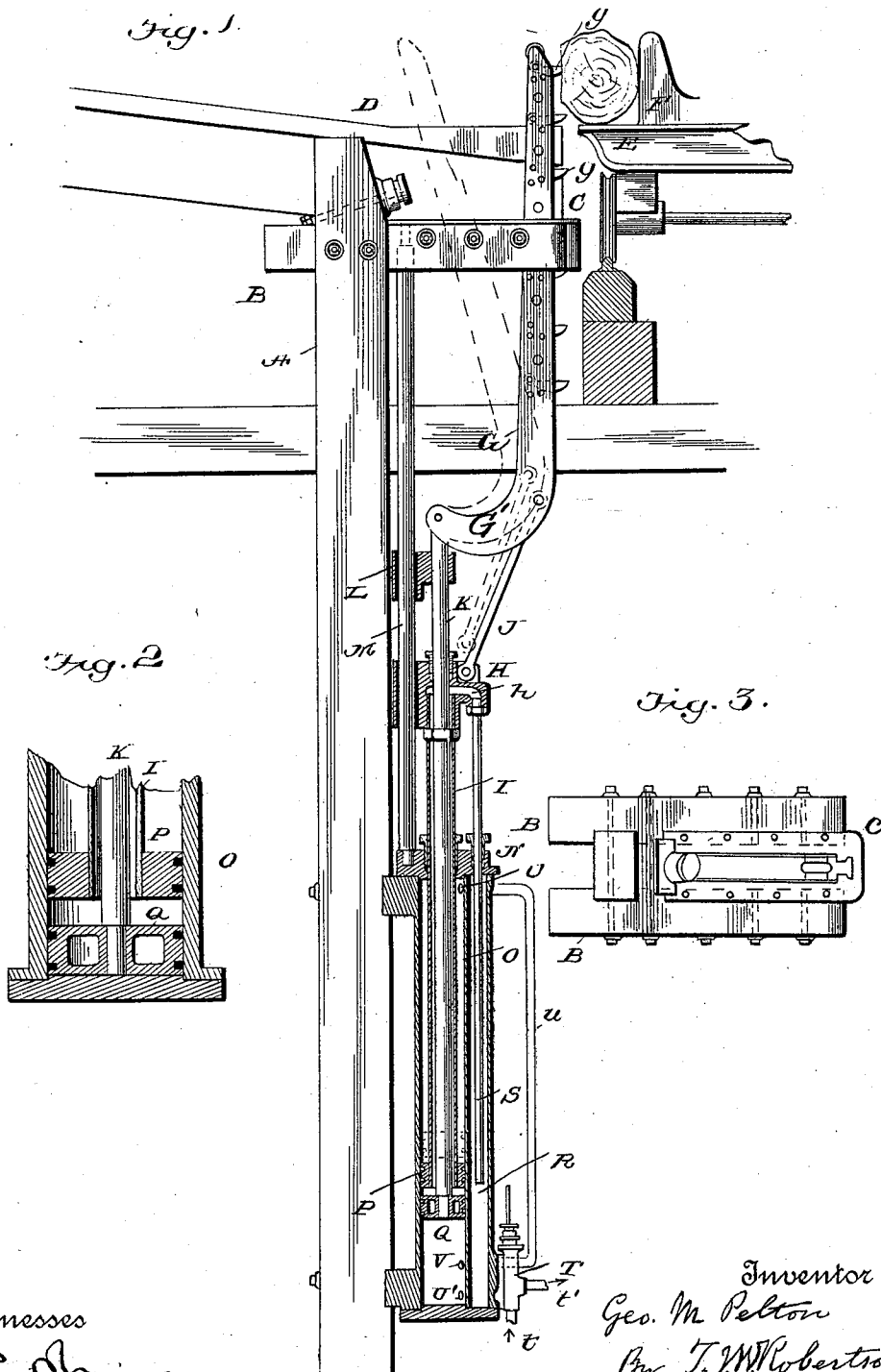


(No Model.)

G. M. PELTON.
LOG TURNER.

No. 588,600.

Patented Aug. 24, 1897.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE M. PELTON, OF BELMONT, NEW YORK.

LOG-TURNER.

SPECIFICATION forming part of Letters Patent No. 588,600, dated August 24, 1897.

Application filed December 26, 1893. Serial No. 494,754. (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 certain new and useful Improvements in Log-Turners, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This improvement is designed to provide a steam log-turner that will roll the log either sidewise over the skidway to the carriage or on its axis, so as to turn it over, with the aid of a single cylinder and two pistons, in the manner hereinafter more fully set forth; and the invention consists in the peculiar construction, arrangement, and combinations of parts hereinafter more particularly described and then definitely claimed.

