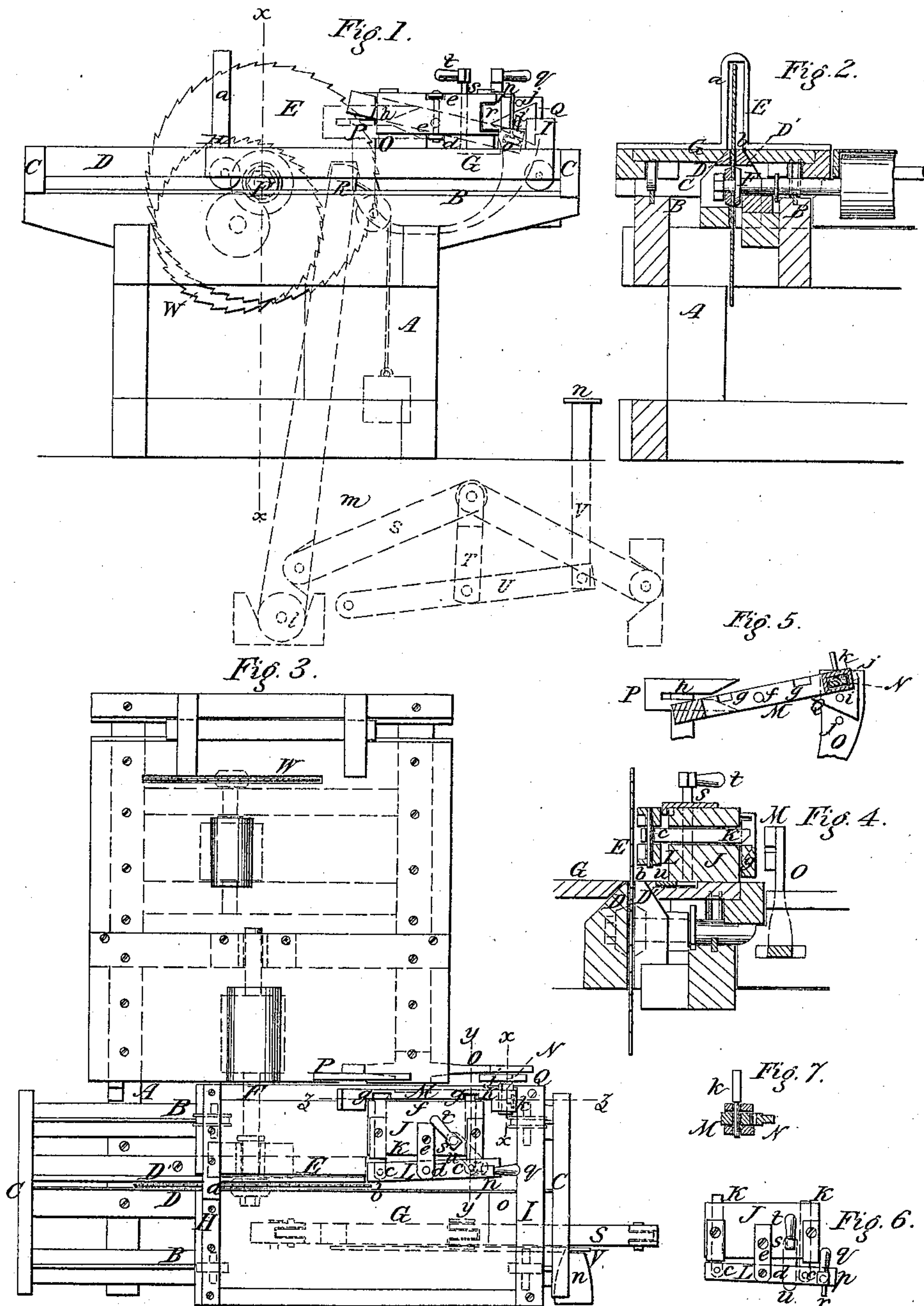


Shaw, Estabrook & Piner, Sawing Shingles.

N^o 34,701.

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Witnesses:

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UNITED STATES PATENT OFFICE.

NOAH SHAW, WILLIAM B. ESTABROOKS, AND C. A. PIPER, OF EAU CLAIRE, WISCONSIN.

