No. 714,314. Patented Nov. 25, 1902.

B. G. LUTHER.

RAILWAY CUT-OFF SAW.

(Application filed May 26, 1902.)

(No Model.) 3 Sheets—Sheet 1.

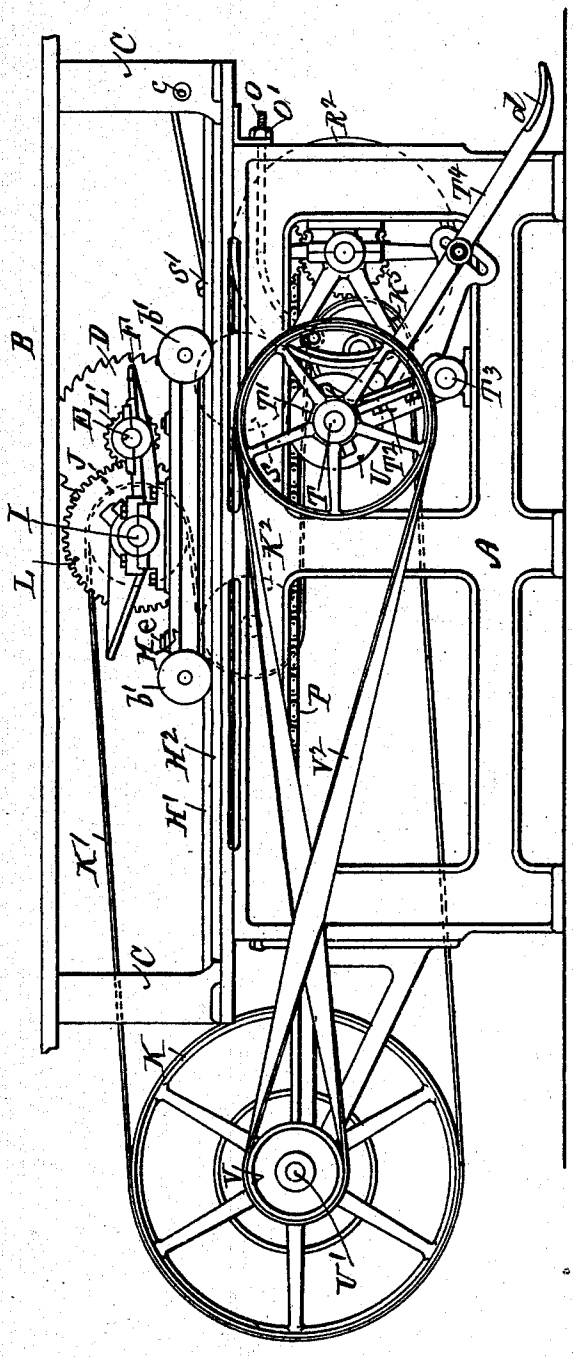


FIG. 1.

WITNESSES:

Andrew J. Pilcher

John S. Lynch

INVENTOR:

