

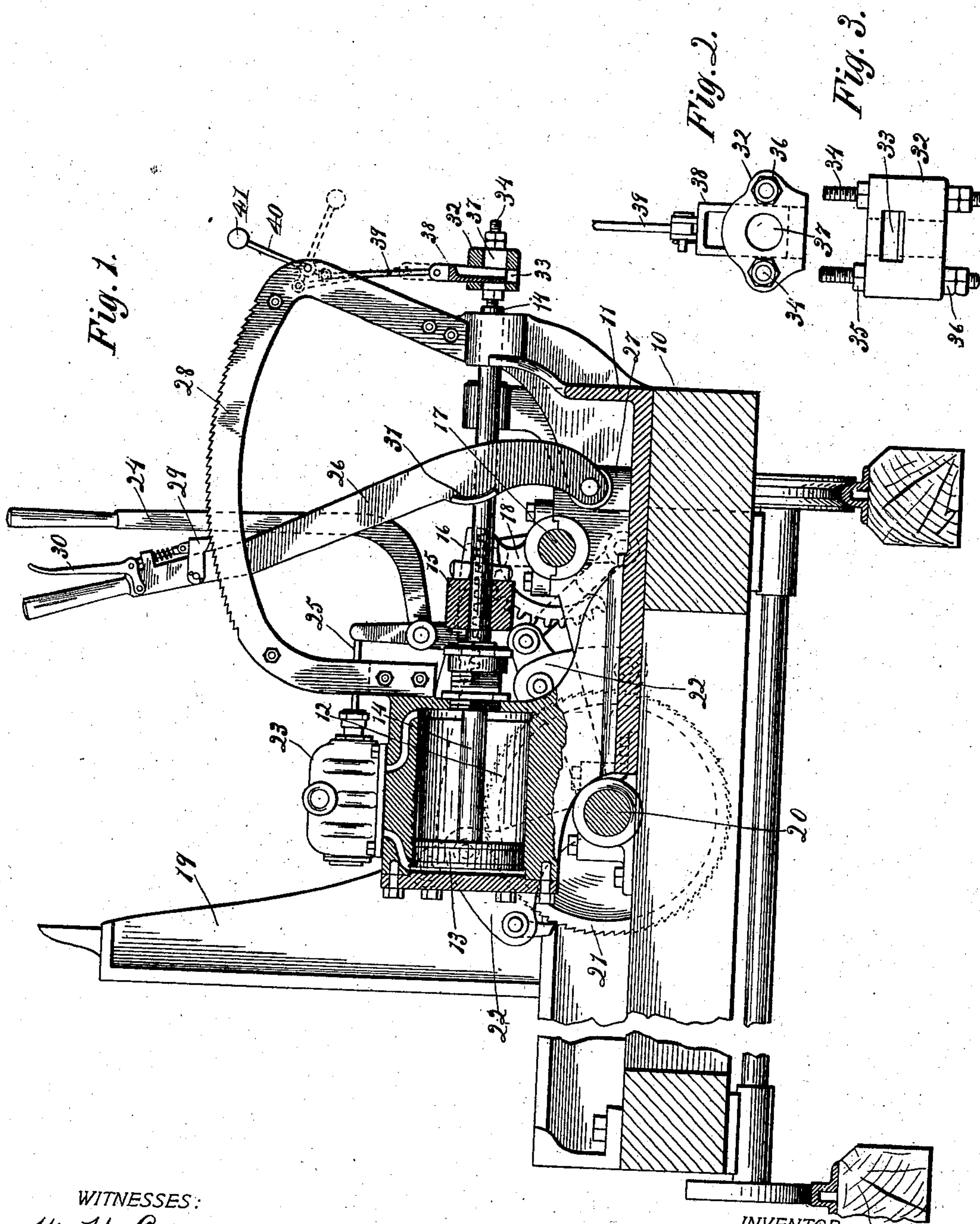
No. 708,829.

DE WITT C. PRESCOTT.  
STEAM SET WORKS FOR SAWMILLS.

Patented Sept. 9, 1902.

(Application filed July 2, 1901.)

(No Model.)



WITNESSES:

W. H. Cotton.

Arthur B. Seibald.

INVENTOR.

De Witt C. Prescott.

Lawrence L. Hiller  
ATTORNEY.



