

W. H. SMITH.

Heating Stove.

No. 23,720.

Patented April 19, 1859.

Fig. 1

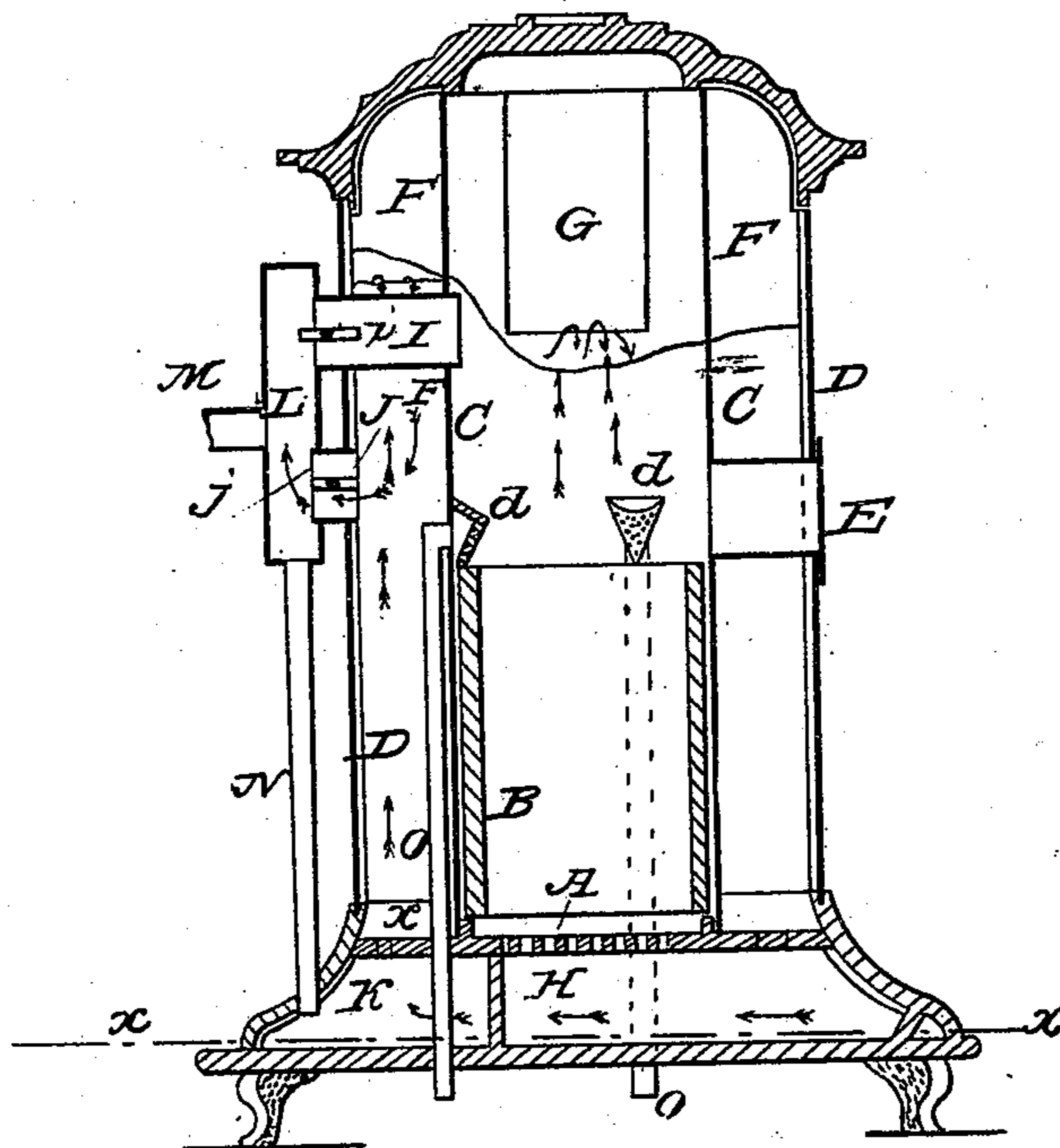
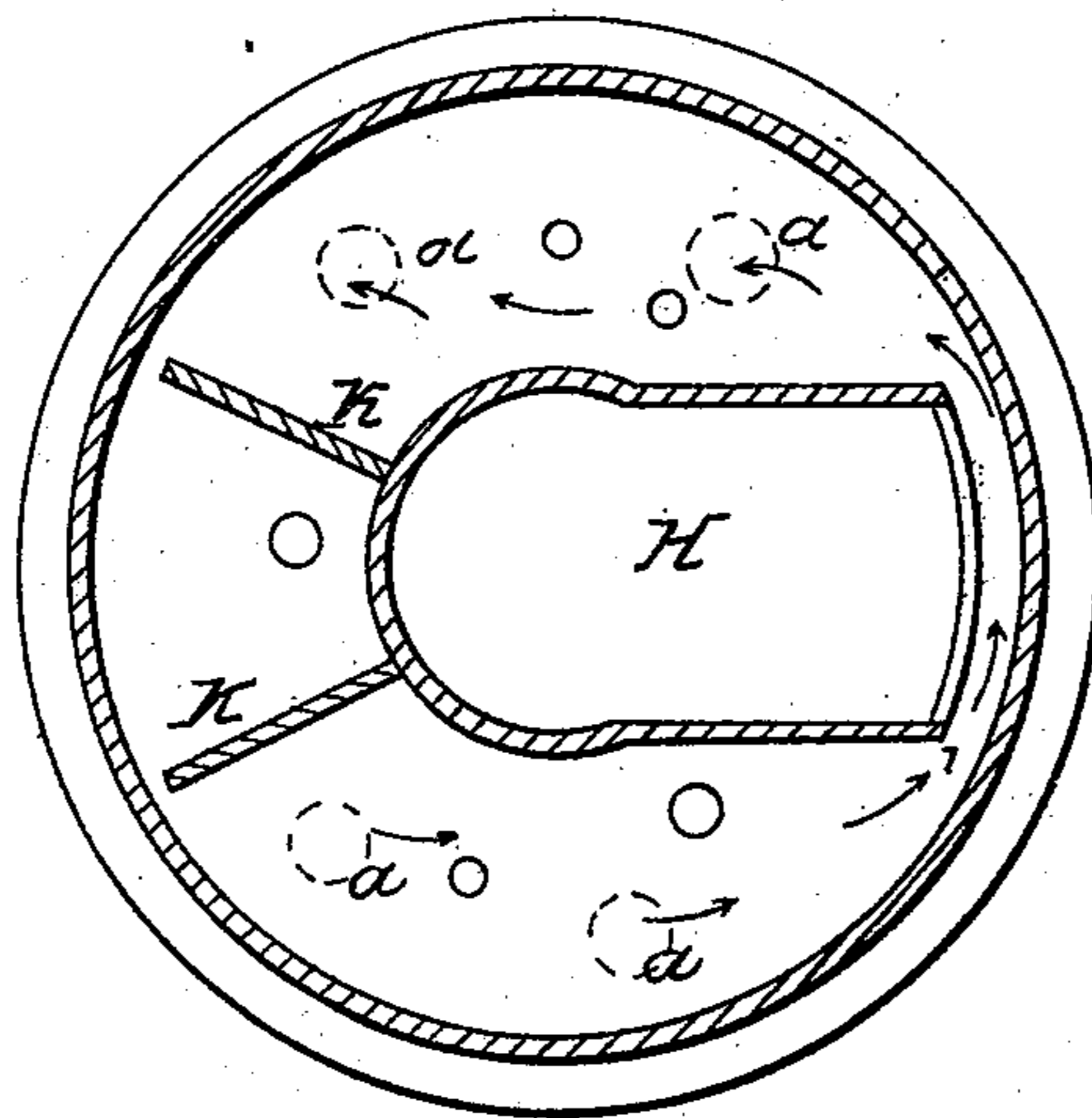


