

N. A. BOYNTON.

Heating Stove.

No. 61,602.

Patented Jan. 29, 1867.

Fig. 1

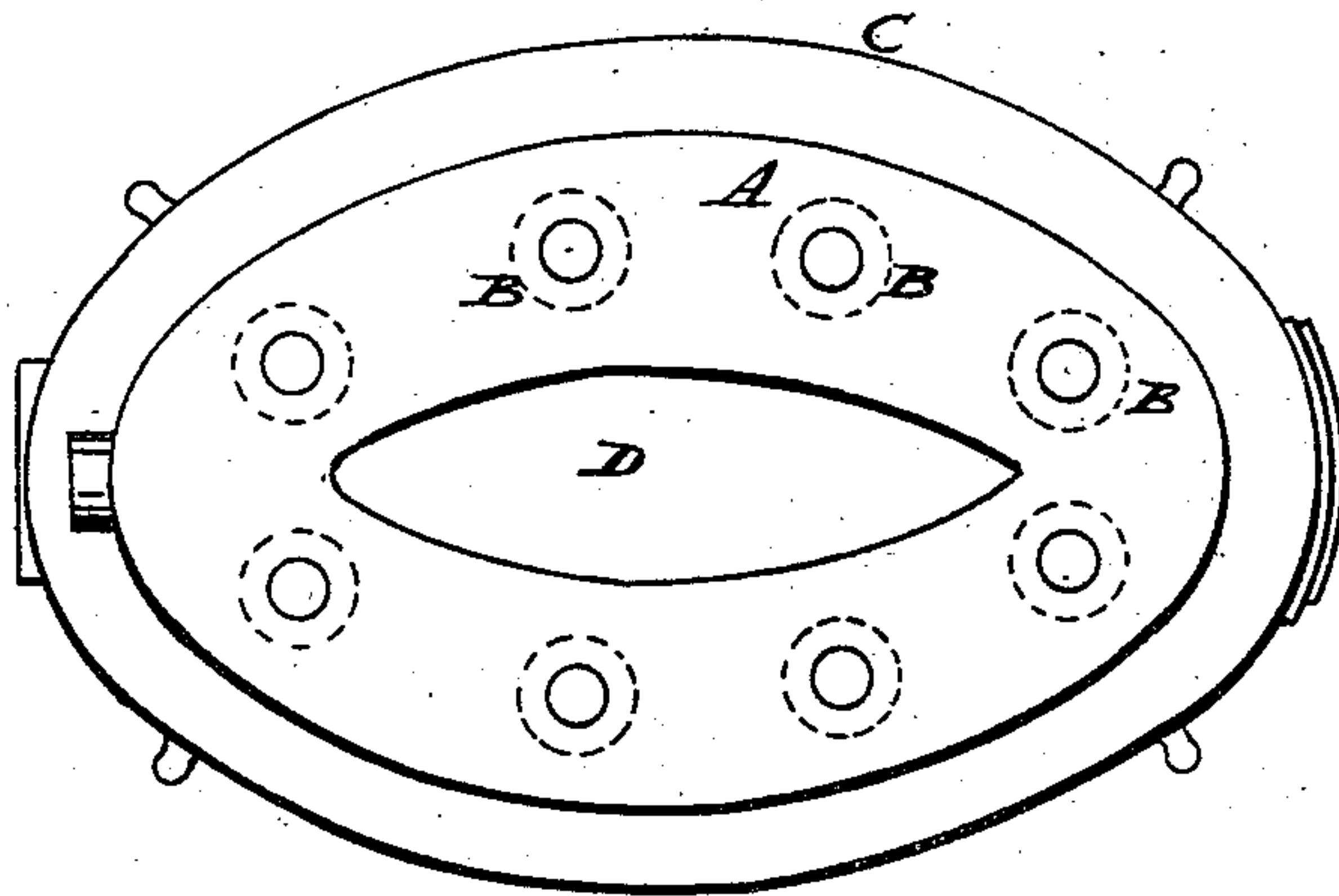
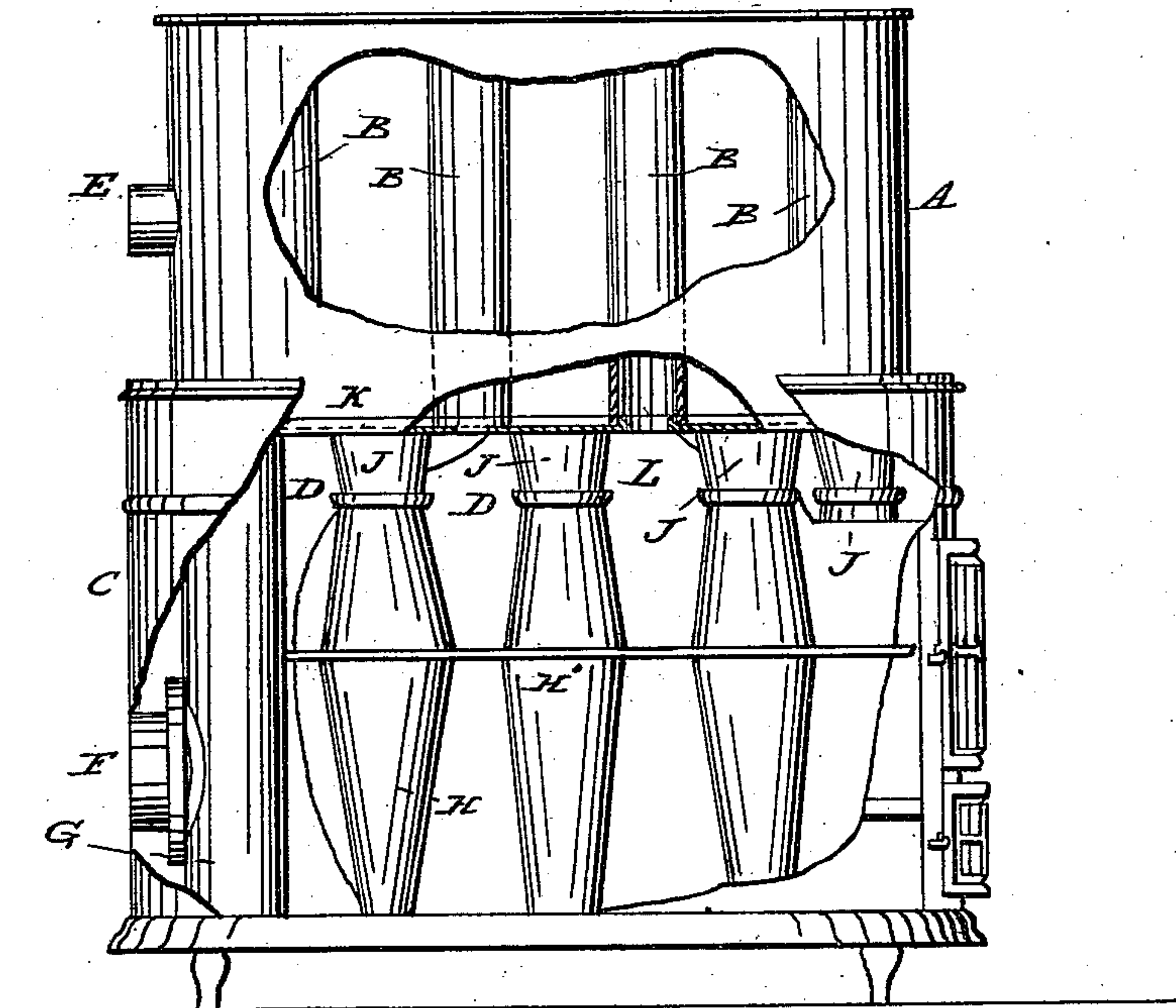


