(No Model.) 2 Sheets—Sheet 1.

E. E. THOMAS.

OFFSETTING MECHANISM FOR SAWMILL CARRIAGES.

No. 546,124. Patented Sept. 10, 1895.

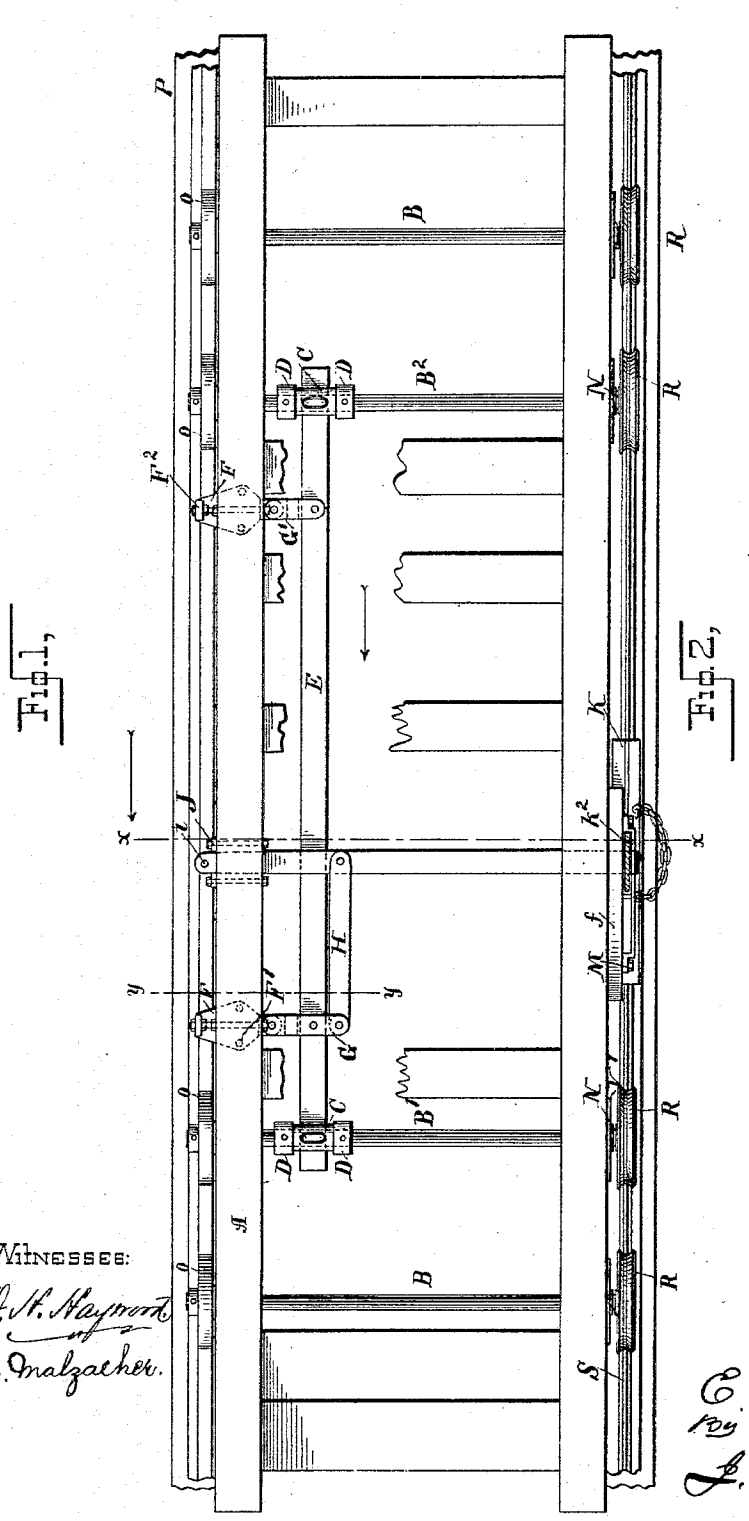

Fig. 1.

