

A. RODGERS.

DEVICE FOR MOVING THE LOG-CARRIAGES OF SAW-MILLS.
No. 176,409.

Patented April 18, 1876.

Fig. 1.

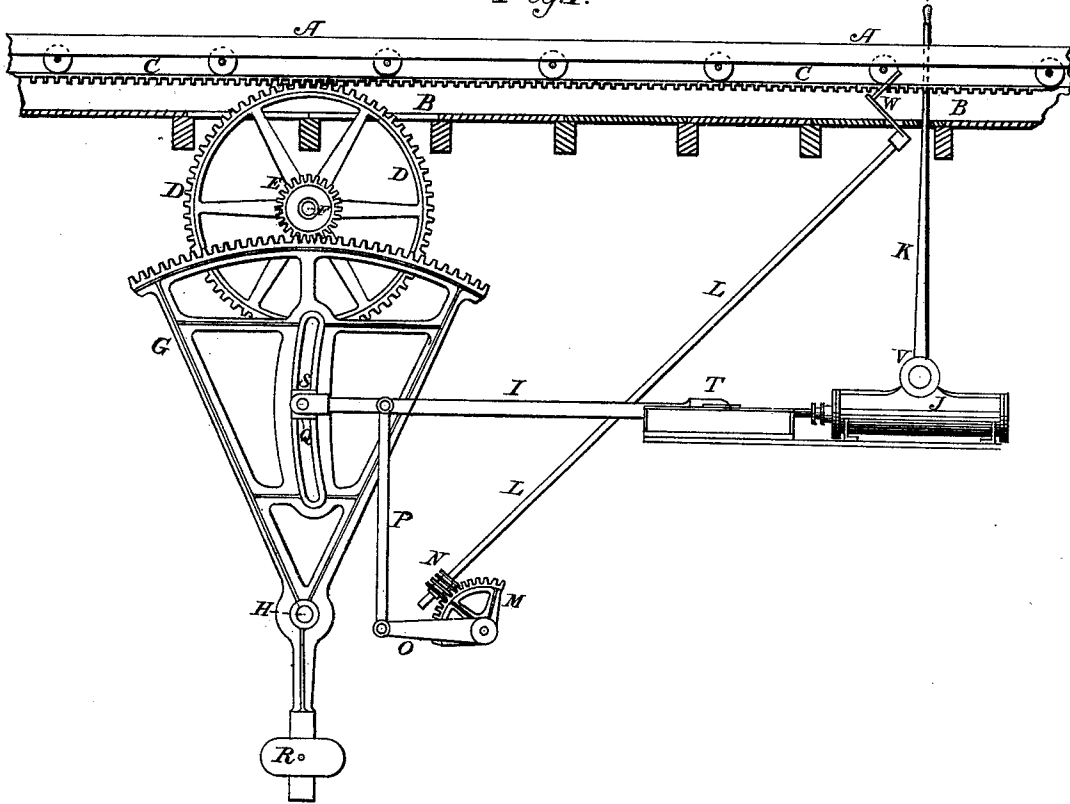
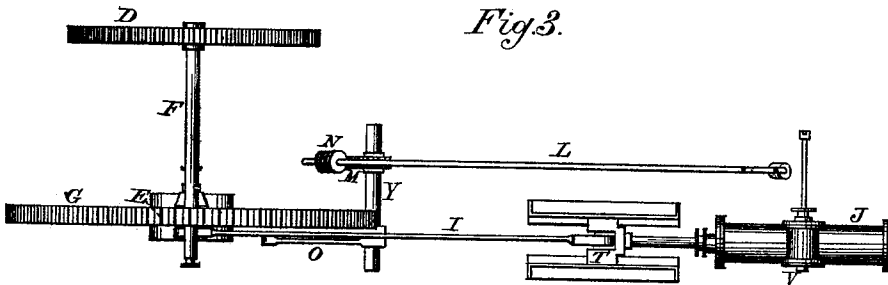


Fig. 3.

