

No. 758,429.

PATENTED APR. 26, 1904.

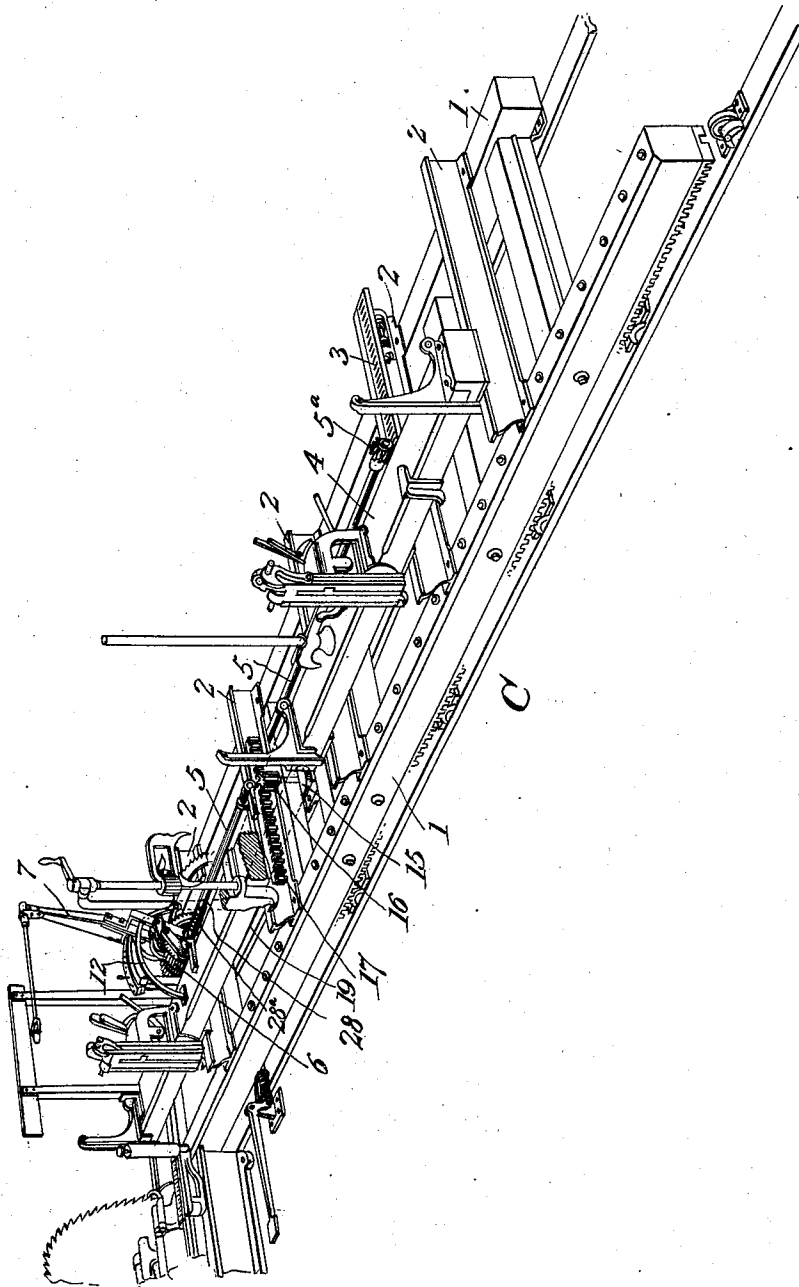
W. E. DILLARD.
SAWMILL SET WORKS.

APPLICATION FILED AUG. 31, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 2.

