

William T. Downs

PATENTED DEC 28 1869

Imp'd Furnace

Witnesses:

William W. Herthel

Robert Burns

Inventor:

Wm. T. Downs by
his Atty
Herthel

98239

Figure 1.

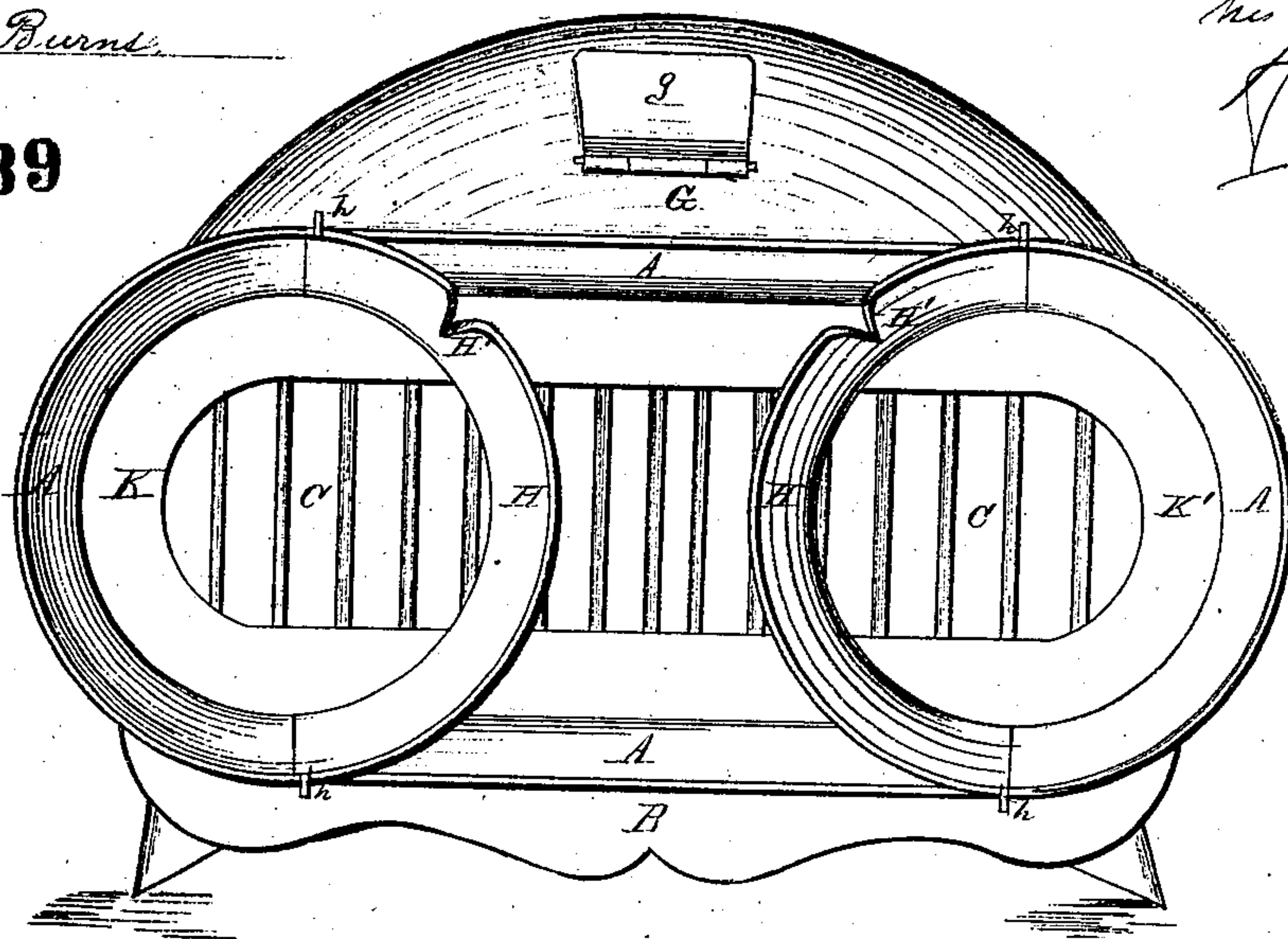


Figure 2.

