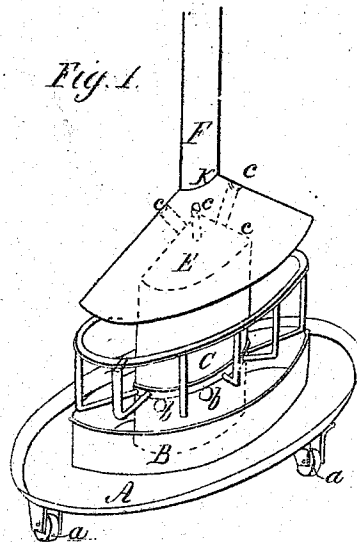
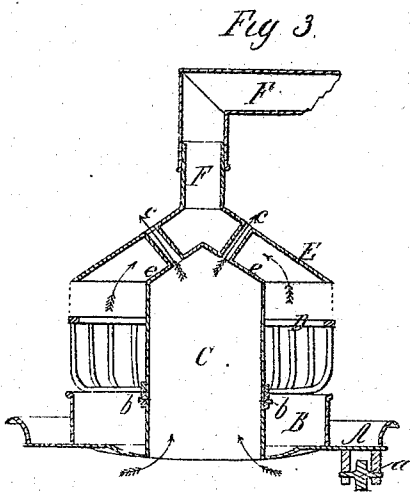
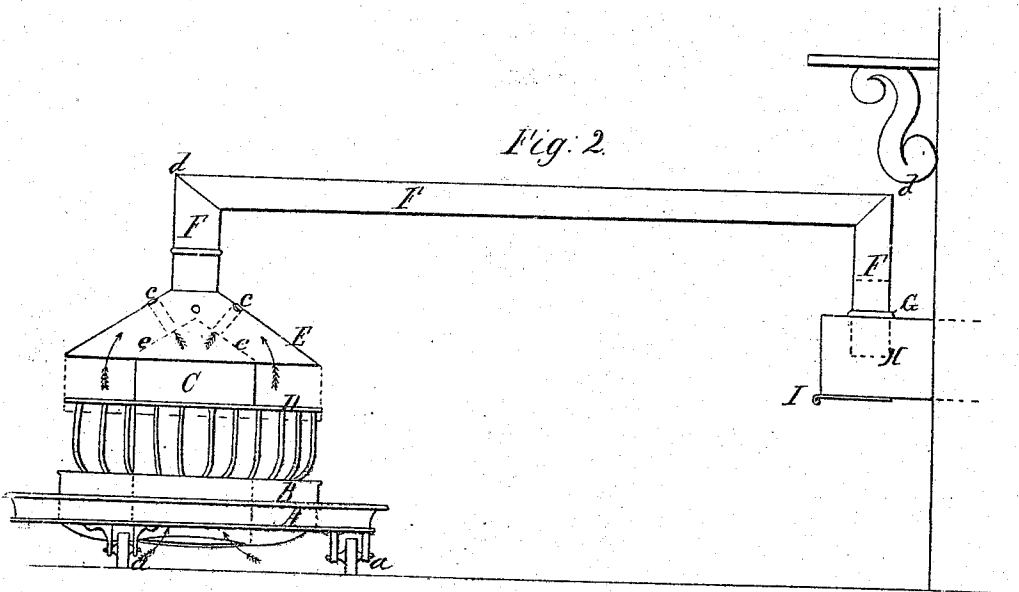


J. L. Cathcart.

Heating Stove.

N^o 7,338.

Patented May 7, 1850.



UNITED STATES PATENT OFFICE.

JAMES L. CATHCART, OF WASHINGTON, DISTRICT OF COLUMBIA.

AIR-HEATING STOVE.

Specification of Letters Patent No. 7,338, dated May 7, 1850.

To all whom it may concern:

Be it known that I, JAMES L. CATHCART, of Washington, District of Columbia, have invented a new and Improved Stove for Warming Rooms and Dwellings; and I do hereby declare that the following is a full and exact description.

The nature of my invention consists in the following improvements which I will proceed to describe, to enable others skilled in the art to make and use my invention.

Figure 1 is a perspective view; Fig. 2 a longitudinal elevation, and Fig. 3 a longitudinal section in the annexed drawings making a part of this specification.

I construct my grate or apparatus for warming rooms in the following manner: A is a circular hearth on which rests the hollow cylinder, C, at some distance from the circumference of the hearth which may be made of cast or sheet iron terminating in the conical top *e, e*, over which a conical hood, E, is placed with the smoke pipe, F, at the apex.

