(No Model.)

E. T. LEMM.

FEED MECHANISM FOR SAW MILL CARRIAGES.

No. 361,068. Patented Apr. 12, 1887.

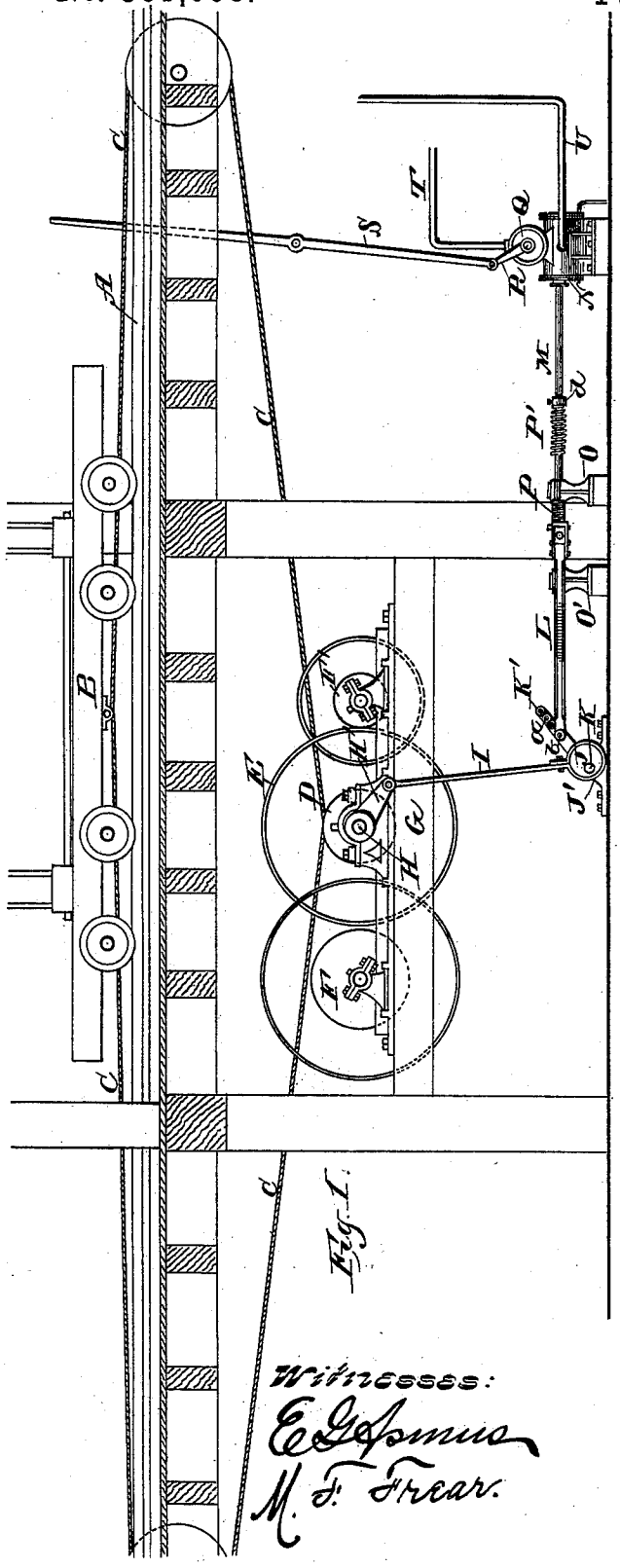


Fig. 1.

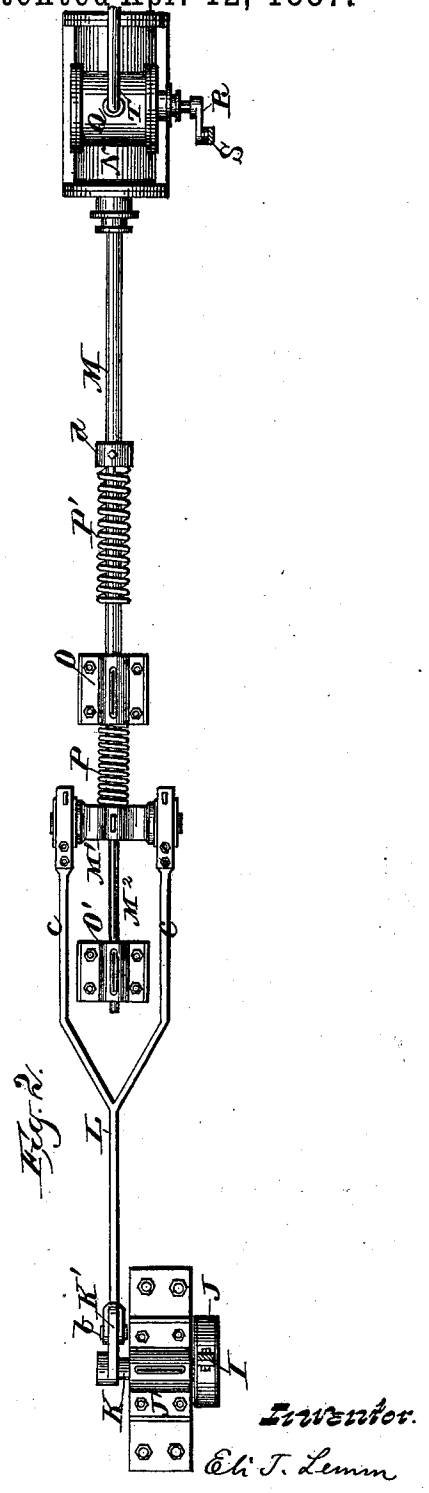


Fig. 2.

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UNITED STATES PATENT OFFICE.

