

No. 833,972.

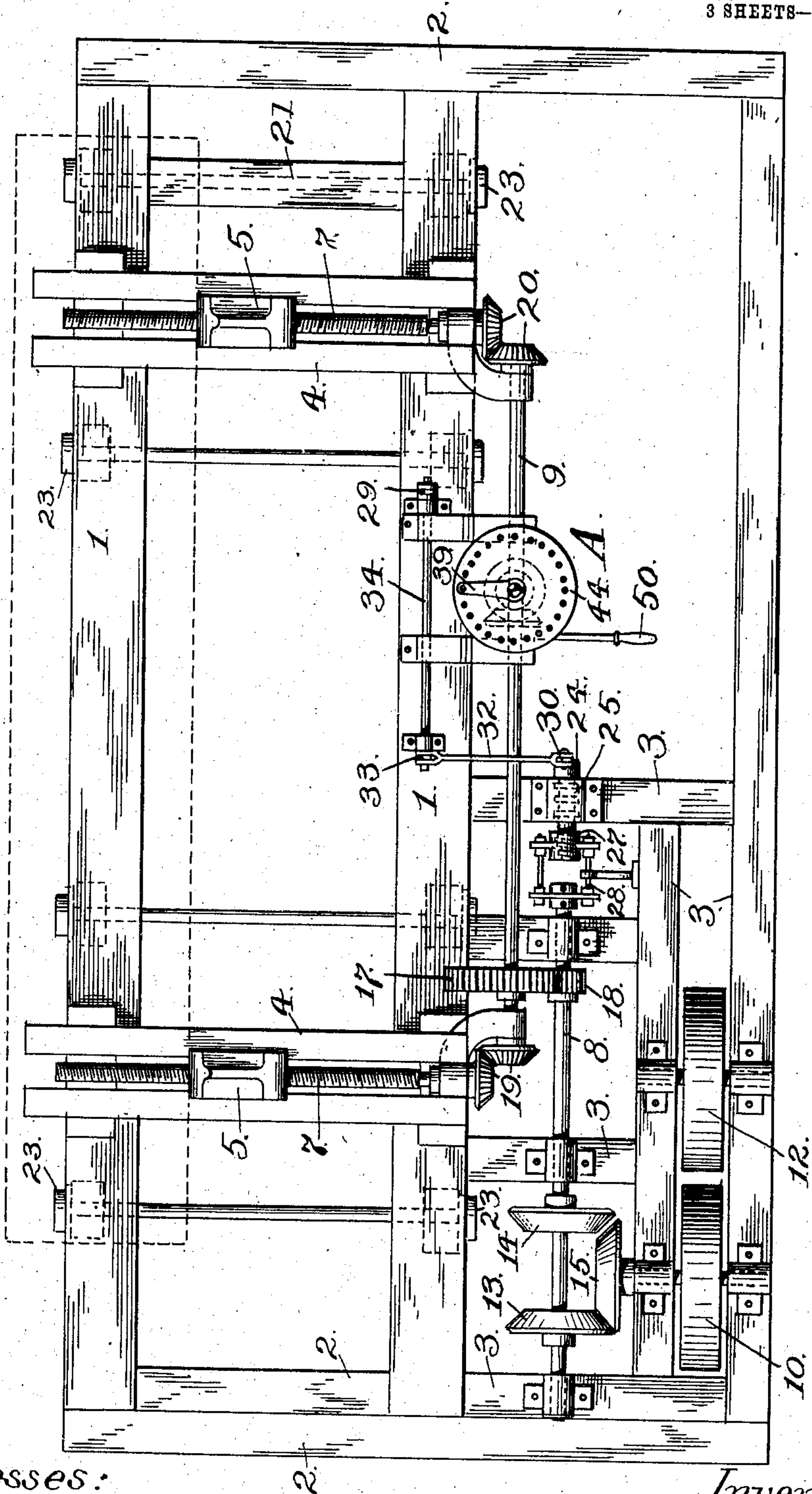
PATENTED OCT. 23, 1906.

