(No Model.)

C. E. CLARK.

LOG TURNER.

No. 578,723. Patented Mar. 16, 1897.

Fig. 1.

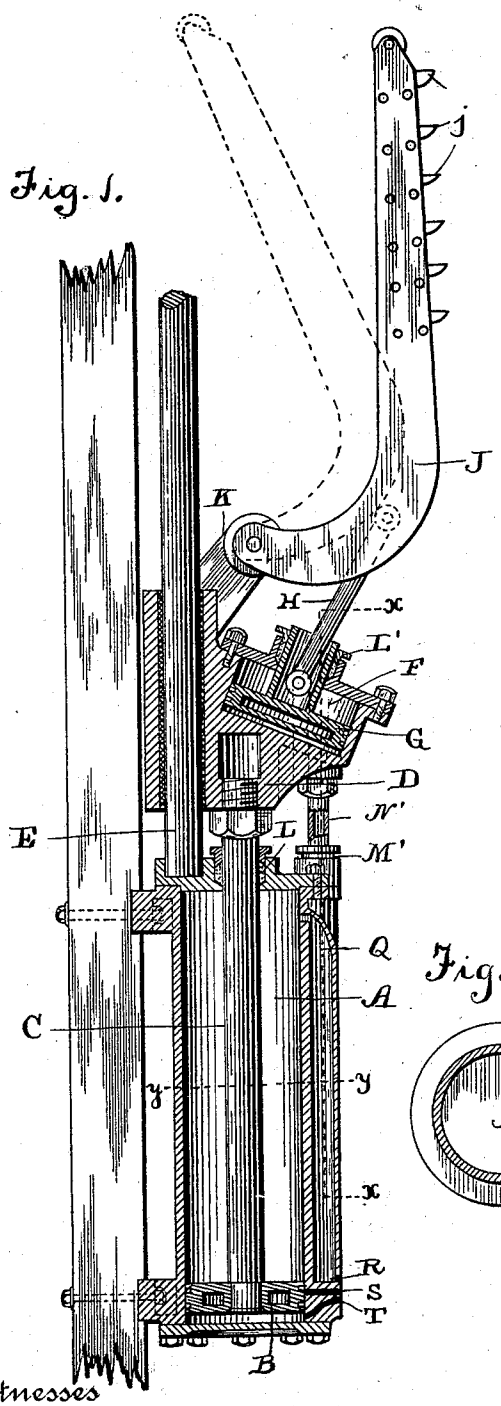


Fig. 2.

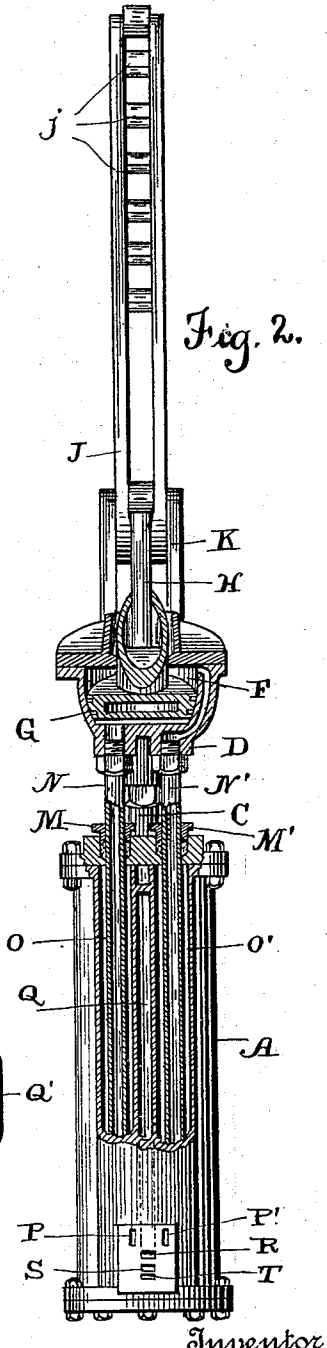
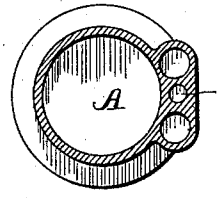


Fig. 3.



Witnesses
Thos. E. Robertson
W. E. Clendaniel

Inventor
Charles E. Clark
By T. J. W. Robertson
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES E. CLARK, OF BELMONT, NEW YORK.

