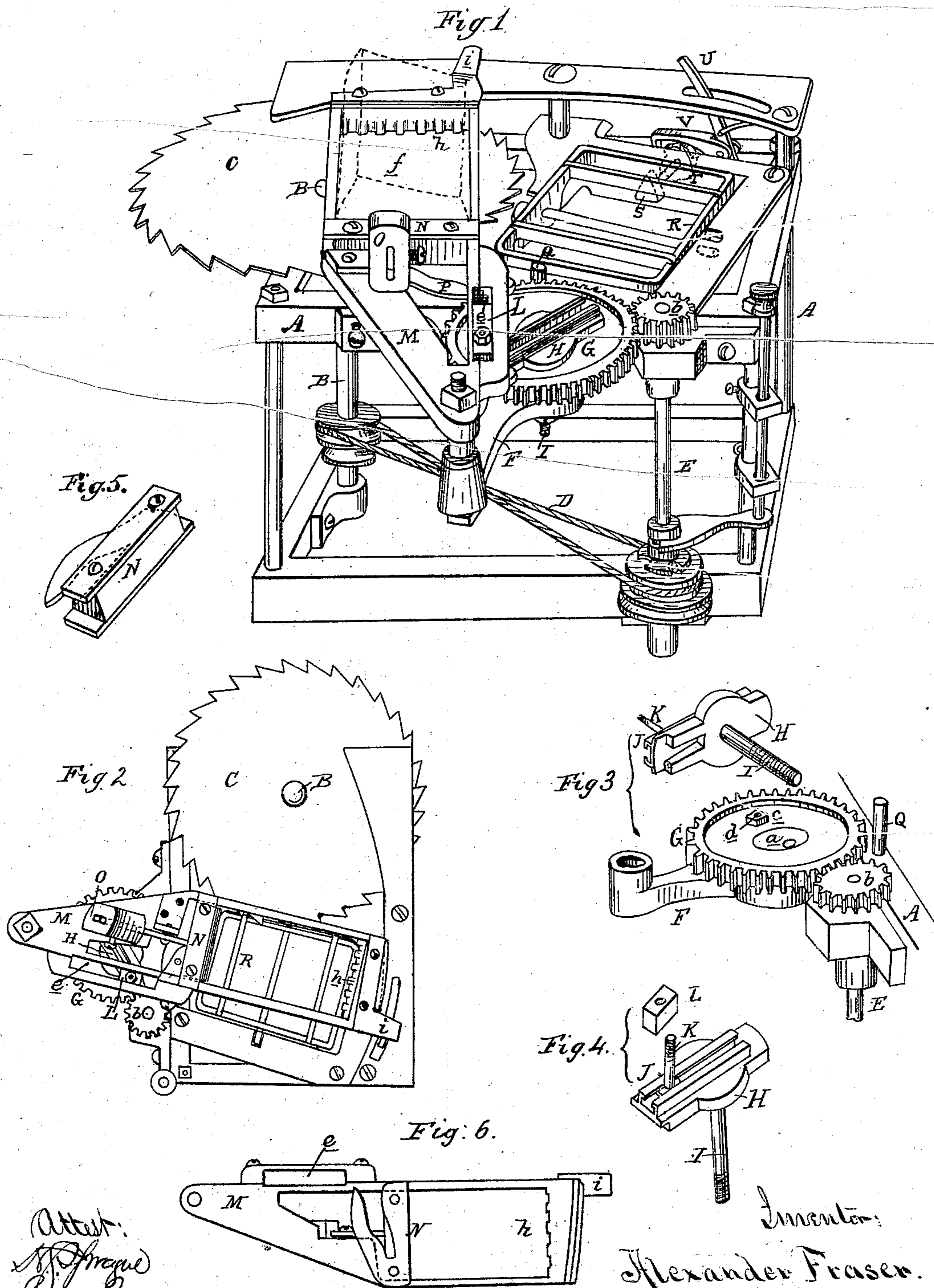


(No Model.)

A. FRASER.
SHINGLE MACHINE.

No. 270,297.

Patented Jan. 9, 1883.



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UNITED STATES PATENT OFFICE.

ALEXANDER FRASER, OF DETROIT, MICHIGAN.

SHINGLE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 270,297, dated January 9, 1883.

Application filed July 12, 1882. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER FRASER, of Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Shingle-Machines; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

The nature of this invention relates to certain new and useful improvements in the construction of shingle-cutting machines of that class wherein the shingles are sawed from a bolt held in an oscillating frame, which is automatically advanced and retracted to and from the saw; and the novelty consists in the construction and arrangement of parts, as will be more fully hereinafter set forth, and specifically pointed out in the claims.