Fig. 2



WITNESSES

R. R. Hazard
Albert Caswell

INVENTOR

W. H. Smith

UNITED STATES PATENT OFFICE.

WM. H. SMITH, OF NEWPORT, RHODE ISLAND.

STOVE.

Specification of Letters Patent No. 23,720, dated April 19, 1859.

To all whom it may concern:

Be it known that I, W. H. SMITH, of Newport, in the county of Newport and State of Rhode Island, have invented a new and Improved Stove; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, represents a vertical section of my stove, and Fig. 2, a horizontal section of the same, the line x, x , Fig. 1, indicating the plane of section.

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

This invention relates to that class of stoves in which the circulation of the fire and the draft is created and regulated by means of a cylinder which is placed into the shell of the stove and around the supply cylinder and which divides the hollow space in the shell into several compartments which communicate by means of suitable pipes with the flue, and the invention consists in arranging the pipes through which the several compartments communicate with the flue in such relation to these compartments, that the hot air is forced down into the space surrounding the ash box, which space is so divided by suitable partitions that the hot air which descends on one side of the ash box has to circulate around the same and in its front, in order to get to the tube which communicates with the flue.

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

A, is the fire grate to which fuel is supplied by means of a supply cylinder B, which is surrounded by the cylinder C, and by the shell D, of the stove and to which access is had through a door E. The inner cylinder C, is provided with three wings or partitions F, F¹, which fit closely to the shell D, and two of which extend up to the cover of the stove, and an aperture G, is cut into the upper part of the inner cylinder C, through which the hot air from the fire escapes and which serves to regulate the circulation.

The inner cylinder C, communicates with the flue by means of a pipe I, and the outer cylinder by means of another pipe J, both of which are provided with dampers i , and j , respectively, and both of which also terminate in a casing L, which communicates with

the flue by means of a pipe M, and from which a pipe N, extends down into the space under the fire grate. This space contains the ash pan H, and it communicates with the space around the supply cylinder B, by means of openings a, a^1 , which are cut into the base around the fire grate, and the ash pan fits closely to this base and to the side walls surrounding the space under the fire grate, and wings K, extend from the ash box so that the space under the fire grate is divided into 3 compartments corresponding to the compartments into which the space between the cylinder C, and shell D, is divided by the partitions F F¹. One of the partitions F¹, nearest to the openings a , in the base of the stove is cut short right behind the tube I, so that the air which ascends through the openings a , has access to the tube J, as will be hereafter fully explained.

The space above the supply cylinder B, communicates with the open air by means of pipes O, which terminate into air chambers d , which are perforated with a number of openings so as to admit atmospheric air to the upper part of the supply cylinder, and by this arrangement the gaseous matter escaping from the fire is fully consumed.

The operation is as follows. After the fire has been lighted, and if a strong draft is required the damper i , in the pipe I, is opened and the damper j , in the pipe J, is closed, and the draft from the fire goes right straight through to the chimney. If a small draft only be required which is the case when the fire is in full blast, the damper i , is closed and the damper j , is opened. In this case the draft goes from the fire up in the cylinder C, and through the aperture G, down between the partitions F F¹, to the openings a^1 , in the base, which are represented in dotted lines in Fig. 2, from which the circulation has to pass around the ash box and in front of the same, as represented clearly by the red arrows in Fig. 2, and by the black arrows in Fig. 1, in order to come to the openings a , through which the hot air passes up behind the partition F¹, as indicated by the black dotted arrows in Fig. 1, and over the top of this partition, down to the tube J, through which it escapes to the chimney. In order to still further diminish the draft both the dampers are closed, and in this case the hot air circulates in the same manner as in the former

case, but as the same has no way to escape
it is forced to descend again to the space
between the partitions K, behind the ash
box from which it escapes to the chimney
5 through the pipe N.

Having thus described my invention, what
I claim as new and desire to secure by Let-
ters Patent, is,

The arrangement of the partitions F F¹,

in combination with the partitions K, and 10
the openings *a*, *a*¹, for the purpose of forcing
the hot air to circulate around and in front
of the ash box, substantially as and for the
purpose specified.

WM. H. SMITH.

Witnesses:

R. R. HAJARDT,
ALBERT CASWELL.