

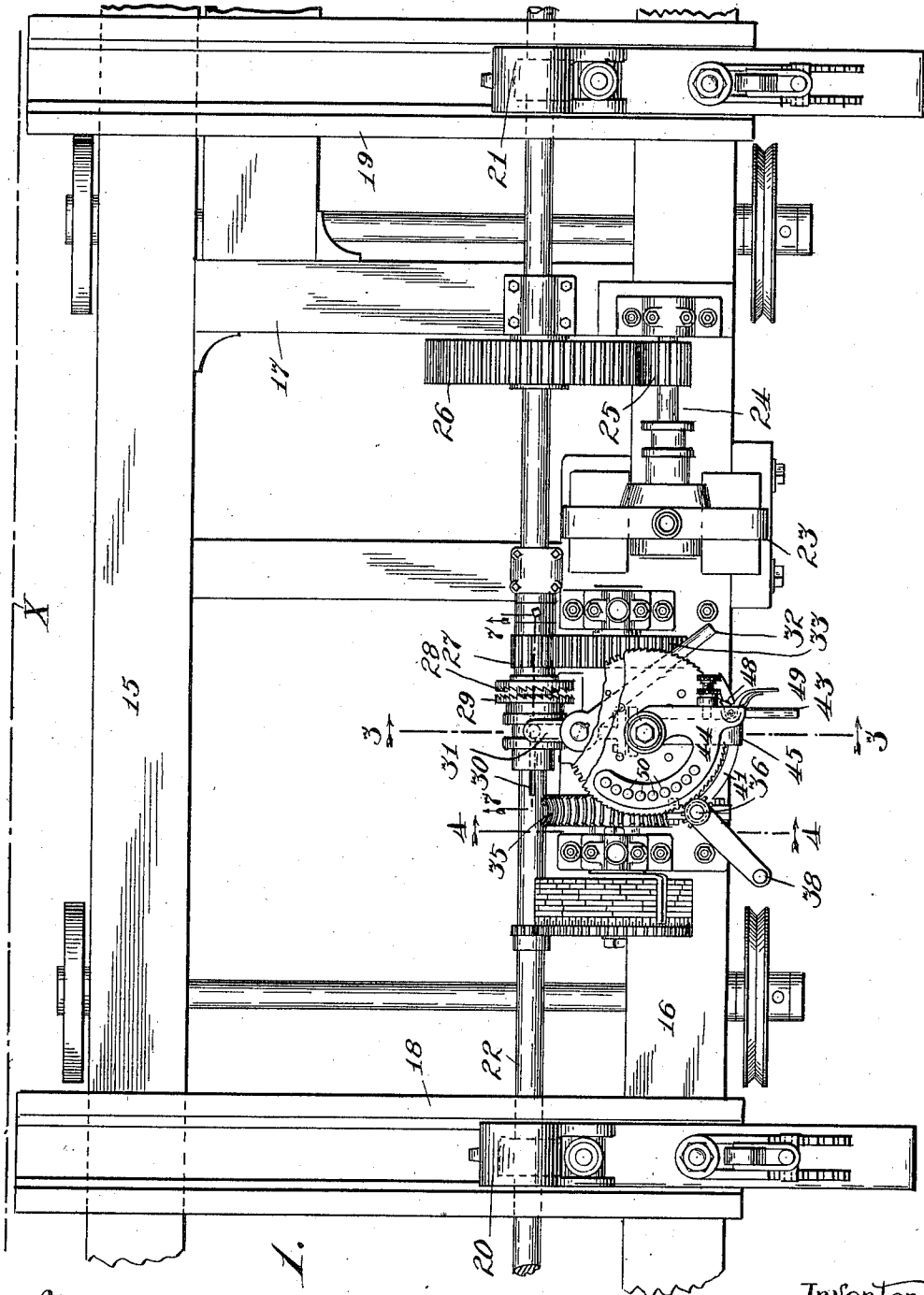
DE WITT C. PRESCOTT.
SAWMILL SETTING AND RECEDING MECHANISM.

APPLICATION FILED JUNE 9, 1911.

1,038,788.

Patented Sept. 17, 1912.

4 SHEETS—SHEET 1.



Witnesses
Milton Lenoir
E. M. Klatchner

Fig. 1.

