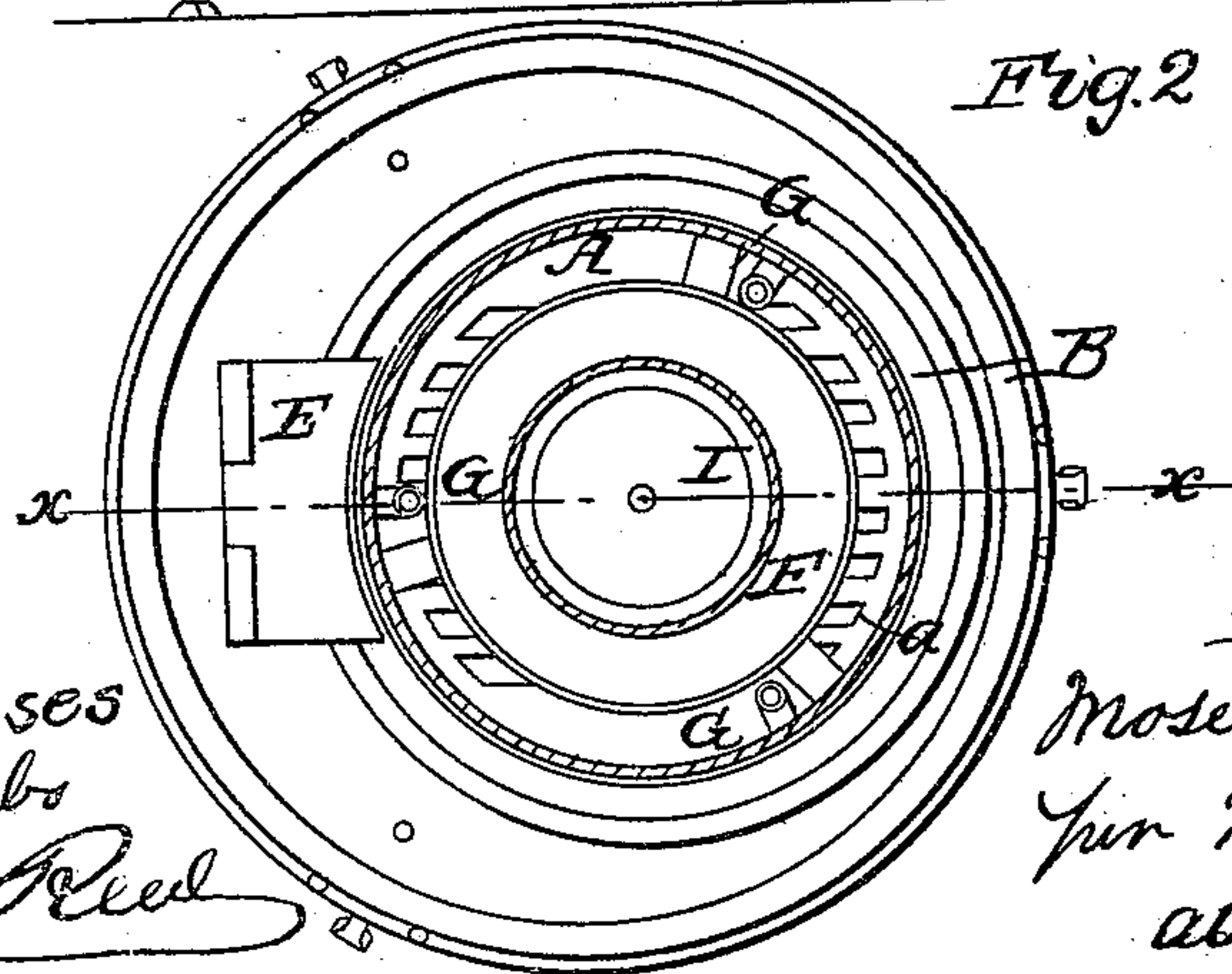
