

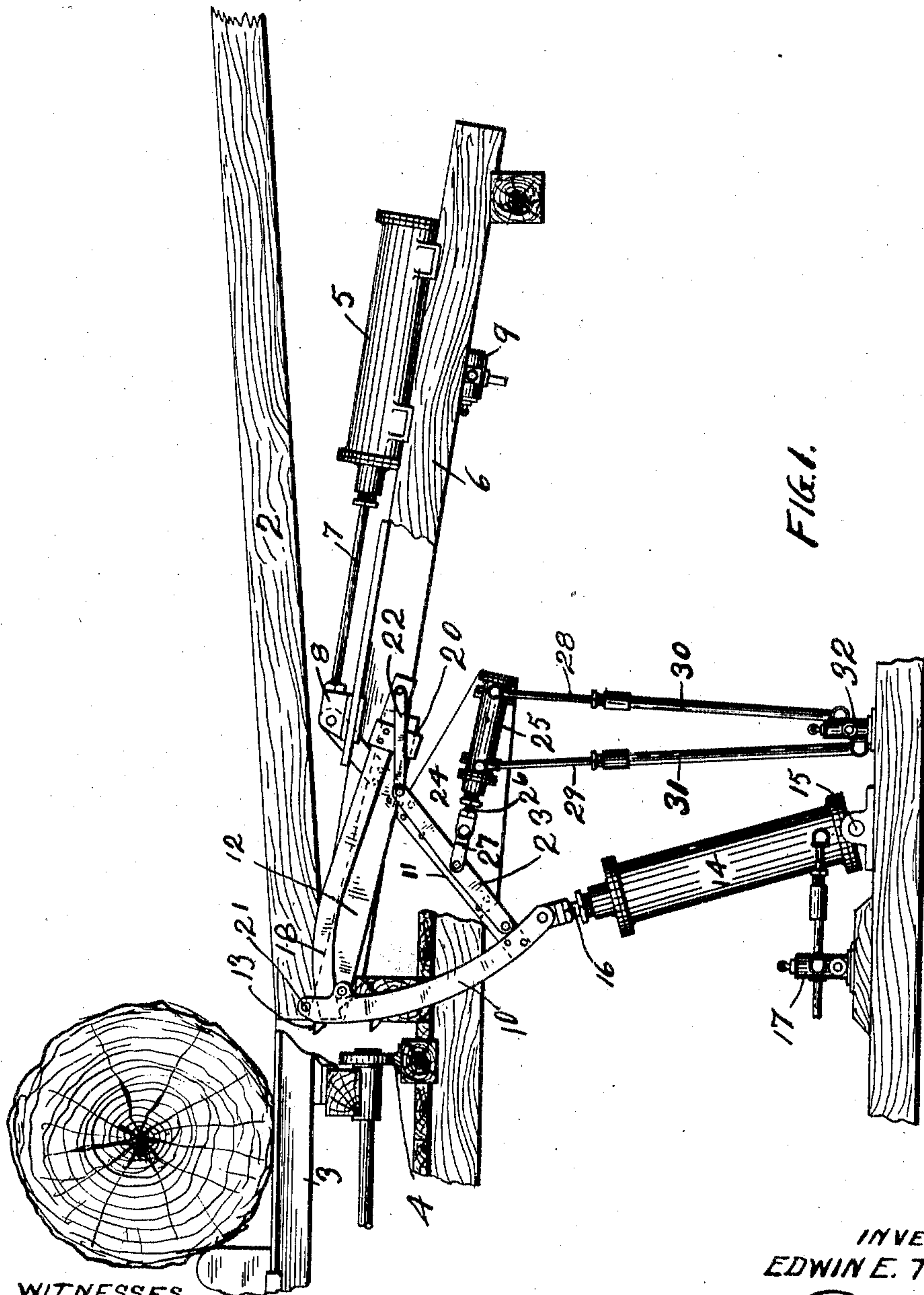
No. 776,963.

PATENTED DEC. 6, 1904.