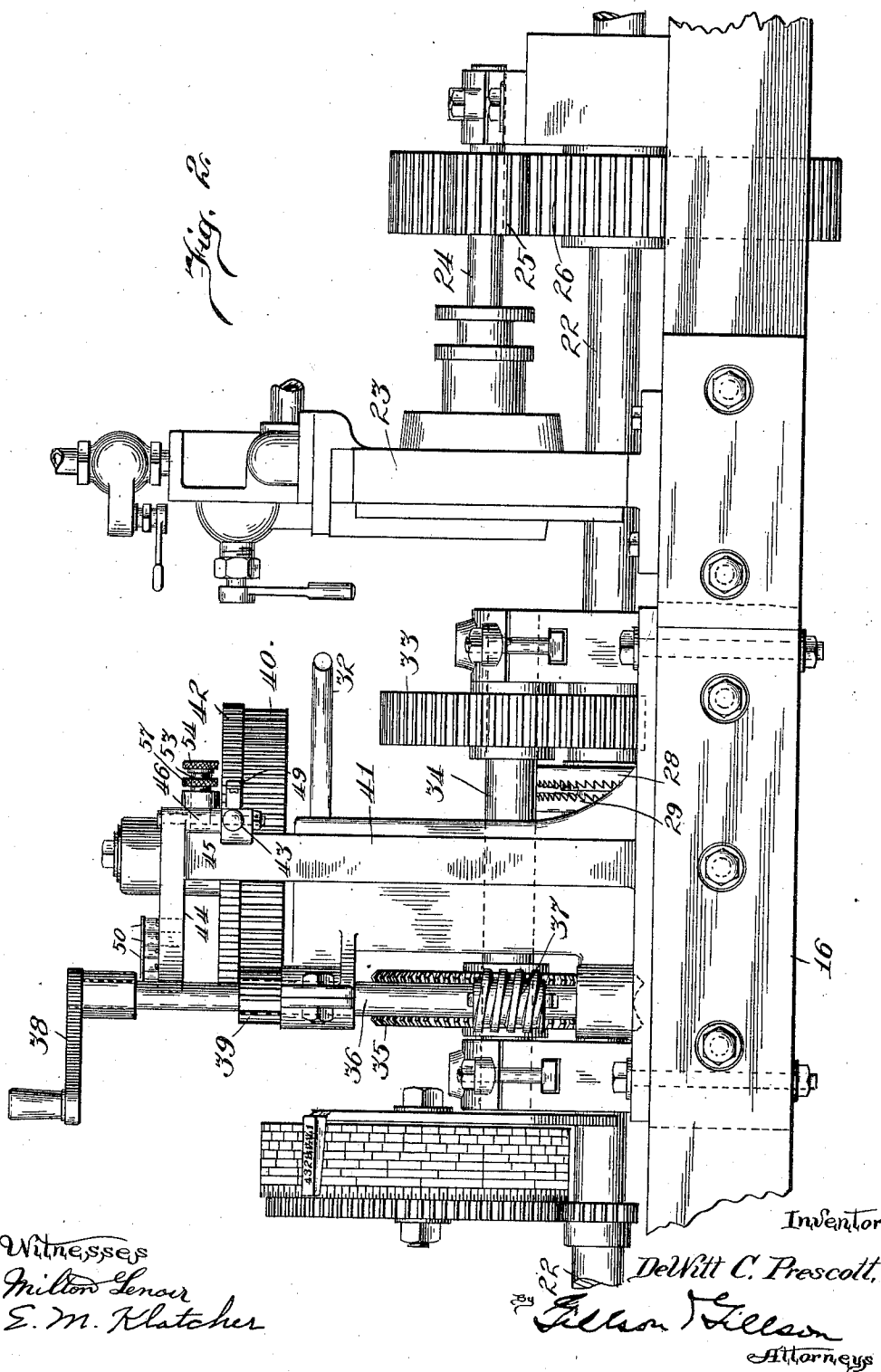
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