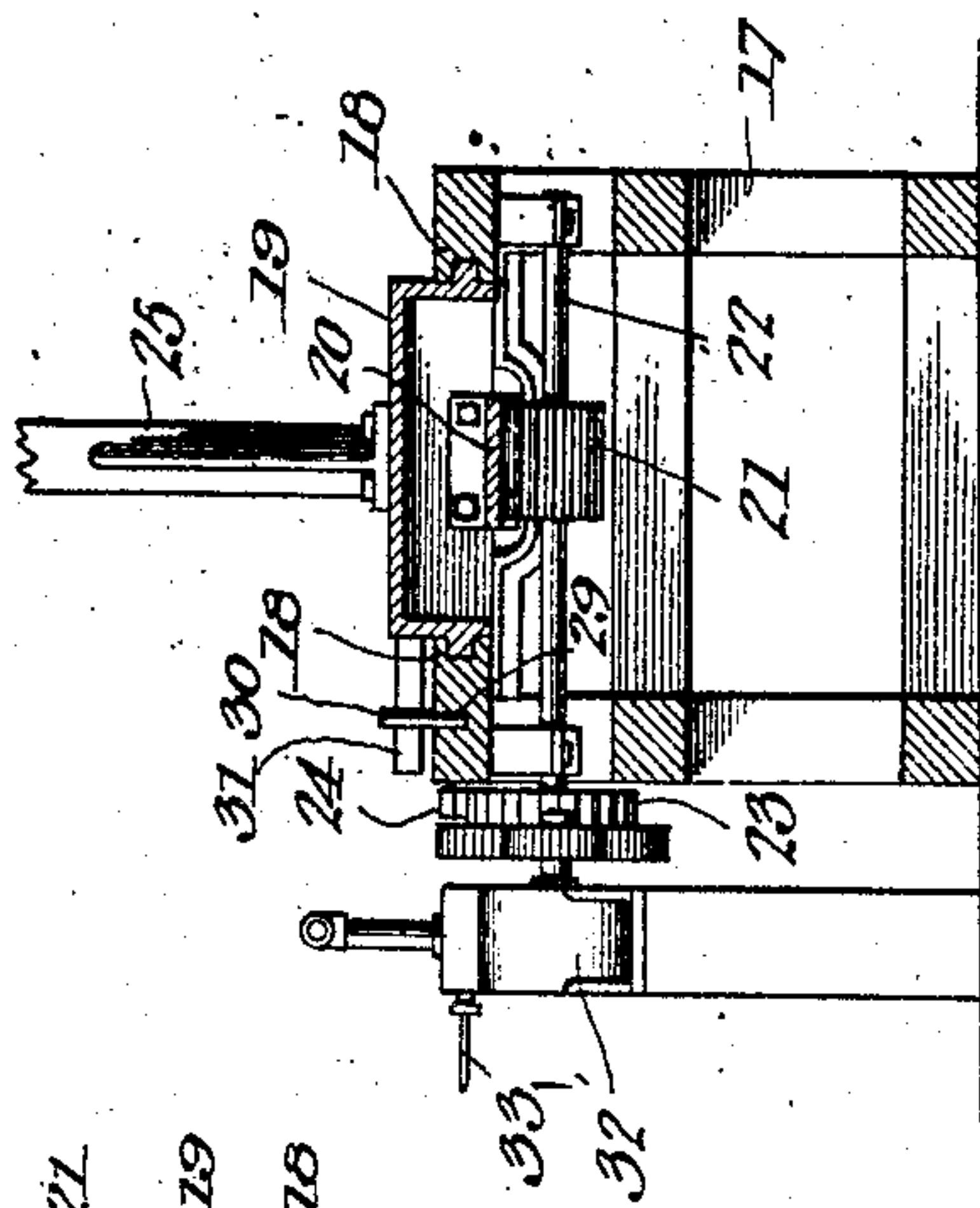