20 In the accompanying drawings, Figure 1 shows an elevation of a log-mover constructed according to my invention with parts in section. Fig. 2 is a section of the cylinder and pistons on a larger scale. Fig. 3 is a plan of the yoke and its connection through which the lever works.

Referring now to the details of the drawings by letter, A represents an upright to which are bolted the cross-bars B, between which is secured the yoke C. Above the yoke and cross-bars are the skidways D, over which the logs travel to the carriage E, supporting the head-blocks F. Between the walls of this yoke travels the bar G, provided with pivoted teeth *g* and having its lower end connected to the cross-head H of a hollow piston-rod I by means of a link J and having a lateral extension G', which is connected to the upper end of a solid piston-rod K, which has attached to it a cross-head L, working (as does the cross-head H) on a guide-rod M, whose ends are secured in the under side of the yoke C, and the head N of a cylinder O, secured to the upright A by bolts, as shown. At the lower ends of these piston-rods are the pistons P Q, fitting steam-tight in the cylinder O. On one side of the cylinder is a steam-passage R, in which works a tube S, whose upper end is screwed into the cross-head H, and its bore communicates with a steam-passage *h* in said cross-head, so that steam entering the passage R

will pass up through said tube, through passage *h*, and down between the outside of the rod K and the inside of the hollow rod I to the space between the pistons, where it may be used to separate said pistons, as hereinafter described.

At T is shown a steam-chest or valve-case in which *t* is the inlet and *t'* the exhaust. In this works a valve (not shown) which, as it forms no part of the invention herein claimed and as any suitable form of valve may be used, need not be illustrated or described here.

At U U' are shown two ports to admit steam, the upper one, U, receiving steam through the pipe *u* from the chest T. At V is an exhaust-port which is set at a short distance from the bottom, so as to trap the exhaust and form a cushion for the piston and prevent its striking the lower cylinder-head when descending.

The operation is as follows: Supposing the pistons to be in their lowest position, the valve is so operated as to admit steam below the lower piston, which will cause the toothed bar to rise vertically and give a rotating movement to the log on the carriage, which ceases when steam is admitted above the upper piston. Exhausting the steam from below the piston will cause the toothed bar to descend to its former position without disturbing the log, owing to the pivoted teeth yielding as they descend. When steam is admitted between the pistons through the tubes S and hollow piston-rod I, it will cause the pistons to move in opposite directions, thereby swinging the upper end of the toothed bar back from the vertical position, as shown in dotted lines, and if steam be admitted above and below the piston simultaneously the upper end of the bar will swing toward the vertical position, thus moving the log from the skidway to the head-blocks.

It will thus be seen that by a proper manipulation of the valve so as to give the bar the proper movements vertically and sidewise I can take a log from the skidway of a sawmill, roll it onto the carriage, and then rotate it any required number of degrees or press it firmly against head-block knees, as desired.

I am aware that it has before been proposed to work two or more pistons of the same diam-

eter in a single cylinder of a steam-engine, and therefore do not claim this feature broadly; but I am not aware that any of such engines have ever had passages for the steam capable of delivering the same between the
5 pistons at any part of the cylinder.

I am also aware that it has been proposed to use two pistons of different sizes inclosed in the same cylinder to operate a log-turner, one of which pistons works within the other, which latter performs the function of a cylinder for the first piston, so that although said first piston is within the main cylinder it does not work in contact with the walls thereof. I deem my invention much superior to
15 said log-turner, inasmuch as the main cylinder of the latter is necessarily longer than mine, and the larger piston is also much larger and heavier than is necessary with my invention, so that my log-turner could be made
20 cheaper, lighter, and less cumbersome, and as both my pistons are comparatively light much less steam is necessary to operate the same than would be where a piston is used that is large enough to form a cylinder for another
25 piston. A heavy piston in a log-turner is especially objectionable, as the entire weight of the piston has to be lifted the whole length of the stroke, the movement of the same being
30 vertical.

What I claim as new is—

1. In a log-turner, the combination of a cylinder, two pistons of the same diameter working therein, and a bar for operating on the
35 log, connected with both pistons, substantially as described.

2. In a log-turner, the combination of a cylinder, two pistons of the same diameter working therein, a bar for operating on the log, and
40 connections between the pistons and operating-bar one of said pistons being connected to the bar near the lower end thereof and the other to a lateral extension of the same, whereby the pistons may move said bar laterally,
45 substantially as described.