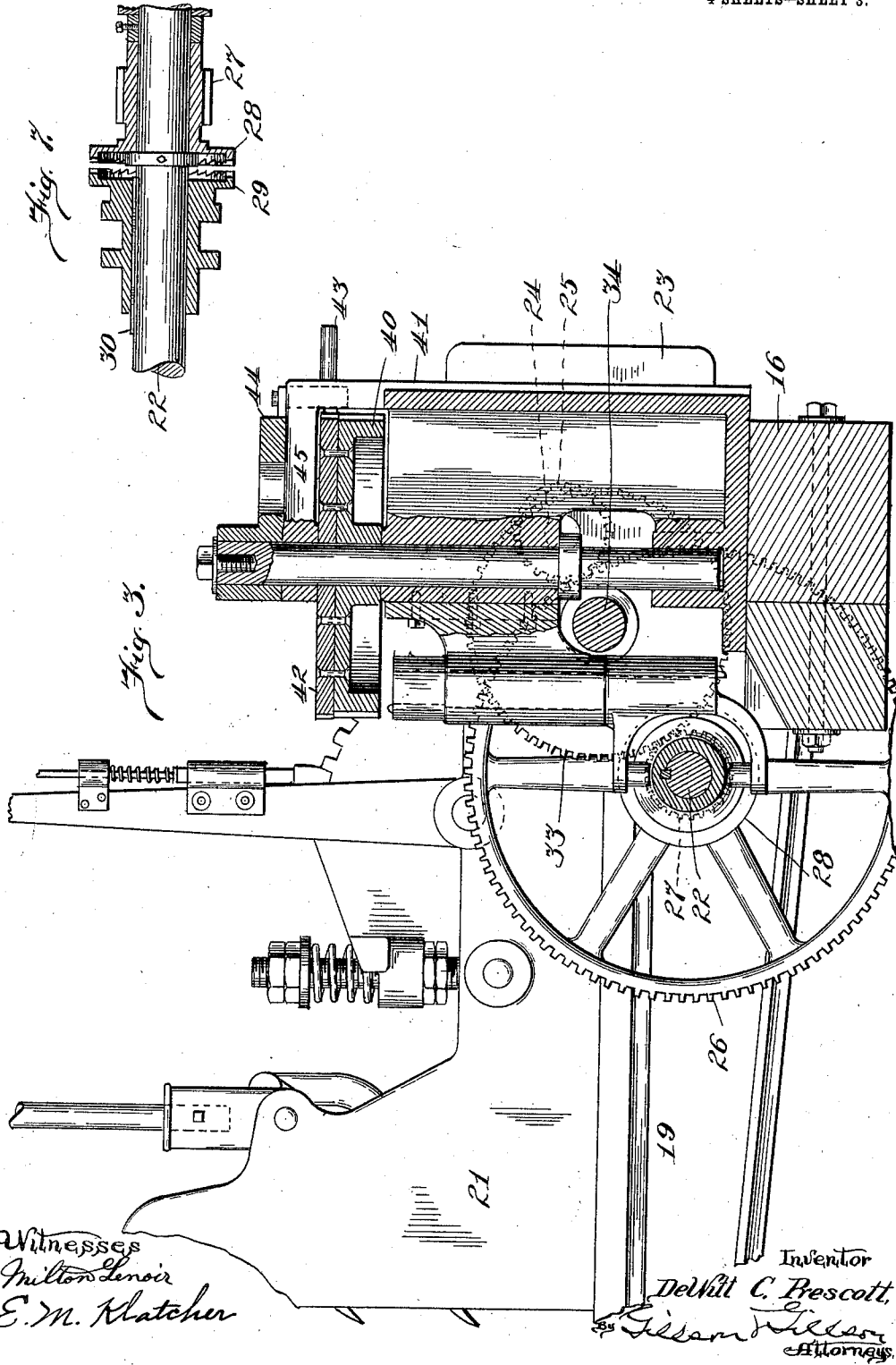


