of the teeth *j* and the spring-pawls *k* causes the carriage to obtain a firm and solid bearing against a movement rearwardly at once, as the perpendicular sides *p* and *r* pass each other and avoids the difficulty which obtained with the pawls and teeth heretofore in use, the common form of the pawls and teeth being that each was provided with an inclined side and a perpendicular side, coming to an angle, and which, on account of the fine adjustment of the feeding mechanism required, allowed the perpendicular sides of the pawls and teeth to pass slightly by each other, and permitted

the carriage to recede until the said perpendicular sides came to a firm bearing against each other as the knife began cutting, which action produced shingles having their opposite side edges of a different thickness and reduced their market value. One of the most essential features of this class of shingle-cutting machines is suitable rigidity and firmness in the carriage which supports the blocks, and in order to prevent any springing action of the vertical portion *g*, which supports the upper portion of the shingle-block against the rearward-crowding force of the compression-roller, the portion *g* is provided with the brace-pieces *m*, which reach nearly to the upper portion of the portion *g* and extend rearwardly to some distance, and are arranged with their lower edges bearing upon the central bed-pieces, *e'*. These brace-pieces operate to stiffen and firmly support the upper portion of the part *g*, and prevent any receding or springing of the part by the action of the roller or knife upon the shingle-block in the operation of cutting the shingles, which adds greatly to the efficiency of the machine.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination, in a shingle-cutting machine, of the reciprocating gate carrying a cutting-knife and a compression-roller, a carriage provided with devices for holding the shingle-block and having an intermittent movement toward the knife, and a frame supporting the carriage, with the racks *i*, secured to the said supporting-frame and provided with the teeth *j*, having the short inclined side *s* and the perpendicular side *r*, and the pawl-pieces *k*, having the ends *n* engaging with the teeth *j*, and provided with the inclined sides *q* and the perpendicular sides *p*, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM GOLDIE.

Witnesses:

JAS. E. THOMAS,
GEO. A. GAGE.