E. E. THOMAS.
LOG LOADER AND TURNER.
APPLICATION FILED OCT. 10, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES.
E. E. Thomas
W. H. Agency

INVENTOR
EDWIN E. THOMAS.
BY *Paul & Paul*
HIS ATTORNEYS.

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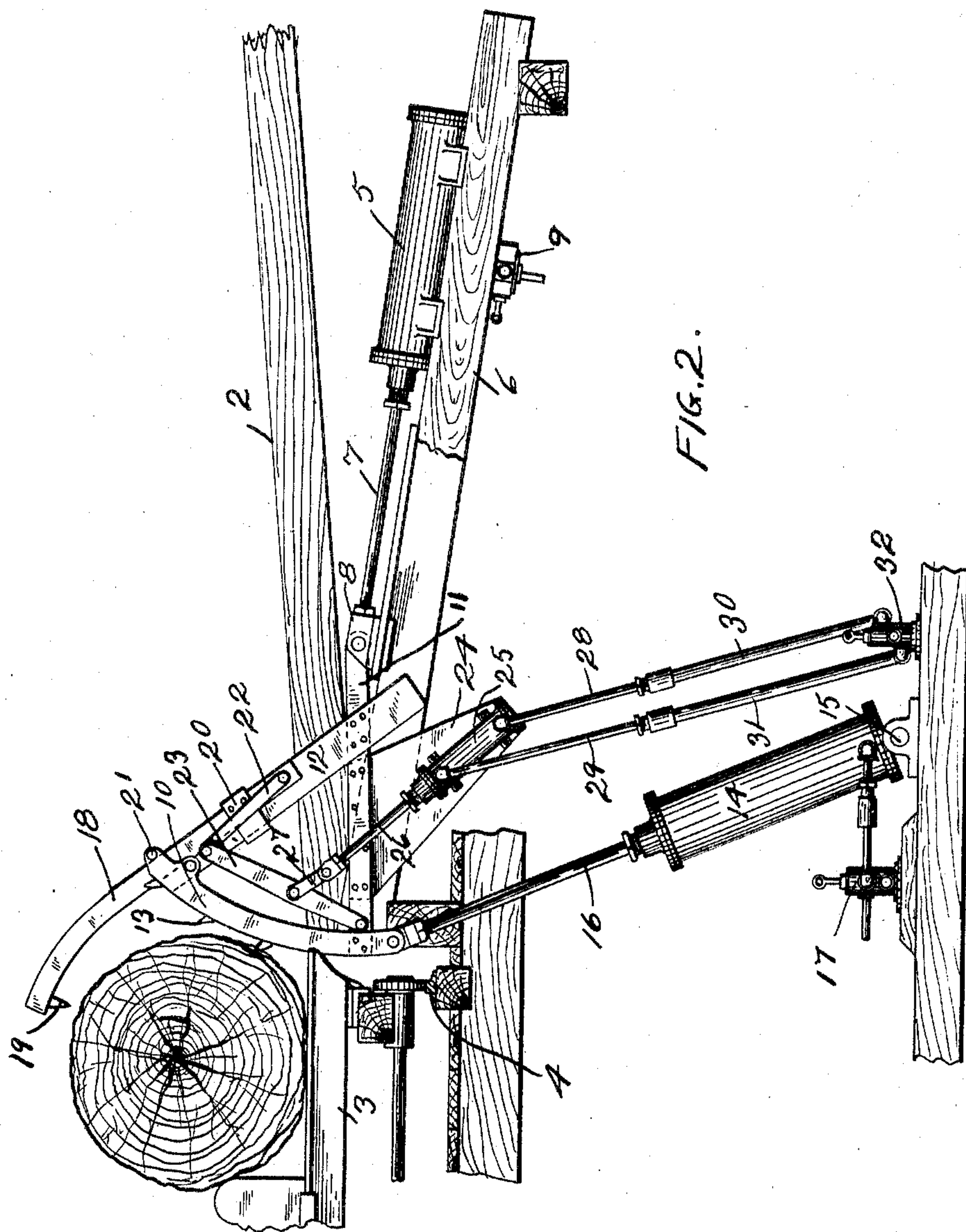
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E. E. Thomas

M. Hagerty

INVENTOR

EDWINE E. THOMAS

BY *Paul & Paul*
HIS ATTORNEYS.

