S. T. Sanford,

Saving Shingles,

No. 51,484, Patented Dec. 12, 1865.

Fig. 4.

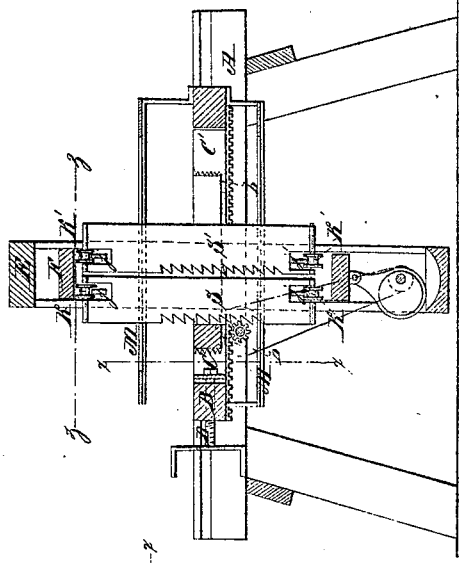


Fig. 5.

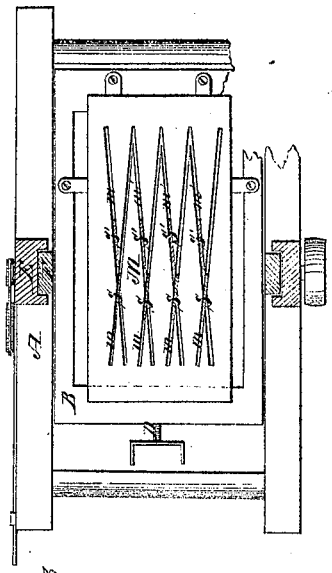


Fig. 3.

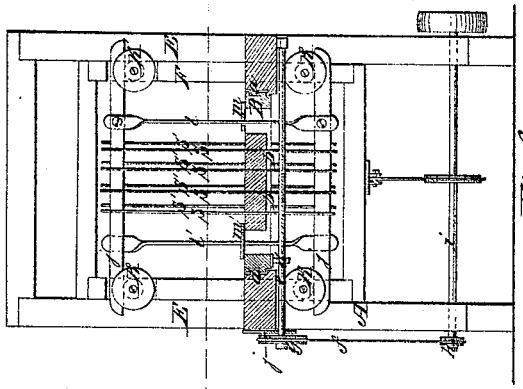


Fig. 6.

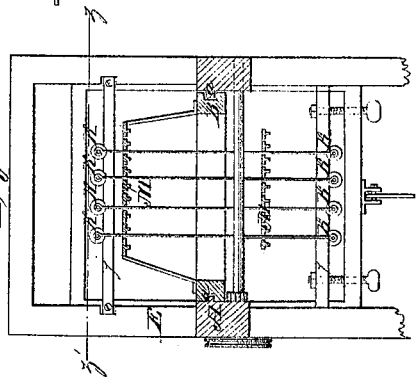


Fig. 1.

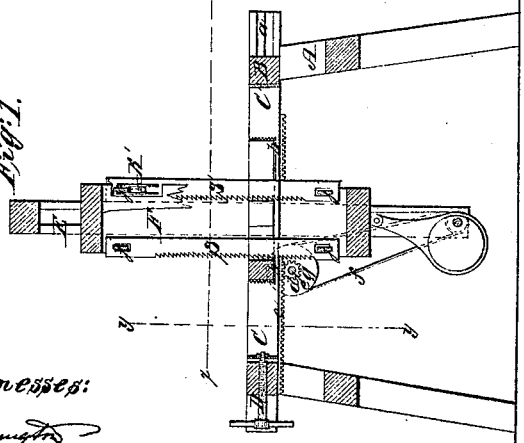
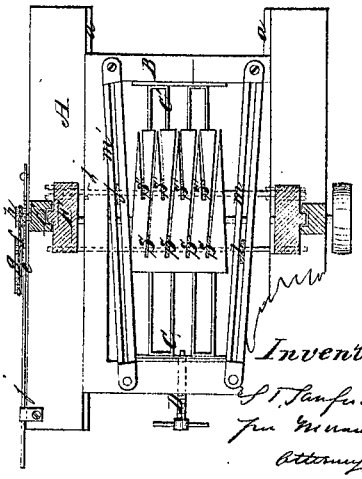


Fig. 2.



Witnesses:

Inventor:

S. T. Sanford

Attorneys

UNITED STATES PATENT OFFICE.

SAMUEL T. SANFORD, OF FALL RIVER, MASSACHUSETTS.

IMPROVEMENT IN SHINGLE-MACHINES.

Specification forming part of Letters Patent No. **51,484**, dated December 12, 1865.

To all whom it may concern:

Be it known that I, S. T. SANFORD, of Fall River, in the county of Bristol and State of Massachusetts, have invented a new and useful Improvement in Machines for Making Shingles, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a longitudinal vertical section of this invention. Fig. 2 is a horizontal section of the same, the line *x x*, Figs. 1 and 3, indicating the plane of section. Fig. 3 is a transverse vertical section of the same, the plane of section being indicated by the line *y y*, Fig. 1. Fig. 4 is a longitudinal vertical section of a modification of the same. Fig. 5 is a horizontal section of the same, taken in the plane indicated by the line *z z*, Fig. 4. Fig. 6 is a transverse vertical section of the same, the line *x' x'*, Fig. 4, indicating the plane of section.