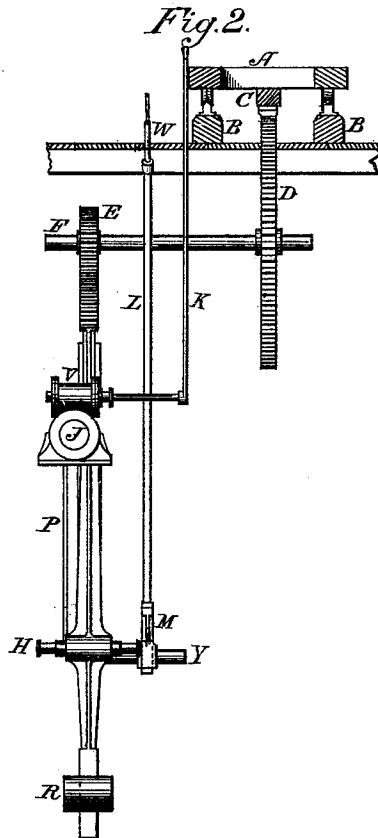


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John Rodgers

Inventor:
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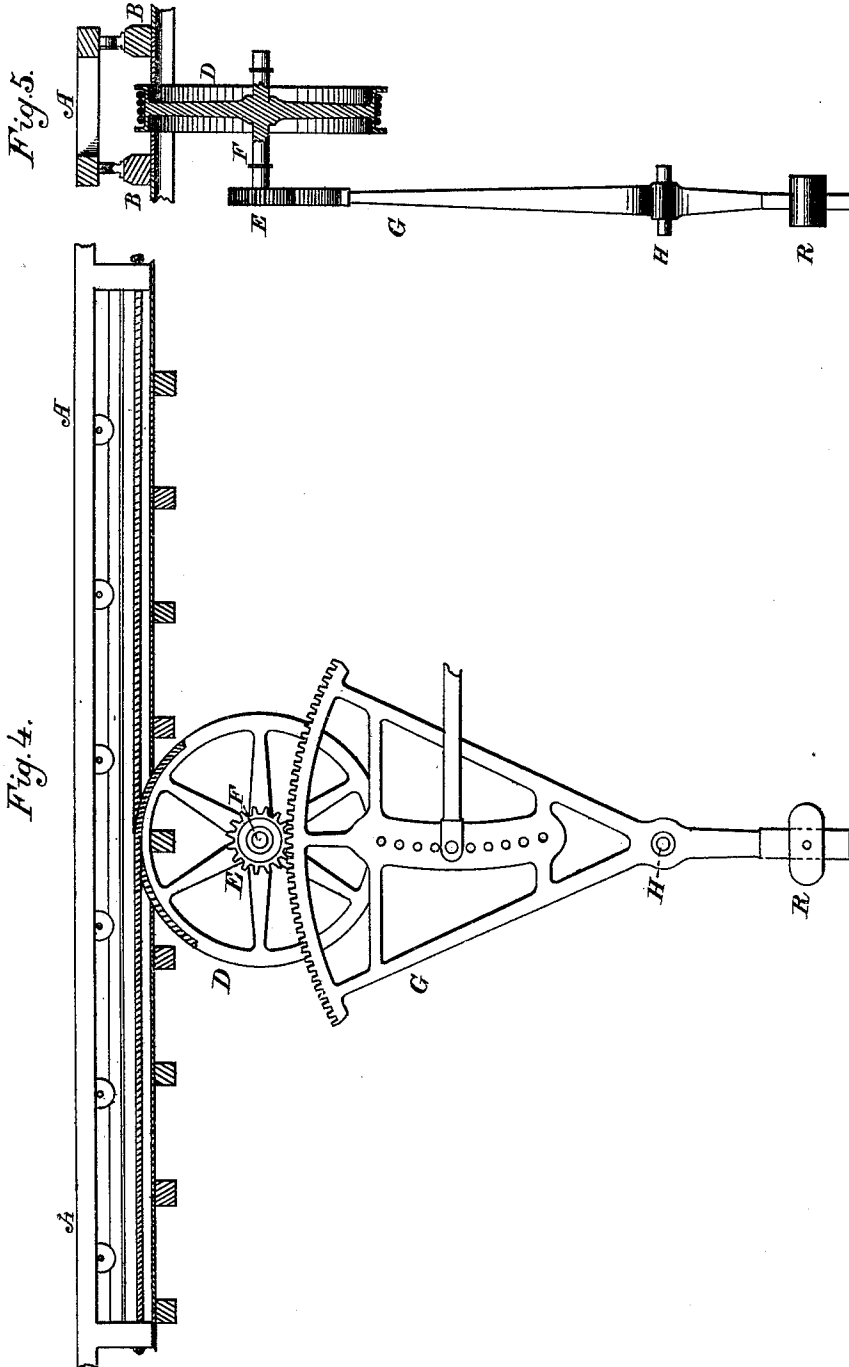
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UNITED STATES PATENT OFFICE

ALEXANDER RODGERS, OF MUSKEGON, MICHIGAN.

IMPROVEMENT IN DEVICES FOR MOVING THE LOG-CARRIAGES OF SAW-MILLS.

Specification forming part of Letters Patent No. **176,409**, dated April 18, 1876; application filed March 25, 1876.

