

W. BRYENT.  
Hot-Air Furnace.

No. 11,847.

Patented Oct. 24, 1854.

Fig. 2.

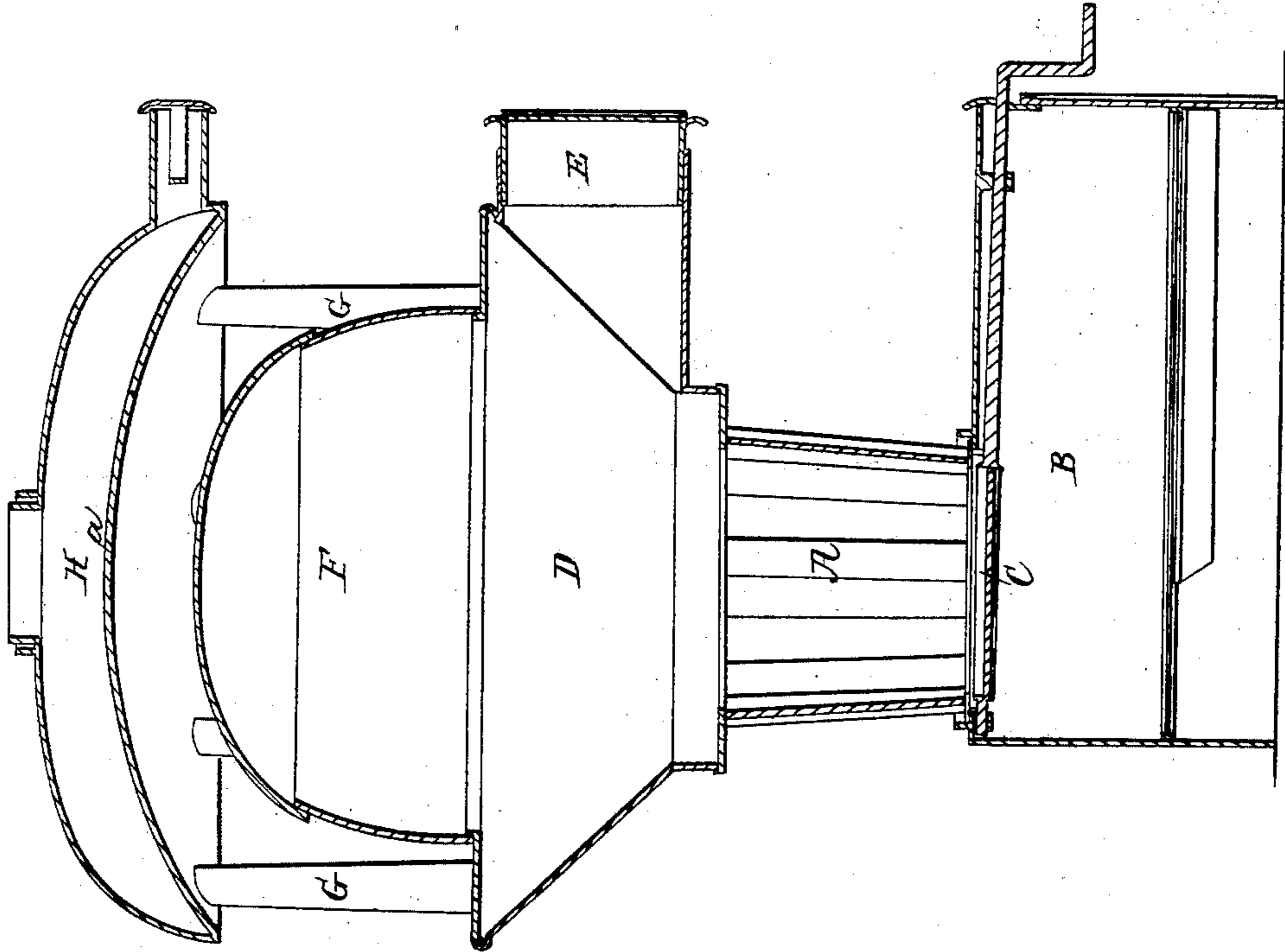
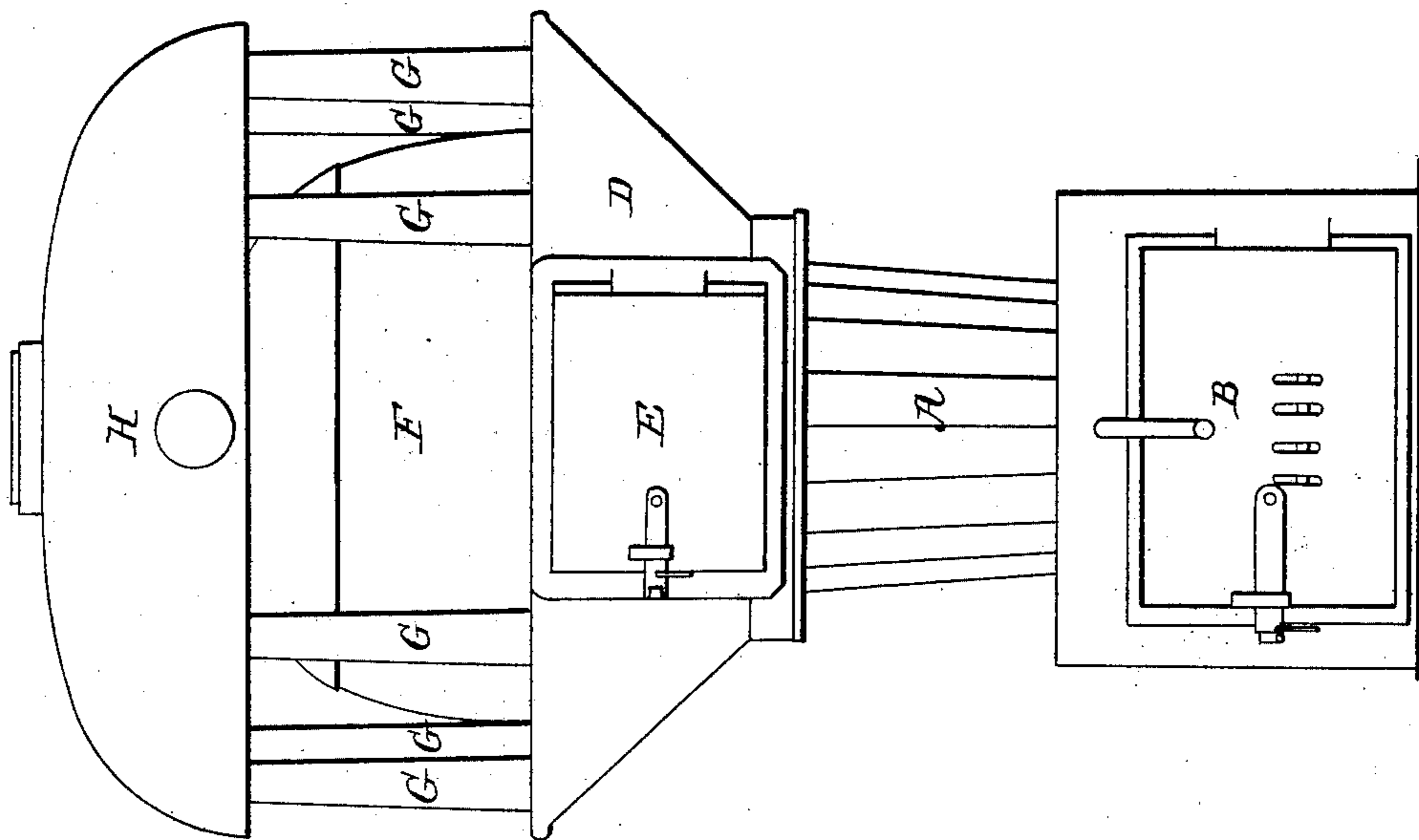