Benjamin G. Luther

BY J. Scholfield

ATTY.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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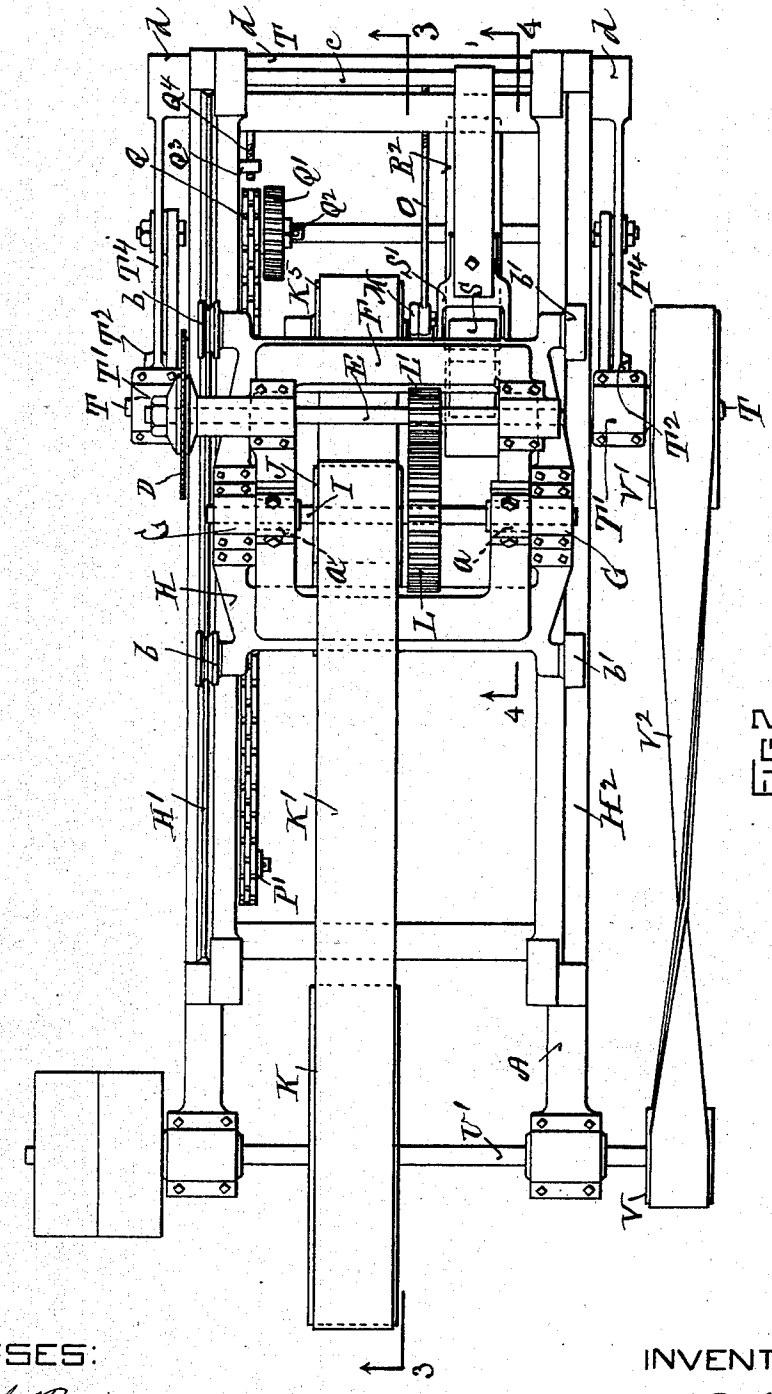


FIG. 2.

WITNESSES:

Andrew J. Peters

Robert S. Seymour

INVENTOR:

Benjamin G. Luther

BY S. Schofield

ATTY.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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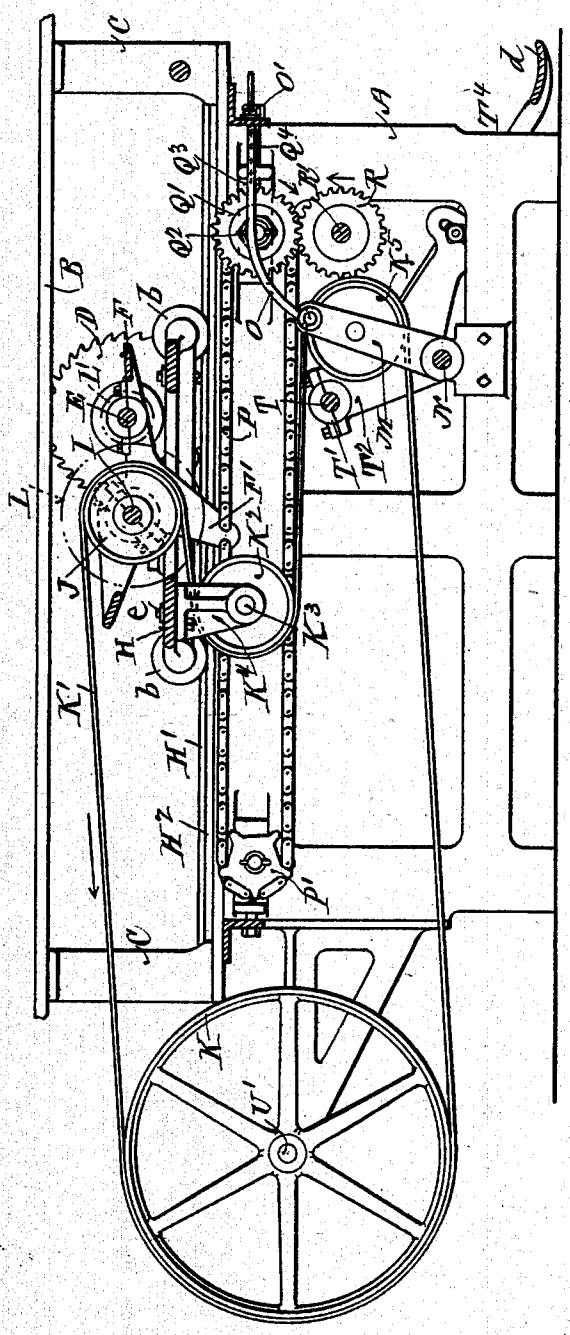


FIG. 3.