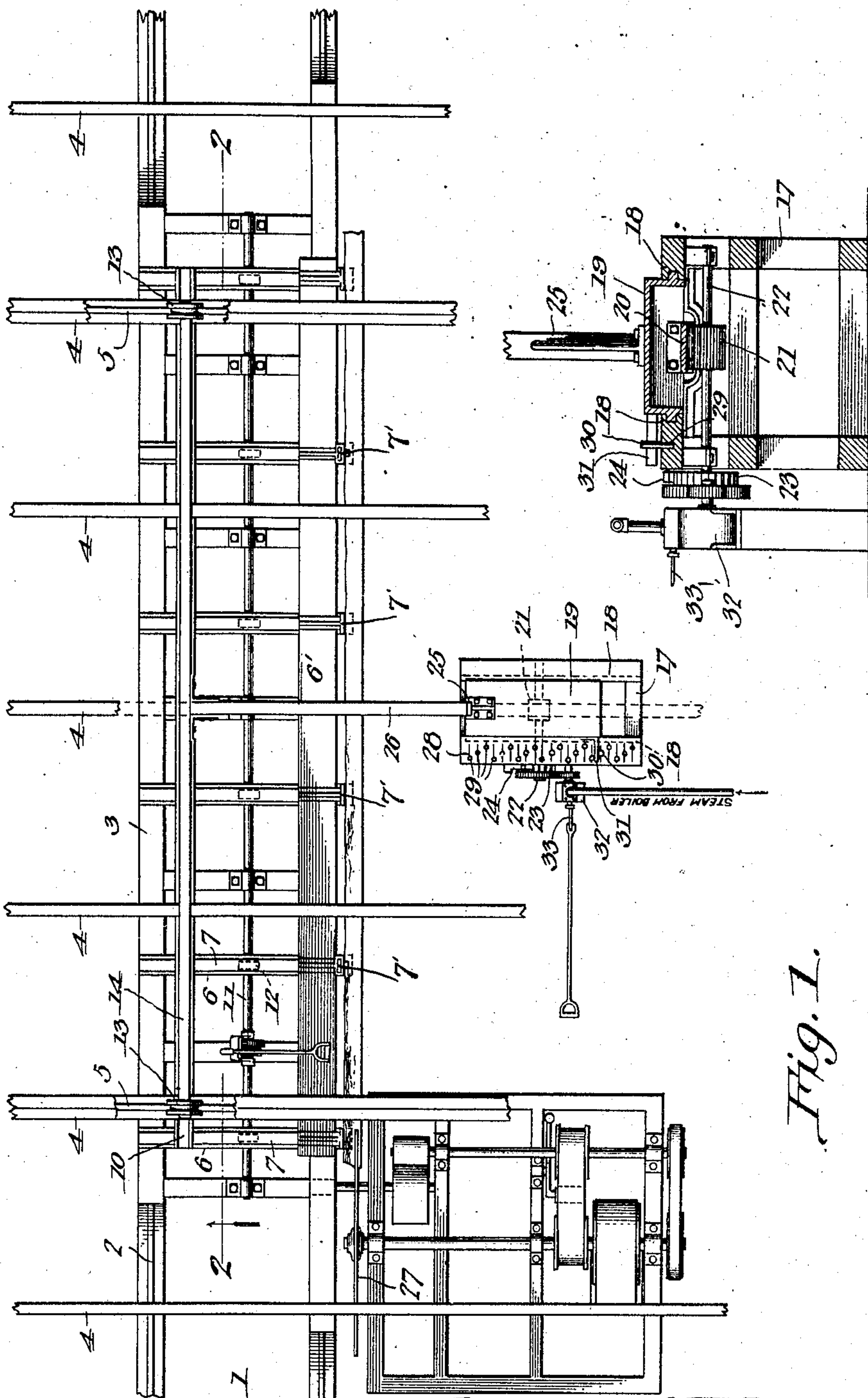