IMPROVED SHINGLE-MACHINE.

Specification forming part of Letters Patent No. 34,701, dated March 18, 1862.

To all whom it may concern:

Be it known that we, NOAH SHAW, WILLIAM B. ESTABROOKS, and C. A. PIPER, all of Eau Claire, in the county of Eau Claire and State of Wisconsin, have invented a new and Improved Shingle-Machine; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side view of our invention; Fig. 2, a vertical section of the same, taken in the line xx of Fig. 1; Fig. 3, a plan or top view of the same; Fig. 4, a section of the same, taken in the line yy of Fig. 3; Fig. 5, a section of the same, taken in the line zz of Fig. 3; Fig. 6, a detached plan or top view of the bolt-adjusting device; and Fig. 7, a section of the same, taken in the line $x'x'$ of Fig. 3.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to a new and improved shingle-machine of that class in which circular saws are employed for cutting the shingles from the bolt.

The object of the invention is to obtain a machine which may be rendered available for cutting up the refuse stuff of saw-mills into shingles—such, for instance, as slabs, broken scantling, boards, planks, &c.

This invention consists in a novel and improved bolt-adjusting mechanism, substantially as hereinafter fully shown and described, whereby the bolt is adjusted automatically by the reciprocating movement of the carriage in such a manner as to cause the shingles to be sawed from the bolt in proper taper form, point and butt being cut alternately from opposite ends of the bolt.

The invention also consists in a means for varying the thickness of the shingles and properly supporting the same until the proper time arrives for them to drop from the machine or carriage.

To enable those skilled in the art to fully understand and construct our invention, we will proceed to describe it.

A represents a rectangular frame, which may be constructed in any proper way to support the working parts of the machine, and B B are two parallel ways which are placed transversely on the upper part of the frame A at one end of it. The ways B B are connected at their ends by traverse-bars C C,

which serve as stops for the bolt-carriage, and between the ways there are placed two parallel longitudinal strips D D', the upper surfaces of which are beveled or inclined, as shown clearly in Fig. 4. The strip D extends the whole length of the ways B B; but the strip D' is but a little more than half the length of the strip D, for the reason hereinafter explained.

E is a circular saw placed on a mandrel F, which is at right angles to the ways B B. The saw E works between the strips D D', its front edge being near the inner end of the shorter strip D', as shown in Fig. 3.

G is a bolt-carriage of rectangular form and provided with four wheels which work on the ways B B. The bolt-carriage is formed of two longitudinal parts connected at one end by a metal bar H, which is provided with an upright loop a and connected at the opposite end by a bar I. A space b is allowed between the two parts of the carriage for the saw E to work through, and also to allow the upper edges of the strips D D' to pass through and be flush with the upper surface of the carriage, as shown clearly in Fig. 4. The strips D D', it will be seen by referring to Fig. 4, fit quite closely to the saw, but do not bind or press against it in the least. It is designed that the saw shall be perfectly free.

On the bolt-carriage G there is permanently secured a rectangular block J. This block is attached to the carriage at the right-hand side at its front end, as shown in Fig. 3, and it has two parallel and horizontal bars K K fitted in it. These bars K K are allowed to slide freely in the block J, and they are connected at their outer ends by pivots $c c$ to a bar L, which is secured near its center by a pivot d to arms $e e$, which project from the top and bottom of the block J. The bar L forms the bearing-surface for the bolt from which the shingles are cut, and it is allowed to work freely on its pivot c . The inner ends of the bars K K are beveled, as shown in Fig. 4, and to the inner side of the block J there is attached a lever M, the fulcrum-pin f of said lever passing through its center into the block. The inner side of the lever M—the side next the block J—has two beveled notches $g g$, which are directly opposite the ends of the bars K K, (see Fig. 3,) and in the front end of the lever M there is fitted a horizontal pin N, the use of which will be presently shown.

To the upper part of the frame A and at a point near the right-hand way B there is attached a curved or semicircular bar O. (See dotted lines in Fig. 1.) To the back end of this bar O there is attached a plate P, which has a horizontal slot *h* made in it, as shown clearly in Fig. 5, and to the front or opposite end of said bar there is attached by a pivot *i* a triangular-shaped plate Q. The plate Q is allowed to work freely on its pivot *i*, and its movement is controlled by two pivots *j j*, which serve as stops.