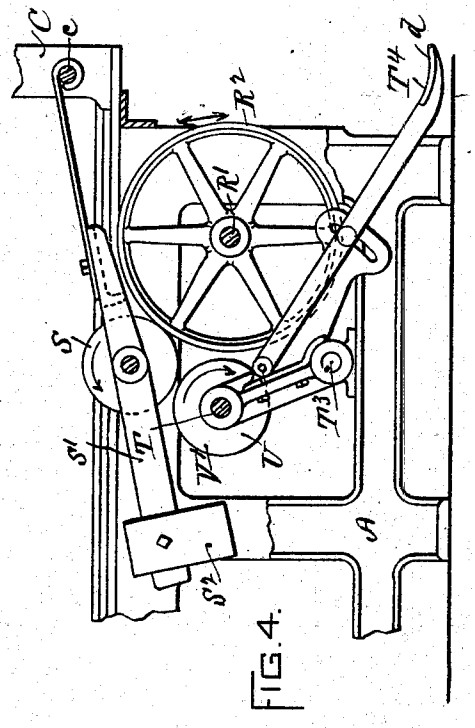


FIG. 4.

WITNESSES:

Andrew J. Peterson

John S. Synnestvedt

INVENTOR:

Benjamin G. Luther

BY S. Schofield

ATTY.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

BENJAMIN G. LUTHER, OF WORCESTER, MASSACHUSETTS.

RAILWAY CUT-OFF SAW.

SPECIFICATION forming part of Letters Patent No. 714,314, dated November 25, 1902.

Application filed May 26, 1902. Serial No. 109,084. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN G. LUTHER, a citizen of the United States, residing at Worcester, in the State of Massachusetts, have invented a new and useful Improvement in Railway Cut-Off Saws, of which the following is a specification.

The nature of my invention consists in improved mechanism for raising and lowering the saw automatically and operating the saw-carriage, as hereinafter fully set forth.

In the accompanying drawings, Figure 1 represents a side elevation of a sawing-machine embodying my improvement. Fig. 2 represents a top view with the same without the saw-table for holding the board. Fig. 3 represents a section taken in the line 3 3 of Fig. 2. Fig. 4 represents a section taken in the line 4 4 of Fig. 2.