To all whom it may concern:

Be it known that I, ALEXANDER RODGERS, of the city of Muskegon, county of Muskegon, and State of Michigan, have invented certain new and useful Improvements in Devices for Moving the Log-Carriages of Saw-Mills, of which the following is such a clear and exact description as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, in which—

Figure 1 represents a side view of a log-carriage and the mechanism by which it is moved. Fig. 2 shows a transverse section of the log-carriage and its supporting ways, together with an end view of the devices by which the carriage is moved. Fig. 3 is a plan view of the power-cylinder and its connections. Figs. 4 and 5 are side and transverse sectional views of the apparatus, so arranged as to permit the use of a rope in place of the rack and gear-wheel for moving the log-carriage.

The object of this invention is to furnish a means by which the feed of the log to a circular or reciprocating saw can be increased to a greater extent than is found practicable with the frictional gearing commonly employed, it having been found practically impossible to so enlarge the frictional surfaces as to enable them, without being burned by the heat engendered, to feed the log forward to the saw and gig it back as quickly as the requirements of the trade demand; and the invention consists in the direct application of an independently-operating power to the carriage, in the manner hereinafter described.

In the drawings the log-carriage is represented by that part of the mechanism marked A, and may be of the ordinary construction, and running upon the ways B. These carriages are commonly furnished with a rack, C, depending between the ways, which engages with a feed-pinion that gives it the proper reciprocating motion. D represents a feed-wheel revolving on the horizontal shaft F, and which takes the place of the ordinary feed-pinion. Instead of the toothed gear-wheel and rack represented in Figs. 1, 2, and 3, a winding-drum, as shown in Figs. 4 and 5, upon which a wire or other rope winds, and which is connected to the opposite ends of the log-carriage,

may be used when the apparatus is constructed for use in new mills; but I prefer the gear-wheel and rack, as it requires no change in the carriage when the apparatus is applied to a mill already in use. A pinion, E, is secured to the shaft F, and gears into a vibrating quadrant-shaped segment, G. This segment is carried upon the rocking shaft H, and is provided with an extension below the shaft, upon which is secured the adjustable counter-balance R. The segment is also provided with a curved slot, Q, in which the block S, carrying the pin to which the connecting-rod I is attached, moves in changing the throw of the segment; or a series of holes, into which the pin is inserted, may be used in place of the slot. This connecting-rod is attached at the end opposite to the vibrating segment to a cross-head, T, moving upon suitable slides. To the cross-head is secured a piston-rod, carrying at its opposite end a piston, which moves within the cylinder J, which is secured to a suitable bed-plate, and is provided with valves moving within the valve-chest V. The construction of this valve is such as to give full control to the operator over the admission and exit of the steam or other fluid employed to give motion to the piston. A lever, K, is attached to and extends from the valve-stem to such a position as will place it within the grasp of the sawyer, who also has within his reach the crank W upon the shaft L. This shaft carries a screw, N, upon its lower end, which gears into the quadrant M upon the rock-shaft Y. Secured to this is an arm, O, to the end of which is pivoted the link P. The upper end of this link is jointed to the connecting-rod I. Thus, by turning the crank W, the connecting-rod, together with the pivot-block S, is raised or lowered, and the extent of the vibrations of the segment G increased or diminished. As the movement of the segment controls the revolutions of the pinion E, and through it those of the wheel D, it is evident that the movement of the log-carriage to cut logs of different lengths may be easily regulated.

The counter-balance R keeps the moving parts in equilibrium, thus avoiding all shocks to the mechanism from the sudden changes in the direction of motion.

It will be evident that this apparatus may be operated by steam, or any other fluid under pressure, when it can be obtained. I prefer water, as its inelasticity renders the movement of the carriage, when feeding the log to the saw, more regular than it would be were an elastic fluid (such as steam or compressed air) employed.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent, the following:

1. The vibrating toothed segment G, provided with a series of holes, or their equivalents, to receive the pin for adjusting the connecting-rod I, as and for the purpose set forth.

2. The segment G, in combination with the adjustable counter-balance R, as specified.

3. The segment G, provided with the series

of holes for adjusting the throw of the segment, in combination with the connection I, cross-head T, and its connected rod and piston within the cylinder J, as shown and described.

4. The saw-carriage A, rack C, wheel D, and pinion F, in combination with the segment G and its operating mechanism, as described.

5. The crank-shaft L, screw N, quadrant M, arm O, link P, connection I, and block S, in combination with the segment G, as set forth.

In testimony whereof I have hereunto affixed my signature this 25th day of December, 1875, in presence of two witnesses.

ALEXANDER RODGERS.

Witnesses:

DAVID McLAUGHLIN,

JOHN RODGERS.