No. 785,604.

PATENTED MAR. 21, 1905.

F. A. FLOYD.
SAWMILL SET WORKS.
APPLICATION FILED JULY 1, 1904.

2 SHEETS--SHEET 1.



Witnesses

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E. F. Stewart
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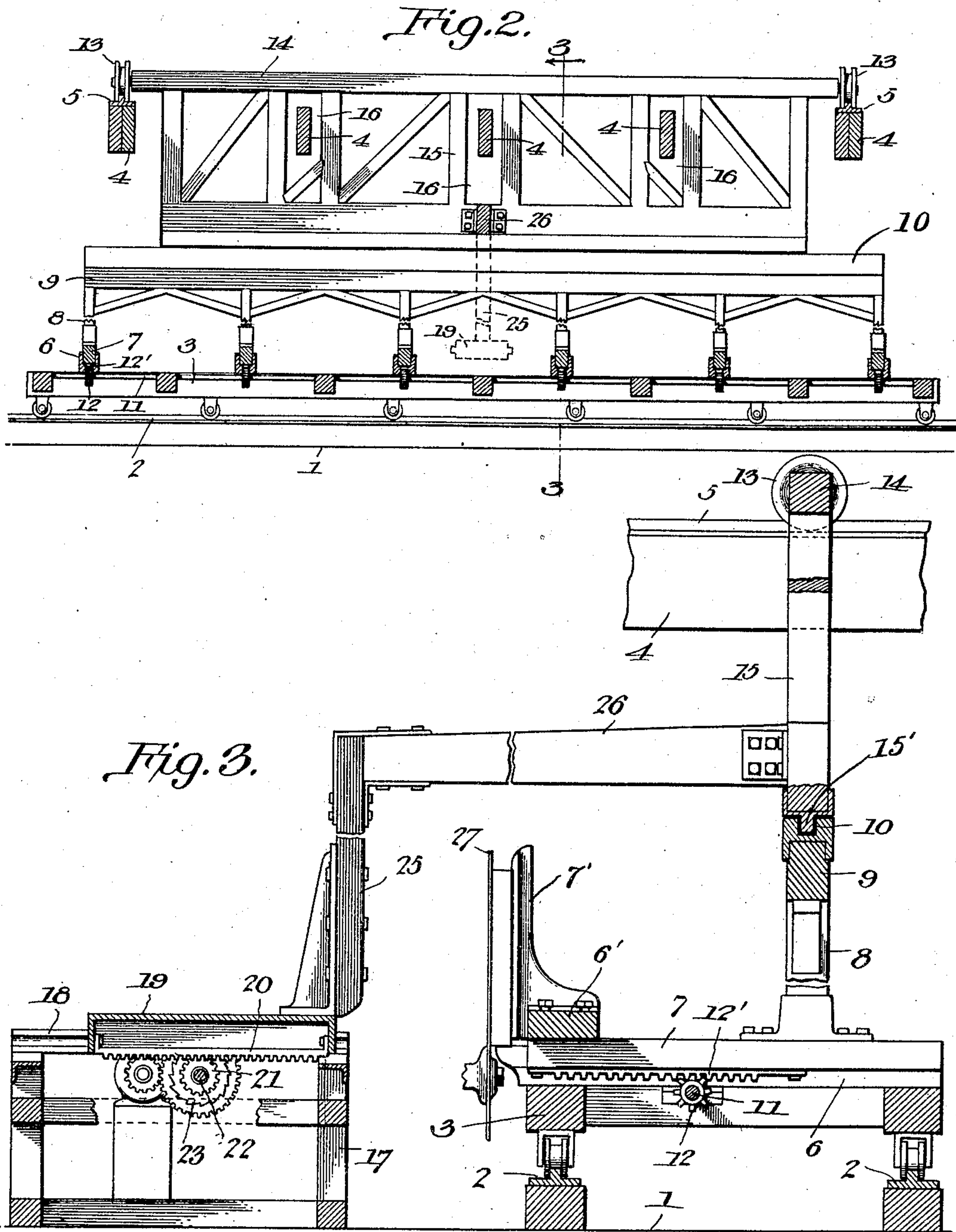
Fortune A. Floyd, Inventor,
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UNITED STATES PATENT OFFICE.

FORTUNE A. FLOYD, OF MERRILL, MISSISSIPPI.

SAWMILL SET-WORKS.

SPECIFICATION forming part of Letters Patent No. 785,604, dated March 21, 1905.

