W. D. JOHNSON.

Barrel-Hoop Cutting-Machine.

No. 203,162. Patented April 30, 1878.

Fig. 1.

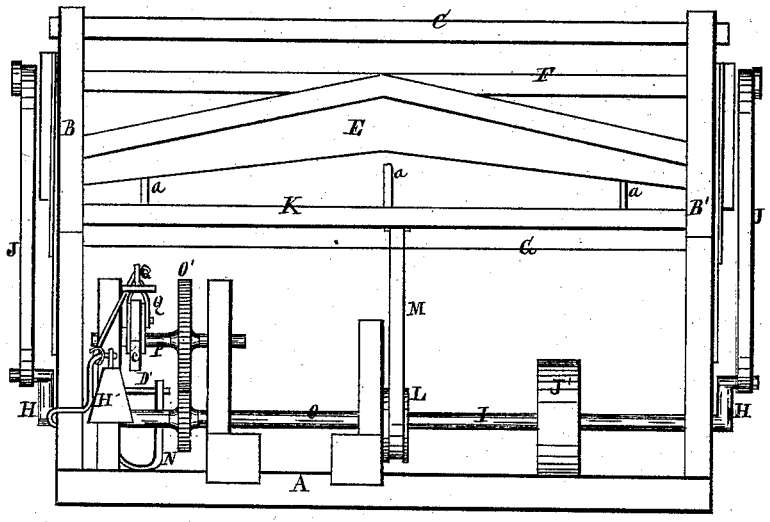


Fig. 2.

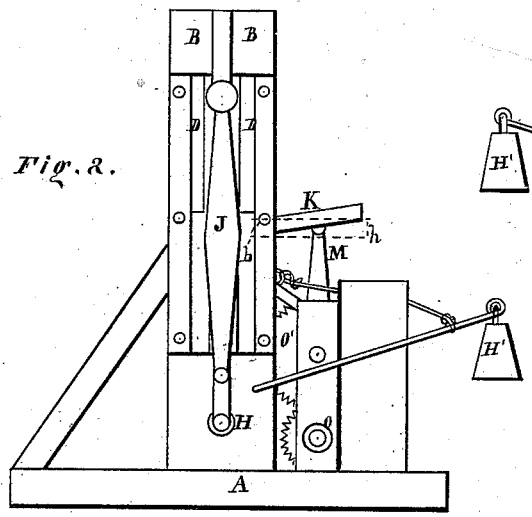


Fig. 3.

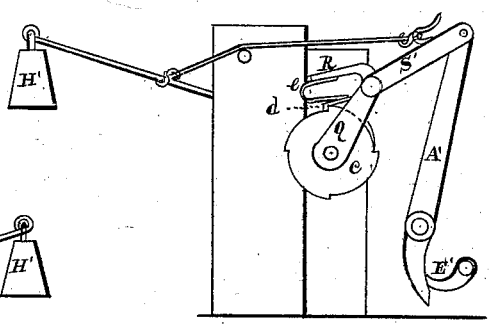
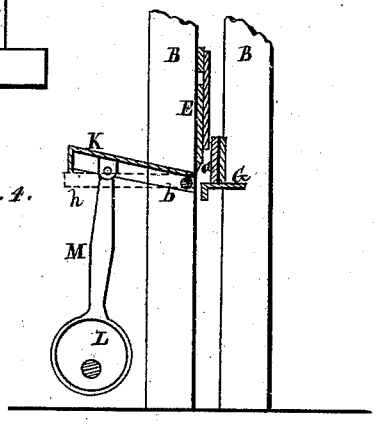


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM D. JOHNSON, OF ELMORE, OHIO, ASSIGNOR OF ONE-HALF HIS RIGHT TO LEWIS FREESE, OF SAME PLACE.

IMPROVEMENT IN BARREL-HOOP-CUTTING MACHINES.

Specification forming part of Letters Patent No. **203,162**, dated April 30, 1878; application filed January 21, 1878.

To all whom it may concern:

Be it known that I, WILLIAM D. JOHNSON, of Elmore, in the county of Ottawa and State of Ohio, have invented new and useful Improvements in Machines for Cutting Barrel-Hoops, of which the following is a description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side elevation of the machine. Fig. 2 is an end elevation. Figs. 3 and 4 are detached sections.

Like letters of reference refer to like parts in the several views.