UNITED STATES PATENT OFFICE.

EDWIN E. THOMAS, OF TACOMA, WASHINGTON, ASSIGNOR TO WILLAMETTE IRON & STEEL WORKS, OF PORTLAND, OREGON, A CORPORATION.

LOG LOADER AND TURNER.

SPECIFICATION forming part of Letters Patent No. 776,963, dated December 6, 1904.

Application filed October 10, 1903. Serial No. 176,472. (No model.)

To all whom it may concern:

Be it known that I, EDWIN E. THOMAS, of Tacoma, county of Pierce, State of Washington, have invented certain new and useful Improvements in Log Loaders and Turners, of which the following is a specification.

My invention relates to sawmill machinery; and the object of the invention is to provide means for turning a log toward the log-deck after it has been loaded onto the sawmill-carriage.

A further object is to provide a log-turner designed particularly for handling large logs, though equally well adapted for turning those of medium or small size.

A further object is to provide a combination log loader and turner which will load a log onto a carriage and turn it either toward or from the log-deck, as desired.

Other objects of the invention will appear from the following detailed description.

The invention consists generally in means arranged to engage a log after it has been loaded onto the carriage and turn it toward the log-deck.

Further, the invention consists in various constructions and combinations, all as herein-after described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of my improved log loading and turning device, showing the mechanism in its retracted or inoperative position. Fig. 2 is a side view showing the mechanism raised and the log-turning device in position to engage the log and turn it toward the log-deck.

In the drawings, 2 represents a log-deck, and 3 a carriage arranged in front of the deck upon a track 4 in the usual manner.

5 is an engine-cylinder arranged beneath the log-deck upon timbers 6 and having a piston 7 connected with a sliding cross-head 8. The admission of steam to the cylinder 5 is controlled by means of the valve mechanism 9. A triangular frame, composed of bars 10, 11, and 12, is pivoted to the cross-head 8, and the bar 10 is provided with a series of teeth 13, mounted therein in the usual way

and adapted to engage the log and lift or roll the same upon the carriage when said frame is raised above the log-deck. A second engine-cylinder 14 is mounted on a pivot 15 beneath said triangular frame and has a piston 16 pivotally connected with the bar 10. A valve mechanism 17 controls the admission of steam to the cylinder 14. By the movement of the pistons 7 and 16 the triangular frame can be raised or lowered on its pivot and its teeth moved into engagement with the log or withdrawn therefrom, as desired.

It is frequently desirable after loading a log upon the carriage to turn it back toward the log-deck, and I have found this operation requires considerable time and labor, particularly where the logs are of large diameter, and I therefore have provided a mechanism in connection with the oscillating triangular frame for engaging the log and turning it toward the deck to present new surfaces to the saw whenever desired. This mechanism consists in an arm 18, slidably mounted on the bar 12 and having a tooth 19 at its upper end to dig into the surface of the log and roll the same away from the carriage. I prefer to provide a guide 20 on the arm 18 and slidably mounted on the bar 12, the upper end of said arm being held in place by a pin 21. To reciprocate the arm 18, I provide a link 22, pivotally connected with the lower end of said arm at one end and at its other end pivoted to a lever 23, pivoted on the bar 11. One end of the lever is therefore free to oscillate with the link 22, while its opposite end is fixed on the triangular frame and moved therewith. A plate 24 is secured on the bar 11, and on said plate I provide an engine-cylinder 25, having its piston 26 connected by a coupling 27 with the lever 23 at a point intermediate to its ends. Steam is supplied to the cylinder 25 through pipes 28 and 29, that telescope in pipes 30 and 31, that have a swivel connection with a valve 32, by means of which the operator controls the admission of steam to the cylinder 25.

