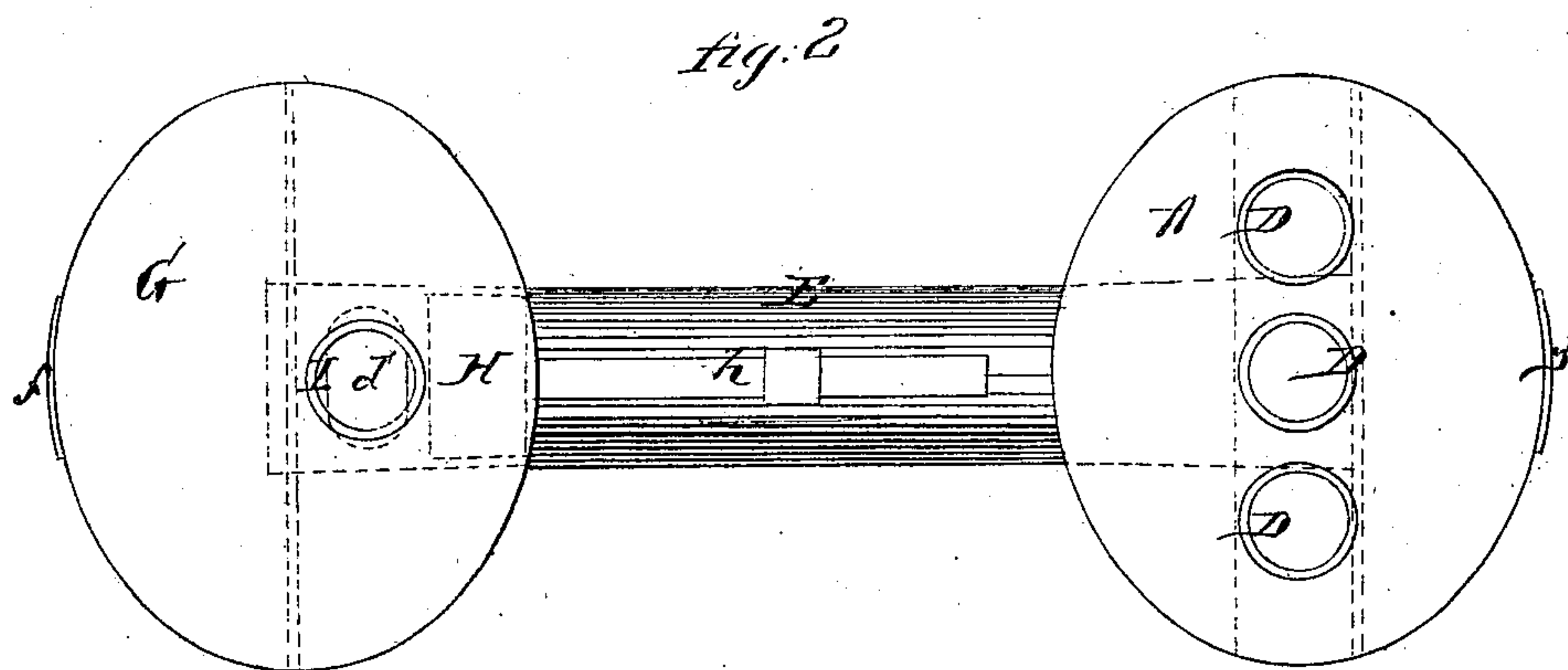