E. H. PERCY, JR.
SAWMILL SETTING APPARATUS.

APPLICATION FILED AUG. 24, 1905.

3 SHEETS—SHEET 1.

Fig. 1.



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3 SHEETS—SHEET 2.



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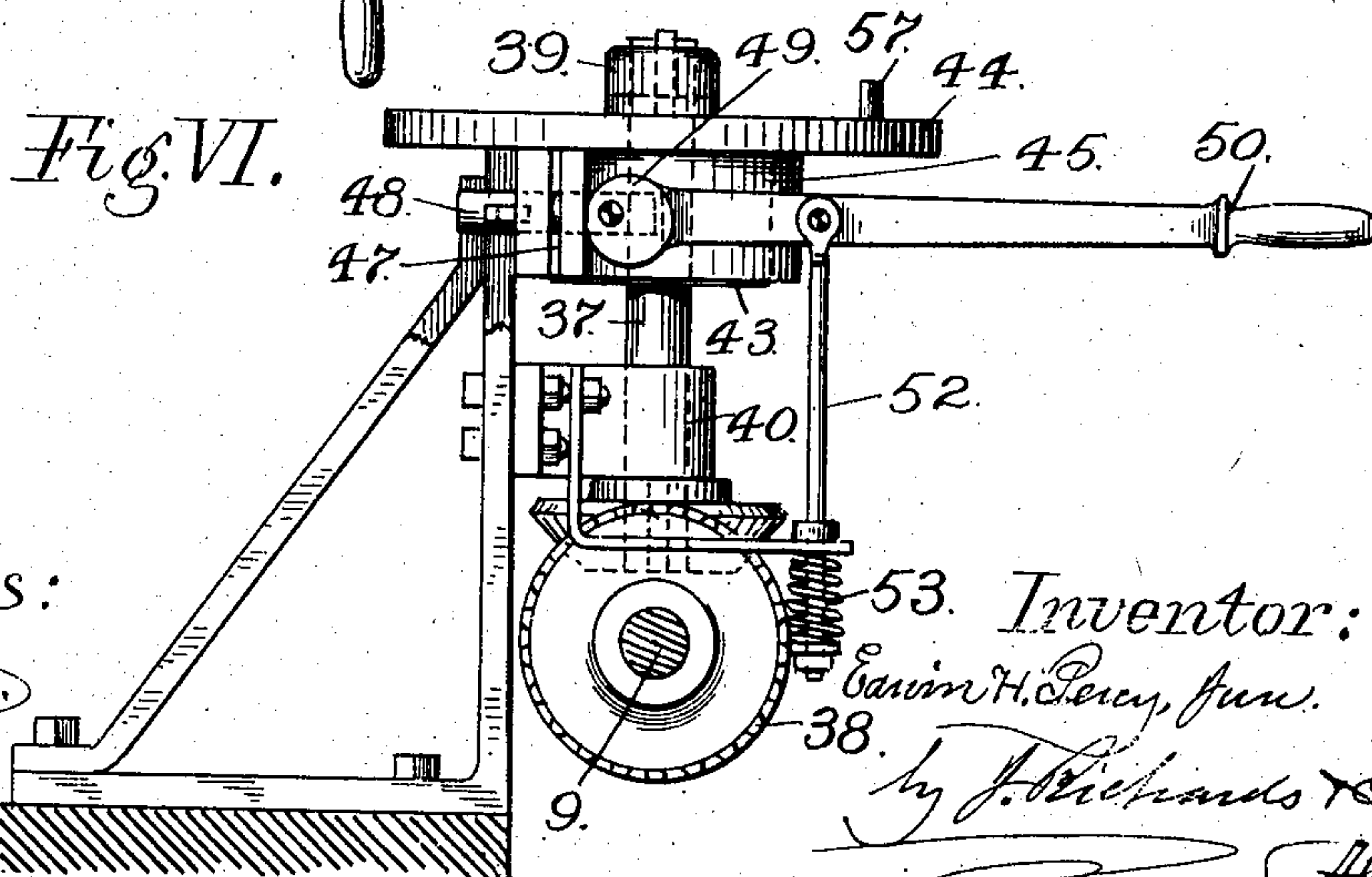
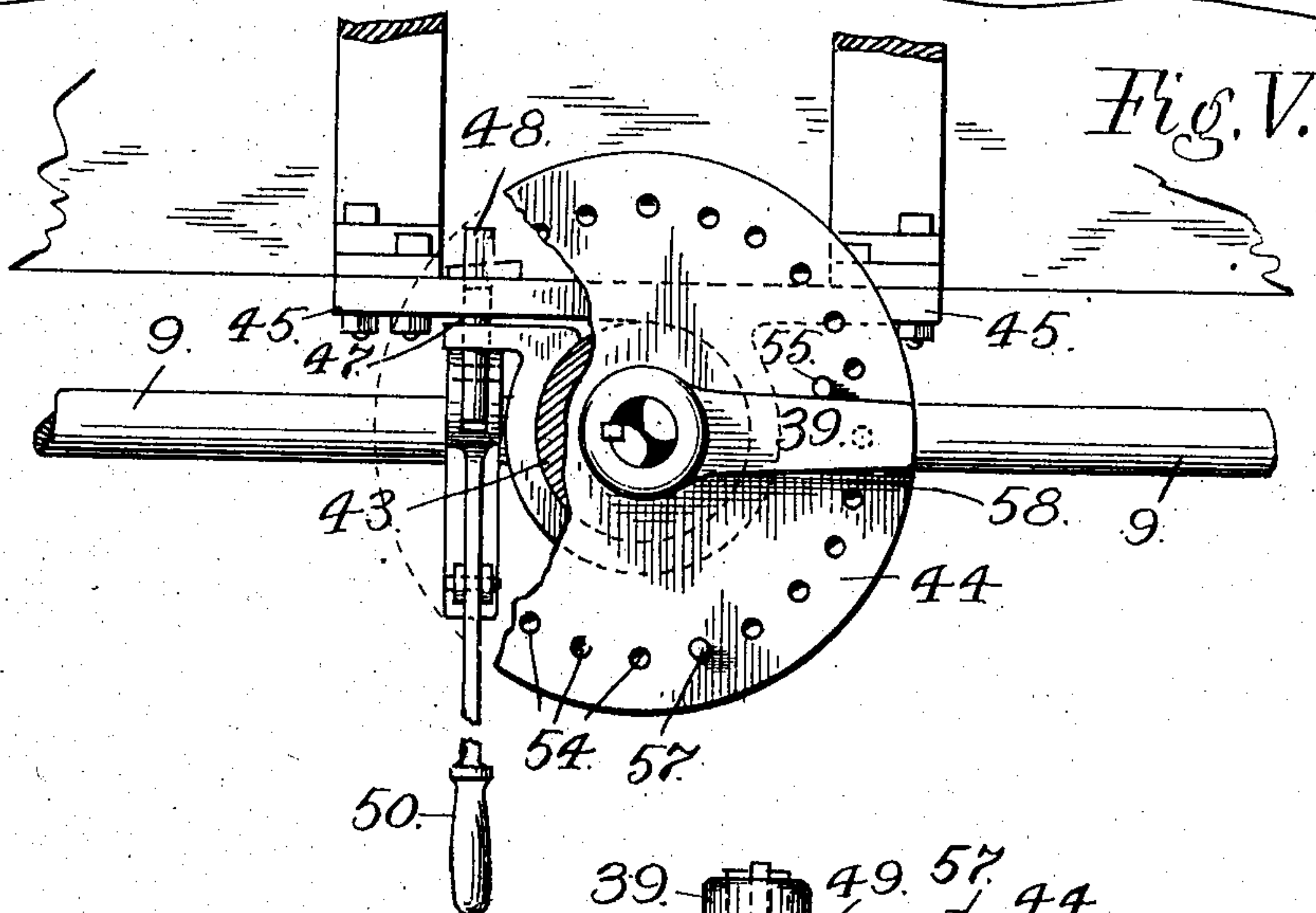
