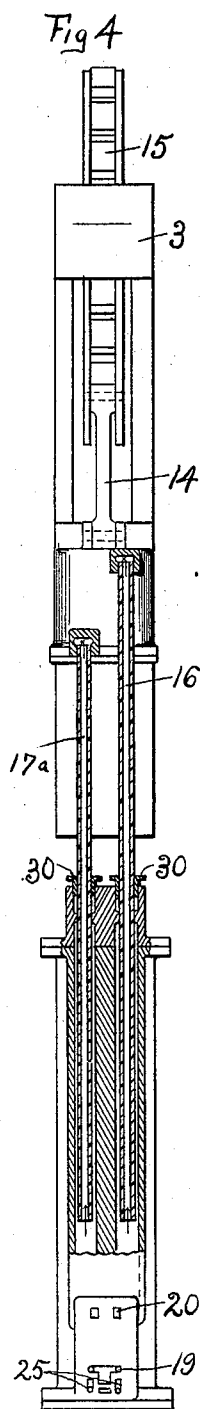




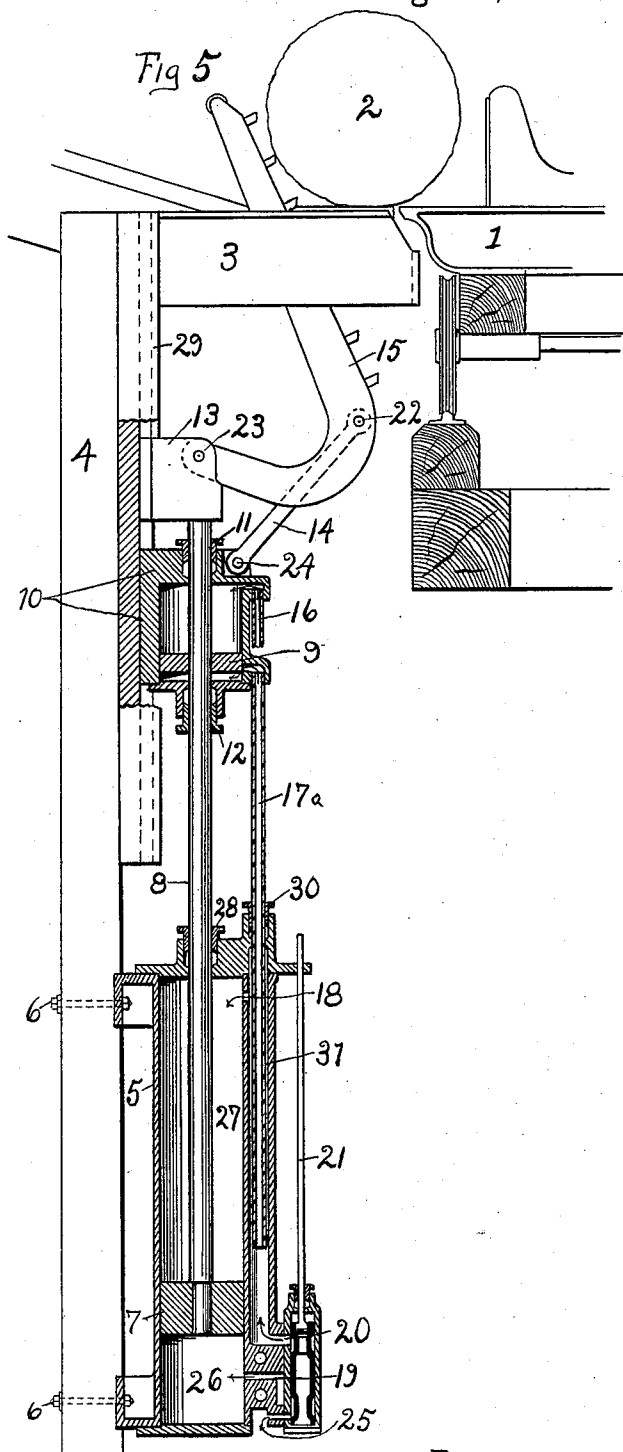
G. M. PELTON.  
LOG ROLLING AND TURNING MACHINE.

