

(No Model.)

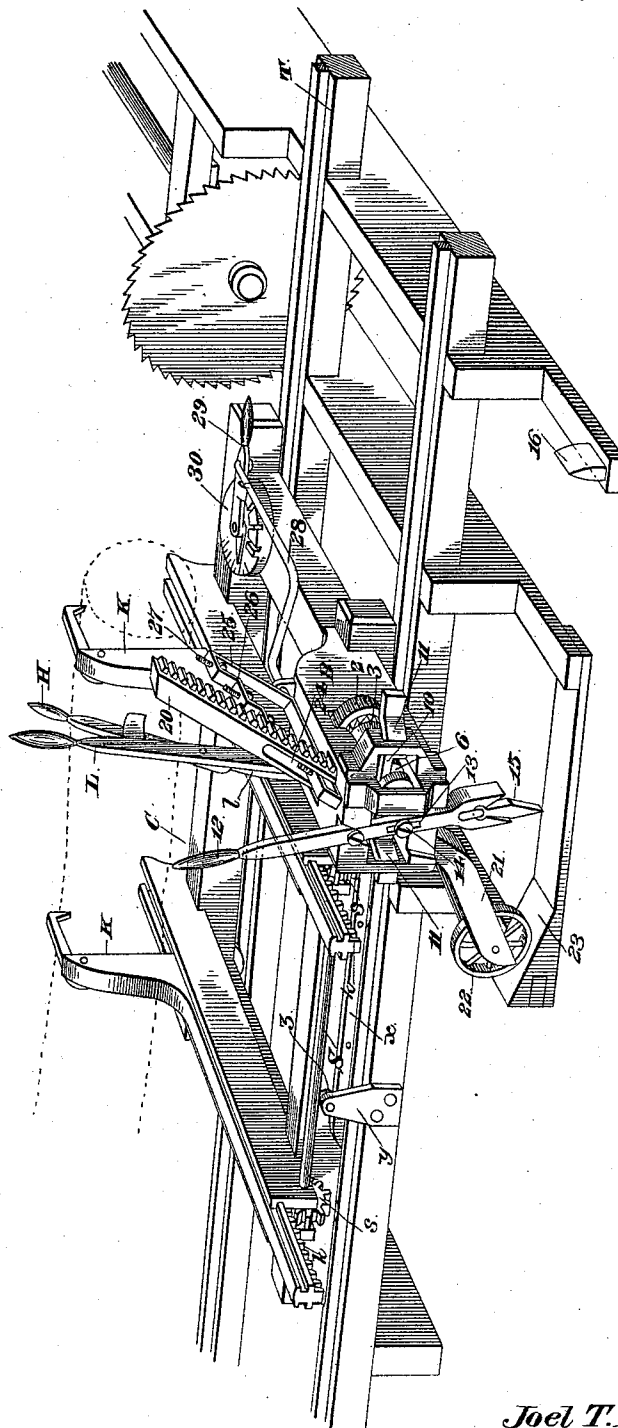
2 Sheets—Sheet 1.

J. T. RICE.
SAWMILL SET WORKS.

No. 485,564.

Patented Nov. 1, 1892.

FIG. 1.