LOG-TURNER.

SPECIFICATION forming part of Letters Patent No. 578,723, dated March 16, 1897.

Application filed August 29, 1894. Renewed February 11, 1897. Serial No. 622,997. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. CLARK, 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.

This invention relates to that class of log-turners wherein two cylinders are employed; and it consists in the improvements hereinafter more particularly described and then definitely claimed.

In the accompanying drawings, Figure 1 is a vertical central section of a log-turner constructed according to my improvement. Fig. 2 is a side view, partly in section, indicated by the line *x x* on Fig. 1. Fig. 3 is a horizontal section of the cylinder and steam-passages, as indicated by the line *y y* on Fig. 1.

Referring now to the details of the drawings by letter, A represents the main cylinder, which may be secured to any suitable support, as shown, and is provided with a piston B, connected to a piston-rod C, which carries a cross-head D, working on a suitable guide E, and a second cylinder F (preferably formed in said cross-head) in which works a trunk-piston G, carrying a pitman H, connected with a J-shaped dog J, whose lower end is pivoted in a forked extension K of the cross-head.

At L L′ are shown the stuffing-boxes of the lower and upper cylinders, respectively, and M M′ indicate two stuffing-boxes, through which pass pipes N N′, communicating, respectively, with the lower and upper parts of the upper cylinder. These pipes N N′ pass into steam-passages O O′, having ports P P′. Between these passages O O′ is another passage Q, leading to the top of the lower cylinder and having a port R. Below this port are two other ports S T, communicating with the lower part of the main cylinder. A suitable steam chest and valves (not shown) for admitting and controlling the passage of the steam to and from these ports must of course be provided, but as these form no part of the invention here claimed and may be arranged in different ways no further description of them is now necessary.

The operation is as follows: Supposing the parts to be in the position represented in the drawings and it is desired to turn a log, steam is admitted to the port T, which starts the piston C upward, and as it passes the port S steam is admitted there also. The piston continues to rise, carrying the cross-head and dog with it and turning the log by means of the pivoted teeth *j* catching into the same. When the log has been turned, steam is admitted to the port R, which allows the steam to act on the top of the piston B and force it downward, the steam below it being exhausted through the port S. Port T at this time should be closed, so that as the piston passes the port S egress from below the piston is closed, thus leaving steam in the bottom of the cylinder to act as a cushion.

When it is desired to use the apparatus to move the log sidewise, steam is first admitted to the port P, which allows the steam to act on the under side of the piston G, throwing the dog into the position indicated by dotted lines, and then steam is admitted to the under side of the piston B, which will carry the dog upward behind the log to be moved. If steam be now admitted into the port P′, it will pass up the passage O′ and above the piston G and force the same downward, thus moving the dog to a vertical position and carrying the log sidewise. The lower piston B should then be lowered, as before, to be ready for another operation.

From the foregoing description and the appended drawings it will be seen that I have provided a steam log-turner that is simple, compact, powerful, convenient, and durable, and one that can be built cheaply, considering all its advantages.

What I claim as new is—

1. In a log-turner and in combination with the dog thereof, a cylinder, a piston working therein, a second cylinder arranged outside the first cylinder and carried by the rod of said piston away from the first cylinder, and a piston working in said second cylinder, substantially as described.

2. In a log-turner and in combination with

the dog thereof, a cylinder, a piston working therein, a second cylinder arranged diagonally above the first cylinder and carried by the rod of the piston thereof, and a piston working in said second cylinder, substantially as described.

3. In a log-turner, the combination of two cylinders, two pistons working therein, and a dog connected with both pistons, one of said cylinders being formed in a cross-head carried by one of the pistons above the main cylinder, substantially as described.

4. The combination in a log-turner, of a cylinder, a piston working therein, a second cylinder carried by the rod of said piston away from the first cylinder, a piston working in said second cylinder, a steam-passage connected with the first cylinder, and a tube carried by the second cylinder and entering into said steam-passage to admit steam to said second cylinder, substantially as described.

5. The combination in a log-turner, of a cylinder A, a piston B working therein, a cross-head D carried by the rod of piston B, a cylinder F formed in said cross-head, a trunk-piston G working in said cylinder F, and a dog J pivotally connected with both pistons, all substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 14th day of May, 1894.

CHARLES E. CLARK.

Witnesses:
C. N. BROWN,
W. P. CLARK.