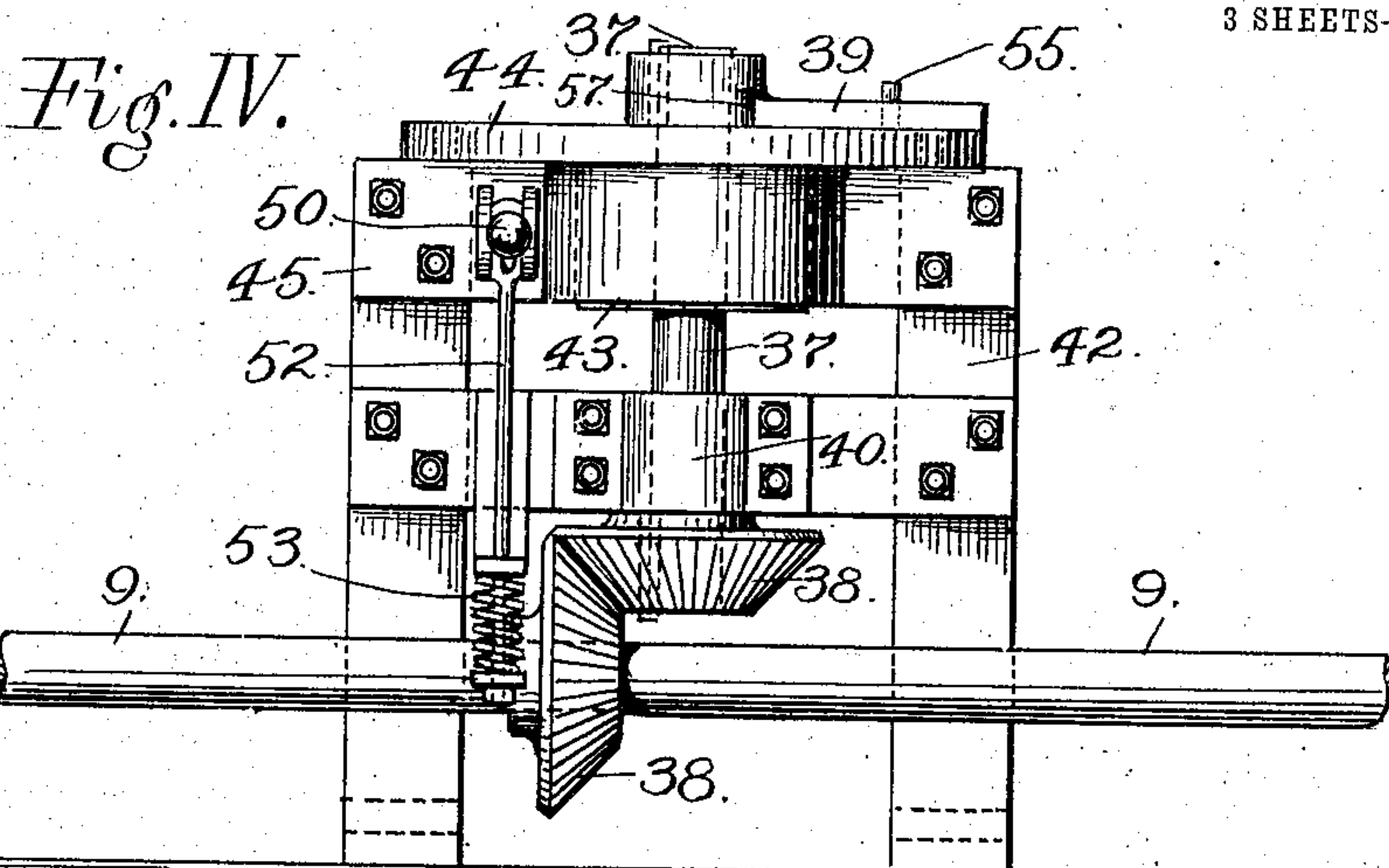
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3 SHEETS—SHEET 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