Fig. 2



Witnesses:

C. J. B. Waller
G. L. G. Russell

Inventor:

Nathl. A. Boynton

United States Patent Office.

NATHANIEL A. BOYNTON, OF NEW YORK, N. Y.

Letters Patent No. 61,602, dated January 29, 1867.

IMPROVEMENT IN COAL STOVES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, NATHANIEL A. BOYNTON, of 234 Water street, New York, have invented a new and useful Improvement in Heaters; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 is a plan of a heater made according to my invention.

Figure 2 is a side elevation, parts of the heater being broken away in order to show the relative positions of the air pipes in the drum.

This invention relates to that class of heaters where the products of combustion are discharged into a drum on their way to the place of exit. In this example I have shown my invention applied to a heater whose fire-box is intended for a wood fire, but it may be applied also to such as are intended for other kinds of fuel.

The letter A designates a drum set above the fire-box H, and supported thereon chiefly by means of the fire flues J. These fire flues are, in this example, seven in number, but the number may be greater or less than that. They are arranged, three on one side and three on the other side of the fire-box, and one at its front end, thereby providing not only suitable and well distributed supports for the drum, but also providing numerous distinct flues or outlets for the products of combustion, extending on each side of the fire-box from front to rear. The flue at the front end rises from the flat portion of the fire-box, and it may be used also to receive one of the connecting-rods that hold the drum in place. The side flues are continuations of vertical grooves or channels, H', formed within the fire-box, which continuations take the form of pipes that enter the lower ends of corresponding pipes which descend from the bottom K of the drum, the joints made at their place of meeting being closed by means of cup-shaped collars; D, which may be luted in the ordinary way. The drum A has a series of vertical air flues, B, extending through it from bottom to top, the bottom and top plates of the drum being, for that purpose, pierced with suitable openings, whose inner edges have collars that receive the ends of the air pipes which form such flues. The air flues are placed between the fire flues J, and the pipes of said air flues are of such diameter as wholly to fill the space between adjacent fire flues, the circumferences of the air and fire flues touching each other or becoming coincident at the points which are adjacent. The object of this part of my invention is to prevent the lodgment of soot and ashes at the upper ends of the fire flues, and thereby keep a free and open passage in the flues, an object of great importance in stoves and heaters, and especially in those in which wood is burnt. The drum A is composed of concentric shells, whose form or pattern may be varied in many ways without departing from the principle of my invention. In this example these shells are elliptical, forming a hollow ring or drum flattened so as to resemble an ellipse, which drum receives the products of combustion at several distinct points along its bottom where the fire flues enter it, and discharges them at its rear, either through a direct exit pipe, E, or through a descending flue, G, the said products of combustion, when they have entered the drum, being compelled, by the construction and arrangement of the parts, to impinge against the several air pipes which intervene between the fire flues respectively and the place of discharge, and to pass through the narrow lateral spaces left between the air pipes and the walls of the drum, whereby the imparting of heat to the air flues and to the walls of the drum is greatly facilitated. The outlines of the drum here shown, it will be seen, form an elliptical central air space, D, bounded by the inner shell of the drum. This air space is directly over the dome of the fire-box, which dome enters a little way into said space. Instead of making the drum with a complete and continuous periphery, as in this example, it may be made in horse-shoe form or any other convenient shape, so long as the principle of this part of my invention is adhered to; that is to say, constructing a heating drum of an annular form, whether it be a complete and continuous annulus or not, having concentric or parallel sides, between which are contained a series of air pipes that penetrate the drum at points intermediate of the fire flues. The fire-box H is surrounded in this example by a shell or cylinder, C, to which the doors of the heater are attached, but this shell may be left off if desired.

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

Claims.

1. The annular heating drum A, provided with air pipes B, and a central air space D, substantially as described.
2. I also claim the arrangement of the air flues B intermediate of the several fire flues J, in combination with a heating drum having the form of a complete or of an incomplete annulus, substantially as described.
3. I also claim the arrangement of the air and fire flues with reference to each other, in the manner above shown, so that at adjacent points their circles shall coincide for the purpose of preventing the lodgment of soot and ashes at these places, substantially as described.

NATH. A. BOYNTON.

Witnesses:

GEO. F. SOUTHERN,
J. VAN SANTVOORD.