Witnesses

M. C. Fowler

A. J. Collamer,

By his Attorneys,

Inventor

Joel T. Rice

C. A. Snow & Co.

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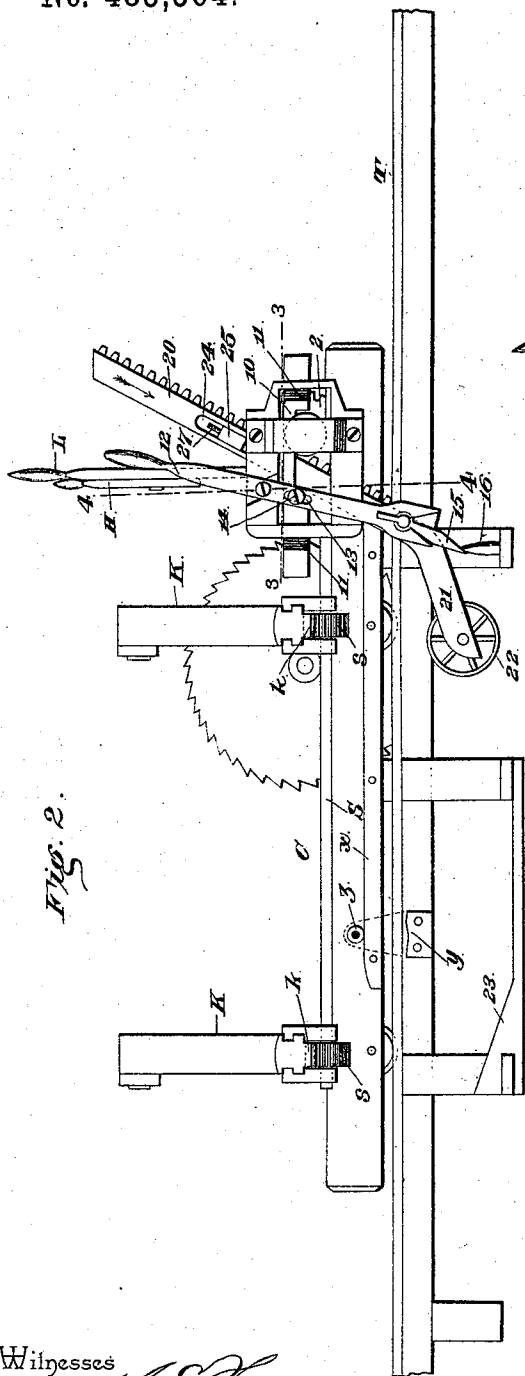


Fig. 2.

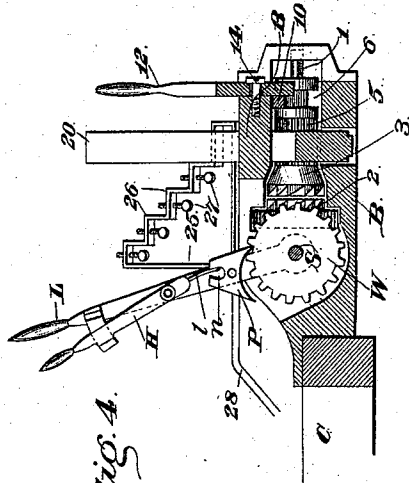


Fig. 4.

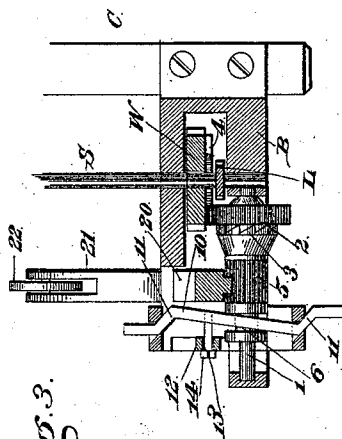


Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

JOEL TROUT RICE, OF HOT SPRINGS, ARKANSAS, ASSIGNOR OF ONE-HALF
TO CHARLES CUTTER AND JOHN J. SUMPTER, OF SAME PLACE.

SAWMILL SET-WORKS.

SPECIFICATION forming part of Letters Patent No. 485,564, dated November 1, 1892.

Application filed October 16, 1891. Serial No. 408,887. (No model.)

To all whom it may concern:

Be it known that I, JOEL TROUT RICE, a citizen of the United States, residing at Hot Springs, in the county of Garland and State of Arkansas, have invented a new and useful Sawmill Set-Works, of which the following is a specification.

This invention relates to wood-sawing, and more especially to the set-works on the saw-mill-carriage for setting the log toward the saw; and the object of the same is to effect certain improvements in devices of this character.

To this end the invention consists in the devices hereinafter more fully described and claimed.

Figure 1 is a perspective view showing the saw, the track, and the carriage. Fig. 2 is a rear elevation showing the trigger as just passing forward over the stud and the rack-bar as falling. Fig. 3 is a horizontal section on the line 3 3 of Fig. 2, showing the trigger-lever as having been moved in the other direction and the clutch members in engagement. Fig. 4 is a vertical section on the line 4 4 of Fig. 2, showing the usual hand-lever and the rack-bar stop.