EDWIN H. PERCY, JR., OF FORT BRAGG, CALIFORNIA.

SAWMILL-SETTING APPARATUS.

No. 833,972.

Specification of Letters Patent.

Patented Oct. 23, 1906.

Application filed August 24, 1905. Serial No. 275,639.

To all whom it may concern:

Be it known that I, EDWIN H. PERCY, Jr., a citizen of the United States of America, residing at Fort Bragg, county of Mendocino, and State of California, have invented certain new and useful Improvements in Sawmill-Setting Apparatus; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to timber-sawmills and the carriages on which the logs or timber is traversed, and relates especially to what is technically called the "setting" machinery or apparatus by means of which the logs are advanced to the saw after each cut is made, as hereinafter described in this specification, and illustrated by drawings that form a part thereof.

The invention consists in continuously-driven machinery to operate the setting-works, connected therewith by frictional gearing that moves the traversing screws and knees, and connected therewith a graduated circular gaging and indicating disk having a movable detent or stop to determine the range of the knees and instantly stop the same by a frictional clamp operated by an attendant and arresting definitely the motion of the frictional driving-gearing that moves or sets the timber; also, consists in constructive and other features that will be more fully pointed out by the aid of the drawings.

Referring to the drawings, Figure I is a plan view of the carriage for a sawmill with its connected parts constructed according to my invention. Fig. II is an edge or side view of the device shown in Fig. I. Fig. III is an end view of the same with a log mounted thereon. Fig. IV is an enlarged side view of a part of the setting mechanism. Fig. V is a plan view of the part shown in Fig. IV, and Fig. VI a side view of the same at a right angle to the view of Fig. IV.

In setting machinery for sawmill-carriages to advance the timber to the saw various and varying distances are required as the work progresses, and when such setting machinery is driven by power its control demands special devices to secure celerity and accuracy. When engagement is made by frictional devices, these have to perform a motion of definite range within a moment's time, and as frictional gearing is not capable of

producing a positive movement stop and indicating devices are required that must have visible and instant action without slipping the frictional transmitting gearing to a degree that will wear or injure the surfaces in contact. The range of setting or the thickness of pieces to be sawed at each cut can be determined by positive stops for the next cut while one is being made; but such adjustment must be positive, instantaneous, and in practice not exceeding a second's time. To meet these requirements, I construct machinery and devices as shown in the drawings, 1 being the main carriage-rails held together by bolts and struts 21; 2, cross members of the same projecting laterally to sustain the members 3, on which is mounted the driving and setting machinery, as seen in Fig. I.

The setting machinery consists of the timber-supports 4, knees 5, screws 7, the two shafts 8 and 9, pulleys 10 and 12, frictional gear-wheels 13, 14, and 15, spur-wheels 17 and 18, bevel-wheels 19 and 20, all as shown in Fig. I. This setting machinery is driven by an endless band 22, that passes partly around the pulleys 10 and 12, as shown in Fig. II, and permits free movement of the carriage forward or back on the truck-wheels 23 without other resistance than the tractive strain of the band 22, which at the end passes around a driving-pulley in the usual manner of such gearing. The shaft 8 is driven right and left by the bevel friction-wheels 13 14 15 and is engaged by an end movement of this shaft produced by the short shaft 24, having a bearing at 25, a screw-nut 27 thereon, the latter connected by a shackle device 28 to the end of the shaft 8, as shown in Fig. I. The shaft 24 is operated by a lever 29, a lever 30, link 32, lever 33, and shaft 34, on which is the operating-lever 29, within reach of an attendant whose station is at A, Fig. I.