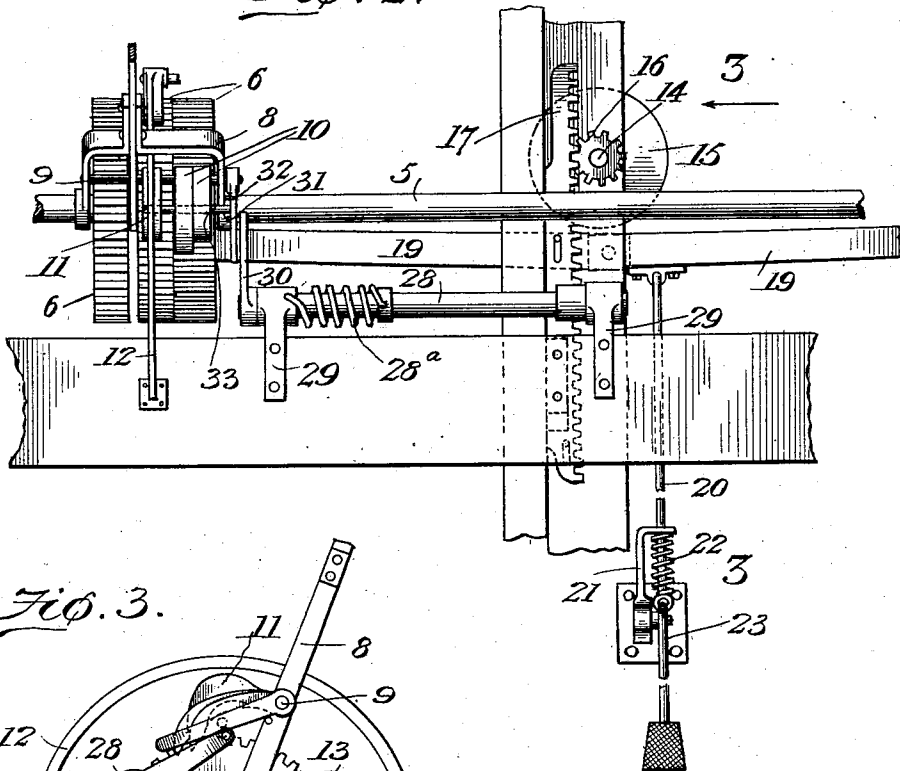


Fig. 3.

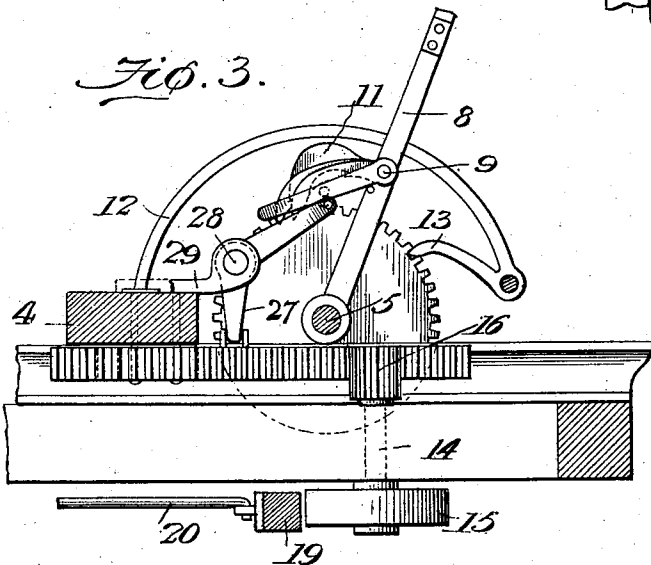
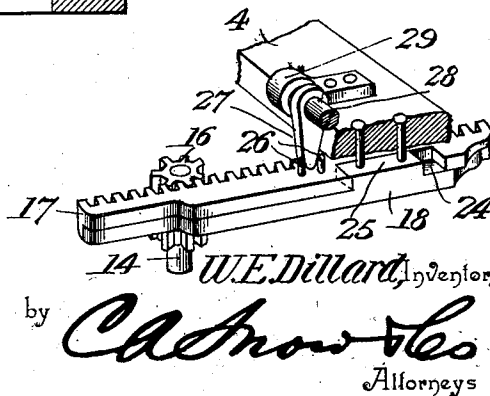


Fig. 4.



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UNITED STATES PATENT OFFICE.

WALTER E. DILLARD, OF PETERSBURG, VIRGINIA.

SAWMILL SET-WORKS.

SPECIFICATION forming part of Letters Patent No. 758,429, dated April 26, 1904.

Application filed August 31, 1903. Serial No. 171,436. (No model.)

To all whom it may concern:

Be it known that I, WALTER E. DILLARD, a citizen of the United States, residing at Petersburg, in the county of Dinwiddie and State of Virginia, have invented a new and useful Sawmill Set-Works, of which the following is a specification.

This invention relates to improvements in sawmill set-works of the type in which the set-beam is advanced and retracted by power supplied from the sawmill-carriage.

The object of the invention is to provide in sawmill set-works of the type specified improved devices associated with the offset mechanism and operative before movement is imparted to the set-beam to disengage the pawls by which the ratchets on the set-shaft are advanced and held in position.

In sawmills in which the set-beam is offset by means of mechanism operated by the carriage on its reverse movement a "foot-rig" is frequently employed to shift a member under the carriage into operative engagement with the offset mechanism to impart movement thereto, and it is necessary to employ separate means to disengage the pawls which advance and hold the ratchets on the set-shaft. This is an operation which must always be performed before the offset mechanism is set in operation, because its neglect will lead to serious damage to the set-works. It is therefore a desideratum to provide in connection with the foot-rig by which the offset mechanism is brought in play means for disengaging the pawls from the ratchets on the set-shaft before the set-beam is retracted, thus doing away with the necessity of disengaging the pawls before the foot-rig is brought into play.

The foot-rigs employed to actuate offset mechanism in sawmills are generally so constructed that in mills for sawing light timber the initial action of the foot-rig moves the carriage slightly toward the saw and causes the log to press hard against the saw.

