A. McFarland,

Drag Saw.

No. 52,434. Patented Feb. 6, 1866.

Fig: 4.

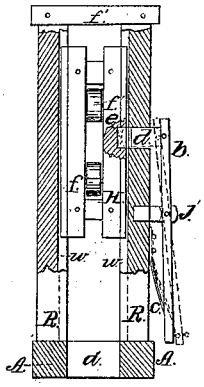


Fig: 2.

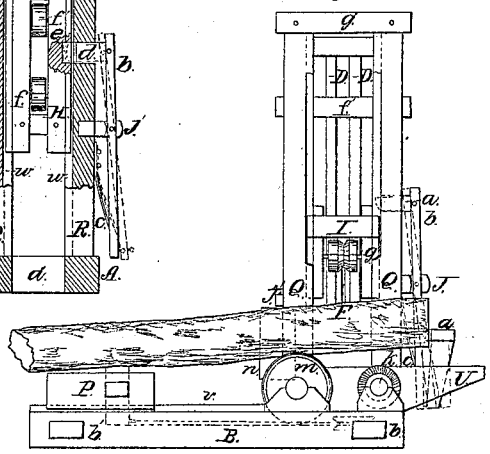


Fig: 3.

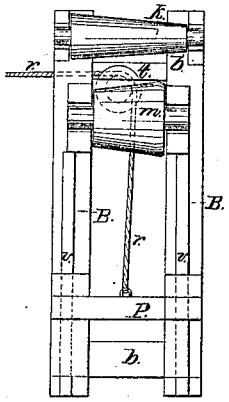
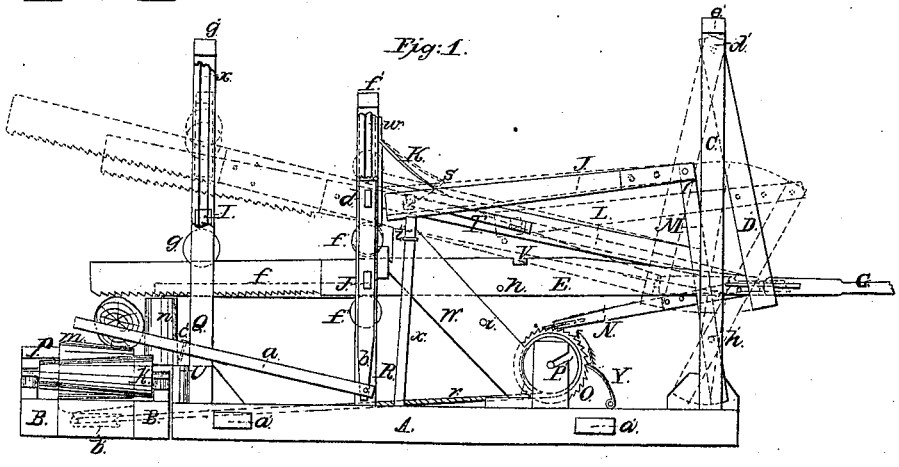


Fig: 1.



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UNITED STATES PATENT OFFICE.

ANDREW McFARLAND, OF ST. JOHNSBURY, VERMONT.

IMPROVEMENT IN SAWING-MACHINES.

Specification forming part of Letters Patent No. **52,434**, dated February 6, 1866.

To all whom it may concern:

Be it known that I, ANDREW McFARLAND, of St. Johnsbury, in the county of Caledonia and State of Vermont, have invented a new and useful Improvement in Drag-Sawing Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, and letters of reference marked thereon.

Same letters of reference indicate corresponding parts in each of the several figures.

Figure 1 is a side elevation of the machine and end view of log-carriage and bed-frame supporting a log. Fig. 2 is an end view of machine and side view of log-carriage and bed-frame supporting a log in position to be sawed. Fig. 3 is a top view of log-carriage, bed-frame, and rollers. Fig. 4 is a part end and part sectional view of machine.

A A are sills of machine. *a' a'* are cross-sills. C C are two posts or standards situated at back or rear end of machine. *k'* is a cross-timber situated between standards C C and working in bearings *d'*, near top of said standards. Attached to and suspended from the cross-timber *k'* are two parallel bars, D D.

E is the saw-beam, one end of which is attached to the lower end of said parallel bars and connecting-rod G. To the other end of said saw-beam is attached the saw F.

H is a frame carrying two pulleys, *f f*, one of which works on top, and the other at the bottom, of the saw-beam. Said pulley-frame is situated between and works in grooves *w w*, on the inner surfaces of the standards R R.

Q Q are two standards, situated near forward end of machine, furnished with grooves *x x* on their inner surfaces.

I is a frame carrying a grooved pulley, *g*. Said frame, with its pulley, works up and down in the grooves *x x*. Said pulley, with its frame, rests on the top or back edge of the saw.

