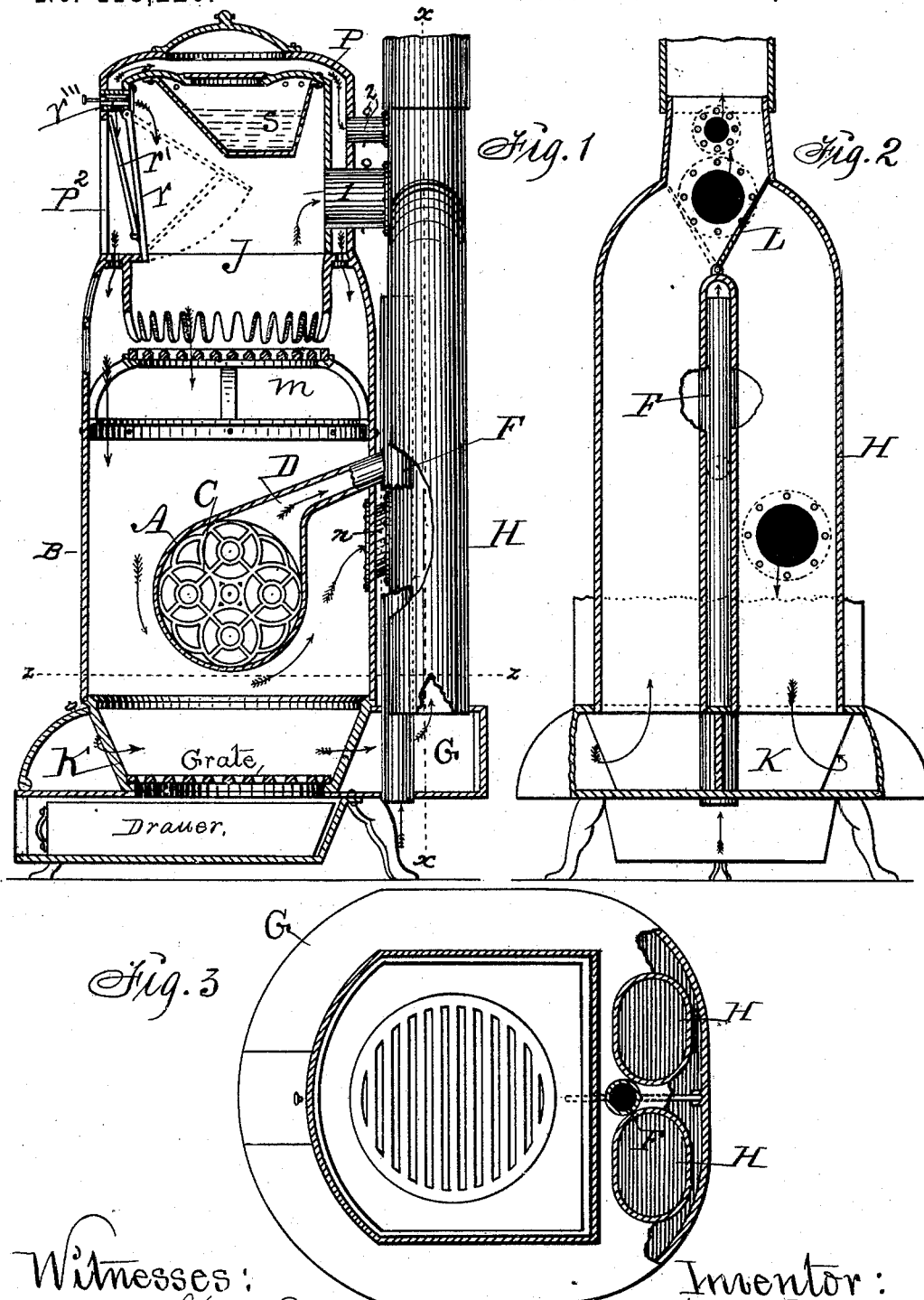


(No Model.)

J. T. ROBBINS.  
STOVE OR FURNACE.

No. 418,226.

Patented Dec. 31, 1889.



Witnesses:

O. W. Stiles,  
M. P. Smith

Inventor:  
Joseph T. Robbins,  
Thomas G. Orwig, Attorney.

# UNITED STATES PATENT OFFICE.

JOSEPH T. ROBBINS, OF NEWTON, IOWA.

## STOVE OR FURNACE.

SPECIFICATION forming part of Letters Patent No. 418,226, dated December 31, 1889.

Application filed September 10, 1888. Serial No. 285,074. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH T. ROBBINS, a citizen of the United States of America, and a resident of Newton, in the county of Jasper and State of Iowa, have invented new and useful Improvements in Stoves or Furnaces, of which the following is a specification.

