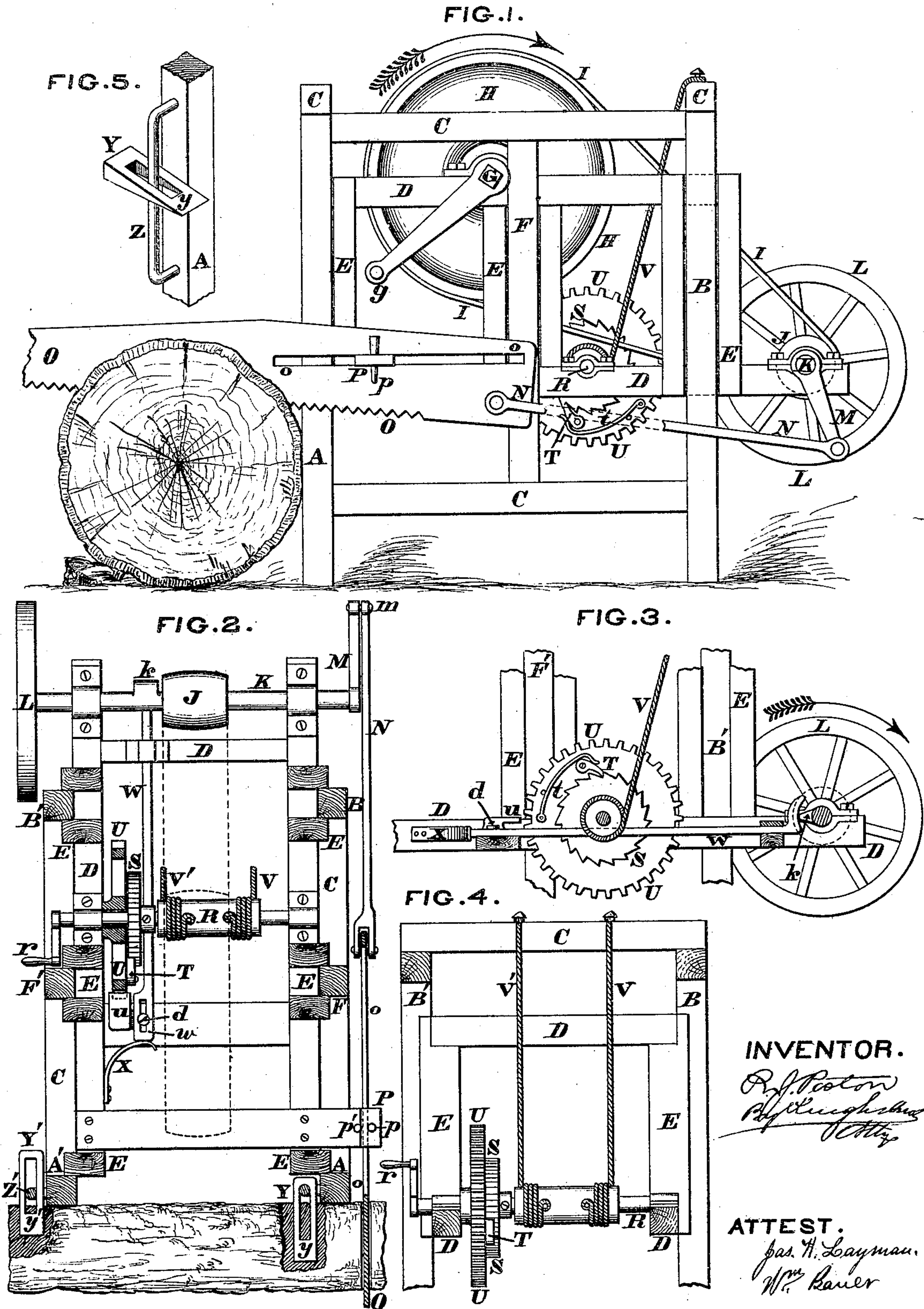


*R. J. Foster,*  
*Sawing Machine.*  
*No. 102343.      Patented Nov. 15. 1870.*



INVENTOR.

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*Att'y*

ATTEST.

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# United States Patent Office.

RICHARD J. POSTON, OF MAINVILLE, OHIO.

Letters Patent No. 109,343, dated November 15, 1870.

## IMPROVEMENT IN SAWING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

I, RICHARD J. POSTON, of Mainville, Warren county, Ohio, have invented certain new and useful Improvements in Sawing-Machines, of which the following is a specification.

### *Nature and Objects of the Invention.*

This invention relates to the class of portable sawing-machines that are capable of being moved from place to place for sawing up felled timber into suitable lengths for cord-wood, mill purposes, &c.; and

The first part of my improvement consists in a ratchet-feed, for permitting the descent at proper intervals of a gravitating frame which carries the saw and other operative parts of the machine, the lowering of said frame being necessary in order that the saw may penetrate the log.

The second part of my improvement relates to a peculiar dog for attaching the machine to the log which is to be sawn.

### *General Description with Reference to the Drawing.*

Figure 1 is a side elevation of a sawing-machine embodying my improvements, a portion of the pitman and saw being broken away;

Figure 2 is a horizontal section of the same in the plane of the saw;

Figure 3 is an elevation of the ratchet-feed and its accessories;

Figure 4 is a vertical section through the ratchet-feed; and

Figure 5 is a perspective view of one of the dogs and its accessories.