Application filed July 1, 1904. Serial No. 214,949.

To all whom it may concern:

Be it known that I, FORTUNE A. FLOYD, a citizen of the United States, residing at Merrill, in the county of Greene and State of Mississippi, have invented new and useful Sawmill Set-Works, of which the following is a specification.

This invention relates to a sawmill set-works, and has for its object to provide for the simultaneous adjustment of a plurality of knees to set the work with respect to the saw for gaging the cut of the latter. It is also designed to have the adjustment steam-actuated and to provide for the convenient control of the steam-actuated means by the sawyer from his position at the saw.

Another object of the invention is to provide for accurately gaging the set of the knees to obtain any predetermined depth of cut of the saw. In this connection it is proposed to provide for automatically limiting the setting movement of the knees independently of the controlling device of the motor in order that the sawyer may set the set-works in operation and then leave the same and attend to other parts of the mill.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a plan view of a portion of a sawmill plant embodying the present invention. Fig. 2 is a sectional elevation taken on the line 2 2 of Fig. 1. Fig. 3 is an enlarged sectional elevation taken on the line 3 3 of Fig. 2. Fig. 4 is a detail view, partly in section, of the means for controlling the adjustment of the knees of the sawmill-carriage.

Like characters of reference designate corresponding parts in each and every figure of the drawings.

In explanation of the present embodiment of my invention, reference being had to the accompanying drawings, 3 designates an ordinary sawmill-carriage mounted to travel upon a track 2, which is supported upon the floor 1 or other suitable support. Upon this carriage is a plurality of longitudinally-slotted head-blocks 6, upon each of which is an endwise-slidable knee 7. At the forward end of each knee there is the usual standard 7', and, if desired, the several knees may be rigidly connected at their forward ends by means of a bar or timber 6'. The usual longitudinal set-shaft 11 is mounted upon the carriage beneath the knees and is provided with a plurality of pinions 12, working in the slotted portions of the respective head-blocks and engaging racks upon the under sides of the knees, one of such racks being shown at 12' in Fig. 3 of the drawings. This rack-and-pinion adjustment is the usual mechanism employed for setting the knees, the shaft 11 being manually operated by an attendant.

It is an important object of the present invention to dispense with the services of an attendant for manipulating the shaft 11 to adjust the knees, and in carrying out this feature of the invention it is proposed to provide for adjusting the knees by means mounted independently of the carriage and in position for convenient control by the sawyer when standing at the saw. To accomplish this result, each of the knees is provided with a post 8, and the series of posts is connected by a top rail 9, which is surmounted by a grooved guideway 10. Above and in longitudinal alinement with the guideway 10 is a knee-shifting carriage 15 in the nature of an upright frame having its lower edge provided with a longitudinal tongue or rib 15', slidably fitting in the guideway 10, so as to permit of the necessary reciprocation of the sawmill-carriage without endwise movement of the frame 15. The frame 15 is hung from an axle 14, provided with terminal wheels or rollers 13, mounted to travel upon tracks 5, carried by overhead beams 4, disposed transversely with respect to the direction of movement of the sawmill-carriage. The beams 4 may be

supported at their ends by suitable posts, (not shown,) or they may be the joists of the building in which the sawmill plant is installed. For the accommodation of the other joists which lie between the joists that support the tracks 5 the carriage 15 is provided with suitable openings 16, through which said joists extend, so as not to interfere with the movement of the frame or carriage 15 transversely across the sawmill-carriage.

The means for running the knee-shifting carriage 15 back and forth upon the tracks 5 is mounted upon a stand or frame 17 and consists of a shiftable member 19, working in a direction transverse to that of the sawmill-carriage and supported in guideways 18, carried by the stand or frame 17. Upon the under side of the slidable member 19 is a rack 20, which meshes with a pinion 21, carried upon the shaft 22, which is mounted in suitable bearings upon the frame 17 with one end projected beyond the frame and provided with a ratchet-wheel 23, with which a dog or pawl 24 coöperates and is mounted upon the frame. A suitable rotary engine 32 is supported adjacent the projected end of the shaft 22 and is geared thereto so as to run the shaft at a comparatively low rate of speed, the throttle-lever 33 of the engine being projected into a position which is conveniently accessible by the sawyer when standing at the saw, as will be understood by reference to Fig. 1 of the drawings. As best shown is Fig. 3, connection is had between the slide 19 and the knee-shifting carriage 15 by means of a standard 25, rising from the slide, and a connecting-bar 26, extending between the upper end of the standard and the lower portion of the carriage 15.