The present invention consists in a simple mechanism which may be applied to a sawmill for sawing light timber and which will insure the disengagement of the pawls from the ratchet-wheels on the set-shaft whenever

the foot-rig is employed to effect the retraction of the set-beam and in an improved foot-rig which will prevent pressure of the log against the saw by forcing the carriage away from the saw when the foot-rig is operated to actuate the offset mechanism.

In describing the invention reference will be had to the accompanying drawings, in which is illustrated one form of embodiment of the invention as applied to a sawmill of the type above mentioned.

In the drawings, Figure 1 is a perspective view of a sawmill having the invention applied thereto, a part of the set-beam being broken away to show the arrangement of the means for retracting it. Fig. 2 is a detail plan view of a portion of the sawmill-carriage and set-beam with the invention applied thereto. Fig. 3 is a sectional view on the line 3 3 of Fig. 2 looking in the direction indicated by the arrow. Fig. 4 is a detail view in perspective, showing how the rack-bar by means of which the set-beam is retracted is arranged for limited movement independent of the set-beam.

In the several figures corresponding parts are designated by similar characters of reference, and it is to be understood that various changes may be made in the form, proportions, and exact mode of assemblage of the elements exhibited without departing from the spirit of the invention or exceeding the scope of the appended claims.

Referring to the drawings by reference characters, C designates the sawmill-carriage comprising a frame 1 and base-bars 2, arranged transversely of the frame, as usual. Certain of the base-bars are provided with racks, one of which is indicated at 3, and a set-beam 4, which extends longitudinally of the carriage, is mounted for movement laterally on the base-bars. At the back of the set-beam there is mounted in suitable bearing-brackets a set-shaft 5, having pinions, as 5^a, which engage with the racks 3 to advance or retract the set-beam. The set-shaft 5 is also provided with a plurality of ratchet-wheels 6, and an operating-lever 7, the lower end of which is rigidly connected with a yoke 8, is mounted for free pivotal movement on the set-shaft in such po-

sition that the yoke embraces the ratchet-wheels. In the outer portion of the yoke at a suitable distance from the ratchet-wheels is placed a pin 9, parallel with the set-shaft, and there are mounted on the pin a plurality of
 5 pawls 10 10 and 11. The pawls 10 10 are substantially alike in function, though differing slightly in size, while the pawl 11 is provided with an elevation which may be brought into
 10 engagement with a weight-arm 12, attached to a check-pawl 13, which is pivoted behind the set-shaft and is normally held in engagement with one of the ratchet-wheels.

Rotatably mounted in one of the cross-bars
 15 of the carriage-frame 1 is a short vertical shaft 14, at the lower end of which is provided a disk 15, which is rigidly attached to the shaft, and at the upper end of which is rigidly mounted a small pinion 16, which meshes
 20 with a rack-bar 17, arranged transversely of the set-beam and supported upon a bar 18, which is bolted securely to the set-beam. On the track beneath the carriage there are pivotally mounted two bars 19, whose ends are
 25 lapped and pivoted together, as best shown in Fig. 2. To one of the bars 19 is attached a rod 20, supported for sliding movement in a bracket 21, fixed at the side of the track on
 30 which the carriage travels. The rod 20 is normally held by a spring 22 in the retracted position shown in Fig. 2; but a foot-lever 23 of the bell-crank type is mounted on the
 35 bracket 21 and has its shorter arm connected with the rod 20 to impart movement to the rod when desired. When the foot-lever 23 is
 40 depressed, the bars 19 will be brought into approximate alinement and will contact with the periphery of the disk 15. Consequently the movement of the disk along the bars 19,
 45 which are held stationary, will cause rotation of the disk and the shaft 14 upon which it is mounted. The pinion 16, which is rigidly connected with the shaft 14, will also be turned and movement will be imparted to the rack-
 50 bar 17 in a direction such as to advance or retract the set-beam, according as the sawmill-carriage is moving forward or is reversed.

The foot-rig described in the foregoing paragraphs is especially designed for use with the
 55 other mechanism which forms a part of my invention and which will now be described as operated by the foot-rig above disclosed.

The rack-bar 17 is provided at the back with a recess 24, exceeding somewhat in size
 55 an elevation 25 upon the supporting-bar 18 and serving, in connection with the elevation 25, to provide means whereby a small amount of movement of the rack-bar 17 will be produced by the pinion 16 before motion is im-
 60 parted to the set-beam. The rack-bar 17 bears on its upper surface in front of the set-beam a pair of upwardly-projecting studs 26, which form a notch to receive the end of a short arm 27, rigidly attached to a shaft 28, mounted for
 65 oscillatory movement in bearing-brackets 29

on the set-beam. The shaft 28 is held normally in the position shown in Fig. 4 by a coil-spring 28^a. Upon the end of the shaft 28, adjacent to the ratchet-wheels, there is rigidly secured an arm 30, having in the ends
 70 thereof a pin 31, which projects under and supports a dog 32, mounted on one end of the pin 9. The dog 32 has projecting from the side adjacent to the ratchet-wheels a pin 33 of
 75 sufficient length to extend beneath the pawls 10 10 and 11.