The pin N, which is fitted in the front end of the lever M, is secured therein by a vertical pin *k*. (Shown clearly in Fig. 7.)

In the bar L there is placed a vertical rod *p*, which has a handle *q* at its upper end. This rod *p* has a projecting flange *r* attached to it, said flange when turned inward fitting in a recess in the block J. In the block J there is also placed a vertical rod *s*, the upper end of which is provided with a handle *t*. The lower end of the rod *s* has a bar *u* attached at right angles. This bar *u* when turned outward will project across the space or opening *b* in the bolt-carriage.

R is an upright lever, the lower end of which is secured by a fulcrum-pin *l* to a timber *m* below the frame A. The upper end of this lever R is fitted in a notch in the under side of the bolt-carriage G, and it is connected near its lower end to a toggle S, which is also attached to the timber *m*, as shown by the dotted lines in Fig. 1.

To the joint of the toggle S there is connected a pendent bar T, the lower end of which is attached to a lever U. This lever U is also on the beam *m*, and it is connected at its front end to the lower part of a slide V, having a horizontal foot-piece *n* at its upper end.

On the frame A at the end opposite to that where the saw E is placed there is a circular saw W, arranged in the usual way. This saw W is designed solely for sawing the "stuff" into proper-sized bolts.

The operation of the machine is as follows: A bolt is placed on the carriage G with one end against a stop or block *o*, which is attached to the carriage, as shown in Fig. 3. The bolt-carriage G is then shoved forward or toward the saw by forcing down the slide V with the foot, the toggle S being straightened by that operation, the lever R actuated, and the carriage G moved. The right-hand side of the slot bears against the bar L, and as the carriage moves toward the saw E the latter cuts a shingle from the bolt. As the carriage approaches the termination of its forward movement the pin N of the lever M enters the slot *h* of the plate P, and the lever M is thereby actuated and brought to a horizontal position. Each time the carriage G approaches the termination of its backward movement the pin N strikes the triangular plate Q and the lever M is again actuated, and by this latter movement of the lever the

bars K K are actuated alternately and the bar L placed in oblique positions, as the pin N works at one movement of the carriage over the top of plate Q and at the next moment underneath it, the plate Q being shifted in position by the action of the pin N, which is adjusted in proper position relatively with the plate Q, in consequence of passing into the slot *h* of plate P during the latter part of the forward movement of the carriage, as previously described. When the carriage reaches the termination of its backward movement, the sawed shingle is allowed to fall through the space *b* of the carriage, in consequence of the strip D' being short and not extending in front of the bar L. The bar L is adjusted alternately in reverse positions, so that the shingles are cut from the bolt, butt and point alternately from either end. When it is desired to saw thin shingles, the rod *p* is turned a certain distance to cause the flange *r* to project outward from the bar L. The rod *s* is turned so as to cause the bar *u* at its lower end to project across the space *b* and serve as a support to the shingle being sawed, the bar *u* being turned out of the way as the carriage approaches the termination of its forward movement, in consequence of striking against the ending of the strip D'. The strip D serves as a stationary support for the inner side of the bolt, the strip D, it will be understood, being stationary while the carriage is moving. The bolt-carriage is moved backward by hand only, and during this movement the slide V is elevated, so that it may be depressed by the foot to shove the carriage forward at the succeeding operation.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The pivoted bar L, operated through the medium of the bars K K, lever M, plates P Q, and bolt-carriage G, substantially as shown, for the purpose of adjusting the bolt from which the shingles are sawed, as herein set forth.

2. The employment or use, in connection with the adjustable bar L, of the rod *p*, provided with the flange *r* and fitted in the block J, for the purpose of regulating the width of the shingles, as specified.

3. In combination with the adjustable bar L, actuated or operated as shown and described, the rod *s*, provided with the bar *u* and arranged, as shown, to serve as a support for the shingle being sawed.

4. The two strips D D', provided with upper beveled or inclined surfaces and arranged, in relation with the saw E and the space or opening *b* in the carriage G, to operate as and for the purpose set forth.

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