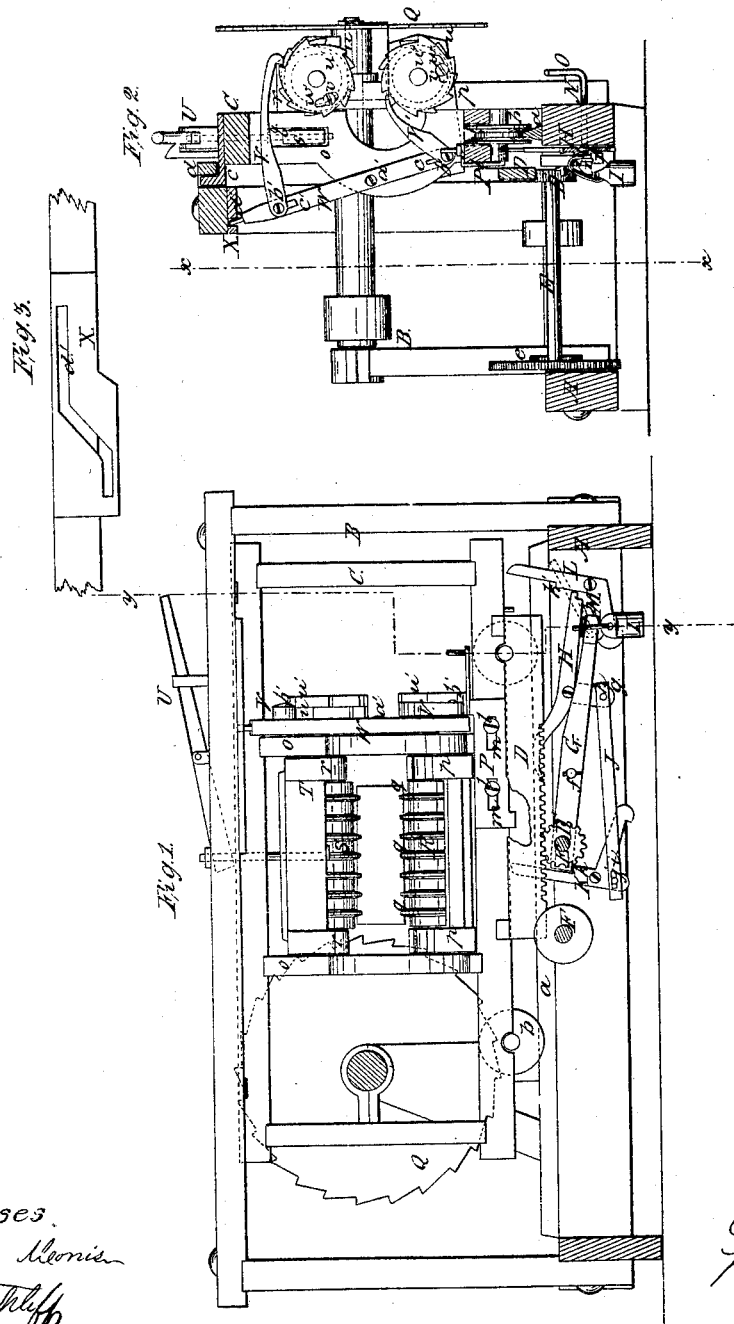


*E. Drake,
Sawing Shingles,*

No. 45,592.

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UNITED STATES PATENT OFFICE.

E. DRAKE, OF GARDINER, MAINE.

IMPROVEMENT IN SHINGLE-MACHINES.

Specification forming part of Letters Patent No. 45,592, dated December 27, 1864.

To all whom it may concern:

Be it known that I, E. DRAKE, of Gardiner, in the county of Kennebec and State of Maine, have invented a new and Improved Shingle-Machine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view of my invention; Fig. 2, a transverse vertical section of the same, taken in the line *x x*, Fig. 1; Fig. 3, a detached view of a slotted plate pertaining to the same.

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 a circular saw is employed for cutting the shingles from the bolt; and the invention consists in a novel means employed for feeding the bolt to the saw, and also in a novel means for adjusting the bolt so that the same may be cut of any required thickness and of different tapers, as may be required.