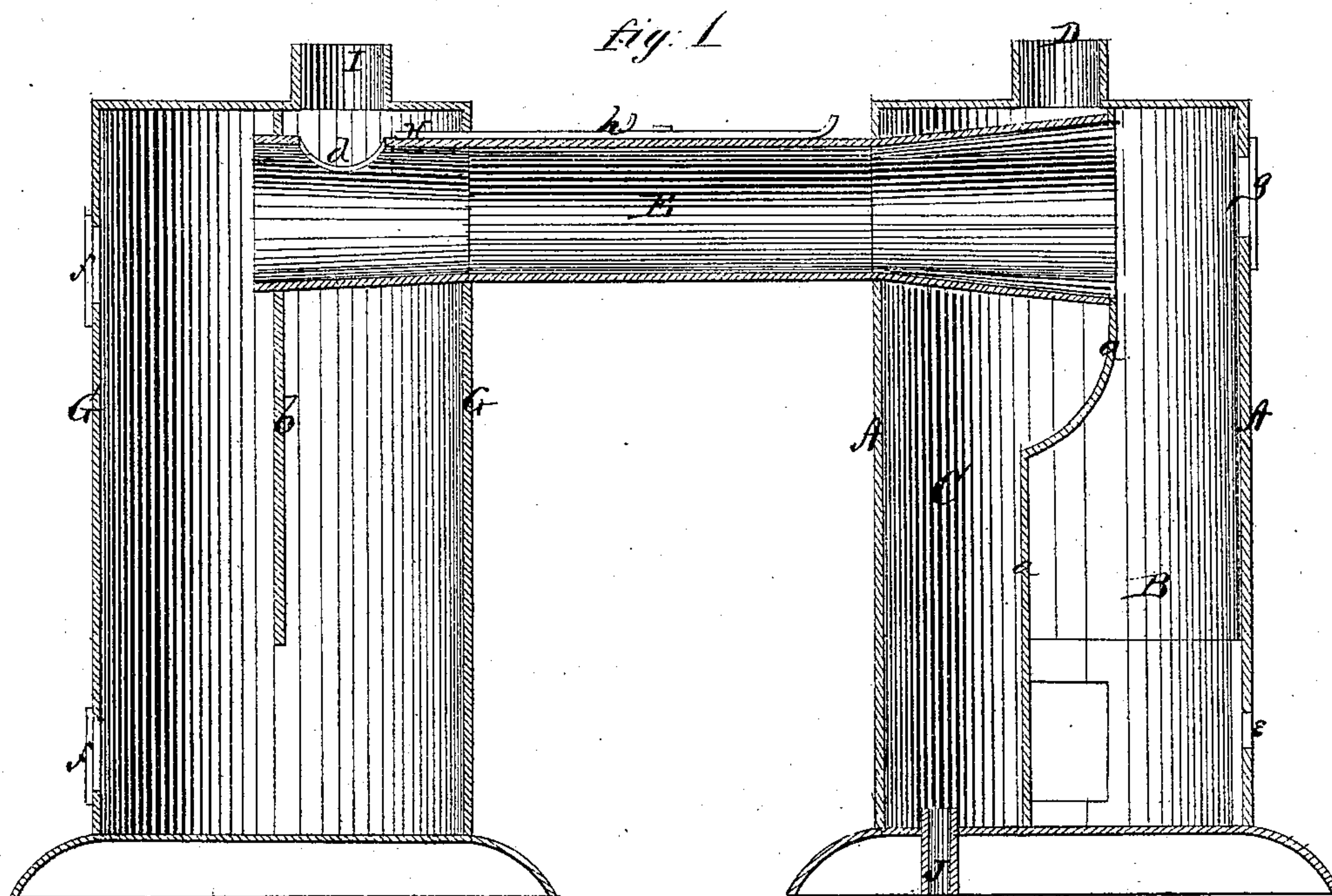


