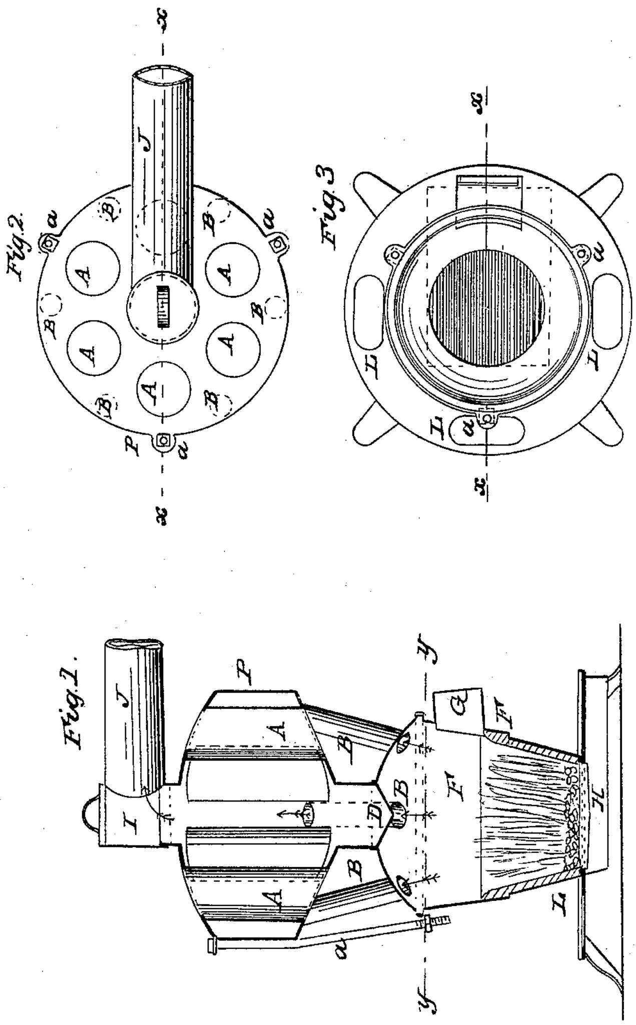
C. C. HARE.

Heater.

No. 50,354. Patented Oct. 10. 1865.



WITNESSES
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UNITED STATES PATENT OFFICE.

C. C. HARE, OF LOUISVILLE, KENTUCKY.

HEATER.

Specification forming part of Letters Patent No. **50,354**, dated October 10, 1865.

To all whom it may concern:

Be it known that I, C. C. HARE, of Louisville, in the county of Jefferson and State of Kentucky, 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, 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 an elevation of a vertical section of a heater made according to my invention, the line of section being seen at *x* in Figs. 2 and 3, the inclosing-case being omitted. Fig. 2 is a top or plan view of the heater, the smoke-flues B being indicated by dotted outlines. Fig. 3 is a plan of a cross-section on the line *y* of Fig. 1.

Similar letters of reference indicate like parts.

This invention has for its object an improvement in heaters for household use; and it consists in a novel arrangement of flues and air-tubes and passages, by means whereof great economy is attained in the use of the articles, and the cost of construction is much diminished.

The heater is supported upon feet which project from the edge of a hearth of circular form, and which has openings L in it for the access of fresh air within the heater, as hereinafter explained.

H designates the ash-pit, and F the fire-chamber, the latter being provided with a doorway, G, for feeding fuel to the fire, and being lined with fire-brick E. The top of the fire-chamber is convex, and its center has an opening which receives the lower end of a soot-pipe, D, which extends downward from the lower side of the combustion chamber or drum P. This drum surmounts the fire-chamber. It is circular in its peripherical outline, and has a convex bottom and top, and its diameter may be a little greater than that of the fire-chamber. It is connected with and supported above the fire-chamber by means of rods *a*, which extend from the periphery of one to that of the other. The lower ends of the rods *a* have screw-threads cut on them which work through lugs on the upper rim of the fire-chamber, so that by turning the rods the drum P may be raised or lowered to different positions when it is desired to change the elevation of the heater. The bottom of the drum P is pierced by numerous pipes B, which extend from the top of the fire-chamber, just within its circumference, to the drum above. Through these the products of combustion are conducted into the drum.

The letters A designate open cylinders, which are set in a circle in the drum, and which extend entirely through it. These are intended to transmit the air through the drum to the upper part of the heater. The soot-pipe D is a part of the bottom of the drum. The lower end of this is conical, and may be wholly closed, or a small opening may be left in it, so that the smoke and gases from the fire may pass through before the end becomes filled with soot.

The exit-pipe of the drum is seen at I. It has a lateral pipe, J, which leads to a chimney or other flue. The pipe I is vertical, and is closed by a cover, which enables one to have access to the interior of the drum. The air-cylinders A and side of drum P are so constructed as to be capable of extension when it is desired to give a greater elevation to the heater and increase the radiating surface.

The heater is to be inclosed within a case (not here shown) of metal or other suitable material, the top of which may be fitted with one or more registers or hot-air pipes, according to the usual manner of fitting up the cases and outer walls of heaters. The products of combustion pass upward into the drum through the flues B, and after circulating around the air-pipes A pass into the exit-flues I and J. The air to be heated passes through the holes L in the hearth of the furnace, then upward along the sides of the fire-chamber through the air-cylinders A, and outside of the drum to the top of the heater, whence it may be conducted through any suitable pipe or apparatus to warm the rooms of a building. This heater is meant more especially for use in regions where the chief fuel is bituminous coal, in burning which a great deal of dirt and soot is deposited in the flues of the furnace. By inclining the bottom of the drum so that it converges toward the center I cause the soot and dirt to become collected there, at which point the soot-pipe D

forms a receptacle, where it can accumulate without interfering with the functions of the furnace and heater, and may be swept back into the fire-chamber through an opening in the bottom of the soot-pipe D by inserting a small broom or brush through the pipe I.

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

1. The warm-air tubes or cylinders A, passing through the drum, in combination with the smoke-pipes B, and with a drum whose bottom is convex and has a soot-pipe at its center, substantially as described.

2. So connecting the fire-chamber to the drum that the latter can be elevated to varying heights, substantially as described, for the purpose of increasing or decreasing the extent of radiating surface.

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Witnesses:
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