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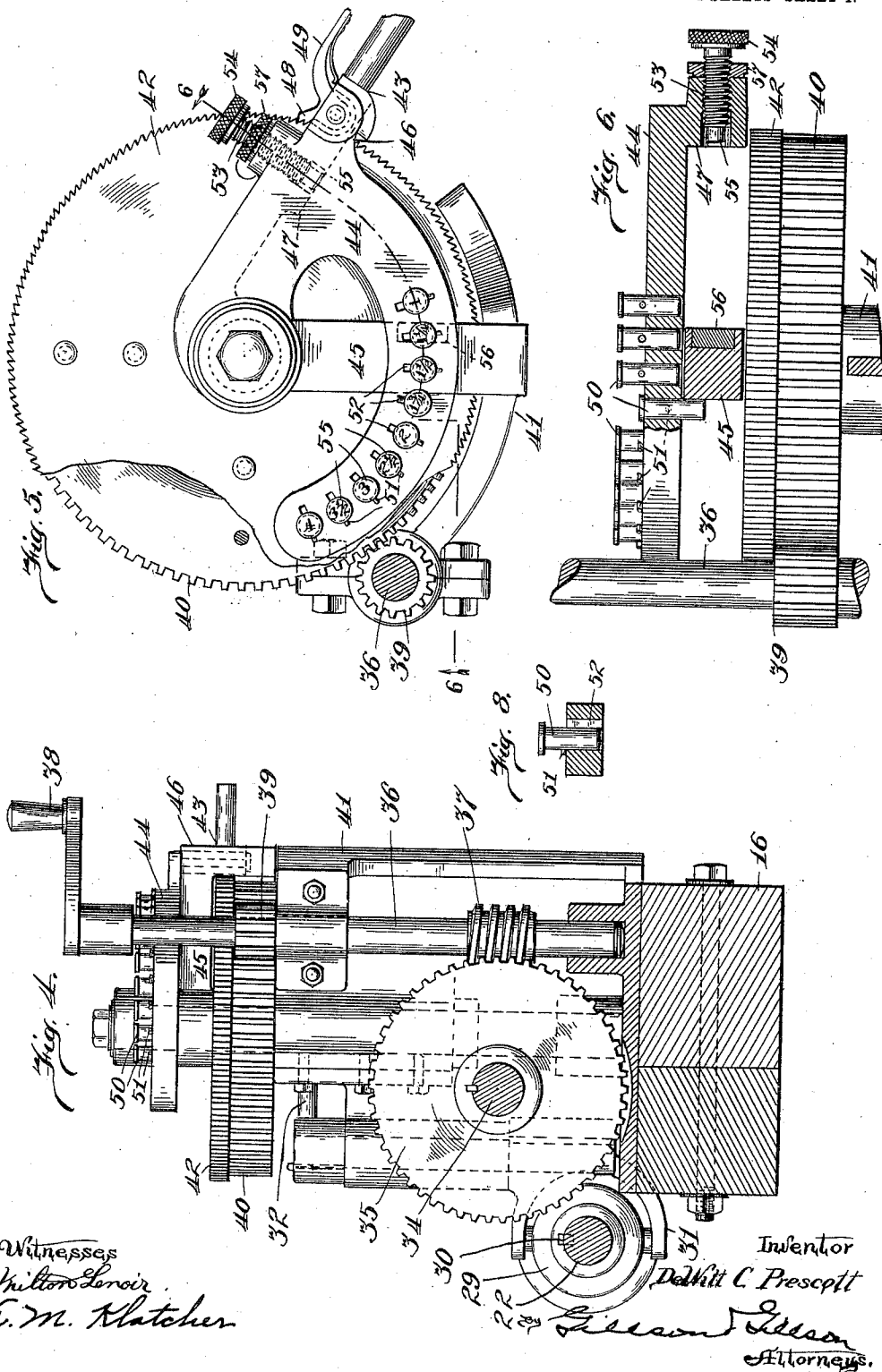


