

M. T. Arnold.

Distilling Wood.

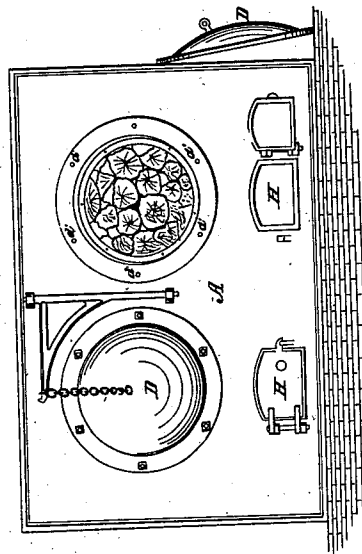
N^o 107,319.

Patented Sept. 13, 1870.

Fig. 2.



Fig. 1.



Witnesses:
Charles Kempton
E. W. Anderson

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UNITED STATES PATENT OFFICE.

MERRITT T. ARNOLD, OF SUMMIT, RHODE ISLAND.

IMPROVEMENT IN KINDLING-WOOD.

Specification forming part of Letters Patent No. 107,319, dated September 13, 1870.

To all whom it may concern:

Be it known that I, MERRITT T. ARNOLD, of Summit, in the county of Kent and State of Rhode Island, have invented a new and valuable Improvement in Means for Manufacturing Kindling-Wood and Pyroligneous Acid by one Process; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a front external view of my furnace with a cylinder-head removed. Fig. 2 is a sectional view of the same with a portion of the side of a cylinder broken off to show the kindling-wood in place.

My invention relates to means for preparing kindling-wood for use, and at the same time and by the same process of manufacturing pyroligneous acid; and it consists in the construction and arrangement of a furnace, and the invention of a process whereby both results may be rapidly and efficiently accomplished.

A of the drawings represents a box or chest, with two or more apertures in its front end, adapted to receive the strong iron cylinders B. These openings are cylindrical in form, and are made immediately above the interior plate above the fire-spaces, and so arranged that when the cylinders are inserted they rest, respectively, upon said interior plate. This interior plate is marked *c* on the drawings. The cylinders B are closed at their rear ends, but their front is open, for the purpose of receiving the kindling-wood, as hereinafter mentioned. The method of closing the front ends of these cylinders is represented on Fig. 1; and it consists of the construction of the removable heads D, which are adapted for attachment to the cylinders by screws, which pass through their rims and into the openings marked *d*.

My fire-places are represented by the let-

ters H. At the rear ends of each cylinder, and at the extreme lower side thereof, I make a small aperture, and connect therewith a pipe, marked K, which pipe is passed through a tank of cold water, and from thence to a proper receptacle of pyroligneous acid.

To operate my device I first saw and split wood into very small fragments, of a size suitable for kindling-wood, and fill therewith the cylinders B. I then attach the heads of said cylinders, as described, and pack the joints closely with lute. I then build a fire under the cylinders and heat them intensely. The pyroligneous acid of the kindling-wood is carried off in the form of vapor in the tube K, and is condensed in the cold-water tank referred to.

Inasmuch as a leading object of my device is to prepare kindling-wood for use and not to destroy it, I slacken the fires and cease the heat upon such wood when it is about reaching the point of being changed into charcoal; or, in other language, while I heat it vigorously I do not allow it to char.

When the process above described is intelligently and carefully followed, the result will be from twenty to eighty per cent. of the pyroligneous acid of the timber will be secured, and at the same time the kindling-wood will be thoroughly dried and made ready for use.

I claim—

1. The furnace herein described, having box A, cylinders B, with removable heads D, fire-places H, central plate, *c*, and condensing-pipe K, when constructed and arranged to operate as specified.

2. The kindling-wood herein described, when prepared by the process specified, as a new article of manufacture.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

MERRITT T. ARNOLD.

Witnesses:

HENRY S. VAUGHN,
JOHN F. AUSTIN.