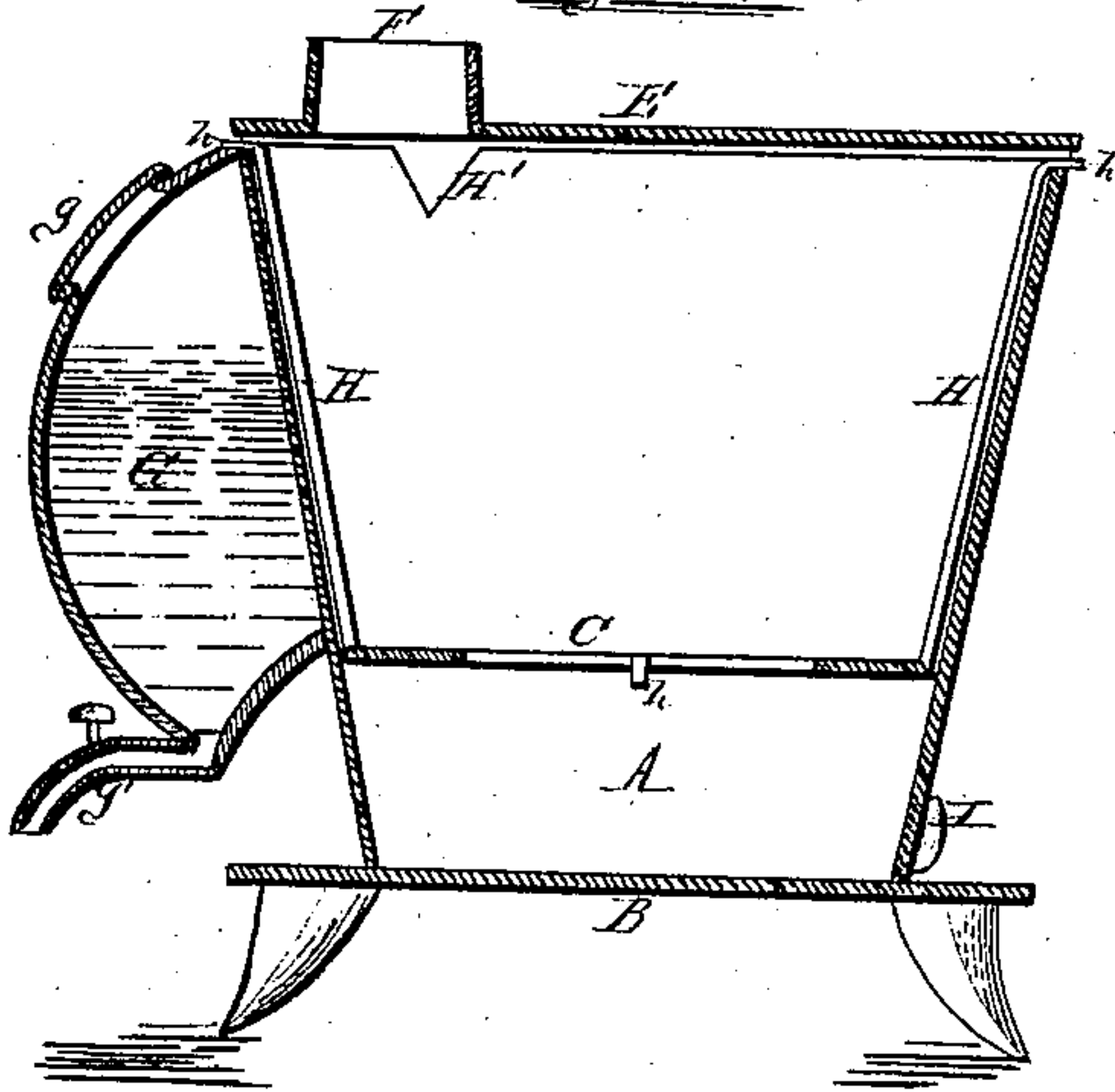
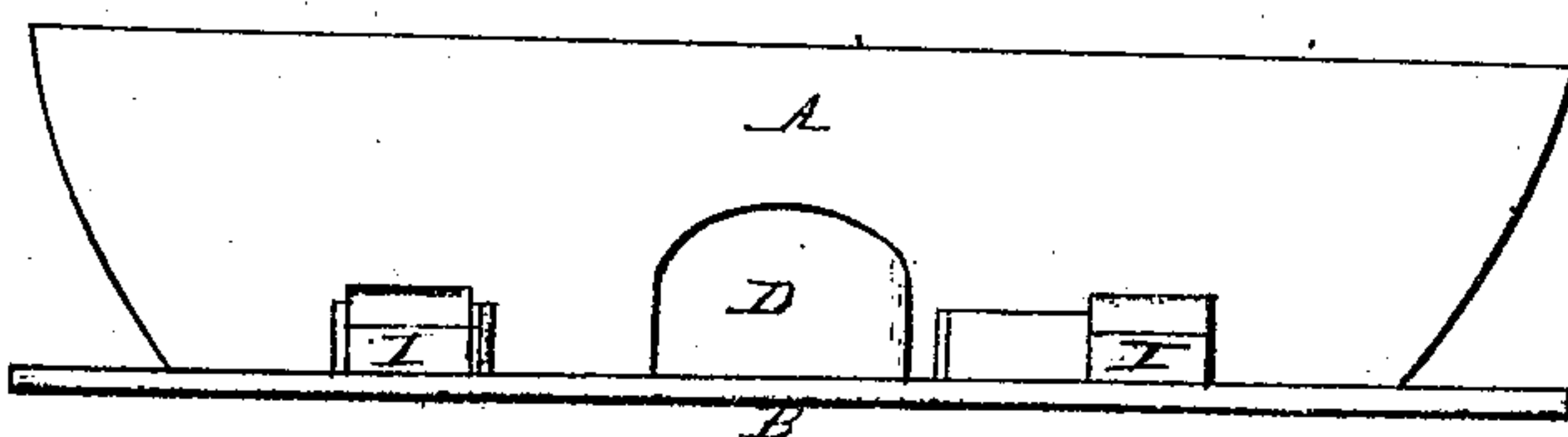


