F. Godfrey,

Cutting Shingles.

No 24,733. Patented July 12, 1859.

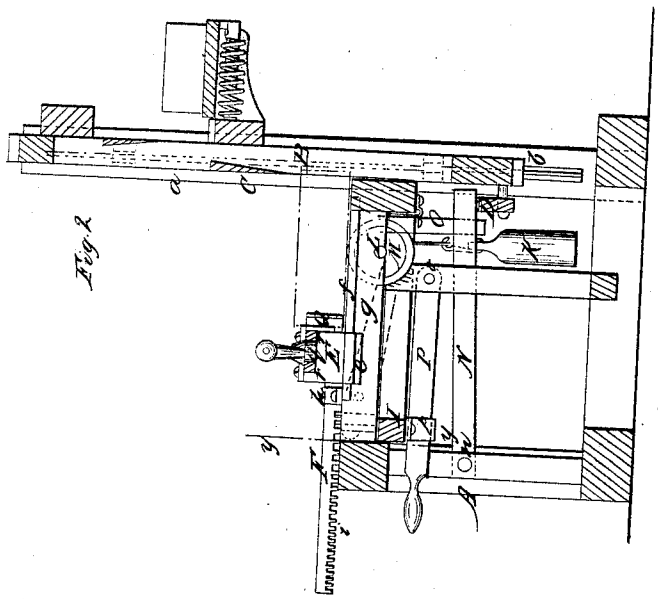

Fig 2

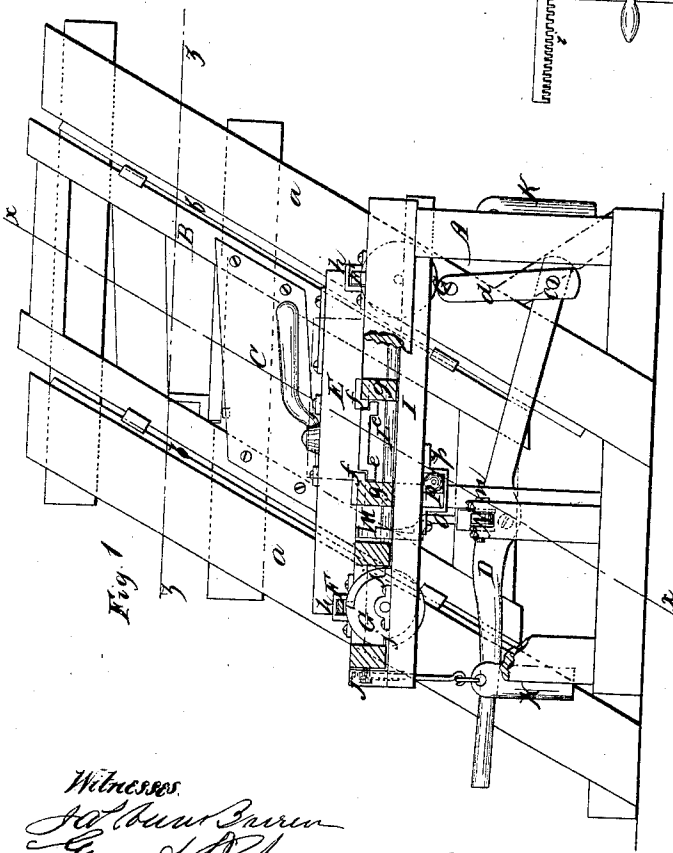

Fig 1

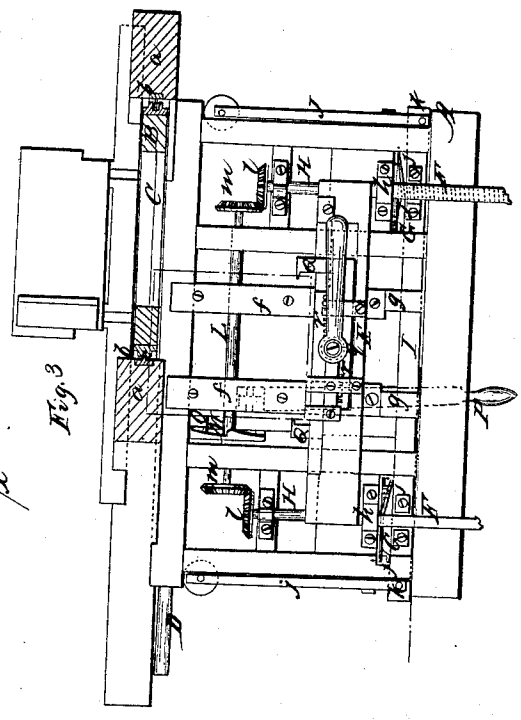

Fig 3

Witnesses.

Inventor.

Freeman Godfrey

UNITED STATES PATENT OFFICE.

FREEMAN GODFREY, OF GRAND RAPIDS, MICHIGAN.

SHINGLE-MACHINE.

Specification of Letters Patent No. 24,733, dated July 12, 1859.

