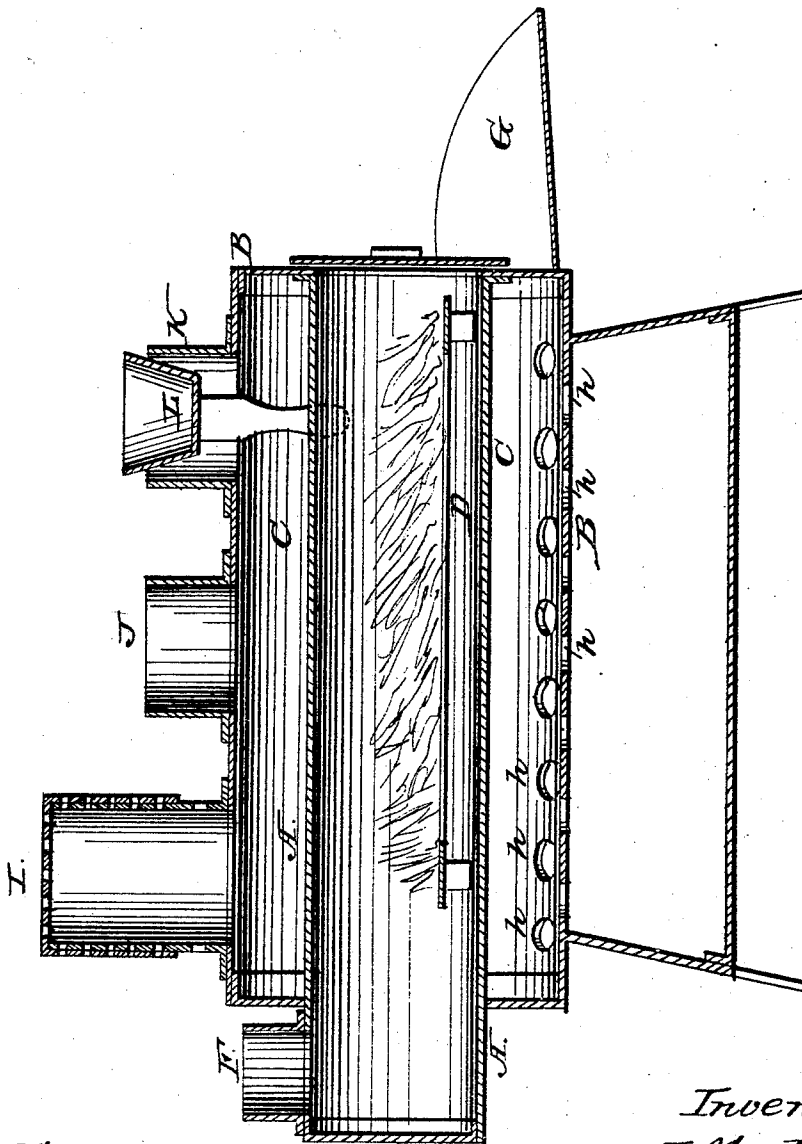


J. MARTIN.
Hot-Air Furnace.

No. 86,239.

Patented Jan. 26, 1869.



Witnesses
Amid Magan
P. C. Dutrich

Inventor
J. Martin.
per *Munn & Co.*
Attys



JAMES MARTIN, OF FLORENCE, ALABAMA.

Letters Patent No. 86,239, dated January 26, 1869.

IMPROVEMENT IN HOT-AIR FURNACES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, JAMES MARTIN, of Florence, in the county of Lauderdale, and State of Alabama, have invented a new and useful Improvement in Hot-Air Furnaces; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to an improved apparatus for heating air for warming buildings; and

It consists in the combination and arrangement of two horizontal cylinders, provided with suitable openings for the admission and discharge of the air.

The drawing represents a longitudinal sectional elevation of the furnace, showing the manner of its construction and operation.

A represents the inner cylinder, in which the fire to heat the air is made.

B is the outer cylinder, which is, as seen in the drawing, of greater diameter than A.

C is the annular space between the two cylinders, which is the air-chamber.

D represents the fire-grate.

E is the fire-door.

F is the smoke-chimney.

G is the hearth.

The fire is made in the cylinder A, which cylinder projects sufficiently far through the cylinder B to allow space for the chimney, as seen in the drawing.

Through the bottom of the outer cylinder B there are holes, *h*, for the admission of air, which holes are of suitable size, and as many in number as may be required.

I, J, and K, represent apertures, through which the heated air is discharged, from which the air may be conducted to any part of the building.

In the orifice K a vessel, L, is placed, for containing water. The vapor which rises from the water serves to moisten the air.

The cold air enters the annular space C through the apertures *h*, and rises up around the fire-cylinder A, and thereby becomes sufficiently heated or warmed for the purpose intended.

It will be seen that the air-holes *h* are distributed along the whole length of the cylinder B. This arrangement allows a very large quantity of air to enter, which, being expanded by the heat, escapes through the apertures I, J, and K, or through any one or more of them, with a force proportioned to its temperature.

I claim as new, and desire to secure by Letters Patent—

The cylinders A and B, with the proper apertures for the entrance and escape of the air, arranged and operating substantially as shown and described, and for the purposes set forth.

JAMES MARTIN.

Witnesses:

C. H. SHACKELFORD,

H. O. MARTIN.