Referring to the said drawings, the letter T designates the track mounted on the framework which supports the saw, and C is the carriage moving over this track alongside the saw, as is usual in devices of this character. This carriage has the ordinary knees K, with teeth *k* on their lower edges, and S is the set-shaft extending longitudinally through the carriage and having gears *s*, engaging said teeth, whereby the knees may be moved. In a suitable box B, mounted on the carriage, the shaft S has a toothed wheel W, and L is the usual lever pivoted on the shaft adjacent this wheel, having a double pawl P, adapted to engage the wheel so as to turn it in either direction, and having a small or hand lever H pivoted thereto, with a leaf-spring *l* in its lower end, projecting into a notch *n* at the upper end of the pawl. When this hand-lever is moved, the pawl is set as desired, and thereafter by reciprocating the upper end of the lever L the wheel W will be turned by the pawl, and the gears on the shaft S will move

the several knees to set the log, as may be necessary. Heretofore devices of practically this same construction have been used for this purpose, and the present invention consists in adding thereto mechanism for effecting the regular and automatic setting of the knees, as well as devices for limiting the degree of the set. Such mechanism is operated by the reciprocation of the carriage, which is effected by any suitable means, while the said devices are adapted to be controlled by the sawyer while standing at the front side of the carriage.

In the box B is located a horizontal shaft 1, standing at right angles to the shaft S, and on this shaft 1 are located two clutch members 2 and 3. The former is near the inner end of the shaft and is toothed on its exterior, the teeth engaging a toothed ring 4 on the side of the wheel W, while the latter has a long toothed hub 5 and at its outer end an annular groove 6. Moving horizontally through the box is a slide-bar 10, having oblique portions 11, the body of this bar engaging said groove 6. 12 is a trigger-lever pivoted to the rear end of the box B, having a slot 13, engaging a pin 14, which projects to the rear from the slide-bar 10, and having a recess in its lower end, in which is mounted a swinging trigger 15, whose tip is adapted to move over a stud 16, secured on the track or the framework supporting the same. By this means as the carriage passes forward the trigger drags over the stop, as shown in Fig. 2, whereby the trigger-lever 12, having been thus drawn to the left, moves the slide-bar, so that its oblique or angular portions 11 move diagonally through the box, and the clutch member 3 is drawn out of engagement with the member 2, the rack-bar falling at this time, as is hereinafter described. The carriage then commencing to move forward the trigger drags over the stud in the other direction and moves the trigger-lever and the slide-bar in the other direction, thereby throwing the clutch members again into engagement, as seen in Fig. 3. In certain cases the trigger might be omitted, though I prefer to use it, as described.

Sliding diagonally but nearly vertically

through the box is a rack-bar 20, whose teeth engage those on the hub 5 of the clutch member 3, and the lower end of this rack-bar is preferably bent slightly forward, as at 21, and carries a wheel 22, adapted to travel over an inclined rail 23, fixed on the framework, as seen in Fig. 2. As the carriage moves forward and the clutch members are disengaged the weight of this rack-bar causes it to fall to its lowest position. The carriage then moves backward, and thereby causes the re-engagement of the clutch members, and when the wheel strikes and travels up the rail the rack-bar is pushed upward, thereby turning the clutch members, the wheel W, and the shaft S and setting the knees as is necessary.

In order to adjust the amount of set which shall take place at each time, and hence to regulate the thickness of the pieces sawed from the log, I provide the rack-bar with a longitudinal slot 24 and cause a rack-bar stop 25 to be adjustably located within this slot. The said stop is best seen in Fig. 4, and consists of an open framework having steps 26, upwardly through each of which may pass a thumb-screw 27, and 28 is a rod leading forwardly from this stop and connected with a lever 29, which is pivoted to a dial 30, mounted on the carriage and suitably inscribed with a scale corresponding with the steps of the stop. By this means the distance which the rack-bar falls each time the carriage moves to the front may be regulated to a great degree of nicety, the operator moving the lever 29 over the dial 30 without leaving his position and setting the thumb-screws 27 when a finer adjustment is desired. When the log is first put on the carriage and dogged to the knees, the trigger-lever is moved to disengage the clutch member, and then the lever L is turned, so as to move the knees and set the log properly, as is usual. The pawl of this lever is then left so as to permit the forward turning of the shaft S and the carriage-feed mechanism is thrown into gear. At each reciprocation of the carriage the knees are moved across the same the distance permitted by the rack-bar stop, and the log is thereby fed or moved in the proper direction and to the proper extent to cause a board or slab of the desired thickness to be cut off.

