

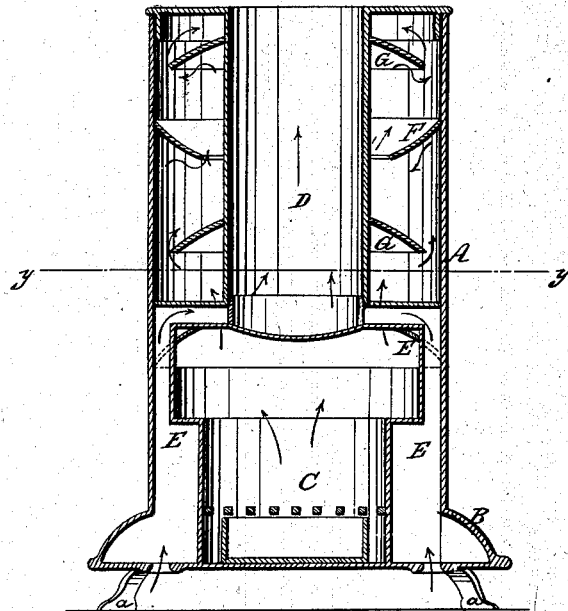
*C. Fownes,*

*Heating Furn.*

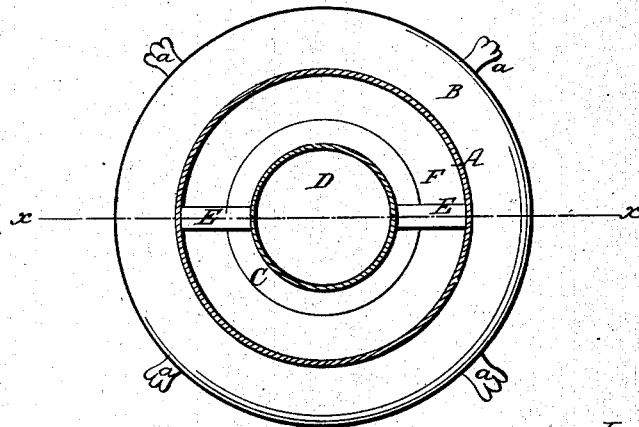
*No. 47,291.*

*Patented Apr. 18, 1865.*

*Fig. 1.*



*Fig. 2.*



*Witnesses.*

*Wm. Brown*  
*C. L. Popliff*

*Inventor.*  
*Charles Fownes*  
*per Wm. H. C.*  
*Attorneys.*

# UNITED STATES PATENT OFFICE.

CHARLES FOWNES, OF PITTSBURG, PENNSYLVANIA.

## STOVE.

Specification forming part of Letters Patent No. 47,291, dated April 18, 1865.

*To all whom it may concern :*

Be it known that I, CHARLES FOWNES, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Heat-Radiating and Air-Heating Stoves; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

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

Similar letters of reference indicate like parts.

This invention relates to a new and improved stove of that class designed for giving the draft or products of combustion a circuitous route in its passage from the fire-chamber of the stove to the flue, so as to cause a greater radiation of heat than when there is a direct draft, and which are also designed for heating air for warming apartments in a building other than that in which the stove is placed.

A represents the case of the stove, which case may be of cylindrical or other proper form, provided with a base, B, and feet *a*.

C is the fire-chamber, placed in the lower part of the case A, and constructed of fire-clay, or fire-brick if desired.

D is a tube or pipe, which is fitted vertically and centrally within the case A, and extends down within a short distance of the top of the fire-chamber or fire-pot C, and is closed at its lower end, but communicates with the external air by means of two tubes, E E, which extend down at the outer side of the fire-chamber C, and pass through the base B, as shown clearly in Fig. 1.

To the inner side of the case A there are attached flanges F, which project inward. Two of these flanges are shown in Fig. 1, the

lower one having a concave under surface and the upper one a convex under surface. To the exterior of the tube or pipe D similar flanges, Y, project, both of which have concave under surfaces, and the flanges G F overlap each other—that is to say, the outer edges of G extend beyond the outer edges of F.

By this arrangement a serpentine direction is given the draft of the stove, the products of combustion from the fire-chamber C, in their passage upward, being deflected first toward the tube or pipe D, and then toward the case A, as indicated by the red arrows in Fig. 1.

The air passes into the tube or pipe D (see black arrows) either from the lower part of the room in which the stove is placed, from a cellar or apartment below, or from the outer side of the building, said air being heated in its passage upward through D and admitted directly into the room in which the stove is placed, or carried by suitable pipes into any other apartment of the building.

The serpentine direction given the draft by means of the flanges F G favors the radiation of heat directly from the stove while it insures the heating of the air passing up through D.

The arrangement is extremely simple and will effect a great saving in the consumption of fuel.

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

The annular deflectors F G, attached alternately to the external case, A, and internal tube, D, in the described combination with a fire-chamber from which heated products of combustion are passed through the annular flue, so as to heat air in its passage through the air-tube D.

CHAS. FOWNES.

Witnesses:

JOHN B. HERRON,  
J. E. THOMAS.