

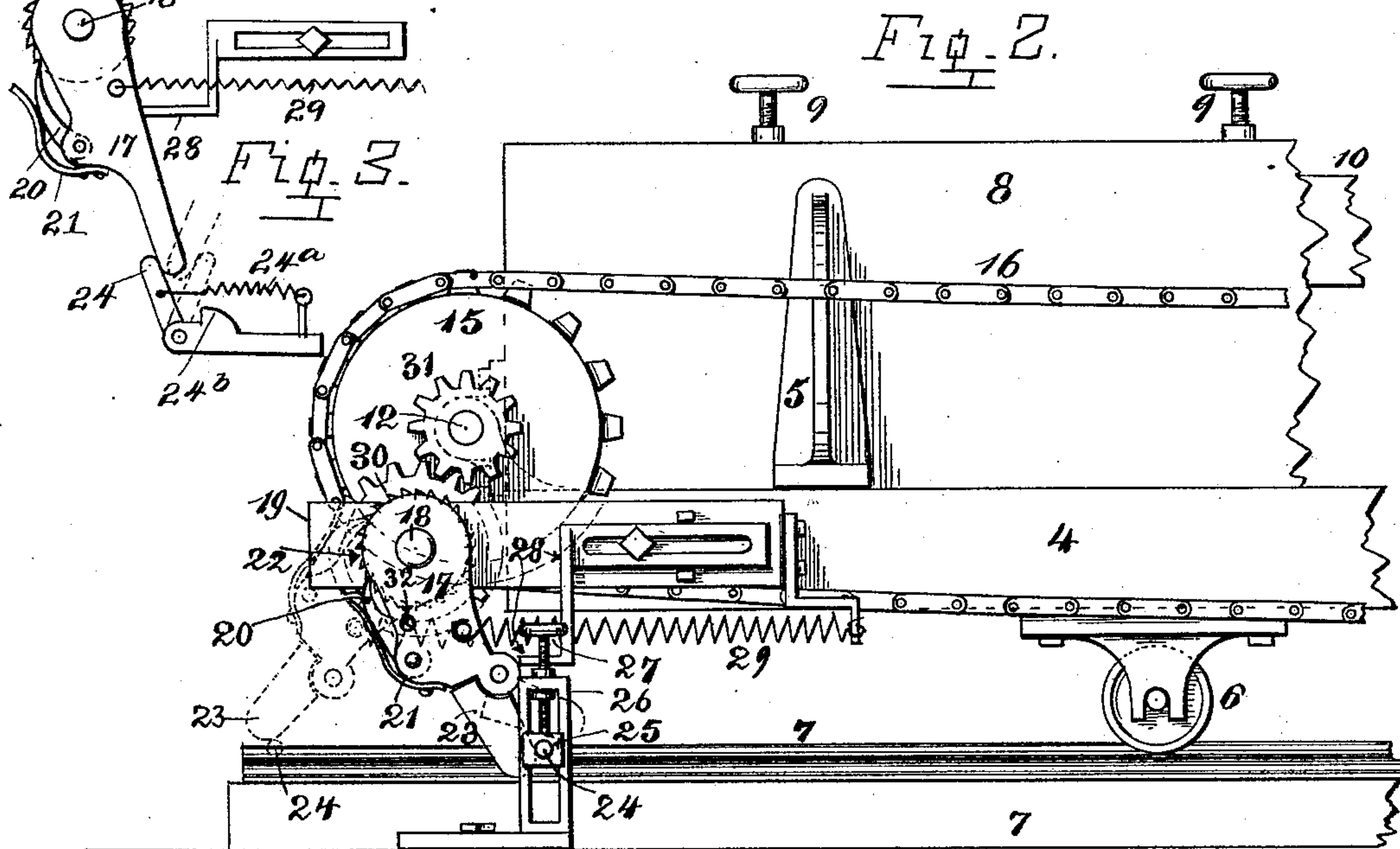
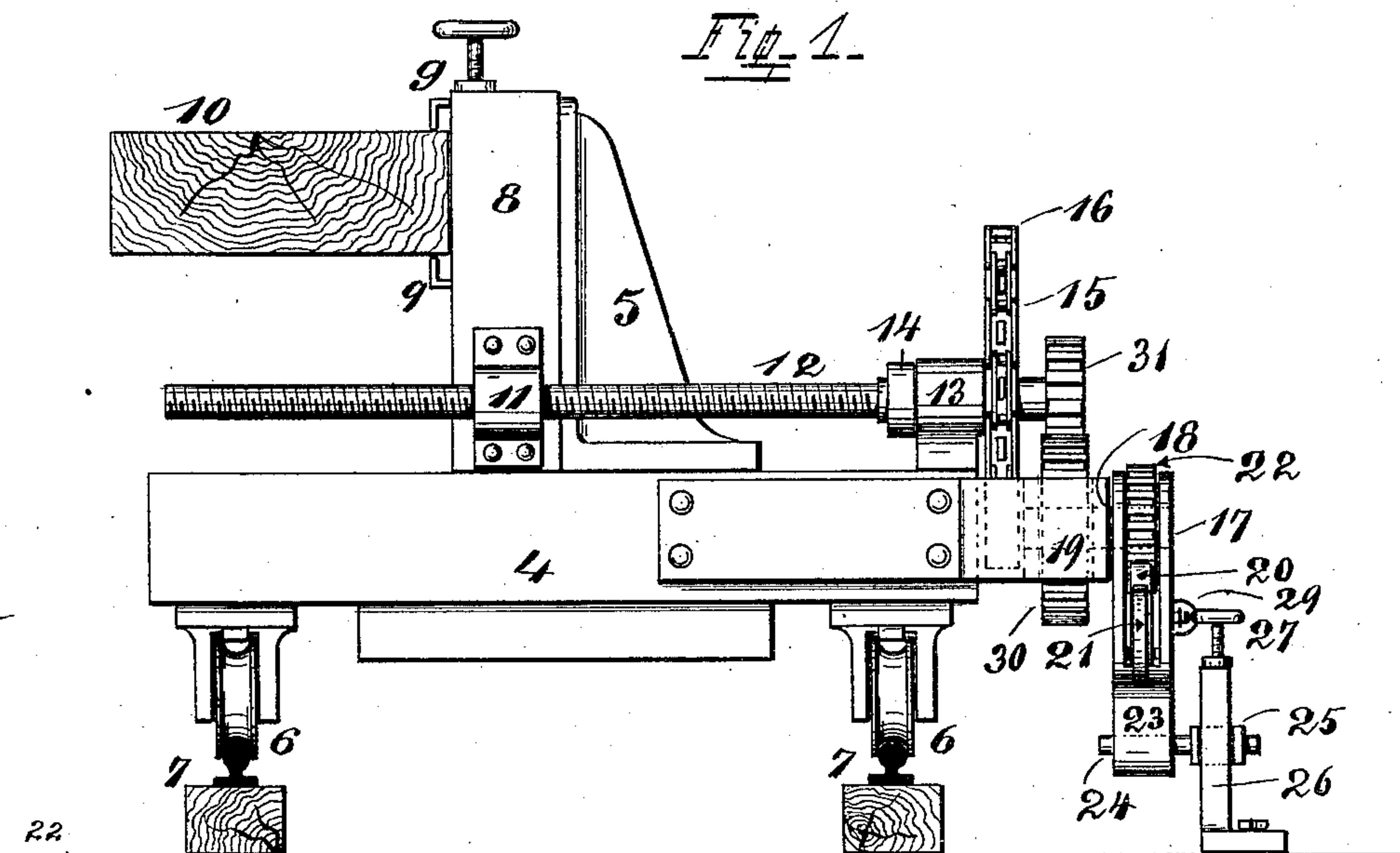
(No Model.)