As thus far described it will be understood that the carriage 3 is designed to work back and forth upon the track 2 in the usual manner, the work being supported upon the head-blocks 6 and clamped to the standard 7' of the knees 7 by any preferred form of dogs, (not shown,) the saw 27 operating to cut the work in the usual manner. When it is desired to shift the knees of the sawmill-carriage toward the saw 27, the sawyer operates the throttle-lever 33, so as to throw the engine 32 into operation, thereby rotating the shaft 22 and causing the slide 19 to travel away from the sawmill-carriage, whereby the shifting carriage 15 is moved upon the tracks 5 toward the saw, the knees 7 being simultaneously moved therewith through the medium of the posts 8, whereby all of the knees are simultaneously adjusted without the assistance of an attendant. By reason of the slidable connection between the frame which connects the several knees and the knee-shifting carriage 15 the sawmill-carriage may work back and forth in its usual manner without interference by the shifting carriage 15, and therefore the

adjustment of the knees may be accomplished when the sawmill-carriage is in motion as well as when said carriage is stationary.

It will here be noted that the set-shaft 11, with its pinions 12 engaging the racks 12' upon the under sides of the knees, do not interfere with the shifting of the knees, and, in fact, operate as additional connections between the knees, so as to insure simultaneous movement thereof even though one or more of the posts 8 may be so loose as not to promptly actuate the knee to which it is connected.

The dog or pawl 24 of course operates to prevent reverse rotation of the shaft 22, and thereby to lock the knees against backward movement after having been set to any predetermined position. By throwing off the dog or pawl 24 the shifting carriage 15 and the knees may be backed off from the timber or other work upon the sawmill-carriage.

To accurately gage the set of the knees to any predetermined cut for the saw, a gage is provided in the nature of a scale 28, provided upon the top of the frame 17 below and at one side of the upper portion of the slide 19, there being sockets or seats 29 at the successive scale-marks for the individual reception of a removable pin or stop 30, designed for contact by a projection or abutment 31, carried by the slide 19. In using this gage the knees are of course backed off a suitable distance and then the stop-pin 30 is placed in a predetermined socket or seat 29, after which the engine 32 is set in operation, so as to work the slide 19 toward the pin and upon contact of the projection or abutment 31 with the stop-pin 30 the forward movement of the slide 19 and the knee-shifting carriage 15 will be stopped, the dog or pawl 24 serving to prevent looseness and backward movement of the knees after the latter have been set.

The rotary engine of the set-works is supplied with steam from the boiler which supplies power for the plant, and the throttle of the engine is arranged for convenient control by the sawyer when standing at the saw, so that it is not necessary for the sawyer to materially shift his position from the saw to control the set-works beyond that which is necessary to reach the throttle and to shift the stop-pin 30 when required. In this connection it will be noted that the set-works are supported entirely independent of the sawmill-carriage, and therefore remain stationary with respect to the direction of movement of the carriage, wherefore the controlling-throttle remains always in one place for convenient manipulation by the sawyer, thereby dispensing with the attendant usually employed for operating the set-works.

A very important advantage of the present invention resides in locating the adjustable stop-pin 30 of the gage in the path of the slide 19, whereby when the sawyer has started

the engine 32 he may leave the same and attend to any other matters requiring his immediate attention, as the movement of the knees will be automatically stopped by the stopping of the slide 19.

Having fully described the invention, what is claimed is—

1. The combination with a sawmill-carriage having a shiftable knee, an overhead carriage mounted independently of the sawmill-carriage and working transversely thereof, and means connecting the overhead carriage with the knee to shift the latter transversely of the sawmill-carriage, there being a slidable connection between the knee and the overhead carriage to permit reciprocation of the sawmill-carriage independently of the movement of the overhead carriage.