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FEED MECHANISM FOR SAW-MILL CARRIAGES.

SPECIFICATION forming part of Letters Patent No. 361,068, dated April 12, 1887.

Application filed August 31, 1886. Serial No. 212,295. (No model.)

To all whom it may concern:

Be it known that I, ELI T. LEMM, of Eau Pleine, in the county of Portage, and in the State of Wisconsin, have invented certain new and useful Improvements in Steam Friction-Feed for Saw-Mill Carriages; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to a friction-feed for saw-mill carriages; and it consists in certain peculiarities of construction and combination of parts, as will be hereinafter described with reference to the accompanying drawings, in which—

Figure 1 represents a side elevation of my invention in operative position, and Fig. 2 a plan view of the same.

Referring by letter to the drawings, A represents a track for a saw-mill carriage, B, the latter having motion imparted thereto by means of a rope, C, that winds and unwinds upon a spool, D, the latter being actuated by means of an ordinary gear, that consists of a central iron friction-pulley, E, eccentrically journaled in suitable bearings, and oppositely-arranged paper friction-pulleys F F′ of different diameters, all of said friction-pulleys being supported in a frame, G, beneath the carriage-track.

The shaft H of the iron friction-pulley E is provided with an arm, H′, and the latter is connected by a rod, I, with an eccentric, J, that is journaled in a bearing, J′, secured to the floor of the mill. The journal K of this eccentric is provided with an arm, K′, that has a series of perforations, *a*, to permit the adjustable connection therewith of a bifurcated yoke, L, by means of a suitable bolt, *b*, said yoke having the ends of its bifurcations, *c*, united by a cross-head, M′, that is fast on one end of the horizontal piston-rod M of a steam-cylinder, N, the latter being in position on the mill-floor. The piston-rod M has a bearing in a standard, O, and the cross-head M′ is provided with a guide-rod, M^2, that has its bearing in another standard, O′.

On the piston-rod M, between the cross-head M′ and standard O, is a spiral spring, P, while a similar spring, P′, is also placed upon this rod between a collar, *d*, fast thereon and said standard, these springs acting as cushions.

The steam-cylinder N is provided with a suitable valve, Q, that has a crank-arm, R, operatively connected to a lever, S, arranged to come in ready reach of the sawyer, steam being fed to said cylinder through a supply-pipe, T, and discharged through an exhaust-pipe, U.

As shown by Fig. 1, the iron friction-pulley E is in position against the smaller paper-friction-pulley, E′, and the carriage B is being actuated toward the saws, said pulleys being held in engagement by the pressure of steam against the piston in the cylinder N. To reverse the movement just described, the lever S is operated to change the position of the valve Q, thereby cutting off the steam-pressure from one side of the piston and exerting it upon the other. By this change of the steam-pressure the piston-rod M is caused to actuate the yoke L in the same line of travel, and the latter, through the arm-connection K′, operates the eccentric J, that is connected by the rod I with the arm H′ on the eccentrically-mounted shaft H, thereby causing the pulley E to be brought over against the one, F, and there held as long as may be necessary or desirable.

As before described, the springs P P′ act as cushions, thus preventing the piston from having too quick a stroke when the steam-pressure is changed from one position to another. These springs also serve as a means for actuating the piston-rod a sufficient distance to bring the main friction-pulley away from either of the ones, F F′, with which it may be in contact when steam is cut off from the cylinder, thereby stopping the movement of the carriage.

By the construction above described I am enabled to quickly adjust and hold the main friction-pulley against either the feed or gig pulleys entirely by steam-pressure, a simple movement of the valve-lever being all that is necessary to accomplish this result, or to entirely stop the carriage at any time during its travel.

When the main pulley is operated by hand-power, as has heretofore been the case, it requires one man at least to attend solely to the friction-gear. This work is very laborious and wearing on the operator, and the latter has to take frequent rests, and unless his place is

supplied by another the mill must necessarily stop working. My device is certain in its operation, and does away with the manual labor necessary in operating the friction-gear, and hence the mill can be continuously run with a saving in expense.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a friction feed-gear having an eccentrically-journaled main pulley, of an auxiliary eccentric operatively connected to the shaft of said pulley, a steam-actuated piston-rod that in turn connects with the latter eccentric, and suitable springs oppositely arranged on said rod to cushion its stroke and impart motion thereto when the steam is cut off, substantially as and for the purpose set forth.

2. The combination, with a friction feed-gear having the eccentric-shaft of its main pulley operatively connected to an auxiliary eccentric, of a bifurcated yoke adjustably secured to the latter eccentric, a steam-actuated piston-rod provided with a cross-head that unites the bifurcations of the yoke, and spiral springs arranged on said rod, substantially as described, to cushion its stroke and impart motion thereto when the steam is cut off, substantially as and for the purpose set forth.

3. The combination, with a friction feed-gear having its main pulley eccentric-shaft operatively connected to an auxiliary eccentric, of a bifurcated yoke secured to the latter eccentric, a steam-cylinder provided with a piston-rod that has a cross-head uniting the bifurcations of the yoke and a guide-rod extension, suitable bearings for said rods, spiral springs arranged upon the former rod on opposite sides of its bearings, a suitable valve for the steam-cylinder, and a lever for operating said valve, substantially as and for the purpose set forth.

4. The combination, with a friction feed-gear, of a steam-actuated piston-rod operatively connected to the main pulley of said gear, and suitable springs oppositely arranged on said rod to cushion its stroke and impart a reverse motion thereto when steam is cut off from either side of the piston, as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

ELI T. LEMM.

Witnesses:
H. G. UNDERWOOD,
N. E. OLIPHANT.