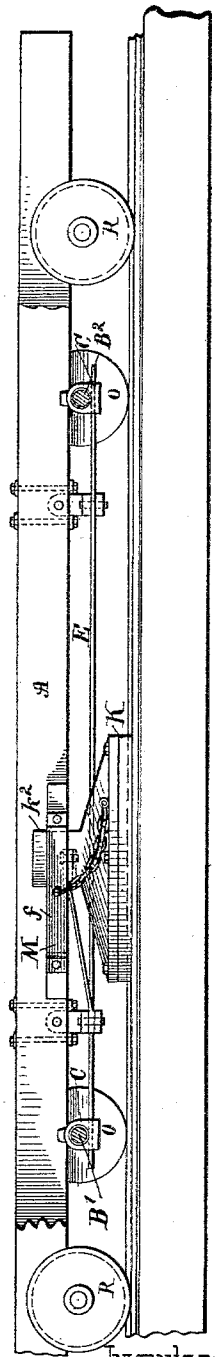

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3,

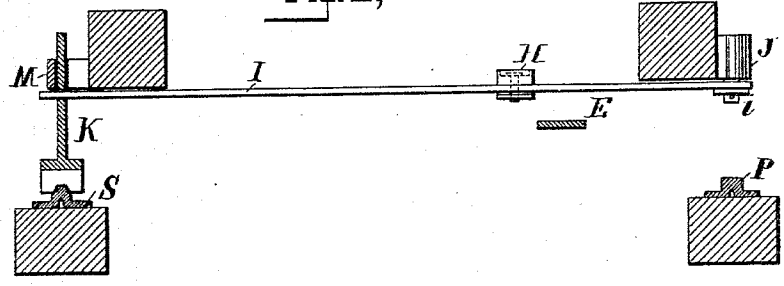


Fig. 4,

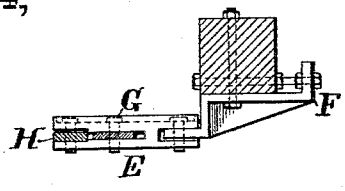
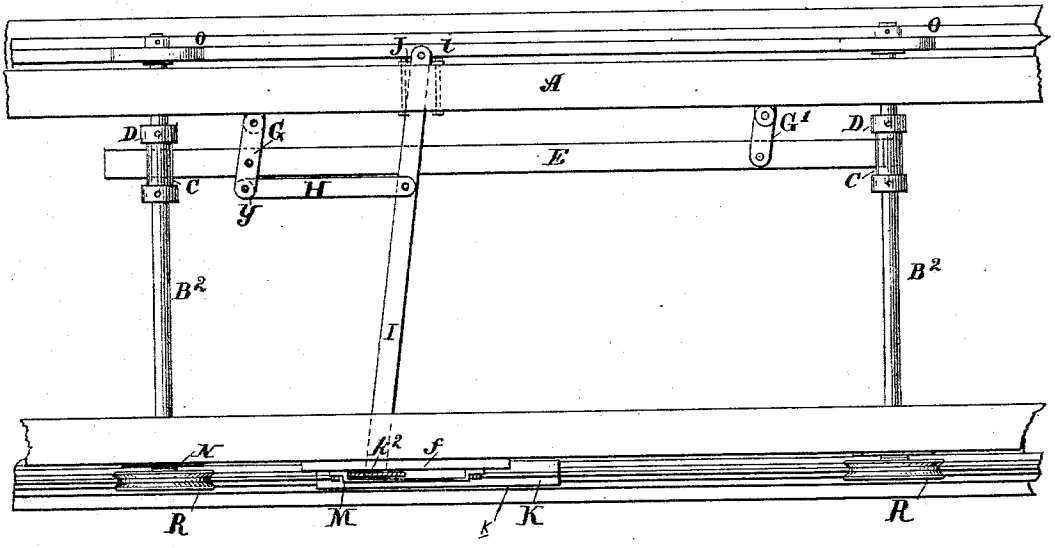


Fig 5,



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OFFSETTING MECHANISM FOR SAWMILL-CARRIAGES.

SPECIFICATION forming part of Letters Patent No. 546,124, dated September 10, 1895.

Application filed May 2, 1895. Serial No. 547,848. (No model.)

To all whom it may concern:

Be it known that I, EDWIN E. THOMAS, of Bay City, in the county of Bay and State of Michigan, have invented a new and useful Improvement in Offsetting Mechanism for Sawmill-Carriages; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to sawmill-carriages, and has for its object to provide for use a log-carriage having a novel and very efficient, as well as simple, means for effecting the "offsetting."

As is well known to those skilled in the art and familiar with modern sawmill machinery, it is now deemed a necessity to have the log-carriage provided with means for effecting an offsetting thereof during the gigging movement of the carriage and the log mounted thereon, in order to prevent a dulling of the saw more on one than on the other side of the teeth by the scraping of the log against one side of the saw during the return movement of the log, and also to prevent the unshipping of the saw, if it be a band-saw, from the band-wheels by such friction of the log (or by slivers projecting laterally therefrom) during the gigging movement; and various mechanisms or devices have heretofore been devised and patented to automatically effectuate the offsetting of the carriage and its log during the gigging movement and to restore them to the proper position for the next action of the saw just before the carriage shall have started on another forward run, such automatic offsetting mechanism being usually provided with means for locking the carriage against lateral movement. Most or all of such prior offsetting mechanisms that I know of have, however, been found to be more or less defective or objectionable in practice on account of their complexity and the frequent and delicate adjustments necessary to keep them in perfect working order.

I have devised a means for the purposes above alluded to which involves a new principle of construction and mode of operation, and which, while being exceedingly simple, is perfectly efficient and reliable in its workings and not at all liable to get out of perfect working order.