No. 588,652.

Patented Aug. 24, 1897.



Witnesses  
Robert H. & Catherine Wood  
Charles L. Hine



Inventor  
George M. Pelton  
by Dwight B. Chaever  
His Atty

# UNITED STATES PATENT OFFICE.

GEORGE M. PELTON, OF BELMONT, NEW YORK.

## LOG ROLLING AND TURNING MACHINE.

SPECIFICATION forming part of Letters Patent No. 588,652, dated August 24, 1897.

Application filed March 27, 1897. Serial No. 629,516. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE M. PELTON, a citizen of the United States, residing at Belmont, in the county of Allegany and State of New York, have invented a certain new and useful Improvement in Log Rolling and Turning Machines; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it relates to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to improvements in log rolling and turning machines in which an upward-projecting tooth-bar is operated by perpendicular or approximately perpendicular direct-connected steam-cylinders without the use of gearing or pulleys.

The object of my invention is to provide in a compact and convenient form an efficient machine which will roll and turn logs with ease and economy of power. I place the cylinders in tandem and construct and operate them in the manner and through the mechanism hereinafter described and claimed.

In the drawings, Figure 1 is an end elevation of the machine. Fig. 2 is a side elevation showing in section the arrangement of the cylinders, steam-pipes, and valves when steam is admitted to the cylinder by means of a hollow piston-rod. Fig. 3 is a plan view of the machine. Figs. 4 and 5 are respectively end and side elevations of the machine when built in a modified form, in which steam is carried to the auxiliary cylinder by means of an external steam-pipe instead of through the hollow piston, as shown in Fig. 2.

Similar figures represent similar parts throughout the several views.

1 represents the saw-carriage; 2, the log; 3, the log-skidway; 4, the framework, supporting the whole machine; 5, the main cylinder, secured to frame 4 by bolts 6; 7, the piston; 8, the piston-rod of cylinder 5; 9, the piston of the small or auxiliary cylinder; 10, the auxiliary cylinder, adapted to slide in guides 29, which are attached to frame 4; 11 and 12, stuffing-boxes of auxiliary cylinder; 13, a cross-head attached to the end of piston 8 and adapted to slide in guides 29; 14, a connecting-rod; 15, a toothed bar pivot-

ally connected to cross-head 13 by bolt 23; 16, the steam-pipe, which feeds the upper end of the auxiliary cylinder; 17, the opening in the piston-rod, which feeds the lower end of auxiliary cylinder; 17<sup>a</sup>, steam-pipe which may be substituted for 17. Pipes 16 and 17<sup>a</sup> are to slide through stuffing-boxes 30 into the steam-chest 31 of the main cylinder. 18, 19, 20, and 25 are steam-ports; 21, a valve-rod; 22 and 24, bolts in the connecting-rod; 26 and 27, respectively the lower and upper steam-chambers of cylinder 5; 28<sup>a</sup>, stuffing-box, and 29 a guide.

In the modified form of machine shown in Figs. 4 and 5 the piston-rod 8 is made solid, and steam is admitted to the lower end of the auxiliary cylinder by means of the external steam-pipe 17<sup>a</sup>. The hollow piston-rod of the main cylinder affords a convenient means of introducing steam into the auxiliary cylinder, but the steam can instead be introduced through the external pipe 17<sup>a</sup> without changing the mode of operation of the machine or the office performed by either cylinder or piston.