Fig. 1.



# UNITED STATES PATENT OFFICE.

WALTER BRYENT, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO JOHN B. KELSEY.

## AIR-HEATING FURNACE.

Specification forming part of Letters Patent No. 11,847, dated October 24, 1854; Reissued March 27, 1860, No. 934.

*To all whom it may concern:*

Be it known that I, WALTER BRYENT, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new or  
5 Improved Air-Heating Furnace, which is Designed to be Used in Heating the Apartments of Buildings; and I do hereby declare that the same is fully described and represented in the following specification and the  
10 accompanying drawings, letters, figures, and references thereof.

Of the said drawings Figure 1, denotes a front elevation, and Fig. 2, a longitudinal, vertical and central section of my improved  
15 furnace.

The said furnace is designed to be erected within a chamber formed of brick work or other suitable material, such chamber being made to receive air at or near its bottom and  
20 to discharge the same by one or more pipes leading out of its top. As in this respect it does not differ from many other furnaces in common use I have not deemed it necessary to exhibit such chamber in the drawings  
25 above mentioned.

In such drawings the ash pit or base of the furnace is shown at B. Over and upon this ash pit or base the fire-pot A is placed; the said fire-pot being provided with a rock-  
30 ing or movable grate C, and an inverted conical flame chamber, D, both of which are disposed with respect to it as seen in the drawings.

The fuel for the fire-pot is supplied  
35 through a mouth piece, E, extending from the flaring part, D, and provided with a suitable closing door. The said flaring chamber, D, is surmounted by a flat dome, F, and a series of hollow columns G, G, G; the  
40 said series of columns being made to surround the dome and open into and support a radiator, H, which is made to extend over the entire dome, F, and to a short distance above the same. The said radiator, H, has  
45 its lower plate, *a*, formed in a concavo convex shape; the concave side of it being arranged downward. The upper side also is made as a concavo convex arch and generally speaking is arranged parallel to the  
50 bottom part *a*.

The smoke and volatile products of combustion that pass into the radiator are to be discharged from it by means of a pipe or flue leading from it; and said radiator may, or may not be connected with the upper  
55 part of a reverberatory chamber within the dome F.

The object of making the bottom of the radiator H, concavo convex is to cause it to retain the heat and air between it and the  
60 top of the dome, F, and thoroughly heat said air; and besides this, the concentration or retention of heat by means of it causes the plate, *a*, to be much better heated than it would be were it a plane. By the above con-  
65 struction of the plate, *a*, the draft through the pipes or hollow columns G, G, is much improved or facilitated.

In constructing my furnace I have made use of a very broad and reverberating cham-  
70 ber or dome, F, the volatile products of combustion being made to pass directly upwards from the fire against the said dome by which they are reverberated and caused to rush through the columns into the  
75 radiator.

I claim—

The improvement in the construction of the radiator arranged over the dome of the fire-pot, the same consisting in making its  
80 bottom a concavo convex plate or arch and with the concave side disposed downward and directly over the said dome, whereby the ascending heat from the top of the dome is retained in the concavity of said bottom and  
85 not only made to warm, to great advantage, the air that rushes into the same, but to heat the radiator so as to improve the draft through the fire pot, and supporting columns of the radiator.  
90

In testimony whereof I have hereunto set my signature this twenty fifth day of July A. D. 1854.

WALTER BRYENT.

Witnesses:

R. H. EDDY,  
F. P. HALE, Jr.