When a sawmill is provided with the mechanism described in the immediately preceding paragraphs, any movement of the foot-lever 23 to offset the set-beam when the direction
 80 of the movement of the sawmill-carriage is reversed will be accompanied by a limited movement of the rack-bars 17 before motion is imparted to the set-beam and the movement of the rack-bar 17 will, through the en-
 85 gagement of the studs 26 and arm 27, impart a slight rocking movement to the shaft 28, which carries the arm 30, provided with the pin 31, which extends beneath the dog 32. The movement of the shaft 28 will necessarily
 90 swing the arm 30 and raise the dog 32 a sufficient distance for the pin 33, mounted in the arm 32, to lift the pawls 10 10 and 11 out of engagement with the ratchet-wheels 6. By the time the independent movement of the
 95 rack-bar 17 is ended and the bar is moved out of the position shown in Fig. 4 the pawls will all be disengaged from the ratchet-wheels and the set-shaft will be free to turn as the set-beam is offset.

From the foregoing description of the construction and operation of the offsetting mechanism it will be clearly seen that the pressure
 100 of the bars 19 against the disk 15 when the foot-rig is actuated tends to impart movement to the set-beam, and consequently to the carriage, such as to move it from the saw. In mills of heavy construction, such as are employed in sawing large logs, the pressure of
 105 the bars 19 against the disk 15 would not impart thereto any appreciable movement; but in light and portable sawing machinery, such as is employed in sawing small timber, the pressure of the bars 19 against the disk 15 im-
 110 parts a perceptible lateral movement to the carriage, and so prevents injury to the face of the log from contact with the saw.

Having thus described the construction and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—
 120

1. The combination in sawmill set-works, of a set-beam, a set-shaft, a ratchet-wheel mounted on the set-shaft, a pawl to control the movement of said ratchet-wheel, a member disposed transversely of the set-beam and adapted for a limited longitudinal movement independent of the set-beam, means for imparting longitudinal movement to said member, and mechanism operated by said member during its movement independent of the set-
 125 130

beam to disengage the pawl from the ratchet-wheel.

2. The combination in sawmill set-works, of a set-beam, a set-shaft, a ratchet-wheel mounted on the set-shaft, pawls to control the movement of said ratchet-wheel, a rack-bar arranged transversely of the set-beam and adapted for a limited movement independent of the set-beam, a pinion engaging said rack-bar, means for imparting rotation to said pinion, and mechanism operated by the rack-bar before movement is imparted to the set-beam to disengage the pawls and ratchet-wheel.

3. The combination in sawmill set-works, of a set-beam, a set-shaft, a ratchet-wheel mounted on said shaft, pawls to control the movement of said ratchet-wheel, a rack-bar arranged transversely of said set-beam for a slight movement independent of the set-beam, a pinion engaging said bar, means for rotating said pinion, a rock-shaft, connections between said bar and said shaft whereby the independent movement of the bar will rock the shaft, and means provided on the rock-shaft for disengaging the pawls from the ratchet-wheel.

4. The combination with the carriage of a sawmill for sawing light timber of set-works mounted on the carriage, set-works-operating mechanism also mounted on the carriage and comprising a friction-disk supported beneath the carriage, a shiftable member supported on the sawmill-frame beneath the carriage and in front of said disk, and a foot-rig for push-

ing said shiftable member into contact with said disk.

5. A foot-rig for actuating set-works in sawmills for sawing light timber comprising a pivoted foot-lever, a pusher-rod pivotally connected with said lever, a spring to keep said pusher-rod normally in inoperative position, and a member arranged longitudinally of the sawmill beneath the sawmill-carriage in front of the mechanism for operating the set-works and adapted to be pressed into frictional contact with the mechanism for operating the set-works to impart movement thereto when the foot-lever is depressed.

6. The combination with the carriage of a sawmill for sawing light timber, of sawmill set-works mounted on the carriage, operating mechanism for the set-works also mounted on the carriage and comprising a friction-disk supported beneath the carriage, a pair of lapped bars pivotally connected and arranged on the sawmill-frame beneath the carriage in front of said disk, a pivoted foot-lever and a pusher-rod held normally in retracted position by means of a spring and pivotally connected to one of said bars and to said foot-lever.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WALTER E. DILLARD.

Witnesses:

R. J. J. SPRATLEY,
J. L. WATS.