B B are sills or bed-frame to log-carriage, situated at forward end of machine and at right angles with the same. A portion of said bed-frame is furnished with a track or rails, *v v*, on which the log-carriage *p* moves.

m is a tapering roller placed at right angles with the track of log-carriage, and situated near the saw. The object of said roller is to support the log while being sawed, the top surface lying in an inclined plane, which causes the log to roll down and rest against the vertical roller *n*, situated near the small end of roller *m* and back side of bed-frame.

k is a small tapering roller placed across the bed-frame near the end so as to allow the saw to work between the two. The large end of the small roller is on back side of bed-frame. The top surface of said roller is lower than the one supporting the log. The use of the small tapering roller is to allow the block that has been sawed from the log to fall onto it and roll off of the machine out of the way.

r is a cord for drawing the carriage and log toward the saw. One end of said cord is attached to the log-carriage. The other end of said cord is passed partially round the grooved pulley *t*, situated below the roller *m* at a point near the center of sawing-machine, thence through the back sill of bed-frame to ratchet-wheel shaft P, and attached to the same.

b is a vertical lever placed on outside of the standard R and pivoted near the center of its length to the stud *j*. The upper end of said lever has a projection, *d*, extending through the standard R, as shown in Fig. 4.

a is a lever on outside and near forward end of machine. Said lever rests on and is pivoted to the cross-timber U, resting on sills and projecting outside of machine. The upper end of said lever extends forward and past the end of the log resting on log-carriage. The lower end of the lever *a* is attached to the lower end of lever *b*.

c is a spring attached to the outside of standard R, and operates on lower end and on inside of the lever *b*.

W is an inclined elevator, its under edge working in bearings at each end. The upper bearing is attached to standard R and the lower bearing to the sill of machine. The elevator has a pin, *i*, projecting on back side and below saw-beam. *h* is a pin projecting from side of saw-beam near lower edge toward elevator. The object of said elevator is to raise the saw-beam, with its saw, to the position represented in red in Fig. 1 by allowing the pin *h*, inside of saw-beam, to slide upon the upper edge of said elevator.

M is a vibrating lever attached to back standard, C, on inside and near the sills of machine by the pin *h'*.

N is a feed arm or finger attached to vi-

brating lever and working in teeth of ratchet-wheel O.

J is a connecting-bar, one end of which is connected with the upper end of vibrating lever, and the other end of said connecting-bar carries a pin, S, which passes through and projects from both sides of said bar. The projection on back side of bar works in slot T in the girt L. The projection on inside of bar works in the notch V on upper edge of saw-beam, when said saw-beam is raised, as represented in Fig. 1.

One end of the girt L is attached to the standard C by a pin. The forward or upper end works in a slot or mortise on side of standard R.

K is a spring attached to standard R and working on top edge of girt L.

The operation of the machine is as follows: After a log has been placed in position to be sawed, as shown in Figs. 1 and 2, and the connecting-rod G attached to a crank-shaft of any convenient power, a reciprocating motion would be communicated to the saw F and beam E. After the saw has cut through the log the block that has been sawed off drops onto the tapering roller *k* and rolls off out of the way. At the same time the saw F and saw-beam E are arrested in their fall by the pin *i*, on inside of elevator W, which causes the elevator to cant in its bearings toward the saw-beam. In the next forward motion of saw-beam the pin *h* strikes the upper edge of the elevator and passes up the same, carrying the saw-beam, with its saw and the pulley-frames H and I to the position shown in Fig. 1, and they are held in their elevated position by means of the spring *c* forcing the projection *d* on upper end of vertical lever *b* into the notch *e* in edge of pulley-frame H, as shown in Fig. 4. While the saw-beam is passing up on the edge of elevator the top edge of said saw-beam strikes the projecting pin S and slides along until said pin is made to catch into the notch V in top edge of saw-beam by means of the spring K operating on top edge of slotted girt L. Motion is thereby communicated to the connecting-bar J, vibrating lever M, feed arm or finger N, and ratchet-wheel O, with its shaft P, as shown in blue in Fig. 1. During said motions the cord *r* is wound around the shaft P, thereby causing the log-carriage *p*, with its log, to be drawn along until the end of the log strikes the end of lever *a*, causing it to swing on its pin *c'*, communicating its motion to the lower end of vertical lever *b*, thereby causing the stud or projection *d* on top end of said lever to be removed from the notch *e* in edge of pulley-frame H, when the saw F, with its beam E, pulley-frames H and I, are allowed to fall. At the same time the feed-motion stops and the sawing operation is repeated.

The nature of my invention consists in the peculiar construction of a machine for operating drag-saws that will raise the saw while the log intended to be sawed is being moved along on its carriage, and will drop the saw and stop the feed-works when the log has been moved along the required distance. Its advantages over other machines intended to do similar work consist in being able to perform more work in the same time with less labor and expense.

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

1. The inclined elevator W, with its pin *i* and spring X, constructed and arranged substantially as described, in combination with the saw-beam E, and the pin *h*, or its equivalent, on the side thereof, for the purpose herein set forth.

2. The arrangement and combination of the catch-notch *e* and stop *d*, or their equivalents, for holding up the pulley-frame H, connected, by means of the spring-levers *a b*, or their equivalents, with the log-carriage in such a manner that the log will, at the proper time, automatically release the pulley-frame and allow it to descend with the saw, as herein specified.

3. The notch V, or its equivalent, in the upper edge of the saw-beam, in combination with the pin S, slotted girt L, connecting-bar J, vibrating lever M, feed-arm N, and ratchet-wheel O, on the shaft P of the winding-up pulley, substantially as described, whereby the log-carriage is drawn along by the reciprocations of the saw-beam when elevated, substantially as herein set forth.

4. The roller *k*, inclined or tapering outward, and arranged in the frame lower than the roller *m*, substantially as and for the purpose herein set forth.

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