On the rear side of the carriage is preferably arranged a horizontal guide-rail or guard-track x , and y is an arm rising from the framework at a proper point and carrying a wheel z at its upper end, beneath which this guard-rail moves. By this construction the carriage is prevented from rising off the tracks during its reciprocation thereover.

What is claimed as new is—

1. In a saw-carriage set-works, the combination, with the carriage moving on tracks, the transversely-moving toothed knees, the shaft having gears engaging the said teeth, and a wheel on said shaft having teeth on one side, of a shaft carried by the carriage, a clutch thereon, one of whose members has a

gear engaging the teeth on said wheel and the other of whose members has a toothed hub, an upright rack-bar engaging said hub, an inclined rail for raising the rack-bar as the carriage goes back, and means for disengaging and then engaging the clutch members when the carriage is near the other end of its movement.

2. In a saw-carriage set-works, the combination, with the carriage moving on tracks, the transversely-moving toothed knees, the shaft having gears engaging the said teeth, and a wheel on said shaft having teeth on one side, of a shaft carried by the carriage, a clutch thereon, one of whose members has a gear engaging the teeth on said wheel, means for turning the other member as the carriage goes back, this member having a groove, a slide-bar engaging said groove, a lever connected with the slide-bar, and a stud tripping the lower end of the lever when the carriage is near the other end of its movement.

3. In a saw-carriage set-works, the combination, with the carriage moving on tracks, the transversely-moving toothed knees, the shaft having gears engaging the said teeth, and a wheel on said shaft having teeth on one side, of a shaft carried by the carriage, a clutch thereon, one of whose members has a gear engaging the teeth on said wheel and the other of whose members has a toothed hub with an annular groove, an upright rack-bar engaging said hub, an inclined rail for raising the rack-bar as the carriage goes back, a slide-bar engaging said groove, a lever connected with said bar, and a stud tripping the lower end of the lever when the carriage is near the other end of its movement.

4. In a saw-carriage set-works, the combination, with the reciprocating carriage, the knees thereon, a box on the carriage, a clutch therein, one of whose members has a groove, means for turning this member, and connections between the other member and the knee, of a horizontal slide-bar having angular portions standing oblique to its body and sliding in said box, a pin projecting from this bar, a depending lever pivoted to the box and having a slot engaging the pin, a trigger on said lever, and a stud adapted to trip said trigger.

5. In a saw-carriage set-works, the combination, with the reciprocating carriage, the knees thereon, a box on the carriage, a clutch therein, one of whose members has a toothed hub, connections between the other member and the knee, and means for engaging and disengaging the members, of an upright rack-bar sliding through the box, engaging said hub, and having a longitudinal slot in its body, means for automatically raising this rack-bar to a certain height as the carriage goes back, and an adjustable stop in said slot, substantially as described.

6. In a saw-carriage set-works, the combination, with the reciprocating carriage, the knees, a box on the carriage, a gear therein

connected with the knees, an upright slotted rack-bar sliding through said box in engagement with said gear, and means for automatically raising the rack-bar to a certain height as the carriage goes back, of a stop standing within said slot, moving over the box, and having steps on its upper edge, set-screws through said steps, and means for adjusting the stop longitudinally.

10 7. In a saw-carriage set-works, the combination, with the reciprocating carriage, the knees, a box on the carriage, a gear therein connected with the knees, an upright slotted rack-bar sliding through said box in engage-

ment with said gear, and means for automati- 15 cally raising the rack-bar to a certain height as the carriage goes back, of a stop within said slot and having steps on its upper edge, a dial on the carriage having a scale, a lever pivoted to said dial, and a rod leading from 20 the lever to the stop.

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

JOEL TROUT RICE.

Witnesses:

CHARLES R. COGSWELL,
JOHN J. SUMPTER, Jr.