Figure 3.



United States Patent Office.

WILLIAM T. DOWNS, OF ST. LOUIS, MISSOURI.

Letters Patent No. 98,239, dated December 28, 1869; antedated December 11, 1869.

CHARCOAL-FURNACE.

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, WILLIAM T. DOWNS, of St. Louis, in the county of St. Louis, and State of Missouri, have made certain new and useful Improvements in "Charcoal-Furnaces;" and I do hereby declare the following to be a full and correct description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates to the furnaces usually employed in small households for cooking and other heating-purposes; and

The nature of this invention is, first, in the arrangement of a boiler or reservoir for water, or similar fluids, permanently upon the sides of the furnace; and secondly, in the manner of arranging a number of removable partitions within the furnace, so that in case a smaller heating-surface is required than the whole furnace would give, with proper economy, a part of the furnace may then be used, said part forming in itself a complete furnace.

To enable those herein skilled to make and use my said improvements, I will now more fully describe the same, referring to the accompanying—

Figure 1 as a plan, with the cover removed; to

Figure 2 as a sectional elevation, transversely; to

Figure 3 as a part front view.

I form said furnace of cast-iron or other similar material, of an elongated body, A, having, usually, rounded ends, and generally approximating to the form of the so-called charcoal-furnaces now in common use.

Said furnace has the bottom B, and is supported upon legs in the ordinary manner.

Above said bottom, and resting upon the inclined ends of the furnace, is the grate C, arranged, generally, as usual.

The main draught-opening D is arranged centrally in the front of the furnace-body, supplying air to the fuel placed upon the grate C.

On the body A, I rest the cover E, arranged with the usual pot-holes, and having proper lids.

In said cover is the chimney or smoke-escape F.

To the body A of my said furnace, I connect the boiler G, forming therewith a reservoir, in which water is placed. Said boiler will usually be connected with the rear wall of the body A, but may be connected with the ends of said body.

Said boiler has an opening and proper lid, *g*, for filling the same with water or other fluid, and a draw-cock, *g'*, for drawing off said fluid. The boiler, thus attached, forms a heater for water; and acts to economize the heat of the furnace in heating the fluid, which finds useful application in many of the necessities of housekeeping. Said boiler and its fluid thus acts to prevent the departure of heat from the furnace to great advantage in hot temperatures, and therefore causes great relief from excessive radiation of heat, to the operator or cook, in hot weather, this being the period when said furnaces are usually employed in cooking, ironing, &c.

Within the body A, I arrange the removable partitions H, having prongs *h*, by which they are held in position on the body A, and having similar prongs projecting between the grate-bars, to prevent dislocation.

At the upper edge of said partitions, I make a smoke-passage, H', through which the gases of combustion pass, to reach the space between said partitions, and from this find an exit at the chimney F.

In the front of the furnace, I arrange the side draught-openings I, leading to each of the spaces enclosed by each partition.

The arrangement of said parts is, therefore, such, that in case a small fire is required, the same may be made in the sub-furnaces K or K', and thus an economy of fuel may be achieved.

When the entire furnace is needed for heating, the partitions H may be lifted out, and even then the side-draught passages I will be found useful to regulate the combustion in the ends of the furnace.

A damper-plate may be used to close the main draught-passage D, when only one sub-furnace, K, is required.

Having thus fully described my said invention, What I claim, is—

1. The arrangement of the furnace A and boiler G, substantially as and for the purposes set forth.

2. The body A, grate C, partitions H, smoke-passages H', cover E, and chimney F, substantially as set forth.

In witness of said invention, I have hereunto set my hand, in the presence of—

WILLIAM T. DOWNS.

Witnesses:

GEORGE P. HERTHEL, Jr.,
WILLIAM W. HERTHEL.