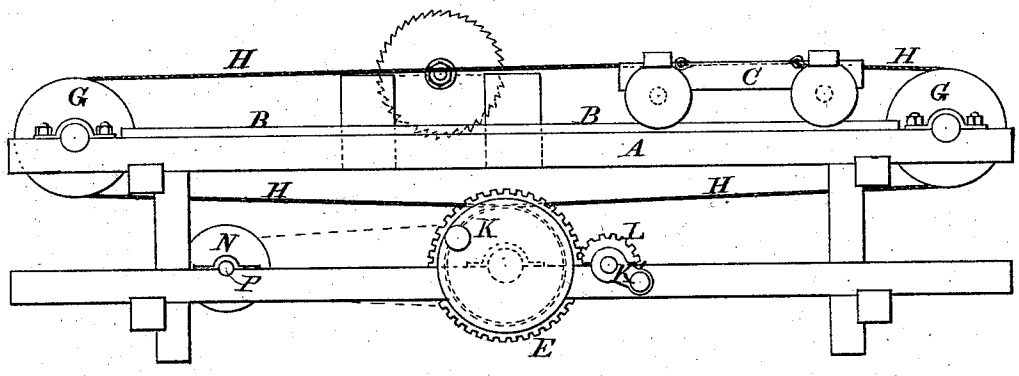
W. LAMB.

Log-Carriage Gear for Saw-Mills.

No. 203,467. Patented May 7, 1878.

*Fig. 1.*



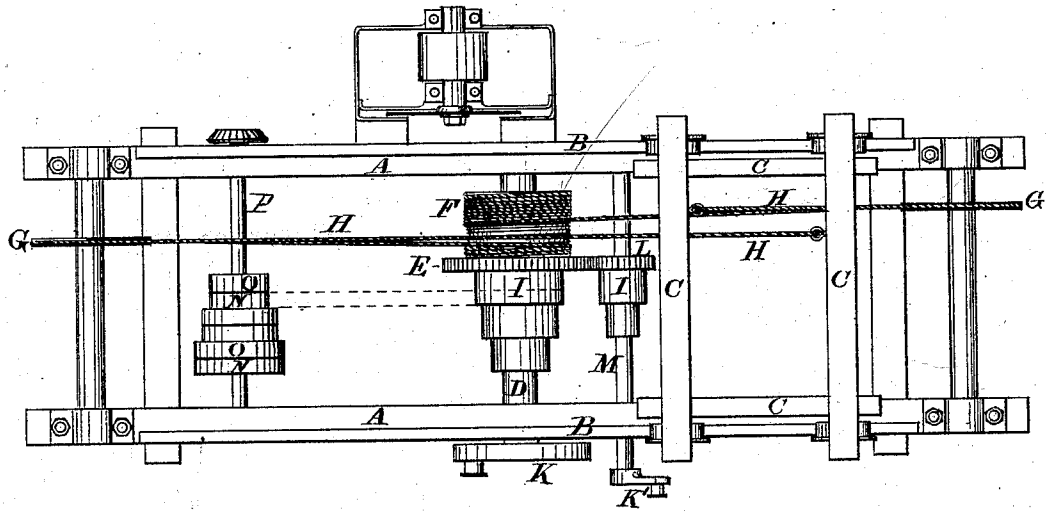




*Fig. 2.*

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# UNITED STATES PATENT OFFICE.

WILLARD LAMB, OF GREEN BAY, WISCONSIN.

## IMPROVEMENT IN LOG-CARRIAGE GEARS FOR SAW-MILLS.

Specification forming part of Letters Patent No. **203,467**, dated May 7, 1878; application filed March 30, 1878.

*To all whom it may concern:*

Be it known that I, WILLARD LAMB, of Green Bay, in the county of Brown and State of Wisconsin, have invented a new and Improved Log-Carriage Gear; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to that class of carriage-gearing in which the movement is produced by means of a drum and chain or rope; and it relates more particularly to such a construction and arrangement of parts as will allow of the power of independent steam-engines being applied directly to the shaft of the winding-drum, instead of being derived from the main shaft of the sawing-machine through belting or other similar means.

In the accompanying drawing, forming part of this specification, Figure 1 represents a side elevation of the carriage and gear, with part of the frame removed; and Fig. 2, a plan of the same.

A A indicate the bed supporting the rails B B, on which runs the carriage C. At D is a shaft carrying a spur-wheel, E, firmly secured to a spirally-grooved drum, F, used for winding the chain or ropes H H, which are so arranged that one is wound up and the other unwound at the same time, by which means, the ropes being passed around the pulleys G G, and their opposite extremities attached to the carriage C, the latter is moved alternately in opposite directions, according to the direction in which the drum is turned.

Motion is to be imparted to the drum by means of steam or other motive-power engines, acting directly on the shaft D, through the medium of the crank K, said shaft D and crank K being thus the equivalents of the same parts in an ordinary engine. In some cases it may be preferable to connect the engine to the crank K′ of the shaft M, and in that manner give motion to the drum F by the wheels E and L, in which case a much slower speed will be given to the carriage, with the same rate of piston travel; or engines may be connected to both of said shafts, and the wheels E L provided with clutches, so that they may be engaged with or disengaged from their respective shafts at pleasure, by which means the engine connected to the shaft M may be used to give the carriage a slow forward motion, and that connected to the shaft D the quick or reverse movement.

Instead of employing clutches, the wheels and drum may be fast on the shaft, and communication opened between the atmosphere and the interior of the cylinder in which steam is not then employed; or a single engine may be employed, having its parts so arranged that its power may be transferred from the crank K to crank K′ at pleasure.

The shaft D is provided with cone-pulleys I, from which run belts to fast and loose pulleys N O on the governor-shaft P, arranged in steps corresponding to the pulley I. By means of suitable shifting-levers the belts on these pulleys may be moved to the fast or loose pulleys, as desired, so that, although the engines and drum may run at different speeds, governors driven by the shaft P will always allow the proportionate amount of steam to pass to the engines.

From the foregoing description it is plain to see that, if the piston-rods of steam or other engines are connected to the cranks on either or both of the shafts D M and steam is admitted to the engines, the ropes H H will alternately be wound upon and unwound from the drum F, thus giving motion to the log-carriage C, the speed of which will depend upon the situation of the belts upon the fast and loose pulleys N O, or which of the shafts D M is driven by the engine.

Although I prefer to run the carriage by means of the spirally-grooved drum and wire ropes, yet it is obvious that, by arranging the wheel E to mesh with a rack on the under side of the carriage, the drum and ropes may be dispensed with.

What I claim as new is—

1. The combination of the shafts D M, connected by the gears E L, the shaft D, carrying the spirally-grooved drum F, with the cranks K K′, adapted to be connected with steam or analogous engines, whereby a log-carriage may be driven by the power of independent engines operating through the chains or ropes H H, substantially as specified.

2. The combination, with the shaft D, of the cone-pulleys I, fast and loose pulleys O N, and the governor-shaft P, substantially as described.

WILLARD LAMB.

Witnesses:
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