W. H. NOBLES.

Heating Drum.

No. 110,781.

Patented Jan. 3, 1871.



Witnesses.

A. A. Whetman,
C. A. Evertz

Inventor.

Wm. H. Nobles
per
Alexander M. Mason
Attys.

United States Patent Office.

WILLIAM H. NOBLES, OF ST. PAUL, MINNESOTA, ASSIGNOR TO HIMSELF
AND C. D. WILLIAMS, OF SAME PLACE.

Letters Patent No. 110,781, dated January 3, 1871.

IMPROVEMENT IN HEATING-STOVES AND DRUMS.

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, WILLIAM H. NOBLES, of St. Paul, in the county of Ramsey and in the State of Minnesota, have invented certain new and useful Improvements in Stoves and Drums; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists in the construction and arrangement of a stove and drum, as will be hereinafter fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a longitudinal vertical section, and

Figure 2 is a plan view.

A represents the stove, which is by a partition, *a*, divided into two compartments, the fire-box B in front, and the air-chamber C in the rear part of the stove.

From the top of the air-chamber C hot-air pipes D D lead upward, as shown.

E is a pipe connecting the stove A with the drum G, which drum is provided with a partition, *b*, extending from the top downward to a suitable distance from the bottom.

The pipe E leads from the upper part of the fire-chamber B into the drum, and through the partition *b*.

This pipe is provided with an opening, *d*, and cut-off, H, so as to change the course of the heat directly from the smoke-pipe I to and through the drum, and then through the smoke-pipe.

J is the fresh-air pipe, leading into the heated air-chamber C.

e is the damper in the stove, and *ff* are small doors in the drum.

The stove A is so arranged as to have the fire in the front and the heated air-chamber in rear, separated by the partition *a*, which may be made of cast-iron or any other material that will endure heat.

If desirable, the air may be taken fresh from the outside through the pipe J into the heating-chamber C, and thence passed through the pipes D into registers for heating other rooms.

The pipe E is made larger at the end in the stove than at the end in the drum, so that the products of combustion from the stove to the drum will have a free passage, carrying as much heat to the drum as possible.

The cut-off or damper H is to be opened, while building the fire in the stove, to prevent smoking, and closed when desired to send the heat through the dif-

ferent apartments of the drum, passing around the pipe B, out of the smoke-pipe I.

If desired to heat another drum in the room above, after the smoke, &c., has passed through the drum G, then, instead of allowing it to pass out through the smoke-pipe I, it may be made to pass toward the stove through a drum or jacket surrounding the pipe E, thus becoming reheated by contact with the outside of said pipe. The smoke, &c., thus reheated is passed through suitable pipes to a drum in the room above, heating the same without condensation.

The pipe E, it will be seen, extends through from fire-box in the stove to a little beyond the partition *b*, in the drum, for the purpose of throwing the heat upon the front portion of the drum.

The fresh-air pipe J may be so arranged as to run along under the floor, between the joists, to the outside of the house, thereby obtaining pure air to be heated in the hot-air chamber C, and thence to be directed to registers in other rooms.

The pipe E passes through the wall or partition between two rooms, so that the stove is in one room while the drum is in another, and the lever *h* to the cut-off H is so arranged that it can be operated and used in either room.

It will be seen by the general arrangement that the heat is allowed to pass freely from the stove through the drum and through other drums in the house, if necessary, without condensation and dripping.

The prevailing opinion has been that the use of dampers to smother the heat was economical and a saving in fuel. Now I use no dampers in this arrangement, except the damper *e*, in front of the fire-box, for the admission of oxygen to support combustion.

By the usual method of dampening or smothering the fire, whatever heat there is in the fuel is destroyed, while the object of my arrangement is to give full latitude to the heat, and at the same time to use a sufficient quantity of oxygen to make the most of the fuel.

It is my object, also, to make the most of the fuel by extending more generally the heat through the house, and thereby its general distribution, thus saving a large per cent. of fuel, according to the amount of space heated.

The small upper door *f* of the drum is for the purpose of cleaning the pipe E when necessary.

An opening, *g*, of the same kind, may be made in front of the stove for the same purpose.

The lower door in the drum is for the purpose of cleaning the drum from soot and ashes, when necessary.

This device may be used either with wood or coal for fuel.

Having thus fully described my invention,

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

1. The cut-off H, and its arrangement for convenient use, as herein described and set forth.

2. The drum G, provided with partition *b* and pipes E I, constructed and arranged substantially as and for the purposes set forth.

3. In combination with the above, the stove A, provided with partition *a*, air-chamber C, and pipes D E

J, all constructed and arranged substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 1st day of March, 1870.

W. H. NOBLES.

Witnesses:

AMOS W. HALL,
JOHN WHALEY.