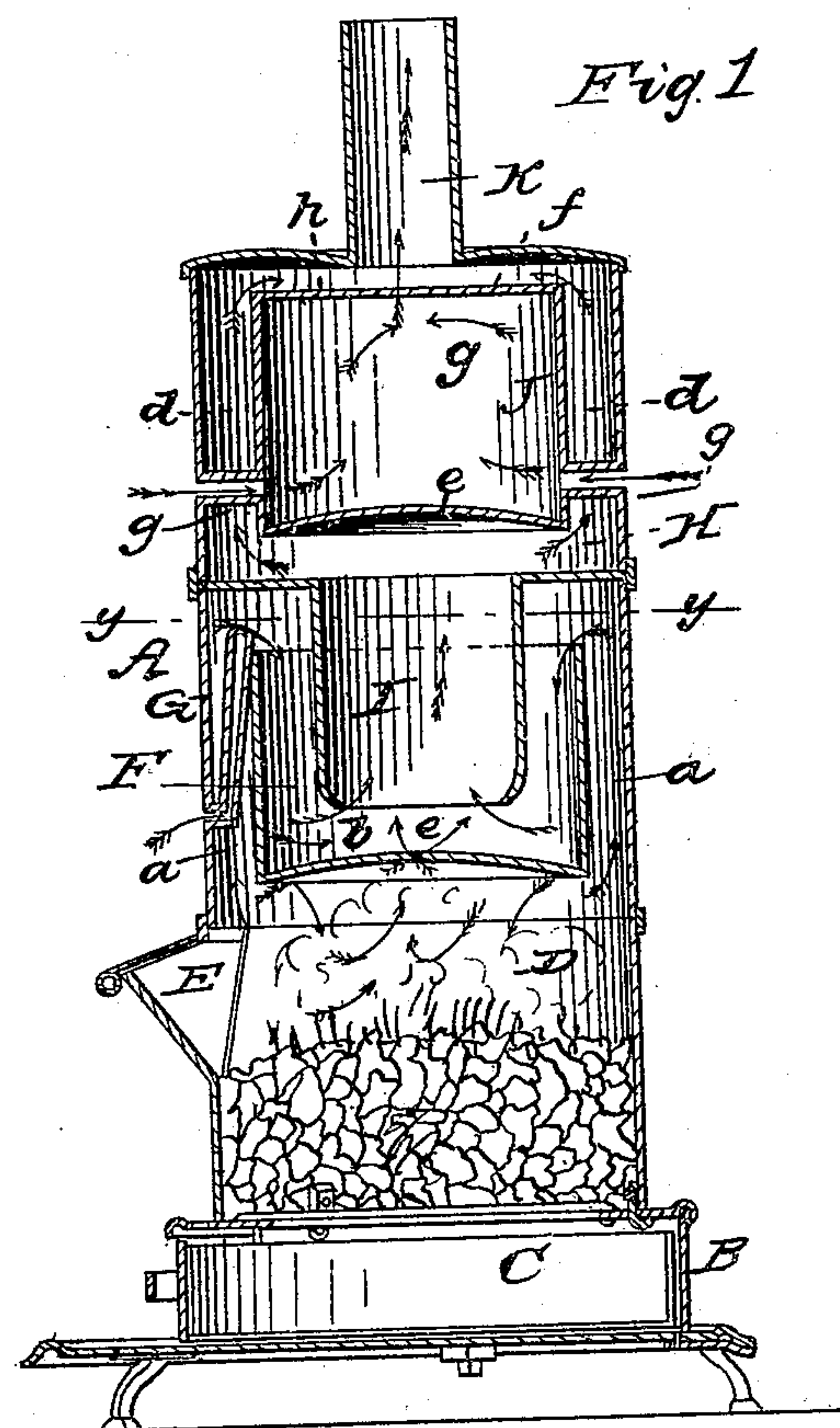