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UNITED STATES PATENT OFFICE.

DE WITT C. PRESCOTT, OF CHICAGO, ILLINOIS.

SAWMILL SETTING AND RECEDING MECHANISM.

1,038,788.

Specification of Letters Patent. Patented Sept. 17, 1912.

Application filed June 9, 1911. Serial No. 632,294.

To all whom it may concern:

Be it known that I, DE WITT C. PRESCOTT, a citizen of the United States, and resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Sawmill Setting and Receding Mechanism, of which the following is a specification, and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates to power mechanism for advancing the knees of a saw-mill carriage for the purpose of bringing the log or cant to the saw line or for throwing it from the carriage, and for receding the knees to receive a new log or cant.

The object of the invention is to provide power-actuated means for accomplishing these means, and particularly for controlling the action of this mechanism so as to accurately advance the log or cant the required distance, such mechanism to be simple of construction, easy of manipulation, and accurate in adjustment. These objects are attained in the structure hereinafter described and illustrated in the accompanying drawings, in which—

Figure 1 is a detail plan of a saw-mill carriage with the improved mechanism mounted thereon; Fig. 2 is a detail side elevation of the carriage showing the setting mechanism; Fig. 3 is a sectional detail on the line 3—3 of Fig. 1; Fig. 4 is a sectional detail on the line 4—4 of Fig. 1; Fig. 5 is a detail plan, partly in section, and with some of the parts broken away, of the controlling mechanism; Fig. 6 is a sectional detail on the line 6—6 of Fig. 5; Fig. 7 is a sectional detail on the line 7—7 of Fig. 1; and Fig. 8 is a sectional detail of the quadrant and one of the stop pins forming a part of the controlling mechanism.

The carriage comprises the sills 15, 16, and suitable cross-sills, as 17. The head-blocks, here shown as two in number, are represented at 18, 19, and, as usual, are located transversely of the carriage and project slightly beyond its forward side so as to just clear the saw line indicated at X. The usual knees 20 and 21 are mounted to slide upon the headblocks, and on their under faces are provided with the usual gear-racks for meshing with pinions mounted upon the set-shaft 22 which is journaled in the base of the head-block.

A motor, shown as a common form of

steam engine 23, is mounted upon the carriage, its shaft 24 being provided with a pinion 25, meshing with a gear-wheel 26 fixed upon the set-shaft 22, so that by driving the motor in either direction the knees may be advanced or receded.

A pinion 27 is loosely mounted on the shaft 22 and in fixed relation with a clutch member 28. A companion clutch member 29 is slidably mounted on the shaft 22, and is locked to the shaft, in order to rotate therewith, by means of a feather or spline 30. This slidable clutch member is controlled by the usual shipper yoke 31 and shipper lever 32. The pinion 27 meshes with a gear-wheel 33 fixed upon a shaft 34 carrying a worm-wheel 35. A vertical shaft 36 carries a worm 37, which engages the worm-wheel 35. Upon the upper end of the shaft 36 there is mounted a hand-crank 38. A pinion 39, fixed upon the shaft 36, meshes with a gear-wheel 40, rotatably mounted upon a standard 41 rising from and firmly set in the frame of the carriage, and to the upper flat face of the gear 40 there is fixed a ratchet wheel 42. An arm 43 is pivoted upon the upper end of the standard 41 so as to swing freely over the ratchet wheel 42, and carries a laterally projected curved or segmental arm 44. A rigid stop bar 45 extends from the standard 41 to a bracket 46 rising from the sill 16, and constituting a part of the frame-work for carrying the worm-shaft 36 and other portions of the mechanism. The bar 45 is located between the arm 43 and the ratchet wheel 42. The arm 43 is provided with a downwardly projecting boss 47, which limits the movement of the arm in one direction by its contact with the stop bar 45. A pawl 48, pivotally mounted upon the arm 43 and controlled by means of a hand-piece 49, coöperates with the teeth of the ratchet wheel 42, normally locking the arm and the ratchet wheel together in such manner that as the wheel is turned the arm is turned by the action of the worm. The boss 47 is carried toward the bar 45.

A plurality of adjustable positive stops, as many as desired, are carried by the quadrant 44, so arranged that they may be separately advanced to make contact with the bar 45 when the arm 43 is moved backward. These stops may take, and as shown are in the form of pins 50, which project downwardly through the quadrant 44 and are

slidable therein, these pins being of such length that they may be depressed so that they will make contact with the bar 45 when the arm 43 is moved backward. Each of the pins 50 carries a laterally projecting stud 51, which is adapted to slide through a groove 52 extending laterally from the aperture in the quadrant 44 within which the pin is fitted. When the pin is not in service it is raised to bring the stud 51 above the upper face of the quadrant, and is then turned to throw the stud out of register with the groove 52.