My invention involves the utilization of the inertia, a weight (which, while it is in an inoperative condition, is dragged along by the carriage) as the motor for automatically actuating the mechanism, for laterally shifting the carriage-frame and its log on the axles of the truck, and the mechanism thus actuated is exceedingly simple, perfectly efficient, and easily and quickly adjusted; and my invention may be said to consist, primarily, in the use, in connection with a log-carriage and its offsetting mechanism, of a weight or body adapted to be drawn along by the carriage, and which operates, by its inertia when stationary, to automatically actuate said mechanism, and, secondarily, in a novel combination of devices comprising said mechanism, all as will be hereinafter fully described, and as will be most particularly pointed out in the claims of this specification.

To enable those skilled in the art to which my invention relates to perfectly understand and practice the same, either in part or in whole, and either under the precise mechanical forms herein shown or under some modified construction, I will now proceed to more fully explain said invention, referring by letters to the accompanying drawings, which form part of this specification, and in which I have shown my invention reduced to practice under those mechanical details which I have so far adopted and employed.

In the drawings, Figure 1 is a top view of a log-carriage made according to my invention, but divested of the usual head-block knees, set-works, &c., to simplify the drawing, and having portions of the truck-frame broken away to better show the parts necessary to be herein particularly described. The carriage shown is one designed to be used in connection with a band-saw that cuts a log arranged at and extending beyond that side of the carriage which is at the top part of said Fig. 1. Fig. 2 is a side elevation, looking at the side farthest away from the saw, of the parts seen in top view at Fig. 1. Fig. 3 is a detail vertical cross-section at the line $x\ x$ of Fig. 1. Fig. 4 is a detail cross-sectional view at the line $y\ y$ of Fig. 1. Fig. 5 is a diagrammatical

view showing some of the parts of the offsetting mechanism proper in a different condition from that shown at Fig. 1.

In the several figures the same part will be found always designated by the same letter of reference.

A is the modern framework of a truck or sawmill log-carriage of the usual approved construction, but provided with or having combined with it the means and mechanism for effecting the offsetting that are comprised by my invention. As usual, this truck-frame is provided with wheel-shafts or axles B B and B′ B², that carry at one set of their ends the four plain-faced wheels O, that travel on a flat-topped rail P, and at the other set of their ends the four peripherally-grooved wheels R, which ride on the guide-rail S of the log-carriage track.

K is a traveling weight which, in the case shown, is arranged to slide on the guide-rail S of the carriage-track and which, to better adapt it to this purpose and prevent undue wear of the rail S, is provided at its lower surface with a wooden shoe-piece *k*, which contacts with the track-rail, as shown. Said weight K, which is the actuator of the offsetting mechanism proper of the carriage, is preferably of metal and is shown of a form such that its upwardly-projecting portion k^2 is in the shape of a thin plate, about square in contour, that stands in close proximity to and parallel with an oblong projection *f* of the outer side beam of frame A and that is loosely embraced laterally by a metallic yoke or confining-strap M, that is securely bolted, as seen, to the outer surface of said frame projection *f*. The length of said confining-strap M is such (see Fig. 1) as to permit a certain degree of movement of the part k^2 of the weight within the loop of M endwise of the truck-frame, as and for a purpose to be presently described, and said part k^2 of the said actuating-weight is perforated for the passage through it of one end portion of a lever *l*, which operates the frame shifting or offsetting devices. The offsetting is, of course, effected by the usual lateral movement of the frame A, together with the log thereon, upon or endwise of the truck-axles and, as is well known, this movement is comparatively small—say about a half inch.

In the drawings the extent of side movement of the frame A on the axles or relatively to the vertical plane of the saw (indicated by the line at Fig. 1, marked "saw-line") is plainly indicated by the space at N (see Fig. 1) between the hub of the wheel R and the journal-box of the axle that comes about into contact with said hub when the frame A is moved out of the position in which it appears in the drawings.

The inner end of the lever I, before referred to, is hinged at *i* to the lower part of a metallic stand J, which is bolted to the inner one of the side beams of the frame A, and to said lever is pivoted one end of a metallic link or bar H, the other and lower end of which is pivoted to one end of a shorter link G, and the last named part, like its mate G′, (see Fig. 1,) has the end nearer the plane of the saw, hinged to the depending part of a metallic stand F, secured to the inner side beam of frame A, while both of said parts G and G′ are pivotally coupled to a long slide-bar E, as clearly shown. This slide-bar E is hung or mounted in two supporting stirrup-like devices C C, that are journaled or mounted, box-like, on the shafts or axles B′ and B² in such manner that it can freely slide endwise within the apertures of said devices through which its end portions pass. This slide-bar E is preferably arranged in about a horizontal plane and about parallel with the sides of the frame A, all as shown; and the stands F, to the pendents of which the links G and G′ are coupled, are combined with the side beam of frame A in such manner that they can each be adjusted relatively thereto and sidewise of the truck by means of the adjusting-screw and nuts, seen at F², (see Fig. 1,) for the purpose of taking up any wear and keeping the offsetting mechanism in perfect adjustment.

