

S. R. SMITH.

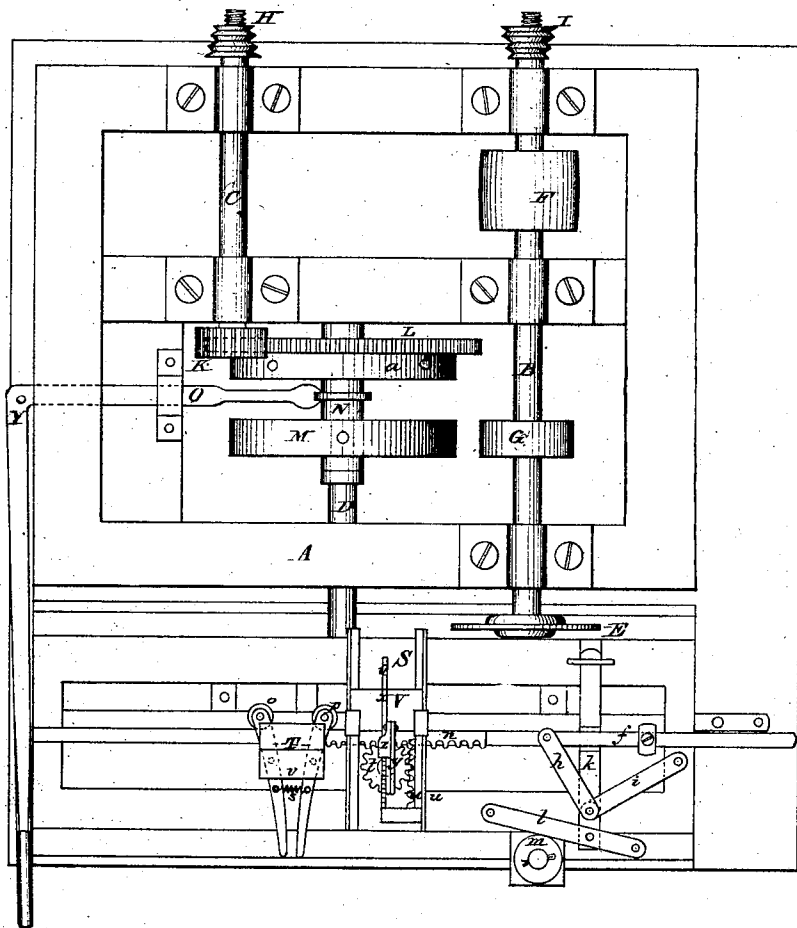
METHOD OF FEEDING LUMBER Laterally IN SAWING MACHINES.

No. 16,454.

PATENTED JAN. 20, 1857.

2 SHEETS—SHEET 1.

Fig. 1.



Taken from Reissue Drawing

Only Drawing Accessible (1912)

Witnesses:

F. C. Orecht.
Phil T. Dodge

Inventor:

S. R. Smith
by Dodge & Munroe
his atty

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2 SHEETS—SHEET 2.

Fig. 2.