The boss 47 has a threaded aperture within which there is fitted a screw-bolt 53, having a knurled head 54, the end 55 of the bolt being hardened, this bolt constituting an adjustable stop for engagement with the bar 45. This bar is preferably armored, as shown at 56, a piece of hardened steel being set in its face for engagement by the boss 47 or the end 55 of the bolt 53.

When a log or cant is mounted upon the head-blocks the setter causes its advance the desired distance in the following manner: The motor 23 having its power applied to advance the knees, and the clutch member 29 being in engagement with the clutch member 28, the worm-wheel 35 tends to rotate the worm shaft 36 but is locked against movement by the worm 37, which is made of suitable pitch to secure this action. The operator depresses one of the pins 50. These pins determine the limit of backward movement of the arm 43. Let it be assumed that it is desired to cut from the cant a board $1\frac{3}{4}$ inches thick. The operator depresses the pin designated with this numeral, as shown in Figs. 5 and 6; he then releases the pawl 48 and swings the arm 43 back until this pin makes contact with the bar 45, whereupon he permits the pawl to again come into engagement with the teeth of the ratchet wheel 42. By now rotating the shaft 36 by means of the hand crank 38, he brings the boss 47 or bolt 53 into engagement with the bar 45, permitting the worm-wheel 35, and consequently the set shaft 22, to be rotated sufficiently to advance the knees the required distance.

In the manufacture of lumber it is sometimes desired to cut to the exact thickness specified, sometimes to cut the board a little scant of the designated measurement, and sometimes to cut it full or slightly in excess of the measurement specified. The boss 47 is so positioned that when its front face is relied upon to make contact with the bar 45 the lumber produced will be slightly in excess of the measurement indicated by the numeral on the stop pin 50. By advancing the bolt 53 so that its end constitutes the engaging member the range of movement of the arm 43 is slightly reduced, and consequently the thickness of lumber produced is

correspondingly reduced. The bolt 53 carries a lock nut 57 to enable the operator to effect the adjustment of this limiting device and maintain it as fixed.

The stop mechanism as described is for the purpose of controlling the motor. While the connections between the stop mechanism and the motor are shown as being through the set-shaft, and this form of construction is at present preferred, it is obvious that the scope of the invention is broader than this specific form of connection and that any means whereby the worm wheel and the stop mechanism associated therewith are connected with the motor, will secure the desired results.

While there is shown in the drawings as the means for connecting the set-shaft with the knees a gear-rack attached to the bottom of the knee and meshing with the pinion carried by the set-shaft, it is understood that the invention is applicable to other forms of construction in which the gearing for driving the knees from the set-shaft is differently organized.

While the invention is shown in connection with the head-blocks of a saw-mill carriage, it is applicable to any setting device for determining the thickness of the board or plank to be cut, whether mounted on a carriage or otherwise arranged, or whether movement is imparted directly to the log or cant or to a table carrying the same or to the saw, the log or cant remaining in the same plane as before.

In sawing timber the knees may be rapidly advanced by the motor 23 to discharge the finished stick from the head-blocks by manually separating the clutch members 28, 29. Preferably the clutch members 28, 29 are provided with inclined teeth, as shown, in order that when the motor 23 is reversed to recede the knees, these clutch members will automatically separate.

I claim as my invention—

1. In a saw mill set works, in combination, a set shaft, a worm wheel, a motor for driving the set shaft and worm wheel, a worm shaft meshing with the worm wheel, a hand crank directly applied to the worm shaft, a ratchet, a train of speed reducing gears operatively connecting the worm shaft and ratchet, an oscillatable pawl arm driven in one direction by the ratchet and a positive stop for limiting the movement of the pawl arm in that direction.

2. In a saw mill set works, in combination, traveling knees, a motor for moving the knees, a worm wheel driven by the motor, a worm shaft engaging the worm wheel, a hand crank, a ratchet, operative connection between the hand crank the worm shaft and the ratchet including a pair of speed reducing gears whereby the ratchet is turned at a less rate than the hand crank and worm

shaft, an oscillatable pawl arm driven in one direction by the ratchet, and a positive stop for limiting the movement of the pawl arm in that direction.

a ratchet wheel driven by the worm shaft, a pawl-arm driven by the ratchet wheel, a positive stop for the pawl-arm, and means for manually turning the worm shaft.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."