D represents simple collars secured two on axle B′ and two on axle B², as shown, to hold the box-like devices C C in place endwise on their respective shafts.

The operation of the devices shown and so far described, mainly with reference to their construction and arrangement together, is as follows: Suppose the carriage to be in the condition and all the working parts of the offsetting mechanism to be in the positions shown at Figs. 1 and 2, which is the condition that exists while the log is being sawed, and that the carriage is traveling in the direction indicated by the arrow at Fig. 1. While thus traveling during the log-sawing operation, it is plain that the weight K, the upwardly-projecting part k^2 of which is in contact at its rearmost edge with the rearmost part of the yoke M, will simply be carried along by said yoke or made to travel in unison with the log-carriage. When, however, the motion of the carriage shall be reversed to perform the gigging stroke or travel, it is obvious that during the first part of said reversed movement of the carriage the weight K will remain stationary on the rail on which it is adapted to slide until the opposite end of the yoke M shall have moved along with the carriage to a point at which it will come into contact with the opposite vertical side of the part k^2, that is now seen to be in contact with the yoke, and inasmuch as the outer end of the long cross-lever I is coupled to the part k^2 of said weight it follows that while the said weight thus remains stationary during this initial or early part of the movement of the carriage the end of lever I, coupled to said weight, must stand still, and the result of this condition of affairs is that during the time that the carriage is moving in the opposite

direction to that indicated by the arrow at Fig. 1 and the weight K is standing still the lever I will have been vibrated on its fulcrum at *i* in the direction and to the extent illustrated at Fig. 5. In other words, during the time that is required, when the carriage's stroke is reversed, to shift the relative position of parts k^2 and M from that seen at Figs. 1 and 2 to that indicated at Fig. 5 the weight K will have operated to hold back the outer end of lever I to effect the changed position of said lever seen at the last-named figure. Now, this shifting of said lever I operates through the medium of links H and G and their connections with the slide bar E to move the latter endwise to a sufficient extent to cause the links G and G′ to assume the positions shown at Fig. 5, and this necessitates, of course, a shortening of the distance between the bar E and the side beam of the frame A to which said links G and G′ are pivoted. The slide-bar E cannot change its positions sidewise relatively to the axles of the truck because the devices C C in which it slides are held endwise on the axles B′ and B^2 by the collars D hereinbefore described. Hence the side beams of the frame A to which the outer ends of links G and G′ are coupled must move toward the said bar E, and this movement of said side beams of course effectuates the necessary lateral movement of the entire frame A on the axles of the truck.

It will be understood, of course, that when the stroke of the carriage is again reversed to again saw the log the same sort of action again takes place, only that the weight K this time operates by its inertia to hold back the end of lever I in an opposite direction, so that the offsetting devices proper and the carriage are all forced to resume the conditions illustrated at Fig. 1 before the log comes into contact with the saw.

So far as the first part of my invention is concerned—viz., the use of the weight to act by its inertia to actuate the offsetting devices—some other and entirely different offsetting mechanism proper might of course be employed, and in the carrying into effect said first part of my invention a weight or traveling body of any other form than that shown might be used, arranged to slide or travel on a supplemental or special rail or track instead of being mounted on the rail on which one set of the wheels of the log-carriage ride, the pith of this first part of my invention resting upon the idea of the use of some sort of traveling body connected with the carriage in such manner that the inertia of such body, while left at rest for a short interval of time at or near the end of each stroke of the carriage, is utilized to move or shift the offsetting devices and effectuate the necessary lateral movement of the carriage and its log. I therefore wish to be understood that—

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

1. In a saw mill carriage, the combination, with the truck; and the offsetting mechanism, of a weight operating solely by its inertia, when at rest, and during the initial movement of the carriage, to cause the necessary movements of the working parts of said mechanism; substantially as hereinbefore set forth.

2. In a saw mill carriage, the combination with the truck; the laterally adjustable frame; and a weight arranged to be drawn along by the carriage, but to have intervals of rest at the end of each stroke of the carriage, of the bar E, arranged to slide endwise, in stirrup-like devices on the truck-axles; the links G, G′; and the actuating lever I, pivoted at one end to the truck frame, coupled by the connecting rod H to one of the said links, and coupled at its other end to the said weight; the whole constructed to operate as and for the purposes set forth.

In witness whereof I have hereunto set my hand this 4th day of September, 1894.

EDWIN E. THOMAS.

In presence of—
ALFRED B. LENNOX,
RICHARD A. MCKAY.