# UNITED STATES PATENT OFFICE.

DE WITT C. PRESCOTT, OF CHICAGO, ILLINOIS, ASSIGNOR TO RUBEN F. BARKER AND MICHAEL CORRY, OF MARINETTE, WISCONSIN.

## STEAM SET-WORKS FOR SAWMILLS.

SPECIFICATION forming part of Letters Patent No. 708,829, dated September 9, 1902.

Application filed July 2, 1901. Serial No. 66,929. (No model.)

*To all whom it may concern.*

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

My invention relates to improvements in power-operated set-works for sawmills; and it consists in providing such machines with an auxiliary stop so arranged that the log about to be sawed may be so adjusted that it will come out even—that is to say, cut up into a determinate number of boards without leaving a remnant or “saw-cull.”

In sawmill set-works as heretofore constructed reliance is placed on the skill of the setter to accomplish the above result, and for this purpose he moves the valve-lever to a slight degree until the knees have been moved up to the desired point; but it is only the expert workman who can do this, and the new and inexperienced operator is apt to waste much lumber in acquiring the requisite skill.

The invention consists, broadly, of a positive adjusting-stop providing for a very limited movement of the engine-piston, and consequently the knees for advancing the log, so that the log may be advanced to a slight degree at each movement of the piston, such stop being an auxiliary to the usual setting-stop which is designed to control the adjustment of the knees for cutting up the log into the desired thickness.

The application of the invention is illustrated in the accompanying drawings, in which—

Figure 1 shows a steam set-works with my invention applied thereto, and Figs. 2 and 3 illustrate the stop in detail and on an enlarged scale.

The invention is applicable to any form of power set-works; but for the purpose of illustration I have shown it in connection with the machine illustrated in Patent No. 643,453, dated February 13, 1900. A brief description

of such machine will suffice to an understanding of the present invention.

A sawmill-carriage is shown at 10, upon which is mounted the bed-plate 11. Carried at one end of the bed-plate is a steam-cylinder 12, in which works the piston 13, the piston-rod 14 thereof having fixed to it a cross-head 15, which carries parallel rack-bars 16, (only one of which is shown,) and which impart motion to the rocker-shaft 17 through the medium of segmental gears 18, keyed to the said shaft. The log-knees, one of which is shown at 19, are advanced in the usual manner through the medium of the set-shaft 20, ratchet-wheel 21, and pawl mechanism 22.

The valve-casing of the steam-cylinder is seen at 23, the valve thereof being operated by a lever 24 and connecting-rod 25.

The adjustable stop mechanism for controlling the setting range of movement of the piston 13, and thereby through the medium of the rocker-shaft 17, pawl-and-ratchet mechanism, and set-shaft 20, consists of a lever 26, pivoted at 27 to a lug projecting from the bed-plate 11. The lever 26 travels over a quadrant 28, supported from the bed-plate 11, and is provided with a spring-pawl 29, engaging the teeth of the quadrant and controlled by the usual handpiece 30. The lever 26 is provided with a contact-face 31, which is disposed in the path of the cross-head 15, and thereby limits the forward movement thereof. The thickness of plank cut from a log is determined by the position of the lever 26, and a scale is usually employed for designating the thickness of the board.

With the machine heretofore described and all other machines employing power-operating mechanism difficulty has been encountered by those inexperienced in the operation of power-operated set-works in setting up the log after cutting slabs off of the three sides of the log when the same is canted for cutting off the fourth slab in order to make the fourth slab of such thickness that the remaining stock will subdivide into a determinate number of planks without leaving any waste. This difficulty cannot be satisfactorily met by means of the positive stop-lever 26, and I have sur-



mounted it by providing an auxiliary or adjusting stop, which permits the engine to move but a short distance. In the machine illustrated this travel is equal to the width of a single tooth of the ratchet-wheel, so that by the manipulation of the throttle-lever the knees can be advanced by a succession of short steps until the log is adjusted to such position, as shown by the scale, that it will cut into the regular sizes of lumber. Such an auxiliary or adjusting stop comprises a movable plate or wedge adapted to be moved across the path of a moving part of the engine or of the set-works mechanism and may be varied in form to suit the particular machine to which it may be applied. As adapted to the needs of the type of machine shown in the drawings it may take the form illustrated and now to be described.