Figure 1 is a perspective view. Fig. 2 is a top plan. Figs. 3 and 4 are detail perspectives of the adjustable or variable crank-pin. Fig. 5 is a detached perspective of the sliding dog employed for securing the bolt within the frame. Fig. 6 is a detail view of the oscillating frame.

In the accompanying drawings A represents a suitable frame, in one end of which is journaled in proper boxes the saw-arbor B, which carries the saw C. This saw is rotated by means of a belt, D, from the upright shaft E, journaled in proper bearings, as shown, and which in turn is driven from any convenient power.

F is an arm projecting from the side of the frame. From the upper face of this arm there rises a hub, *a*, Fig. 3, upon which is properly journaled the geared wheel G, which meshes with a pinion, *b*, upon the upper end of the shaft E, and by means of which it is rotated.

H is a slotted yoke or plate, eccentrically pivoted upon the upper face of the geared wheel G by means of the bolt I, which passes down through a hole in the hub *a* and is secured by a nut upon its lower end. This slotted plate engages with a nut, *c*, which is retained in its proper position by a pin, *d*, which rises from the face of the wheel G. This nut is designed to engage with the slotted yoke H, which latter has secured to its upper face the

slotted guide J, within which the crank-pin K has a reciprocating movement in the operation of the machine. This crank-pin K has sleeved upon it the block L, and is held in place by a proper nut. This block L engages with a slot, *e*, in the oscillating bolt-frame M, which is properly journaled or sleeved upon a bolt rising from the outer end of the arm F.

In the free end of the bolt-frame M is formed a recess, *f*, for the reception of the bolt from which the shingles are to be cut. The outer end of the frame M, and upon the inner face of the girt, which forms one end of the recess in which the bolt is secured, I serrate or roughen, as at *h*, Fig. 2, so that the bolt will be securely held to place while being operated upon. In the opposite end of this recess I secure a sliding dog, N, Fig. 5, which engages with the end of the bolt and is held in contact therewith by the weighted lever O. A cam-arm, P, projecting rearward from the dog N, in the retrograde movement of the frame engages with a stud, Q, rising from the frame, which retracts the dog N from its engagement with the bolt and allows the latter to drop upon the table, preparatory to cutting another shingle.

R represents a tilting table, eccentrically journaled in proper bearings in the frame, so that the longer or heavier end of such table will rest upon the triangular cam S, which is rigidly secured upon one end of a short shaft, properly journaled in the frame, the opposite end of said shaft carrying a ratchet-wheel, T. In the operation of the device an arm, *i*, strikes against the end of a lever, U, projecting above the frame, and which carries a dog, V, which engages with the ratchet-wheel T and intermittently rotates the shaft to which it is secured, causing the triangular cam to present a point and flat surface of its face alternately as a rest for the table R while in the forward movement; or as soon as the lever U is released by the arm *i* a proper spring causes the lever to assume its original position, and by this arrangement the bolt is presented to the saw in such a manner the shingles are cut therefrom with points and butts from alternate ends of the bolt.

It will be seen that by the peculiar construction and application of the crank-pin for gov-

erning the movements of the oscillating frame it is caused to travel toward the saw with a gradually-decreasing speed, but that in the retrograde movement of such frame its speed
5 gradually increases to the completion of its rearward stroke.

The mechanical movement which accrues from the arrangement of the pin I, set eccentrically in the hole *a*, the yoke H, and the pin K
10 in their relation to the frame M, is not sought to be covered in this application, as it is designed to make such the subject-matter of a separate application.

What I claim as my invention is—

15 1. In a shingle-machine, and in combination with the revolving gear-wheel and the oscillating frame which carries the bolt from which the shingles are cut, and which is provided with the slot *e*, the slotted yoke H, having
20 bolt I, adapted to operate eccentrically with the main gear-wheel, and guide J, and nut *c*, and the reciprocating crank-pin K, and block L, whereby the oscillating frame is given motions of variable speed in either direction, as
25 set forth.

2. The combination of the arm F and the oscillating frame M and gear-wheel G, centered thereon, of the power-pinion *b*, the slotted yoke H, having guide J, the reciprocating eccentric pin K and block L, operating in the slot *e*, the
30 bolt-box *f*, and means for automatically releasing the bolt and automatically grasping it again in different positions, as set forth.

3. The frame M, having differential motions, the bolt-box *f*, having roughened end *h*, combined with sliding dog N, having a cam-arm, P, the stud Q for releasing the bolt, and
35 means, substantially as described, for tilting the bolt in alternate directions before it is again grasped for another action, as set forth. 40

4. The tilting table R, triangular cam S, upon which the heavier end of the table R rests, ratchet T, lever U, pawl V, and arm I, combined with the frame M, dog N, cam-arm P, and stud Q, as and for the purposes set forth. 45

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Witnesses:

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