To all whom it may concern:

Be it known that I, FREEMAN GODFREY, of Grand Rapids, in the county of Kent and State of Michigan, 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 annexed drawings, making a part of this specification, in which—

Figure 1, is a transverse section of my invention taken in the line *y*, *y*, Fig. 2. Fig. 2, is a longitudinal section of ditto taken in the line *x*, *x*, Fig. 1. Fig. 3 is a horizontal section of ditto taken in the line *z*, *z*, Fig. 1.

This invention relates to an improvement in that class of shingle machines, in which a reciprocating knife is used for riving the shingles from the bolt.

The invention consists in a novel means employed for feeding the bolt to the knife as hereinafter fully shown and described, whereby a simple automatic and positive feed movement is obtained.

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 at the front part of which two oblique or inclined posts *a*, *a*, are secured. These ports are parallel with each other and to their inner sides metal bars *b*, *b*, are attached, which bars form guides for a rhomboidal frame B, said frame being allowed to slide freely up and down between the parts *a*, *a*. In the frame B, a knife G, is secured, the cutting edge of which is slightly inclined from a horizontal line as shown clearly in Fig. 1. To the lower cross piece of the frame B, a lever D, is attached, the fulcrum *c*, of which is at the lower end of a link *d*, which is attached to one of the posts *a*.

On the upper part of the frame A, a bolt carriage E, is placed and secured thereto by means of flanches or lips *e*, *e*, which are of metal and secured to the under side of the carriage and fit under guide plates *f*, *f*, which are secured to the upper surfaces of bars *g*, *g*, which are placed longitudinally on the frame A, as shown clearly in Fig. 1.

To each end of the carriage E, a rack bar F, is attached by a pivot. These rack bars pass through guides *h*, *h*, on the frame A, and the racks are formed by oblique teeth *i*, at the under sides of the bars.

Into each rack bar F, a cam G, gears. These cams are formed of circular plates having each two spiral flanches *j*, *j*, formed on them at opposite points of their peripheries. These cams G, are placed on shafts H, H, which are secured in a frame I, the front end of which is fitted loosely in the front part of the frame A, the back end of frame I, is kept in an elevated state and the cams G, in gear with the rack bars F, in consequence of said frame being connected at each end by links *k*, *k*, with levers J, J, which are secured one at each side of the frame A, and have each a weight K, attached.

On the front end of each shaft H, a bevel pinion *l*, is placed, and these pinions gear into corresponding pinions *m*, *m*, which are secured to the ends of a shaft L, which is placed in the front part of the frame I, and has a ratchet M, placed on it.

N, is a lever which is secured by a fulcrum pin *n*, in the back part of the frame A. To the front end of this lever a pawl O, is attached. In the front part of the frame A a lever P, is secured by a fulcrum pin *o*. This lever passes through a guide *p*, attached to the under side of the frame I. To the carriage E, two sliding dogs Q, Q, are secured and operated or adjusted by a pinion *q*, and racks *r*, *r*, as shown clearly in Fig. 3.

The operation of the machine is as follows: The bolt shown in red outline, is placed on the bars *g*, *g*, and secured to the carriage E, by the dogs Q, Q, the carriage being drawn back to its fullest extent. The lever D, is then operated by any suitable application of power, so as to give an up and down movement to the knife frame B. Each time the frame B, descends, the knife C, cuts a shingle from the bolt and each time the frame B, ascends, the lever D, actuates the pawl lever N, and the pawl O, will turn the ratchet M, the distance of one tooth which is equivalent to one quarter of a revolution. This movement of the ratchet M, is communicated to the cams G, G, which are placed on their respective shafts H, H, in reverse positions, relatively with each other so that they will operate their respective rack bar F, F, alternately, it being recollected that the cams are provided each with only two flanches *j*, and consequently if the cams are placed in reverse position on their shafts and operated alternately, the carriage E, and bolt will be moved obliquely toward

the knife, the ends of the carriage and bolt being moved alternately and the shingles cut from the bolt in taper form.

It will be seen from the above description that the feed movement is perfectly automatic and positive. Each movement of the bolt will be equal, insuring a uniformity in the taper and thickness of the shingles. The carriage E, is moved back for the purpose of having a fresh bolt attached to it by depressing the back end of the frame I, and thereby throwing the cams G, out of gear with the rack bars F. This frame may be depressed at any time when it is desired to stop the feed movement.

I would remark that the flanches *e*, *e*, of the carriage E, are made of curved form at their edges to admit of the oblique adjustments of the carriage and that a supplemental knife *r*, may be attached to the frame B, for the purpose of edging the shingles, a yielding feed board S, being attached to the posts *a*, *a*, on which board S, the shingles are placed to be fed to the knife B, see more particularly Fig. 2.

I do not claim the rhomboidal reciprocating knife frame B, for that has been previously used in machines for riving or cutting shingles; but,

I do claim as new and desire to secure by Letters Patent,

The cams G, G, gearing into rack bars F, F, attached one to each end of the carriage E, said cams being fitted in a yielding or adjustable center poised frame I, and operated from the power lever D, through the medium of the pawl O, ratchet M, and gearing *l*, *m*, substantially as and for the purpose set forth.

FREEMAN GODFREY.

Witnesses:
JAS. VAN BUREN,
GEO. A. ROBINSON.