Referring especially to Figs. IV, V, and VI, which illustrate the indicating and controlling devices for setting the timber 35, 37 is a short vertical shaft connected to the shaft 9 by the bevel-wheels 38. This shaft 37 has a bearing 40 on the lower frame 42 and at the top turns loosely in the nave or hub 43 of the disk 44. The hub or nave 43 of the disk 44 is supported in the part 45, which constitutes a bearing and also a clamp, being parted at 47 and drawn together by a pin 48, a cam 49, and lever 50, so as to nip and hold the disk firmly when the parts are in the po-

sition shown in Figs. V and VI. When the lever 50 is raised, the cam 49 loosens the pin 48 and permits the disk 44 to revolve freely, a rod 52 and spring 53 being provided to prevent this lever from being accidentally raised, also to return the parts to their locked position as soon as it is released by an attendant. In the face of this disk 44 are drilled a row of space-holes 54, the distance between these representing a unit of movement for the arm 39, which is regularly attached to the top of shaft 37 and permits definite movement of the shafts 9, screws 7, the knees 5, and the timber 35, preferably one-fourth of an inch of the latter for each hole and space 54 when the screws 7 have a pitch of four inches for each revolution.

In the face of the disk 44 are two pins 55 and 57, which limit the rotary range of the arm 39 and the shaft 37, the first being fixed and called the "starting" pin or point and the second one, 57, the "setting" or "gaging" pin to determine the range of the setting movement. An attendant or sawyer stationed at A, Fig. I, can control the three elements for adjustment—the friction-clutch motion for the shafts 8 and 9, the lever 50 to disengage the disk 44, and the adjustment of this disk.

The operation is as follows: Supposing the log or timber 35 is to be advanced a sufficient distance to cut a board one inch thick and the arm 39 is bearing against the fixed pin 55, as seen in Fig. V, the operator first moves the setting-pin 57 five holes or four spaces ahead to the position shown in the same figure. The lever 29 is then pressed forward, engaging the friction-wheels 14 and 15, starting the shafts 8 and 9, the screws 7 and the shaft 37 turning the arm 39 until it strikes against the pin 57, which arrests the motion of all the parts, the lever 29 being at the same time or a little in advance drawn back to release the friction-wheels 14 and 15. The clutch-wheels 13, 14, and 15 have smooth faces and being driven by frictional contact only the movement to engage and disengage them is short and quick to avoid sliding the contacting faces. This advances the timber 35 one inch, also the thickness of a saw-kerf, which must be provided for in each case. This latter is accomplished automatically at each setting by the relation between the pins 55 and 57, which are so placed that a space (shown at 58 in Fig. V) represents the saw-kerf and is added to the movement of the arm 39. When the arm 39 strikes the pin 57 and is stopped, the attendant raises the lever 50, releasing the disk 44, which is turned until the fixed pin 55 again comes in contact with the arm 39, so that after each cut the gaging of thickness is done by simply turning the disk 44 after each cut until the pin or stop 55 contacts the arm 39, not requiring skill or even observation so long as pieces of the same thickness are being

sawed from the timber 35. The position of the disk 44 and of the arm 39 being visible to a head sawyer, who stands at some distance therefrom, he can from the relative positions of these parts see how to best dispose of so much of a balk or log as remains to be sawed. At the beginning the setting parts are so adjusted that the arm 39 will stand transverse to the log and line of the saw when the knees 5 are at an even number of inches from the line of the saw or cutting face, so that the sawyer can determine from the revolutions of the arm 39 and its relation of position to the disk the amount of the balk or log sawed off and how best to dispose of the remainder. In this manner the whole control becomes simple and in a sense automatic, the attendant merely operating the levers 29 and 50, setting the pin 57, and turning the disk 44. To reverse the motion of the machinery and draw the head-blocks 5 back after a log is finished and to place another on the carriage, the lever 50 is raised to loosen the disk 44 and permit it to revolve with the arm 39, the lever 29 is drawn back, engaging the friction-wheels 13 and 15, as will be understood.

