

No. 200,662. **Patented Feb. 26, 1878.**

Fig. 1.

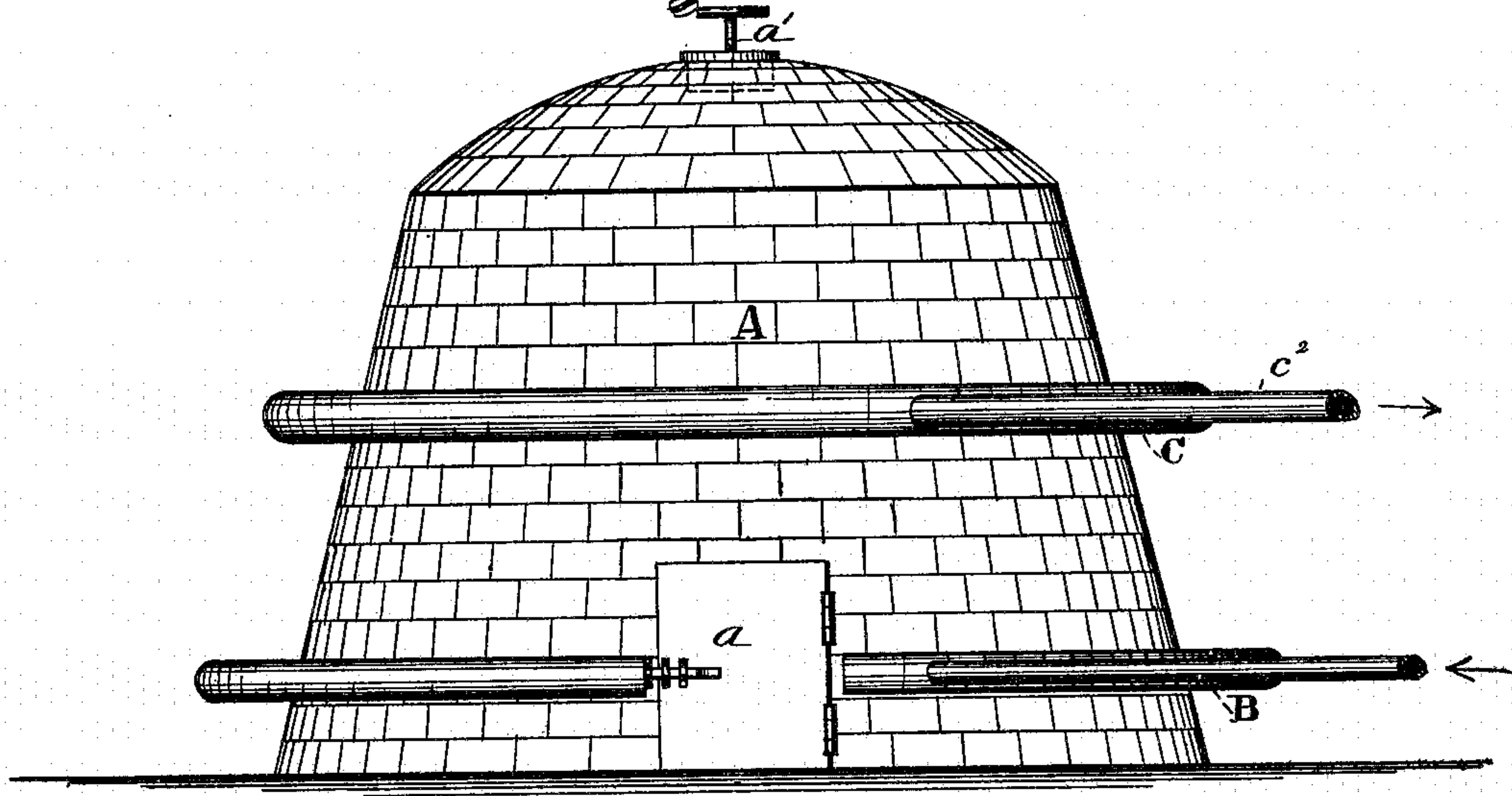
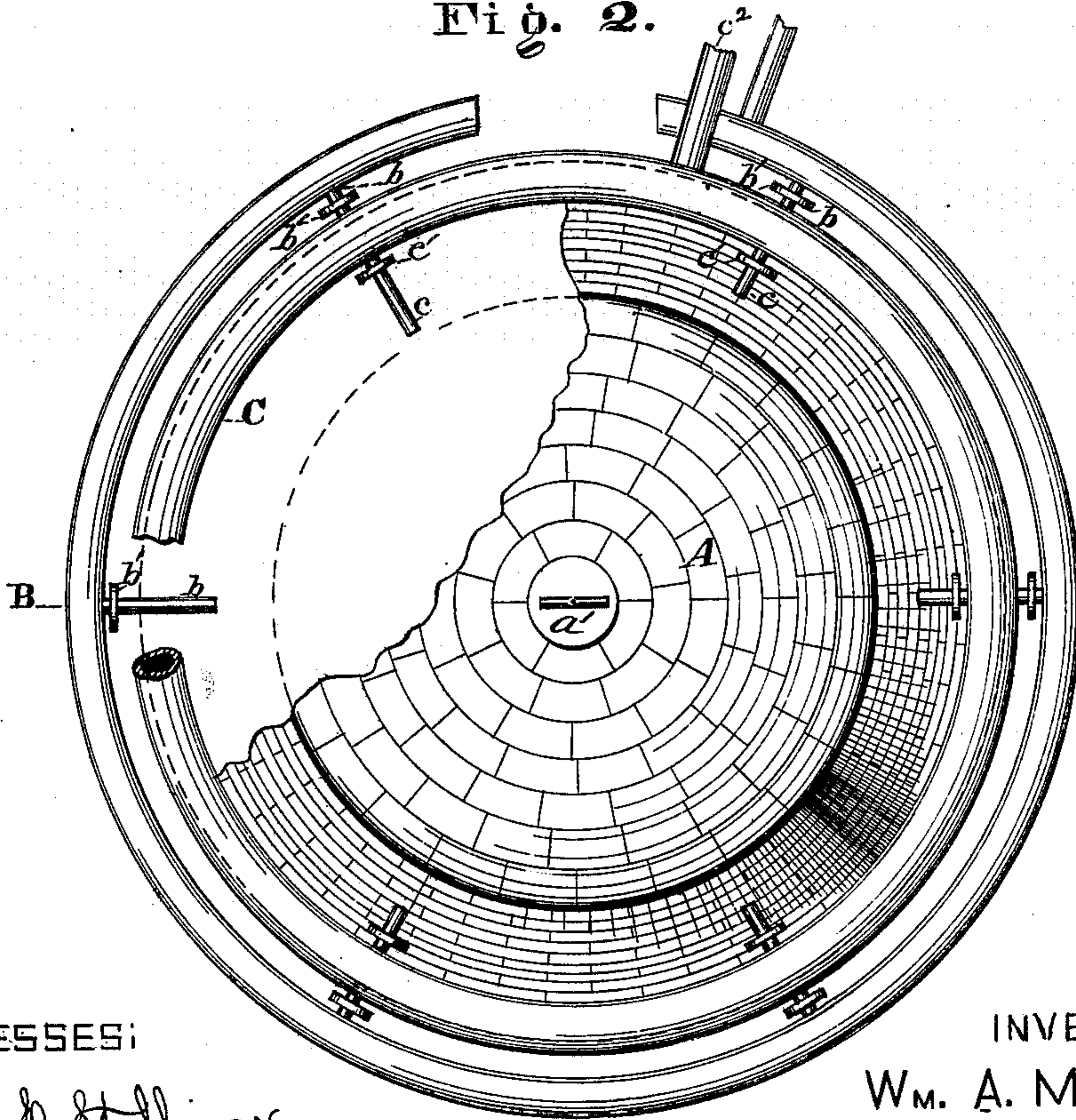


Fig. 2.



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IMPROVEMENT IN METHODS OF OPERATING CHARCOAL-KILNS.