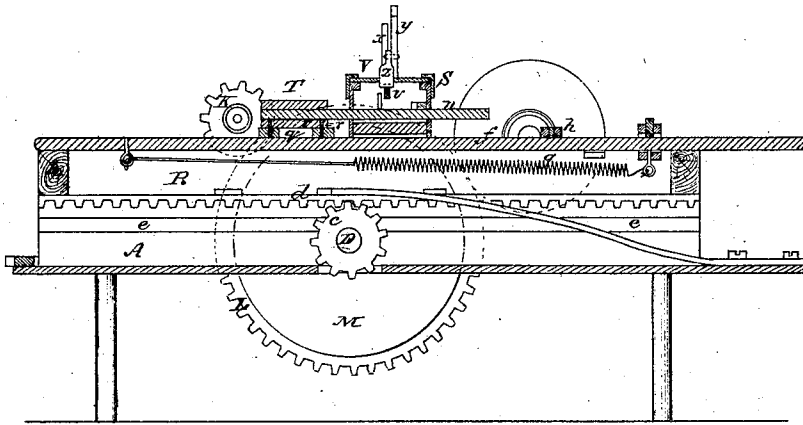
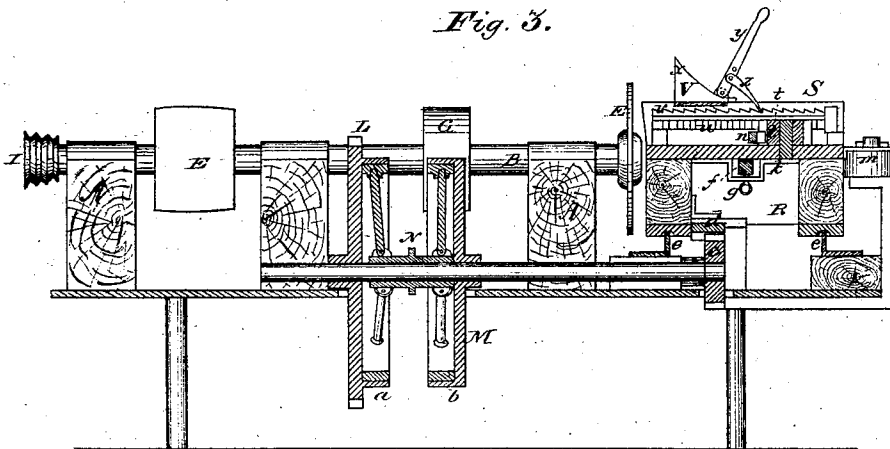


Fig. 3.



Taken from Reissue Drawing

Only Drawing Accessible (1912)

Witnesses:

J. C. Brecht.

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Inventor:

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UNITED STATES PATENT OFFICE.

SAMUEL R. SMITH, OF FLORENCE, MASSACHUSETTS.

IMPROVED METHOD OF FEEDING LUMBER LATERALLY IN SAWING-MACHINES.

Specification forming part of Letters Patent No. 16,451, dated January 20, 1857.

To all whom it may concern:

Be it known that I, SAMUEL R. SMITH, of Florence, in the county of Hampshire and State of Massachusetts, have invented a new and useful Mechanism for Feeding a Log Laterally During the Operation of Sawing it into Boards or Lumber; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—

Figure 1 is a top view of my said mechanism as applied to the sawing machinery and carriage of a saw-mill. Fig. 2 is a longitudinal and vertical section of the same, taken through the toggle slide-bar, to be hereinafter described. Fig. 3 is a vertical and transverse section taken through the log-presser *x* and the third shaft, D, and its clutch mechanism.

In the drawings, A exhibits a frame for sustaining the three shafts B C D, on the inner end of one of which—viz., that marked B—a circular saw, E, is affixed, the said shaft also carrying two pulleys, F and G, disposed on it, as shown in Fig. 1.

On the two outer ends of the two shafts B C are cone-pulleys H I, around which a band may pass to convey motion from said shaft to the second shaft, C. A pinion, K, carried by the said shaft C, engages with a gear-wheel, L, which runs loosely on the third shaft, D, and has a friction-annulus, *a*, extended from its side. Another wheel, M, having a friction-annulus, *b*, is also placed on the shaft D, and runs loosely on it, three wheels being alternately clutched to the shaft by a friction-clutch, N, which is moved by a bent lever, *o*, which turns upon a fulcrum at P, and is arranged as shown in the drawings. An endless belt should run around the wheel M and pulley G. On its outer end the third shaft, D, carries a pinion, *c*, which engages with a rack, *d*, affixed to the under side of a carriage, R, disposed by the side of the frame A, and serving to sustain the mechanism by which the log is supported and moved laterally. This carriage moves longitudinally on parallel ways or rails *e e*, and supports a frame, S, on which the log, at or near one end of it, is laid or made to rest while being sawed. It is to be understood that the other end of the log is to be supported by similar means applied to the carriage R, and it is to be moved laterally by mechanism applied to it, and similar to that which is em-

ployed for moving the first-mentioned end of it laterally.

As my invention relates to the mechanism used to effect the lateral movement of one end of the log, and as each end of it is to be moved by similar mechanism, it will be sufficient to describe that which is applied to set in movement one end of it.