The cylinder, C, is open at the bottom to admit the air to pass into it beneath the hearth, A, which air thus becomes heated and is discharged into the room by means of the pipes *c, c*. Around the cylinder, C, I place the circular grate, D, (resembling a basket exteriorly, and which I call a basket grate) at a convenient distance from the cylinder. For ordinary sizes the depth of the grate may vary from six to twelve inches, which when filled with coal or wood may be ignited by means of the blower or fender B to be hereafter described.

The grate is composed either wholly of cast iron or partly of wrought iron, as may be thought best. I make also in the conical top of the cylinder, *e, e*, two or more holes for the purpose of conducting the air, by means of the pipes, *c, c*, that has already become heated within the cylinder, into the room. These pipes will of course vary according to the size of the cylinder. For a cylinder of ten inches I usually make the pipes from one and a half to two inches in diameter.

Above the grate at a suitable distance and extending beyond its perpendicular line I place the contrivance, E, which I call the hood, that may be circular, hexagonal, octagonal or otherwise at its periphery. The design of this hood is to concentrate the heat and keep the smoke and gas from passing

into the room. This hood, E, is also connected with the cylinder, C, and supported on it by means of the pipes *c, c*. These pipes are fastened to the hood and screw into the conical top of the cylinder, *e, e*, so as to raise or depress the hood and thus secure a proper draft at all times. I think the best degree of obliquity for the hood and cone of the cylinder is from thirty-five to forty-five degrees. I also place upon the hearth, which is made with a depression *f* for holding ashes, at a suitable distance from the cylinder a circular fender, B, of a height from two to four inches greater than the distance between the top of the grate and the bottom of the hood. This when raised and hooked to the hood, as represented by the dotted lines in Figs. 2 and 3, is designed to serve as a blower for igniting the coal or rendering the grate a kind of close stove. The grate is also placed on the friction rollers *b, b*, Figs. 1 and 3, the axles of which may be fastened to the cylinder by means of which the grate may be made to revolve and thus cleared of the ashes and cinders which need to be sifted out. At the top of the conical hood E I place the smoke pipe F F F by which the smoke or gas is conducted off to the sheet iron box H, which is fixed in the chimney protruding into the room so that the pipe F may enter it at the top where it is made movable so that it can be turned in different directions and the stove being placed on rollers *a, a*, is easily moved to different parts of the room without deranging the pipe. The box H has a sliding door I at the bottom for removing the ashes. A reservoir K may be placed at the top of the hood, if desired, and the pipes *c, c*, be continued and bent around into the water so that the heated air from the pipes would pass through the water before passing into the room.

The whole stove or apparatus is raised above the floor by legs sufficiently to allow the air to pass under the hearth, and become heated by passing through the cylinder to the pipes.

The legs can be supported by casters if desired. The various parts of the hood and blower may be ornamented in the manner that other stoves are decorated.

I am aware that contrivances have been used to introduce air into stoves or apparatus for heating rooms so that when thus heated the air may pass off into the room

or open space by means of apertures or pipes; but these have been, as in Olmstead's stove, by passing through the inner one of two concentric cylinders, or in other cases
 5 between two plates serving as radiators outside of the fire chamber; but my apparatus for securing the object is believed to be different from all others before known, as it secures a draft of air through the cylinder
 10 that does not come in direct contact with the fire, and no ashes or gas from the fire can come into the room from the pipes. The air that circulates through the pipes is introduced beneath the hearth which is also
 15 believed to be a new feature. Circular or cylindrical stoves are common having a revolving grate at the bottom, inside, but this grate of mine is a revolving one outside and around the cylinder.

20 What I claim as my invention and desire to secure by Letters Patent is—

1. A grate combined with and around the hollow cylinder through which the air passes and becomes heated.

25 2. A conical hood placed above the air cylinder and the grate, and connected with a smoke pipe for the purpose of creating a

draft, concentrating the heat and conducting off the smoke or gas from the burning wood or coal. 30

3. The placing the grate on friction rollers as described in connection with the cylinder for the purpose of clearing the grate of ashes or bringing any part of it under the operation of a stronger draft or
 35 current of air.

4. The combination of the air pipes, or air passages, with the hood as described, by which the air that has become heated in the cylinder is conveyed to the room or place to
 40 be warmed.

5. The circular fender which is also made to answer the purpose of a blower by being raised and connected with the hood as described. 45

6. The method of introducing air into a hollow cylinder or air chamber connected with and inside of the grate and taking the air from beneath the hearth.

JAS. L. CATHCART.

Witnesses:

C. A. WASHBURNE,
 W. W. DEANE.