The nature of this invention relates to a machine for cutting barrel-hoops from a piece of timber or plank, so that there may be a bevel on said hoops, in order that they may fit the bilge of the barrel. The machine referred to is constructed and operated substantially as follows:

In the drawings, A represents a frame, on each end of which are standards B B′, connected to each other by a beam, C.

On the outer side of said standards are secured guides or ways D. Between the said standards is arranged a shear, E, Fig. 1. The ends thereof are attached to and slide in the guides or ways D, referred to, as will be seen in the drawing. Said shear is secured in a frame of which F is the upper bar, and G the lower one. A vertical reciprocating movement is obtained to the frame and shear by a crank or cranks, H, Fig. 1, terminating the ends of the shaft I, journaled in the standards, and to which the shear-frame is connected by pitmen J. Motion is given to the shaft by a pulley or drum, J′.

The lower bar G of the shear-frame forms a gage, against the studs *a* of which the edge of the plank is pushed under the shear, as hereinafter shown.

K is a table or bed whereon the plank for being cut is laid. The inner edge of the table or bed is hinged or pivoted in the standards at the points *b*, Figs. 2 and 4, thereby allowing the outer edge or side of the table to vibrate, said vibration being effected by means of an eccentric, L, to which it is connected by a pitman, M. Motion is given to the eccentric by a pinion, N, on the shaft O, Fig. 2, carrying the eccentric, said pinion being made to engage the wheel O′, as shown in Fig. 1.

It will be observed that the inner or pivoted edge of the bed or table K lies near to and parallel to the shear; hence between the edge of the bed and the shear there is no variation, in respect to distance, in consequence of the vibration or tilting of the bed.

The bed is vibrated at certain and regular intervals of time by the following device: On the shaft P, Fig. 1, carrying the wheel O′, is secured a ratchet-wheel, *c*, Fig. 3, of which *d* is the click or pawl, pivoted in the arms Q, and which is held in contact with the wheel by a spring, *e*, attached to the end of the arm R. To the arms Q is pivoted a link, S′, the upper end of which is attached to the lever A′, secured to a shaft, D′, Fig. 1. Said lever is actuated by a cam, E′, Fig. 3, for operating the ratchet-wheel, for the purpose aforesaid.

The practical operation of the machine is as follows: A plank of the proper length for a hoop is laid upon the bed or table K, the shear at this time being raised above the bed, as shown in Fig. 1, under which the edge of the plank is pushed to the studs *a a*, which gages the thickness for the hoop. The table at this time being tilted or raised to an incline, as shown in Fig. 2, by means of the eccentric referred to, as the shear descends a strip is thereby cut off from the edge of the plank, one edge of which will be thicker than the other by virtue of the inclined position of the table. A continued movement of the machine again elevates the shear, as shown in Fig. 1. By the time the shear attains this elevation, the eccentric has been turned half-way around, which will bring the table to a horizontal position, as indicated by the dotted line *h*, by means of the pawl and ratchet-wheel, actuated in due time by the cam E and lever A′, above described. The plank is now pushed horizontally under the shear to the gage *a a*, as before. The shear again descends and cuts a strip from the plank, which will be beveled on one side, having one edge the thickest, by virtue of the first cut being made at an angle obliquely to the surface of the plank, and the second cut having been made at a right angle therewith.

The second strip or hoop having been cut, the shear is again elevated, as before, during which time the eccentric has again been turned a half-revolution, or to the position shown in Fig. 2. The plank is again pushed forward under the shear, and a strip or hoop cut therefrom, which will also be the thickest on one edge, in consequence of the oblique angle of the table; and so on to the end, first an oblique cut and then a square one, as the table may be tilted alternately from an oblique position to a horizontal one, by the operation of the ratchet-wheel and pawl aforesaid. The reverse action of the pawl is accomplished by the weight H′, attached thereto as shown in the drawing, or by any other suitable device.

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

1. An improvement in hoop-cutting machines, consisting of the reciprocating angular knife E, gage-bar G, connected to and acting in concert with said knife, in combination with the vibrating table K, pitman M, and eccentric L, constructed and arranged to operate conjointly, substantially as and for the purpose set forth.

2. The ratchet-wheel and pawl *c d*, gearing N O′, eccentric L, and pitman, arranged, in relation to and in combination with the table K, in the manner substantially as described, and for the purpose specified.

3. The combination of the cam E′, lever A′, links S′, arms Q, ratchet-wheel and pawl *c d*, gearing N O′, eccentric L, pitman M, and table K, substantially as herein described, and for the purpose set forth.

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Witnesses:

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