

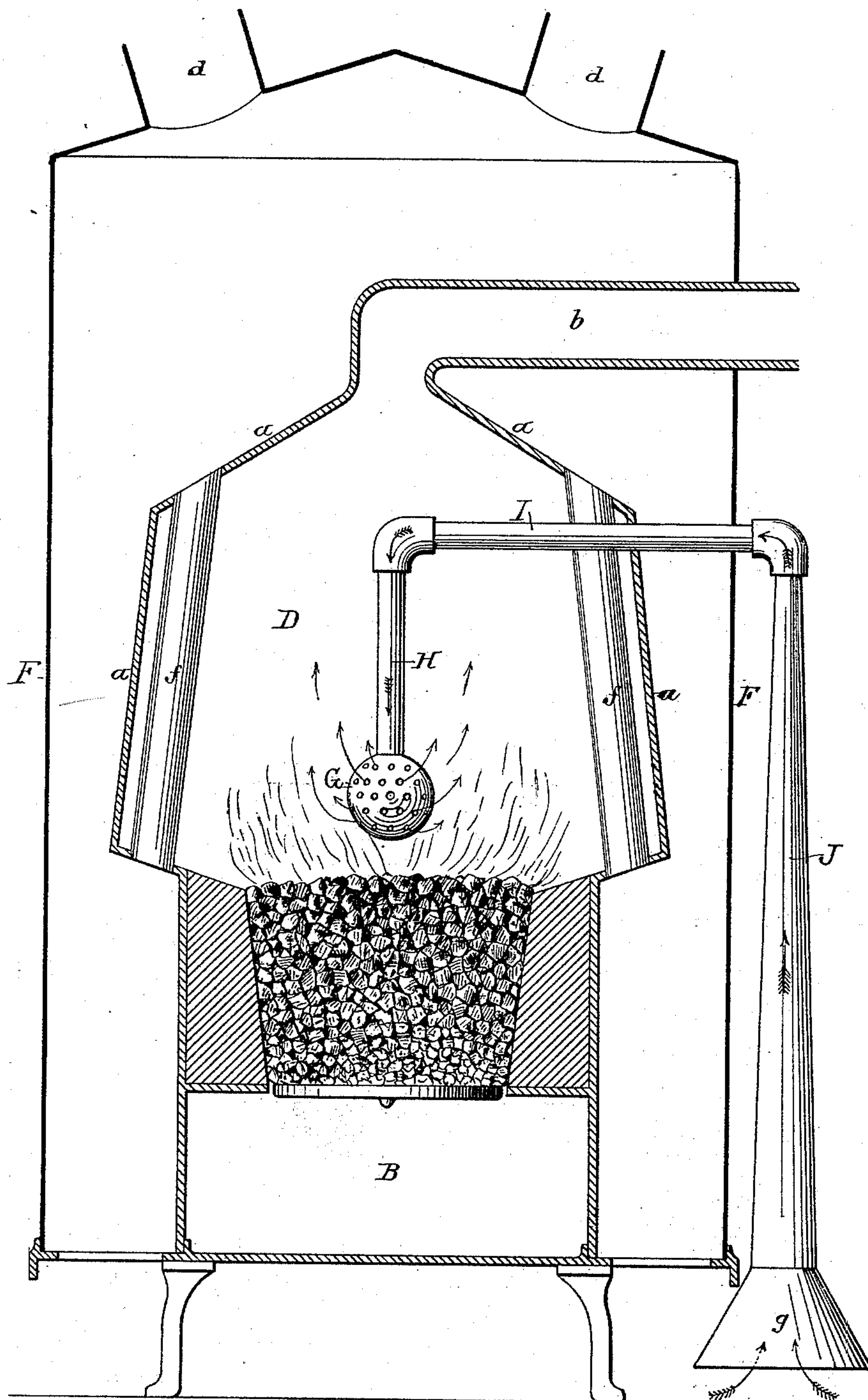
(No Model.)

C. J. KILLE.

AIR SUPPLYING DEVICE FOR STOVES OR FURNACES.

No. 495,740

Patented Apr. 18, 1893.



Witnesses:

Murray C. Boyer
A. V. Grouper

Inventor:

Chaikly J. Kille
by his Attorneys
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UNITED STATES PATENT OFFICE.