Extending along on the upper part of and from end to end of the carriage R, and underneath the frame S, is a slide-bar, *f*, which slides freely in a longitudinal direction and is drawn one way by a spring, *g*, applied to it and the carriage R, and arranged as shown in Figs. 2 and 3. To this slide-bar *f* one of a pair of toggles, *h i*, is jointed, the other toggle being jointed to the top of the frame R, while at their common joint the two toggles are connected with a transverse slide-bar, *k*, jointed to a lever, *l*, arranged as shown in Fig. 1, the outer edge of such lever being drawn against the periphery of a standard or friction roller, *m*, fixed in position (except being capable of rotating on its axis) and disposed as seen in Figs. 1 and 3.

Over and parallel with the bar *f* is a rack, *n*, which slides transversely through the frame S and projects from a locking and detaching or catch apparatus, (shown at T.) This latter consists of one or two eccentrics, *o p*, and a fixed stud, *q*. (See Figs. 1 and 3.) Each of the eccentrics is carried by one of two levers, which turn on fulcra extended from a block, *r*, from which the rack *n* projects. The tails of these levers are connected by a spring, *s*. From the block *r* the stud *q* extends downward, as seen in Fig. 3, the slide-bar *f* resting against the side of such stud. A pinion, *t*, within the frame S engages with the rack *n*, and also with another rack, *u*, which slides longitudinally in the frame S and carries another rack, *v*, extending along directly underneath a sliding carriage, V, which is supported and moves on the frame S. A presser or shoulder, *x*, projects upward from the carriage V, the log, when placed on the frame S, resting against the vertical inner edge of such shoulder. A lever, *y*, carrying a pawl, *z*, is jointed to the rear end of the carriage V, the said pawl acting in the rack *v* so as to engage the carriage and rack in such manner that the forward movement of the former may be produced by that of the latter. During the reciprocating rectilinear

movements of the carriage R the saw will be caused to pass through the log and from one end to the other of it, and the log will be retracted far enough to enable it to be moved laterally to the extent sufficient to permit the saw again to pass through it while the log is again moved forward. During the backward movement of the carriage R the lever *l* will be forced against the roller *m*. This will move the toggles so as to cause them to move the slide-bar *f*. This bar, in moving backward, will so move the eccentrics on their axes as to be clutched to the rack *n* and produce a back movement of said rack. This rack will of course turn the pinion *t*, which in its turn will move the rack *u*, whereby a forward movement of the carriage V will take place and the log will be moved laterally to the extent required. During the next forward movement of the carriage R the spring *g* will draw the slide-bar *f* forward and release it from the catch mechanism T.

The carriage R may have suitable studs, projections, or devices by which, just before it may have completed its movement in either direction longitudinally, it will so act on the lever O of the clutch N as not only to arrest the operation of the mechanism by which it may have been moved, but to set in operation that mechanism used to move it in the opposite direction.

In consequence of the manner in which the

carriage V is connected with the rack by which it is moved, the lateral adjustment of the log may be effected at any time by an attendant, who, simply by laying hold of the pawl-lever *y* and pulling upon it so as to force the pawl down upon its rack, may move the log. A mechanism for so adjusting the log is found to operate to good advantage.

What I claim is—

1. The combination of mechanism by which the lateral adjustment of the log is effected, as described, such consisting of the spring *g*, the stationary bearing-roller *m*, or its equivalent, the lever *l*, the toggles *h i*, the slide-bar *f*, the catch mechanism T, the pinion *t*, and the rack or racks applied to the carriage V, substantially as described, the whole being arranged and operating together essentially as specified.

2. Making the carriage or head-block V movable independently of the ways or frame on which it is supported, and combining with said carriage and its movable rack a lever and pawl or an equivalent device, whereby said carriage may be moved toward the saw by the hand of an attendant applied to the said lever.

In testimony whereof I have hereunto set my signature this 1st day of December, A. D. 1856.

SAMUEL R. SMITH.

Witnesses:

R. H. EDDY,
F. P. HALE, Jr.