My invention relates to the stove or furnace for which United States Letters Patent No. 366,255 were issued to me July 12, 1887; and it consists, first, in the construction and combination of an auxiliary cylinder within the chamber under the grate; second, in combining an open-ended tube with the auxiliary cylinder and stove to maintain an equalized temperature within a room; third, in the construction and arrangement of a water-reservoir, a double wall, and two doors, with the top, for the purpose of distributing vapor and hot air to the fire to promote combustion and to prevent the escape of gas while the doors are open.

Figure 1 of the accompanying drawings is a vertical sectional view of one of my improved stoves. Fig. 2 is a sectional view through the line *xx* of Fig. 1. Fig. 3 is a view looking down upon the base from the point of elevation indicated by line *zz* in Fig. 1.

A is an open-ended auxiliary cylinder that extends horizontally through the lower cylinder B, and is fixed to the edges of corresponding openings in the cylinder in such a manner that the products of combustion will be on the outside of the wall of the auxiliary cylinder and cold air admitted from outside of the cylinder to the inside of the radiator.

C represents an ornamental filigree fixed in the open ends of the radiator A.

D is a tube formed on or fixed to the central portion of the auxiliary cylinder to extend outward through an opening in the cylinder B and into an open-ended tube F, that extends vertically through the base G in such a manner that the products of combustion will envelop the lower end of the tube to aid in heating cold air that enters its bottom.

H is a U-shaped open-ended radiator combined with the base G at its lower end and with the double-walled top of the stove at its upper end by means of tubes 1 and 2 to carry off odors and gases escaping from the fuel in

the chamber J, and also in such a manner that the products of combustion can be circulated around the annular deflector K in the base G at pleasure by simply adjusting the damper L in the top of the tube D. (Shown in Fig. 2.)

*m* is a grate-support fixed in the top portion of the cylinder B to retain a grate under the fuel-chamber J in such a manner that the products of combustion will pass down through the cylinder B and around the auxiliary cylinder A and then through an open-ended tube *n*, that is fixed in the cylinder B and the tube H to establish communication between them.

P is a jacket fixed around the top portion of the fuel-chamber J, and P<sup>2</sup> is a doorway for introducing fuel.

*r* is a door hinged to the jacket to swing inward and upward, as indicated by dotted lines in Fig. 1, so that it will be automatically closed by force of gravity.

*r'* is a rod hinged to the lower part of the door *r* to serve as a means for opening and propping the door open.

*r'''* is an open-ended tube that extends through the double wall of the top. It is provided with a damper to close the inner end thereof whenever desired, and it has perforations that will allow air to pass from the outside of the top to the space between the wall of the fuel-chamber J and the jacket P, and from thence down to the combustion-chamber under the grate.

*s* is a water-reservoir fixed in the top of the fuel-chamber, so that the vapor generated therein and escaping therefrom through the opening in its top will mingle with the air between the jacket P and the fuel-chamber J and pass down therewith to aid in promoting combustion.

The tube No. 1 connects the fuel-chamber with the tube H in such a manner that odors or gases in the fuel-chamber will be carried off direct into the escape flue or pipe that is connected with the top of the tube H when the damper in the tube is open.

The No. 2 tube, that connects the jacket P with the tube H, will carry off gas and offensive odor from the inside of the jacket P whenever the damper in the tube is open.

When the top portion of the stove is opened to place fuel in the magazine and water in the reservoir while there is fire in the stove, the dampers in the tubes Nos. 1 and 2 must  
5 be opened before the top of the stove is opened and closed when the top of the stove is closed, as required, to shut off direct connection and cause the gases to descend through the grate at the bottom of the fuel to aid in promoting  
10 combustion.

An auxiliary grate located over the ash-pan in the bottom of the stove will prevent pieces of fuel from getting into the ash-pan and will retain them in position, where they will  
15 continue to burn and to be consumed as required to prevent waste of fuel.

I claim as my invention—

1. An open-ended auxiliary cylinder having an open-ended branch extending laterally, in  
20 combination with a cylinder in a stove and an open-ended tube outside of said cylinder for the purposes of heating and circulating air in a building.

2. The auxiliary cylinder A, having a branch

D, in combination with a cylinder B and a  
25 tube F, substantially as shown and described, for the purposes stated.

3. The combination of the auxiliary cylinder A, having a branch D, and the open-ended tube F with the cylinder B and the base G,  
30 to operate in the manner set forth, for the purposes stated.

4. The combination of the jacket P, having a doorway P<sup>2</sup> and a hinged door r, with the fuel-chamber J and the reservoir s, to operate  
35 in the manner set forth.

5. The grate-support m, having radial projections extending downward and outward to engage the top portion of the cylinder B, in combination with a fuel-chamber J, having  
40 an open bottom to allow fuel therein to rest upon a grate placed upon the support m, for the purposes stated.

JOSEPH T. ROBBINS.

Witnesses:

O. VOLKERTS,

THOMAS G. ORWIG.