In the drawings, A represents the frame of the machine, and B the saw-table supported from the frame A by means of the standards C C, located at the corners of the table. The saw D is arranged to rise and fall at the edge of the table and is held upon the arbor E, which is journaled in the tilting frame F, the said frame being pivoted upon the inwardly-extending hubs *a* of the boxes G G of the traveling saw-carriage H, and within the said boxes G G is journaled the shaft I, upon which is secured the pulley J, which is driven from the driving-pulley K by means of the belt K′, and upon the shaft I at the side of the pulley J is placed the gear L, which engages with the pinion L′ upon the saw-arbor E, the said pinion being preferably made of rawhide or similar material, whereby the operation of the gears will be made noiseless. The carriage H is guided upon the track H′ by means of the grooved wheels *b b*, the opposite side of the said carriage being provided with the plain wheels *b′ b′*, which run upon the plain track H^2 of the machine-frame. The belt K′, which drives the pulley J from the driving-pulley K, passes around the idler-pulley K^2, the shaft K^3 of which is held in suitable hangers K^4, attached to the under side of the carriage H, and from the pulley K^2 the belt passes around the adjusting-pulley K^5, the said pulley being held between the parallel arms M M, secured to the pivot-shaft N, held in fixed bearings, and to the upper end of one of the arms M is attached the rod O, the outer end of which is provided with a screw-thread whereby by means of the nut O′ the pulley K^5 may be moved backward to either tighten or loosen the belt K′ when required. The tilting frame F is provided with the downwardly-extending arm F′, to the side of which the opposite ends of the driving-chain P are attached, the said chain passing over the idler sprocket-wheel P′ and being driven by means of the sprocket-wheel Q, secured to the hub of the gear-wheel Q′, which is held for rotation upon the stud Q^2, secured to the sliding plate Q^3, which plate is adjusted for tightening the chain by means of the screw Q^4. The gear-wheel Q′ is actuated by means of the gear R, secured to the shaft R′, which extends from side to side of the machine, and upon the shaft R′ is secured the driven pulley R^2, which is to be operated in opposite directions in order to cause the required forward-and-backward movement of the saw-carriage H. The solid pulley S, provided with a leather-covered face, is held in a frame S′, which is pivoted to the rod *c* and provided with the weight S^2, whereby the said pulley will be caused to bear heavily upon the surface of the pulley R^2. The shaft T is held in the bearings T′ T′ at the upper ends of the arms T^2 T^2, secured to the pivot-shaft T^3, the said arms being actuated by means of the pedal-lever T^4, the pedal *d* of which extends from side to side across the end of the machine, and to the shaft T is secured the pulley U, the said shaft being driven from the shaft U′ of the driving-pulley K by means of the pulley V upon the said shaft, the pulley V′ upon the shaft T, and the crossed belt V^2. When the pulley U is in the position shown in Fig. 4, the pulley S will bear heavily upon the surface of the pulley R^3, with the driving-pulley U out of engagement. Now when the pulley U is brought forward by pressure upon the pedal *d* the surface of the pulley U will be caused to engage with the surface of the weighted pulley S to cause its rotation and with it the rotation of the pulley R^2, and if the downward movement of the pedal is continued then the yielding pulley S will be lifted from engagement with the surface of the pulley R^2 and the pulley U brought into engagement therewith to cause the move-

ment of the pulley R^2 in the reverse direction, and upon the release of the pedal from pressure the driving-pulley U will be carried back to its former disengaged position. When the pulley U is brought into engagement with the pulley R^2, the saw-carriage H will be brought forward to cut off the projecting end of the board placed upon the table B. The initial forward movement of the chain P by its action upon the arm F' will serve to cause the tilting movement of the saw-holding frame F to produce the required upward movement of the saw above the plane of the surface of the table, a suitable limiting-stop *e* being provided for such upward movement, and upon the engagement of the tilting frame F with the stop *e* the carriage H will be brought forward with the saw D in its elevated position to saw off the end of the board held upon the table. Then by slacking up on the pedal *d* the pulley S will be allowed to drop to engagement with the surface of the pulley R^2, with the pulley U still in engagement with the pulley S, whereby a reversed movement will be imparted to the chain P, the initial reversed movement being utilized in causing the downward movement of the saw below the plane of the surface of the table through the action of the chain P upon the arm F', as shown in Fig. 3, and thereafter the carriage will be carried back to its former rearward position without engagement with the board, so that a board placed upon the table may be shoved forward for cutting while the saw is being moved back by the action of the pulleys U and S upon the pulley R^2, thus making a saving in time.

I claim as my invention—

1. In a sawing-machine, the combination of the saw-carriage, the tilting frame pivoted to the carriage, the saw-arbor journaled to the tilting frame, the operating-chain connected with the tilting frame, and means for imparting movement to the operating-chain in both directions, to first cause a vertical movement of the saw, and then a horizontal movement of the saw-carriage, substantially as described.

2. In a sawing-machine, the combination of the saw-carriage, the tilting frame pivoted to the carriage, the saw-arbor journaled to the tilting frame, the pulley and shaft journaled to the carriage, the gear and pinion, upon the shaft and saw-arbor, the operating-chain connected with the tilting frame, and means for imparting movement to the operating-chain in both directions, substantially as described.

3. In a sawing-machine, the combination of the saw-carriage, the tilting frame pivoted to the carriage, the saw-arbor journaled to the tilting frame, the pulley and shaft journaled to the carriage, the gear and pinion upon the shaft and saw-arbor, the operating-chain connected with the tilting frame, means for imparting movement to the operating-chain in reverse directions, the idler-pulley upon the saw-carriage, the main driving-pulley and the belt-tightening pulley, substantially as described.

BENJAMIN G. LUTHER.

Witnesses:
SOCRATES SCHOLFIELD,
HERBERT A. FENNER.