2. The combination with a sawmill-carriage having a shiftable knee, of a post rising from the knee, a guideway carried by the post and supported in an elevated position longitudinally above the sawmill-carriage, and knee-setting means mounted independently of the carriage and having a reciprocal connecting member working transversely to the movement of the carriage and slidably engaging the guideway.

3. The combination with a sawmill-carriage having a shiftable knee, of a guideway carried by the knee and disposed longitudinally of the carriage, and knee-shifting means mounted independently of the carriage and having a reciprocal connecting member slidably engaging the guideway to permit reciprocation of the carriage.

4. The combination with a sawmill-carriage having a shiftable knee, of a guideway carried by the knee and disposed longitudinally of the carriage, and an overhead carriage mounted independently of the sawmill-carriage and working transversely thereof and having a slidable connection with the guideway.

5. The combination with a sawmill-carriage having a shiftable knee, of a guideway carried by the knee longitudinally of the carriage, an overhead carriage working transversely of the sawmill-carriage and having a slidable connection with the guideway, and means mounted independently of the sawmill-carriage and connected to the overhead carriage for actuating the latter to set the knee.

6. The combination with a sawmill-carriage having a shiftable knee, of a guideway carried by the knee longitudinally of the carriage, an overhead track supported independently of the carriage and extending transversely across the same, an overhead carriage mounted upon the track and having a slidable connection with the guideway, and means mounted independently of the sawmill-carriage for actuating the overhead carriage.

7. The combination with a sawmill-carriage

having a shiftable knee thereon, of a guideway carried by the knee longitudinally of the carriage, an overhead track supported independently of the sawmill-carriage and extending transversely across the same, an overhead carriage mounted to travel upon the track with its lower end slidably engaging the guideway, and means for actuating the overhead carriage to set the knee.

8. The combination with a sawmill-carriage having a shiftable knee, of a guideway carried by the knee longitudinally of the carriage, an overhead carriage mounted to travel transversely across the sawmill-carriage and having a slidable connection with the guideway, and means mounted independently of the sawmill-carriage for actuating the overhead carriage and disposed for control from the position of the sawyer.

9. The combination with a sawmill-carriage having a shiftable knee, of a guideway carried by the knee longitudinally of the carriage, an overhead carriage mounted to travel transversely of the sawmill-carriage and slidably engaging the guideway, a frame mounted independently of the sawmill-carriage, a slide supported upon the frame and working transversely of the direction of the sawmill-carriage, a standard rising from the slide, a connection between the standard and the overhead carriage, and means for operating the slide.

10. The combination with a sawmill-carriage having a shiftable knee thereon, an overhead carriage mounted to work transversely across the sawmill-carriage independently thereof and slidably connected to the knee, a frame mounted independently of the sawmill-carriage, a slide mounted upon the frame and working transversely of the sawmill-carriage, a connection between the slide and the overhead carriage, slide-operating means, and a gage upon the frame and including a shiftable stop in the path of a portion of the slide to limit the movement thereof and to predetermine the set of the knee.

11. The combination with a sawmill-carriage having a series of shiftable knees, of posts rising from the knees, a guideway carried by the posts and connecting the knees for simultaneous movement, an overhead carriage mounted to work transversely across the sawmill-carriage independently thereof and having its lower end slidably engaging the guideway, and means mounted independently of the sawmill-carriage for actuating the overhead carriage.

12. A sawmill-carriage having a shiftable knee, a support independent of the carriage, a slide mounted upon the support and having a slidable connection with the knee to set the latter and permit reciprocation of the carriage, a rack upon the slide, a shaft carried

by the support and provided with a pinion
engaging the rack, an engine connected to the
shaft and having its throttle accessible from
the position of the sawyer, and a gage includ-
5 ing an adjustable stop located in the path of
the slide to adjustably limit the setting of the
knee.

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

FORTUNE A. FLOYD.

Witnesses:

E. F. RALL,
J. C. DARSETT.