Specification forming part of Letters Patent No. **200,662**, dated February 26, 1878; application filed July 14, 1877.

To all whom it may concern:

Be it known that I, W. A. MILES, of Copake Iron Works, in the county of Columbia and State of New York, have invented a new and Improved Method of Operating Charcoal-Kilns; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention consists, mainly, in an improved method of operating charcoal-kilns, consisting, essentially, in the following series of steps: first, preparing the kiln in the usual well-known manner, and lighting the fire; second, closing tightly the usual opening or openings into the atmosphere, to make the kiln air-tight; and, third, forcing air into the kiln in a series of equal or unequal jets, according to the necessities of the case, and out of the same in another series of jets to the condenser.

It consists, also, in the special means employed to carry this method practically into effect.

In the drawings, Figure 1 represents a side elevation of a kiln to which my improvements are applied; and Fig. 2 is a plan view of the same, partly broken away, to show the position of the pipes *b b* and *c c* in the wall.

To enable others skilled in the art to use my improved method, I will now proceed to describe the same fully, and the means employed to carry it practically into effect.

A represents the kiln, which may be constructed, generally, in the usual well-known or any other proper manner. *a* represents the door or entrance way, by means of which the kiln is supplied with wood; and *a'*, the opening through which the fire is lighted. B represents a main pipe, encircling the kiln, which is adapted, in any proper manner, to receive air under pressure from a fan-blower or any suitable means, located at any proper point. *b b* represent branch pipes, located at proper points about the kiln, by means of which air from pipe B is discharged into the interior, in equal portions, about its entire circumference. *b' b'* represent dampers or valves, by means of which the supply of air may be controlled at will. C represents a

similar pipe, located above pipe B, which is also provided with branches *c*, dampers *c'*, and a main, *c''*, leading to a condenser of any proper construction.

The pipes B and C may be built of brick or other suitable material, and may be square or rectangular in shape, with metal pipes connecting them with the kiln; or they may be built against the sides of the kiln, with flues running through the walls of the latter; but the construction shown in the drawings will be usually preferred.

The operation will be readily understood. The kiln having been prepared in the usual well-known manner, the fire having been lighted, and the opening *a'* closed, the operation will be as follows: Air under proper pressure is forced into the kiln through the pipe B in such quantities as may be necessary, in equal amounts, to the various parts of the kiln. The smoke and other products resulting from carbonization are driven off by the air-current through the pipe C to the condenser.

The admission of air and the outflow of the gas may be controlled at will by operating the proper dampers. Marked advantages result from this method of operating the kiln.

By means of the pipe B and its branches air can be supplied equally to all parts of the kiln, so that the carbonization of the wood will be effected equally, while on the contrary, if air be admitted through the usual openings, unequal effects are produced, especially in windy weather. More perfect control of the operation of the kiln is obtained, and hence the results are more uniform and perfect.

It will be understood that the air is not drawn in simply by the act of combustion, but is positively supplied in greater or less quantities, as may be desired, by artificial means. It is supplied also to the kiln on every side by means of the system of branch pipes, and so, also, the products of distillation are driven off on every side, by which means uniform results are obtained in every part.

By the employment of this method better results are obtained in the manufacture of charcoal, and in addition, also, the valuable products of distillation are secured.

I am aware of the patent of Converse and

Atherton, May 26, 1868; but in this draft-openings communicating with the atmosphere are employed, and consequently a different effect is produced.

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

1. The described method of operating charcoal-kilns, consisting, essentially, in the following series of steps: first, preparing the kiln in the usual well-known manner, and lighting the fire; second, closing tightly the usual opening or openings into the atmosphere; and,

third, forcing air into the kiln in a series of equal or unequal jets, and out of the same with the products of distillation in another series of jets to the condenser.

2. The kiln described, having the independent system of pipes B and C, provided with regulating-dampers.

This specification signed and witnessed this 13th day of July, 1877.

WM. A. MILES.

Witnesses:

GEORGE HOUSE,
H. HAMILTON.