CHALKLY J. KILLE, OF MOORESTOWN, NEW JERSEY.

AIR-SUPPLYING DEVICE FOR STOVES OR FURNACES.

SPECIFICATION forming part of Letters Patent No. 495,740, dated April 18, 1893.

Application filed March 10, 1890. Serial No. 343,246. (No model.)

To all whom it may concern:

Be it known that I, CHALKLY J. KILLE, a citizen of the United States, and a resident of Moorestown, Burlington county, New Jersey, have invented certain Improvements in Air-Supplying Devices for Stoves and Furnaces, of which the following is a specification.

The object of my invention is to so construct an air supplying device for stoves and furnaces that the air will be projected into the gases as they arise from the fuel in a manner best calculated to effect the ignition and combustion of said gases, the proper heating of the air before it escapes into the combustion chamber of the stove or furnace also being effectually provided for.

The figure in the accompanying drawing represents a vertical sectional view of a common form of heating furnace illustrating the application of my invention thereto.

A represents the fire box of the furnace, B, the ash pit of the same, and D the combustion chamber, the casing *a* of the latter communicating, at the top, with the exit pipe *b*. F is the outer casing of the furnace which receives the cold air at the bottom and discharges the heated air through pipes *d* at the top, the air, in its passage, being heated by contact with the walls of the fire pot and combustion chamber casing and by passage through pipes *f* extending through the combustion chamber.

Within the combustion chamber, and some distance above the top of the fuel in the fire pot, is a perforated bulb G which is secured to the lower end of a depending pipe H, the latter extending to the upper portion of the combustion chamber and having a lateral branch I, passing outward through the casing of said combustion chamber and, if desired, through the outer casing F also, the outer end of this lateral pipe communicating with the vertical pipe J which is of flaring or inverted funnel shape, and is also, in some cases, provided at the lower end with a flaring or funnel mouth *g*. The draft of the stove or furnace causes air to enter the mouth of the pipe J and to pass through the pipes J, I and H, in the direction indicated by the arrows, the air finally escaping through the perforations of the bulb G into the products of combustion as they arise from the fuel in

the fire pot. By causing the final run, H, of the air supplying pipe to extend from the upper to the lower portion of the combustion chamber, I insure the proper heating of the air in its passage, for the air, in descending this portion H of the pipe, is compelled to do violence to its natural tendency to rise, and hence the flow of air through the pipe is never so rapid as to interfere with its proper heating. In any event, the flow of air is dependant upon the draft of the stove or furnace, and hence the supply of air is proportionate to the volume of the products of combustion; that is to say, the stronger the draft, and the greater the volume of the products of combustion arising from the fuel the greater will be the supply of air drawn through the pipes H, I and J for admixture with said products of combustion, hence the device will be self-regulating. It will be seen that as the bulb C, pipe H and branch I are within the combustion chamber, the air in the same becomes highly heated and thus rarefied so that a partial vacuum is created in said branch, so that the outside air is induced to enter through the pipe J, to fill the branch. Owing to the tapering form of said pipe, a more forcible entrance of the cold air is effected than if the pipes were of uniform diameter thus insuring the inward direction of the current of air. If desired, however, the pipe J may be provided at any suitable point with a damper to regulate the flow of air through the same.

Although the tapering form of the pipe J is not essential to my invention, it is preferred, as I find that by this means I am enabled to insure a continuous supply of air, in full volume, to the pipe H.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. A furnace having a combustion furnace, an exterior pipe of tapering form, a branch leading from the smaller end of the exterior pipe, a depending pipe connected with said branch, and a perforated bulb connected with the depending pipe, said branch, bulb and depending pipe being within the combustion chamber, said parts being combined, substantially as described.

2. In an air feeding device for a stove or furnace, the combination of a tapering pipe exterior of the combustion chamber thereof,

having its widest end at the bottom, and its
smallest at the top, and a branch pipe with a
depending pipe having an attached perfor-
ated bulb, said branch, depending pipe and
5 bulb being within said combustion chamber
and said branch communicating with the
smaller end of the exterior pipe, said parts
being combined, substantially as described.

In testimony whereof I have signed my
name to this specification in the presence of 10
two subscribing witnesses.

CHALKLY J. KILLE.

Witnesses:

JOHN A. BURTON,
LORENZO M. HANSEN.