Having thus explained the nature and objects of my invention, what I claim to be new, and desire to secure by Letters Patent, is—

1. In sawmill-setting apparatus, a movable carriage carrying transverse timber-supports, traversing knees on said supports, parallel transverse screws connected with said knees for shifting the timber laterally, main shaft and gears for simultaneously operating said screws, frictional gearing for alternately operating said main shaft and screws in opposite directions, means for alternately throwing said frictional gears into and out of operation, a vertical shaft geared to said main shaft, a stop-arm on said shaft, a disk over which said stop-arm may move, said disk having a home stop against which the back of the stop-arm rests before adjustment for a cut, and a stop adjustable to different distances from said home stop to limit the forward movement of said stop-arm, said disk being revoluble forward to bring the home stop again against the back of the stop-arm and to correspondingly advance the adjustable stop when another advance of the knees is desired, and means for securing the disk against movement so that the adjustable stop may act in its advanced position to gage the movement of the stop-arm, substantially as specified.

2. In sawmill-setting apparatus, a movable carriage carrying transverse timber-supports, traversing knees on said supports, parallel transverse screws connected with said knees for shifting the timber laterally, a main shaft and gears for simultaneously operating said screws, frictional gearing for alternately operating said main shaft and screws in opposite directions, means for al-

ternately throwing said frictional gears into and out of operation, a vertical shaft geared to said main shaft, a stop-arm on said shaft, a disk over which said stop-arm may move, 5 said disk having a home stop against which the back of the stop-arm rests before adjustment for a cut, and a stop adjustable to different distances from said home stop to limit the forward movement of said stop-arm, 10 said disk being revoluble forward to bring the home stop again against the back of the stop-arm and to correspondingly advance the adjustable stop when another advance of the knees is desired, and means for securing the 15 disk against movement so that the adjustable stop may act in its advanced position to gage the movement of the stop-arm, said stops comprising pins adapted to be inserted in holes in the disk, substantially as specified. 20

3. In sawmill-setting apparatus, a movable carriage carrying transverse timber-supports, traversing knees on said supports, parallel transverse screws connected with said knees for shifting the timber laterally, main shaft 25 and gears for simultaneously operating said screws, frictional gearing for alternately operating said main shaft and screws in opposite directions, means for alternately throwing said frictional gears into and out of operation, 30 a vertical shaft geared to said main shaft, stop-arm on said shaft, a disk over which said stop-arm may move, said disk having a home stop against which the back of the stop-arm rests before adjustment for a cut, and a stop 35 adjustable to different distances from said home stop to limit the forward movement of said stop-arm, said disk being revoluble forward to bring the home stop again against the back of the stop-arm and to correspond- 40 ingly advance the adjustable stop when another advance of the knees is desired, and means for securing the disk against movement so that the adjustable stop may act in its advanced position to gage the movement 45 of the stop-arm, said stops comprising pins adapted to be inserted in holes in the disk,

one in a fixed position, for stopping the disk when adjusted, and one movable and insert-ible in said holes for regulating the range of movement of the stop-arm, said holes being 50 spaced a suitable distance apart to include the width of the saw-kerf as well as the setting-range of the timber, substantially as specified.

4. In sawmill-setting apparatus, a movable 55 carriage carrying transverse timber-supports traversing knees on said supports, parallel transverse screws connected with said knees for shifting the timber laterally, main shaft and gears for simultaneously operating said 60 screws, frictional gearing for alternately operating said main shaft and screws in opposite directions, means for alternately throwing said frictional gears into and out of operation, a vertical shaft geared to said main 65 shaft, a stop-arm on said shaft, a disk over which said stop-arm may move, said disk having a home stop against which the back of the stop-arm rests before adjustment for a cut, and a stop adjustable to different dis- 70 tances from said home stop to limit the forward movement of said stop-arm, said disk being revoluble forward to bring the home stop again against the back of the stop-arm and to correspondingly advance the adjust- 75 able stop when another advance of the knees is desired, means for clamping the disk against movement so that the adjustable stop may act in its advanced position to gage the movement of the stop-arm, and levers 80 for respectively controlling said clamping means and said frictional gearing, located within easy reach of an operator stationed to observe the relative positions of said disk and said stop-arm, substantially as specified. 85

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWIN H. PERCY, JR.

Witnesses:

C. E. KING,
ABBE P. SCOTT.