It will be seen by an inspection of the drawings that when piston 9 is held stationary relative to auxiliary cylinder 10 the admission of steam to the lower steam-chamber 26 below piston 7 will move the entire operative mechanism (consisting of the two pistons and piston-rod, the auxiliary cylinder, cross-head, and toothed bar) upward and that admitting steam to steam-chamber 27 above piston 7 will move said mechanism downward. It will also be apparent that if piston 7 is held in one place in cylinder 5 and steam is then admitted through steam-pipe 16 above piston 9 in the auxiliary cylinder 10, the cylinder will move upward on piston-rod 8 and guide 29, and thus cause the toothed bar 15 to rock to the left about pin 23 in cross-head 13, and that when steam is admitted through the opening 17 in piston-rod 8 (or through pipe 17<sup>a</sup>, as shown in Fig. 5) to the lower side of piston 9 cylinder 10 will be moved downward on piston-rod 8 and guide 29, and thus cause toothed bar 15 to rock to the right about pin 23.

The valves controlling the admission of steam to the cylinders are so arranged that the operator can at will cause the cylinders

to operate either independently or simultaneously. If the log is on the carriage and is to be turned, steam is admitted underneath the lower piston and the operative mechanism moves vertically upward until the teeth of the bar, catching on the log, as shown in Fig. 2, roll it over. To avoid crowding too hard against the head-blocks, the operator would at the same time admit a little steam into the auxiliary cylinder, so that the bar will move slightly to the left, giving the log a rolling motion.

If the log is on the skidway, the bar is first thrown back under the log, as shown in Fig. 5, before the vertical movement is given. As the vertical movement is given, the bar is moved to the right to a vertical position, thus crowding the log onto the carriage.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a log-turning machine the combination of two cylinders in tandem, their piston-rod and pistons, a bar for operating on the log connected with the actuated part of each, whereby the bar may be elevated and rocked, substantially as described.

2. In a log-turning machine the combination of two vertical, or approximately vertical, cylinders in tandem one above the other, their piston-rod and pistons, a bar for operating on the log connected with the actuated part of each, whereby the bar may be elevated and rocked, substantially as described.

3. In a log-turner, the combination of two cylinders, a piston working in each and a toothed bar connected with both cylinders, said two cylinders being in tandem with each other on the same piston-rod, whereby the bar may be elevated and rocked, substantially as described.

4. In a log-turner, in combination with the toothed bar thereof, a fixed cylinder, a piston working therein, a second piston carried on the piston-rod of said first-mentioned piston external to said fixed cylinder, and a second

cylinder adapted to slide on said piston-rod about said second piston, whereby the bar may be elevated and rocked, substantially as described.

5. In a log-rolling machine the combination of a toothed bar pivoted at one end to a vertically-guided cross-head, rigidly attached to the piston-rod of an upright main cylinder, an auxiliary cylinder on said piston-rod in tandem with the main cylinder, connected to said toothed bar and adapted to slide on said piston-rod and rock the toothed bar about its pivot on the cross-head, substantially as set forth.

6. In a log-rolling machine the combination of a toothed bar pivoted at its lower end to a vertically-guided cross-head, rigidly attached to the piston-rod of an upright main cylinder, an auxiliary cylinder on said piston-rod between the cross-head and main cylinder connected to said toothed bar and adapted to slide on said piston-rod and rock the toothed bar about its pivot on the cross-head, substantially as described.

7. In a log-rolling machine the combination of a toothed bar pivoted at its lower end to a vertically-guided cross-head rigidly attached to the hollow piston-rod of an upright main cylinder, an auxiliary cylinder on said hollow piston-rod between said cross-head and main cylinder adapted to slide on and receive steam through said hollow piston-rod and rock the toothed bar about its pivot on the cross-head, substantially as set forth.

8. In a log-turner the combination of a fixed cylinder 5, a hollow piston-rod 8, pistons 7 and 9, auxiliary cylinder 10, external to and in tandem with said fixed cylinder 5, cross-head 13, connecting-rod 14, toothed bar 15 and steam-pipes and connections, substantially as set forth and for the purposes specified.

GEORGE M. PELTON.

Witnesses:

GEO. L. TUCKER, Jr.,  
LEWIS W. ALLEN.