The main frame of the machine consists of four vertical posts, A A', B B', which are secured together by horizontal beams C; and fitted within the main frame is the secondary or gravitating one, D, which is confined to a vertical path by guide-blocks E, that embrace the sides of posts A A', B B', and also of the inner posts F F'.

Journaled athwart the upper part of this gravitating-frame D is the driving-shaft G, which carries a large pulley, H, from which proceeds a belt, I, to the small pulley J, which latter is secured to the counter-shaft K.

Either or both ends of the driving-shaft G may be furnished with cranks g, with which to rotate it.

The counter-shaft K is provided, at one end, with a fly-wheel, L, and at the other with an arm or crank, M, to whose wrist-pin, m, is connected one end of the pitman N, which imparts a reciprocating motion to the saw O.

The saw is confined to a proper path by an elongated bearing, P, which projects from the gravitating-frame, and this bearing passes through the longitudinal slot o of the saw.

This slot is not made parallel with the cutting edge of the saw, but is oblique thereto, as shown in fig. 1, which arrangement of slot imparts such an action to the saw as to insure it being cleaned of dust at every stroke.

The saw is confined to its bearing P by means of pins p p'.

The gravitating-frame D is lowered a suitable distance, so as to permit the saw penetrating the log, by the following arrangement of devices:

Journaled within said frame is a shaft, R, to which is securely attached a ratchet-wheel, S, whose retaining-pawl T and spring t are fastened to a toothed wheel, U, that revolves upon said shaft.

Attached by their lower ends to the shaft R, or to a drum thereon, are two ropes or chains, V V', whose upper ends are secured to one of the horizontal beams C of the main frame.

When the shaft R is rotated by its winch r, so as to wind the ropes or chains upon said shaft or its drum, the gravitating-frame is elevated, as shown in fig. 1.

The descent of the frame is permitted at proper intervals of time in the following manner:

The toothed wheel U has engaged with it a detent, u, which projects from a rod, W, whose inner end is slotted at u', for the reception of a guiding-pin or bolt, d, while the outer end of said rod is maintained in contact with the counter-shaft K, or its eccentric k, by a spring, X.

As soon as the rotation of shaft K brings its cam k in contact with the end of rod W, the latter is forced back so as to momentarily disengage its detent u from the wheel U, and thereby permit the rotation of shaft R in such a manner as to uncoil the ropes V V' and permit the descent of the gravitating-frame D.

When the eccentric has escaped from the rod W, the latter instantly resumes its original position and causes the detent u to be again engaged with the toothed wheel, and thus arrests its further rotation.

The dogs Y Y', with which the machine is attached to the log to be sawn, are of the represented wedge-shape shown in fig. 5; and they are furnished with slots y, that are traversed by rods Z Z', which project from posts A A' of the main frame.

These dogs are to be driven in until the log is brought up securely against the posts A A', and the shoulder toward the thick end of the slots impinge against the bars Z Z'.

The method of attachment is represented in fig. 2, in which one of the dogs Y is shown driven home, and the other dog, Y', as in the act of being inserted in the log.

The operation is as follows:

The driving-wheel H, being rotated by winches g,



imparts a rapid reciprocating movement of saw O through medium of belt I, pulley J, shaft K, arm M, and pitman N, as shown in fig. 1.

At each revolution of the shaft K its cam *k* forces back the rod W, causing its detent *u* to be momentarily disengaged from the teeth of wheel U, thereby permitting the rotation of shaft R, so as to uncoil the ropes V V' and allow the gravitating-frame D to descend.

The rod W is maintained in its retracted position only during the time the cam *k* is impinging against its outer end, but the moment said cam has escaped from the rod the latter is instantly restored to its original position by spring X, by which act the detent *u* is again engaged with the teeth of wheel U, and the rotation of said wheel is thereby arrested.

The object of the alternate engagement and disengagement of this detent with the toothed wheel is to permit the gradual descent of the gravitating-frame D, so as to feed the saw into the log as rapidly as the latter is sawn.

The feed-movement of the gravitating-frame can be arranged in such a manner as to allow said frame to descend with greater or less rapidity, so as to be exactly adjusted for any kind of saw or lumber.

A sufficient length of rope should be wound upon the shaft R to permit the lowering of the frame D until the log is sawed completely into, and the rope

can be coiled upon said shaft, and the frame elevated while the machine is being shifted to a new position for the purpose of severing said log at another place.

The ropes V V' and drum R may be omitted and a rack and pinion movement substituted for operating the gravitating-frame.

#### Claims.

I claim herein as my invention—

1. The combination, substantially as described, of the main frame A A', B B', C, gravitating-frame D, shaft G *g*, driving-pulley H, belt I, pulley J, shaft K *k*, fly-wheel L, arm M, pitman N, reciprocating saw O, and feed movement R S T *t*, U *u* V V', W X, for the object stated.

2. The combination of the gravitating-frame D, reciprocating and obliquely-slotted saw O *o*, and the elongated bearing P, which latter is attached to said gravitating-frame in the manner herein explained.

3. In combination with the main frame A of a sawing-machine, the slotted and wedge-shaped dog Y *y*, and guide-bar Z, for the object herein explained.

In testimony of which invention I hereunto set my hand.

RICHARD J. POSTON.

Witnesses:

WM. BAUER,

JAMES H. LAYMAN.