3. In a log-turner, the combination of a cylinder, two pistons of the same diameter working therein, a toothed bar connected with both pistons, and inlet and exhaust ports arranged to admit or exhaust steam or other
50 operating fluid at any portion of the stroke, substantially as described.

4. The combination in a log-turner, of a cylinder, two pistons of the same diameter working therein, a bar for operating on the log
55 having a lateral extension pivotally connected with one of the pistons, and a link connecting it with the other, substantially as described.

5. The combination in a log-turner, of a bar for operating on the log, a cylinder, two pistons of the same diameter working therein, a
60 hollow piston-rod connected with said bar, a second piston-rod working in the hollow piston-rod and connected with an extension on said bar, a passage connected with the steam-
65 supply and a tube working therein whose bore

connects with the hollow piston-rod, substantially as described.

6. The combination in a log-turner, of a toothed bar G having extension G', a cylinder
70 O, pistons P Q working therein, piston-rods I K connected to said pistons and the extension G' and bar G respectively, the cross-head H having a passage h communicating with the hollow piston-rod K, link J connecting the toothed bar with the cross-head H, a
75 steam-passage R in the cylinder connecting with the steam-supply, a tube S running in said passage R and connected to the cross-head H and passage h, and suitable inlet and
80 exhaust passages, substantially as described.

7. In a log-turner, the combination of a cylinder, two pistons of the same diameter working therein, each arranged and adapted to travel through the major part of the length
85 of the cylinder, and a passage for the motive force adapted to deliver the same between the pistons at any part of the cylinder, substantially as described.

8. In a log-turner, the combination of a cylinder, two pistons of the same diameter working therein, arranged and adapted to work through the major part of the length of the
90 cylinder, a passage for the motive force adapted to deliver the same between the pistons at any part of the cylinder, and a bar for operating on the log connected with both pistons,
95 substantially as described.

9. In a log-turner, the combination of a cylinder, two pistons of the same diameter working therein, arranged and adapted to work through the major part of the length of the
100 cylinder, a passage for the motive force adapted to deliver the same between the pistons at any part of the cylinder, a bar for operating on the log, and connections between the pistons
105 and operating-bar, one of said pistons being connected to the bar near the lower end thereof and the other to a lateral extension of the same, whereby the pistons may move said bar
110 laterally, substantially as described.

10. In a log-turner, the combination of a cylinder, two pistons of the same diameter working therein, a toothed bar connected with both pistons, and inlet and exhaust ports
115 arranged to admit or exhaust steam or other operating fluid between the pistons at any portion of the cylinder, substantially as described.

11. The combination in a log-turner, of a cylinder, two pistons of the same diameter working therein, a bar for operating on the log having a lateral extension pivotally connected with one of the pistons, and a link
120 connecting it with the other, substantially as described.

12. The combination in a log-turner, of a bar for operating on the log, a cylinder, two pistons of the same diameter working therein, a hollow piston-rod connected with said bar,
130 a second piston-rod working in the hollow piston-rod and connected with an extension

on said bar, a passage connected with the steam-supply, and a tube working therein whose bore connects with the hollow piston-rod, substantially as described.

5 13. The combination in a log-turner, of a bar for operating on the log, a cylinder, two pistons of the same diameter working therein, a hollow piston-rod connected with said bar, a second piston-rod working in the hollow
10 piston-rod and connected with an extension on said bar, and a cross-head carried by one of the piston-rods, having a steam-passage through it connecting the space between the pistons with the source of power, substan-
15 tially as described.

14. The combination in a log-turner, of a bar for operating on the log, a cylinder, two pistons of the same diameter working therein, a hollow piston-rod connected with said bar,
20 a second piston-rod working in the hollow piston-rod and connected with an extension on said bar, a cross-head carried by one of the piston-rods, having a steam-passage through it connecting with the hollow piston-rod, and

a pipe whose bore connects with said passage 25 and the source of power, substantially as described.

15. The combination in a log-turner, of a bar for operating on the log, a cylinder, two pistons of the same diameter working therein, 30 a hollow piston-rod connected with said bar, a second piston-rod working in the hollow piston-rod and connected with an extension on said bar, a cross-head carried by one of the piston-rods, having a steam-passage through 35 it connecting with the hollow piston-rod, a pipe whose bore connects with said passage, and a second passage in which said pipe works arranged parallel with the cylinder and communicating with the source of power, 40 substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 22d day of December, 1893.

GEORGE M. PELTON.

Witnesses:

H. L. WHITCOMB,
A. H. WATERS.