M. BRATT.

Stove.

No. 42,833.

Patented May 24, 1864.



witnesses
Geo W Reed

Inventor
Moses Bratt
per Munn & Co
attorneys

UNITED STATES PATENT OFFICE.

MOSES BRATT, OF MAYSVILLE, KENTUCKY.

IMPROVEMENT IN STOVES.

Specification forming part of Letters Patent No. 42,833, dated May 24, 1864.

To all whom it may concern:

Be it known that I, MOSES BRATT, of Maysville, in the county of Mason and State of Kentucky, have invented a new and useful Improvement in Stoves and Air-Heating Furnaces; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a vertical central section of my invention, taken in the line *x x*, Fig. 2; Fig. 2, a horizontal section of the same, taken in the line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts in the two figures.

This invention consists in placing a gas-receiving chamber within the stove or furnace directly over the fire-chamber, said gas-receiving chamber having a concave bottom and perforated with one or more holes, and using, in connection with the gas-chamber, a series of cold-air tubes, all being arranged in such a manner that the inflammable gases will be consumed, and also the smoke.

The invention further consists in using, in connection with the gas-receiving chamber, a heat-radiator and draft deflector, arranged in such a manner that the heat from the fire and gas chambers will not be allowed to escape up into the flue, but will be radiated into the room or apartment in which the stove or furnace is placed.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents the body or case of the stove or furnace, which may be of cylindrical or other form, fitted upon a suitable base, B, and provided with an ash-drawer, C, at its lower end. D is the fire-chamber, and E the door through which the fire-chamber is supplied with fuel.

Within the body A, just above the fire-chamber D, there is secured a chamber, F, which is considerably less in diameter than the body A, to admit of a space, *a*, between them. This chamber F is placed concentrically within the body A, and it has an open top and a bottom, *b*, the under surface of which is concave, as

shown clearly in Fig. 1, and is perforated with one or more holes, *c*.

G represents a series of cold-air tubes, which are placed within the space *a*, between the chamber F and body A of the stove. The lower end of the tubes G communicate with the external air just above the lower end of the chamber F, and the upper ends of said tubes are just above the top of said chamber, as shown in Fig. 1.

In the body A, a short distance above the top of the chamber F, there is a horizontal partition, H, at the center of which there is a pendent tube, I, said tube extending down concentrically within the chamber F to within a short distance of its bottom *b*.

J is a hollow cylinder, which is secured concentrically within the upper part of the body A above the partition H. This cylinder J is about equal in diameter to the chamber F, so as to allow a space, *d*, between it and the body A, and said cylinder has a concave bottom, *e*, and a cover or top, *f*. The cylinder J has no communication with the interior of the body A, but it communicates with the external air by means of tubes *g*, as shown in Fig. 1.

K is the smoke-pipe, which extends upward from the top of the body A, a space, *h*, being allowed between the top of A and the top *f* of the cylinder J.

The operation is as follows: When a fire is made in the fire-chamber D, the products of combustion in passing upward will come in contact with the concave surface of the bottom *b* of the chamber F, and will be deflected downward over the fire, and the smoke will be consumed with a portion of the inflammable gases. The unconsumed gases will pass through the hole *c* into the chamber F, and will be mixed with the air introduced into said chamber through the pipes G, and in consequence of being thus mixed with atmospheric air will be consumed, as will also any gases that might pass upward around the chamber F. The remaining products of combustion pass up through the pipe I and impinge against the concave bottom *e* of the cylinder J, and are deflected down and pass up around said cylinder into the space *h*, and thence into the pipe K.

The hollow cylinder J is a heat-radiator, as the air circulates through it from the exterior of the body A, and the heat contained in the products of combustion which pass around said cylinder is absorbed by the air circulating through J.

The passage of the products of combustion from the fire chamber D up through the pipe I and space *d* is indicated by the black arrows, while the passage of the cold air into J and the escape of the heated air therefrom, as well as the passage of the air into chamber F, is indicated by red arrows. (See Fig. 1.)

Thus it will be seen that the inflammable gases and smoke are consumed and the heat prevented from escaping with the products of combustion into the pipe K. A great saving is thereby effected in the consumption of fuel.

I do not claim, broadly, admitting atmospheric air into a stove or furnace above the fire-chamber to mingle with the inflammable

gases and insure their consumption, for this has been previously done; but

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

1. The gas-receiving chamber F, provided with one or more apertures, *c*, in its bottom *b*, in combination with the air-pipes G, partition H, and tube I, substantially as and for the purpose herein set forth.

2. The heat-radiating chamber J, placed within the body A of the stove above its partition H, and communicating with the external air, as shown, when said chamber is used in connection with the gas-chamber F and pipe I, and all arranged substantially as and for the purpose specified.

MOSES BRATT.

Witnesses:

CHAS. WHITE,
SAML. W. OWENS.