Similar letters of reference indicate like parts.

This invention relates to a machine in which two gangs of saws are used in one and the same sash, one in front of the other, in combination with slotted guides, one for each saw or for each gang of saws, in such a manner that by the action of said guides the front saws are caused to cut in one and the rear saws in another direction, thus producing two kerfs which intersect at an acute angle, and cutting a block of wood up in a number of shingles equal to the whole number of saws, less one, provided said block is thick enough to be acted upon simultaneously by the whole number of saws in the sash.

A represents a frame, made of wood or any other suitable material, and provided with suitable ways *a*, to receive the carriage B. This carriage is provided with two jaws, C C', one of which is stationary, while the other is made movable by a screw-spindle, D, so that between said jaws the block to be cut can be fastened with ease and facility. In order to permit the saws to pass clear through the block of wood the jaws C C' are made each of a series of projecting plates with pointed teeth capable of biting into the block and of retaining the same firmly in position, the number of plates in each jaw being equal to the number of saws in each gang, and their position being such that the saws can pass in between them. Said plates are provided with lips *b*, extending beyond their front ends, and at the bottom parts of the same, so that the blocks can be readily adjusted and secured between them. To the carriage B a reciprocating motion is imparted, either by hand or by any suitable mechanism, such as a toothed rack, *c*, and pinion *d*, said pinion being mounted on a shaft, *e*, to which a revolving motion is imparted by a belt, *f*, which extends over a pulley, *g*, on said shaft *e*, and over another pulley, *h*, mounted on the end of the driving-shaft *i*. The shaft *e* has its bearing at one end in a hand-lever, *j*, which is pivoted to the side of the frame A, and by moving this hand-lever up or down the pinion *d* is thrown out of gear with the rack *c* and the motion of the carriage B is stopped.

From the frame A rise two uprights, E, which form the guides for the sash or gate F. In this sash are hung two gangs of saws, S S', one behind the other, as shown in Figs. 1 and 4 of the drawings, and these saws are either secured to cross-bars *j j'*, fitting into flanged friction-rollers *k k'*, which are attached to the sash, as shown particularly in Fig. 3, or said cross-bars are rigidly attached to the sash, and in this case each saw is provided with a friction-roller on top and another friction-roller at the bottom, as seen in Fig. 6. In the first case a lateral motion can be imparted to all the saws in a gang simultaneously, and in the latter case each saw can assume a distinct lateral motion independent of the other saws. The lateral motion of the gangs of saws is produced by rods *l l'*, which connect the cross-bars *j j'*, as shown in Fig. 3, and the rod *l*, which connects the cross-bars *j* of the first gang of saws, passes through a slotted guide, *m*, fastened to the upper surface of the carriage on one side of the saws, whereas the rod *l'*, which connects the rods *j'* of the second gang of saws, passes through a similar slotted guide, *m'*, secured to the carriage on the opposite side of the saws. The guides *m m'* are secured to the carriage in oblique directions, being made to converge in front, as shown in Fig. 2 of the

drawings, and by their action on the connecting-rods *j j'* a lateral motion is imparted to the two gangs of saws in opposite direction as the carriage is moved in the direction of the arrow marked thereon in Fig. 2; and since each gang of saws is compelled to cut in a direction parallel to its guide the saws of the second gang produce cuts running in an oblique direction toward those of the first gang, and a block of wood exposed to the action of the saws is cut up, as shown in Fig. 2.

By changing the direction of the slotted guides *m m'* the saws can be made to cut more or less oblique, and shingles can be produced of any desired angle.

If the saws are hung as shown in Figs. 4, 5, and 6, where each saw has an independent lateral motion, said saws are made to pass through guide-slots *m* m'** in plates M, secured between the uprights E, above and below the carriage B. The guide-slots of the first gang of saws are oblique in one direction, and those of the second gang are oblique in the opposite direction, as shown in Fig. 5, and as the carriage is moved in the direction of the arrow marked thereon in said figure, the saws of the first gang are compelled to follow the guide-slot *m**, and those of the second gang the guide-slots *m'**, and the block of wood is cut up into shingles in the same manner as above described.

It will be observed that in both instances—that shown in Figs. 1, 3, and also that shown in Figs. 4, 6—the saws receive a lateral motion, whereby the same are caused to act in the direction of the guide-slots; but in the first case only one guide-slot is required for the whole gang of saws, and the friction is thereby considerably reduced, and, furthermore, the guides used in the first instance can be readily adjusted to different angles, whereas those in the second instance are rigid and cannot be adjusted for shingles of different shape, although the principle of giving to the saws a lateral motion is shown in both cases, only carried out in different form.

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

1. Giving to each saw or gang of saws a lateral motion by guides *m m'*, or their equivalents, substantially as and for the purpose described.

2. The use of two gangs of saws in one and the same sash, one in front and the other in the rear, substantially as and for the purpose set forth.

SAMUEL T. SANFORD.

Witnesses:
JAMES M. MORTON, Jr.,
C. W. LINDSEY.