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

A represents a rectangular frame, which forms the base of the machine, and B is an upright framing, which is attached thereto and has a longitudinal position. The framing B is near to one side of the frame or base A, and the latter has a way or guide, *a*, secured longitudinally to it at one side, on which grooved rollers *b b*, in the lower part of a frame, C, work, the upper part of the latter having right angular arms *c c* attached to it, which work in guides *d d* at the upper part of the framing B. The frame C is thus held in a proper upright position while being moved horizontally back and forth. To the lower end of the frame C there is attached a rack, D, into which a pinion, D', gears, and through which the feed-movement is given said frame. This pinion D' is placed on one end of a shaft E, which has motion communicated to it from a driving-shaft, F, through suitable gearing, *e*. The end of the shaft E, near where the pinion D' is placed, has its bearing at one end of a lever, G, the fulcrum of which is at *f*, and a lever, H, is directly over the lever G, the latter having a weight, I, on one end, which

weight has a tendency to keep the pinion D' in gear with the rack D, as will be seen by referring to Fig. 1. The lever H has an arm, *g*, projecting from it at right angles, and the lower end of this arm is attached by a pivot, *h*, to one end of bar J, the opposite end having a slot, *i*, made in it to receive a pin, *j*, on a bent lever, K, which has a shoulder, *k*, on it to support the end of the lever G near the shaft E. A similar bent lever, L, is near the outer end of the lever H, the lever, L, being provided with a shoulder, *k*, to support the outer end of the same when it is raised.

M is a small cam, which is directly under the lever H, and is placed on a shaft, N, which passes through one side of the frame or base A, and has an arm or lever, O, on its outer end.

P is a plate, which is attached to one side of the lower part of the frame C by set-screws *l*, the screws passing through oblong slots *m* in said plate; so as to admit of the latter being adjusted more or less forward, as desired. This plate P has a horizontal arm, *n*, at its lower edge, which comes in contact with the upper end of the lever K when the frame C reaches a certain point in its movement toward a circular saw, Q, which cuts the shingles from the bolt. This saw Q may be arranged in the usual way and driven in any proper manner. In the frame C there are placed two uprights, *o o*, between the lower part of which there are secured two horizontal arms, *p p*, to serve as bearings for the journals of a roller, R, which is grooved circumferentially to form rings *q*. A similar roller, S, is fitted between similar arms *r r*, attached to or projecting from a frame, T, the ends of which are provided with tenons *s*, fitting and working in vertical slots *t* in the upper parts of the uprights *o o*. This frame T may be raised by means of a lever, U, on the upper part of the frame C, arranged in any proper way. On one of the journals of each roller R S there are placed two ratchets, *u u'*, side by side, the inner ratchets, *u*, being permanently secured to the journals, and the outer ratchets, *u'*, fitted loosely on said journals, and secured to the inner ones, *u*, by set-screws *v*, the latter passing through curved slots *w* in the outer ratchets, *u'*, and into the inner ratchets, *u*. By this arrangement the teeth of the ratchets may be adjusted relatively with each other, as desired, so as to vary the action of two pawls, V V'.

which engage with them—one, V, being a pulling and the other, V', a pushing pawl, as shown clearly in Fig. 2. These pawls, V V', are attached to a lever, W, the fulcrum *a'* of which passes into one of the uprights *o*, and the screws *b'*, which connect said pawls to the lever W, pass through slots *c'* therein, to admit of the pawls being adjusted higher or lower, according to the throw designed to be given them. The upper end of the lever W is fitted and works in an oblique slot, *d'*, made in the under side of a plate, X, attached to the upper part of the frame B. The bolt (shown in red) from which the shingles are sawed is placed between the two rollers R S, and the bolt is fed to the saw through the medium of the rack D and pinion D'. When the bolt is moved toward the saw, the slot *d'* actuates the lever W so as to move the pawls V V' to a position which will render them capable of actuating the ratchets on the return or backward movement of the bolt and frame C, so as to feed the bolt laterally to the saw a distance according to the desired thickness of the shingles and the taper to be given the same, the bolt being placed vertically between the rollers R S. It will be seen that, in consequence of each pair of ratchets *u u'* being capable of being adjusted separately, and the points of attachment of the pawls V V' to the lever W being also capable of being adjusted so as to vary the lateral feed of the bolt both at the top and bottom, the shingles may be

sawed of a greater or less thickness and of any taper desired.

The length of the feed-movement of the frame C and bolt toward the saw may be regulated by adjusting the plate P, previously described. This plate, on striking the upper end of the lever K, throws the shoulder *k* out from underneath the lever G, and the bar J throws up the loaded end of the lever H so as to admit of the pinion D' dropping from the rack D. The frame C and the bolt, however, may be stopped at any time by throwing up the loaded end of lever H through the medium of the cam M.

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

1. The arrangement of the rack D, pinion D', levers K L G, and the loaded lever H, all combined, with the plate P, to regulate the feed movement of the frame C, as set forth.

2. The lever W, provided with the pawls V V', in connection with the oblique slot *d'* in the plate X, and with the double adjustable ratchets *u u'*, or with single ratchets, for the purpose of giving and regulating the lateral feed-movement of the bolt, for the purpose specified.

E. DRAKE.

Witnesses:

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