J. T. FARROW.

ATTACHMENT FOR AUTOMATICALLY ADVANCING THE KNEES OF  
SAW MILLS.

No. 446,832.

Patented Feb. 17, 1891.



Attest  
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# UNITED STATES PATENT OFFICE.

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ATTACHMENT FOR AUTOMATICALLY ADVANCING THE KNEES OF SAW-MILLS.

SPECIFICATION forming part of Letters Patent No. 446,832, dated February 17, 1891.

Application filed July 7, 1890. Serial No. 357,984. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN T. FARROW, a citizen of the United States, residing at Newport, in the county of Campbell and State of Kentucky, have invented a new and useful Attachment for Automatically Advancing the Knees of Saw-Mills, of which the following is a specification.

This invention relates to improved means of advancing laterally—that is, toward the saw—the knees of saw-mills carrying the log to be reduced to boards.

It consists, in general, of an attachment secured near one end of the carriage and actuated every time after a cut has been completed, being brought in contact with a stationary device on the return of the carriage.

The object and peculiar feature of this attachment is that it is actuated automatically by and during a part of the regular motion of the carriage-frame, which motion is automatic itself, from which it follows that the operation of the former is wholly dependent on the automatic actuation by the carriage. As a consequence the times during which it is actuated during each return of the carriage is always causing an absolute uniform advance of the knees carrying the log to be reduced, and thus producing, finally, boards of a perfectly even thickness. With the means heretofore in use being operated by hand, in connection with a dial, there is no positive stop provided after the knee has been advanced, and a running over or under the standard thickness of the boards is one of the frequent results.

In my improved attachment the stopping of the advance of the knee occurs always and absolutely at the same point on account of the automatic motion of the carriage, causing the starting and stopping of its actuation. Its specific construction is explained in the following description and illustrated in the accompanying drawings, in which—

Figure 1 is an end view of a saw-mill carriage provided with my attachment, and showing also the adjacent knee. The other end of the carriage, excepting the attachment, is the same. Fig. 2 shows the same part in side elevation. Fig. 3 is a detail view of a modification of a part of my attachment.

4 is the carriage-frame carrying the knees 5 and moving by wheel 6 on track 7.