The operation of the machine is as follows: The triangular log-loading frame being in its normal position below the log-deck and the

operator desiring to turn the log toward the deck will admit steam to the cylinders 5 and 14, swinging the triangular frame on its pivot to a point above the deck, and then admitting steam to the cylinder 25 will swing the lever 23 on its pivot and project the sliding arm 18 beyond the upper end of the triangular frame until the tooth 19 overhangs the log, where it will engage and dig into the same when the triangular frame is retracted. As soon as the arm 18 has been projected sufficiently over the log the operator, regulating the admission of steam to the cylinders 5 and 14, will retract the triangular frame, causing the toothed arm to engage the log and turn it toward the deck until the desired surface is exposed to the saw. Upon admitting steam to the upper end of the cylinder 25 the lever 23 will be drawn down and the arm 18 retracted to its normal position. By providing this longitudinally-sliding bar I am able to use the device with logs of the largest size, which cannot be conveniently turned with the devices of this kind as generally used, and by a simple retraction of the bar I am able to use it with logs of small or medium size.

I claim as my invention—

1. The combination, with a log deck and carriage, of a frame arranged beneath said deck and provided on one side with a series of log-turning teeth, an engine arranged to move said frame and teeth horizontally toward the carriage and log, a second engine arranged to oscillate said frame and teeth vertically, a sliding toothed bar carried by said frame and adapted to be projected beyond said first-named teeth over the log, and means for operating said bar.

2. The combination, with a log deck and carriage, of an oscillating log-loader normally below the level of said deck, a toothed arm carried by said loader and arranged to be projected longitudinally beyond the same, and means for operating said loader and arm.

3. The combination, with a log deck and carriage, of a triangular frame pivoted beneath the log-deck, a series of teeth carried by said frame, a longitudinally-reciprocating toothed bar mounted on said frame, and means for operating said frame and bar.

4. The combination, with a log loader and turner, of a reciprocating toothed member mounted thereon, and arranged to be projected lengthwise over the log and withdrawn therefrom, a steam-cylinder, and pivotal connections provided between said cylinder and said reciprocating member, substantially as described.

5. The combination, with a pivoted log-turner, of means for operating the same, a sliding toothed arm carried by said turner and adapted to be projected beyond the same, a lever pivoted on said log-turner, a link con-

necting said lever and said arm, and an engine-cylinder having its piston pivotally connected with said lever, substantially as described.

6. The combination, with a pivoted log-turner, and means for operating the same, of a longitudinally-sliding toothed arm, a fluid-motor carried by said log-turner, and pivotal connection provided between said fluid-motor and said arm.

7. The combination, with a triangular frame, comprising bars 10, 11 and 12, of a head-block whereon said frame is pivoted, a series of teeth provided on said bar 10, a sliding toothed arm mounted on the bar 12 and arranged to be projected beyond the same, a lever pivoted at one end on said bar 11, a link pivotally connecting the other end of said lever with said arm, and a steam-engine cylinder carried by said arm and having its piston pivotally connected with said lever, substantially as described.

8. The combination, with a log deck and carriage, of a log-turner, an arm carried thereby and arranged to be projected over the top of the log a suitable distance according to the size of the log, and having a tooth to engage the log-surface, and means for operating said log turner and arm.

9. The combination, with a log deck and carriage, of a pivoted log-turning frame arranged beneath said deck and provided on one side with a series of log-turning teeth, a fluid-motor having its piston connected with said frame and arranged to operate the same horizontally toward and from the carriage, a second fluid-motor having its piston connected with said frame to oscillate the same vertically, a reciprocating toothed bar mounted on said frame and arranged to be projected beyond said first-named teeth over the log to be turned, and a third fluid-motor carried by said frame and operatively connected with said bar.

10. The combination, with a log deck and carriage, of a log-turning frame arranged beneath said deck and provided on one side with a series of log-turning teeth, an engine horizontally arranged beneath said deck and having its piston connected with said frame, a second engine arranged in a substantially upright position beneath said deck and also connected to said frame, a reciprocating toothed bar carried by said frame and arranged to be projected beyond said teeth and over the log to be turned, a third engine and operative connections between said third engine and said bar.

In witness whereof I have hereunto set my hand this 29th day of September, 1903.

EDWIN E. THOMAS.

In presence of—

HERBERT S. GRIGGS,
E. G. CONNICK.