A guide-block 32, having a vertical slot 33, is preferably located beyond the end and in the path of the piston-rod 14 and may be secured to the bed-plate 11 by screw-bolts 34, nuts 35 and 36 being provided for properly adjusting the said block. The block 32 also has a transverse slot 37, alined with the piston-rod 14 and in which the said piston is ordinarily adapted to reciprocate. The auxiliary or adjusting stop 38 is preferably supported by a link 39, connected to a lever 40, pivoted to the quadrant 28, and is so disposed that when the said lever is lifted the stop 38 will slide into the slot 33 of the guide-block. A weight 41 at the end of the lever withdraws the stop-plate from the slot when the lever is released. The stop-plate 38 may, if desired, be made tapering at its rear face, as shown, with the front face of the same at a right angle to the line of movement of the piston-rod, the slot 33 having the same configuration in order that the plate may fit snugly in the slot, thereby avoiding any play of the plate.

The operation will be readily understood. The log having been squared up on three sides and canted for cutting the fourth side, the operator will be able to tell by a glance at the scale how the log is coming out. If he finds that there is an excess in the thickness of the log for producing a determined number of planks of a certain thickness, the stop-plate 38 is thrown into the path of the piston-rod and steam turned into the cylinder and a movement imparted thereby to the knees carrying the log corresponding to the movement of the piston until arrested by the stop-plate 38, which is so related that the movement of the piston is just sufficient to drive the set-shaft wheel one tooth. Having advanced the log-knees one tooth, if the operator finds he has still an excess in the thickness of the log the plate is again thrown into or left in the slot 33, and the knees advanced another tooth, and so on until the log has been adjusted to such position that

it may be cut into boards or planks of the desired thickness without waste. When the lever 40 is released, the weight drives the stop-plate out of the slot.

I do not limit myself to the construction illustrated, which, I would have it understood, simply shows one embodiment or application of the invention.

The function of the auxiliary or adjusting stop being to restrict the movement of the setting mechanism to a short range of travel for the preliminary adjustment of the log upon the head-blocks, it may obviously be located in the path of any movable part of the mechanism where it may produce such result.

I claim as my invention—

1. In a sawmill set-works, in combination, movable knees, a motor operatively connected with the knees, a positive set-stop in the path of a movable part of such mechanism, and an adjusting-stop movable into an out of the path of a part of such mechanism within the range provided by the set-stop, for the purpose specified.

2. In a sawmill set-works, in combination, movable knees, a motor operatively connected with the knees, a positive set-stop in the path of a movable part of such mechanism, and an adjusting-stop normally out of but movable into the path of a part of such mechanism within the range provided by the set-stop, for the purpose specified.

3. In a sawmill set-works, in combination, a set-shaft, a reciprocating engine for driving the set-shaft, an adjustable stop for varying the movement of the engine, a block supported in the path of the piston of the engine and having an aperture through which the piston reciprocates, a movable plate, a slot in the block in which the plate moves and which crosses the piston-aperture, and means for moving the plate into the slot.

4. In a sawmill set-works, in combination, a set-shaft, power mechanism, pawl-and-ratchet mechanism driven by the power mechanism and driving the set-shaft, the feed throw of such power mechanism being sufficient to advance the set-shaft several teeth, an adjustable stop for varying the movement of the power mechanism through wide ranges, and an independent auxiliary stop movable into the path of an adjunct of the power mechanism and thereby limiting its movement to one tooth of the ratchet mechanism.

5. In a sawmill set-works, in combination, a set-shaft, a reciprocating engine, pawl-and-ratchet mechanism driven by the engine and driving the set-shaft, an adjustable stop for varying the setting movement of the engine, a movable stop, and means for moving the stop into the path of an adjunct of the engine for limiting its movement to one tooth of the ratchet mechanism.

6. In sawmill set-works, the combination with the set-shaft, of a cylinder, a piston fitted



to work in said cylinder and having a pawl-  
and-ratchet-wheel connection with the set-  
shaft, an adjustable stop for limiting the  
movement of said piston in one direction at  
5 different points, and another movable stop  
adapted when in abnormal position, to so  
limit the movement of said piston that it will,

for each single stroke, turn said ratchet-wheel  
an interval corresponding with one tooth, sub-  
stantially as described.

DE WITT C. PRESCOTT.

Witnesses:

LOUIS K. GILLSON,  
ARTHUR B. SEIBOLD.