8 is a stay-log connected to and moving with the knees, and provided with clamps 9 for holding the log 10, which is to be reduced to boards. This stay-log is used with a veneer-mill. In board saw-mills knees are used without the continuous log. The nuts 11, through which screw-shaft 12 passes, are in this case secured to the stay-log 8, while in cases where this latter is omitted the former are connected directly to the knees.

My attachment is applicable to either style carriage or knee—i. e., either with or without the stay-log.

13 is a bearing for screw-shaft 12, which latter has a collar 14 on one side of its bearing to prevent lateral displacement.

15 is a sprocket-wheel secured to the end of screw-shaft 12, and connected by a chain belt 16 to a similar wheel on the other end of the carriage, where the same parts as described are duplicated. The parts and construction so far described are all old and constitute the well-known arrangement of most saw-mill carriages.

My attachment consists of a bifurcated lever 17, pivoted loosely on a shaft 18, having its bearings in a frame 19, which is secured to the carriage-frame.

20 is a pawl pivoted to this lever between the forks of it, and kept by a spring 21 against and in contact with a ratchet-wheel 22, which is fast on shaft 18 and between the forks of lever 17.

23 is a trigger hinged to the lower end of lever 17.

24 is a pin secured in a box 25, which moves up and down in a slot in frame 26, wherein it is vertically adjustable by means of a screw 27. This frame 26 is secured to the floor in such proximity to the carriage as to bring pin 24 within the path of trigger 23.

28 is an adjustable stop, against which forked lever 17 is held by means of a spring 29.

When the saw has completed a cut and the carriage is returning, the hinged trigger 23 passes loosely over pin 24 without being effected by it, as shown in dotted lines in Fig. 2. Having passed pin 24, it swings by means of its weight back to its normal position



against the lower end of lever 17. By this time the carriage has reached its turning point and advances again toward the saw. Trigger 23, resting against lever 17, cannot swing out of the way of pin 24, and is carried back by it, as shown in dotted lines in Fig. 2. (To make this clear, it must be supposed that the carriage has meanwhile traveled back and forward the required distance, in order to be in proper relative position to pin 24, where it is shown in dotted lines.) The effect of this action of pin 24 on trigger 23 and lever 17 (the two forming now one rigid piece) is to partly revolve ratchet-wheel 22 by means of pawl 20. This causes shaft 18, with which the ratchet-wheel is fast, to revolve, and with it a cog-wheel 30, also fast on it. This cog-wheel meshes into another one 31, fast on screw-shaft 12, causing it to revolve, and by means of its sprocket-wheel and chain belt connection to transmit the same movement on to the screw-shaft of the other knee. The movement thus imparted to the screw-shafts and knees is positive in its starting and stopping, and may be varied in its length by the vertical adjustment of pin 24. If higher up, the movement lasts longer, advances the knees farther, and causes a thicker board to be cut. The reverse is the case when the pin is put down lower. Additional adjustment may be had by means of stop 28. If put farther away from lever 17, spring 29 pulls the former farther toward pin 24, causing an earlier and longer contact with it.

After the device is adjusted once for a certain thickness of boards to be cut, the intermittent advance of the knee is absolutely uniform.

The whole attachment may be made inoperative, if desirable, for any reason whatsoever by insertion of a pin into hole 32 in lever 17, and whereby pawl 20 is kept out of contact with the ratchet-wheel.

It is evident that the operations of my invention would be the same if lever 17 and trigger 23 were one continuous piece and the

stop 24 were hinged to the bed-piece and held in upright position by a spring 24<sup>a</sup>, as shown in Fig. 3. In this case the stop would go down as the lever 17 was retracted and fly back against the shoulder 24<sup>b</sup> to operative position as soon as the lever left it; but the mode of operation shown I consider preferable.

Having described my invention, I claim as new—

1. The attachment for advancing automatically and intermittently the knees of saw-mills, consisting of a lever pivoted to and traveling with the carriage, a ratchet-wheel secured near the pivotal point of the lever, a pawl kept in contact with said ratchet-wheel by means of a spring, a trigger hinged to the lower end of the lever, a stationary and vertically-adjustable device secured within the path of the trigger, suitable gear connection to transmit the motion of said ratchet-wheel onto the screw-shaft of the knee, and an adjustable stop against which the lever is held by means of a spring, all for the purpose shown and described.

2. In combination with the knees of a saw-mill, a lever pivoted on the carriage, connecting-gear between the lever and knees, a trigger hinged to the lever, an adjustable device in the path of said lever, and an adjustable stop against which the lever is held by a spring, substantially as shown and described.

3. In combination with the knees of a saw-mill, a lever pivoted on the carriage, connecting-gear between the lever and knees, a hinged device fastened to the bed-piece and held in upright position in the path of the lever, and an adjustable stop against which the lever is held by a spring, substantially as described.

The foregoing specification of my invention signed by me this 4th day of June, A. D. 1890.

JOHN T. FARROW.

Witnesses:

P. J. CADWALLADER,  
JEPHTHA GARRARD.