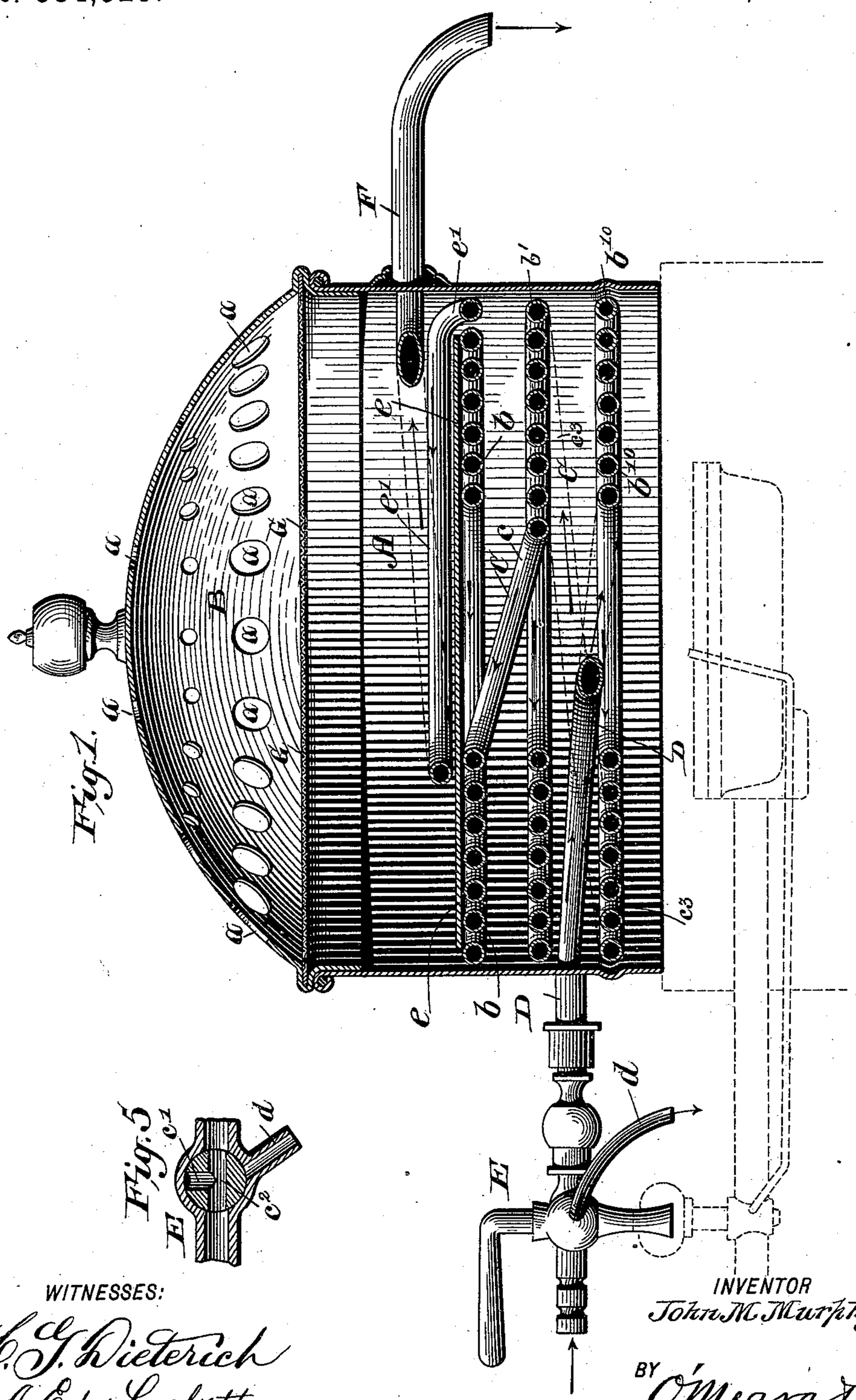
(No Model.)

2 Sheets—Sheet 1.

J. M. MURPHY.

PORTABLE HEATER.

No. 554,529. Patented Feb. 11, 1896.



WITNESSES:

H. G. Dieterich

J. Edw. Luckett

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(No Model.) 2 Sheets—Sheet 2.

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PORTABLE HEATER.

No. 554,529. Patented Feb. 11, 1896.

Fig. 2.

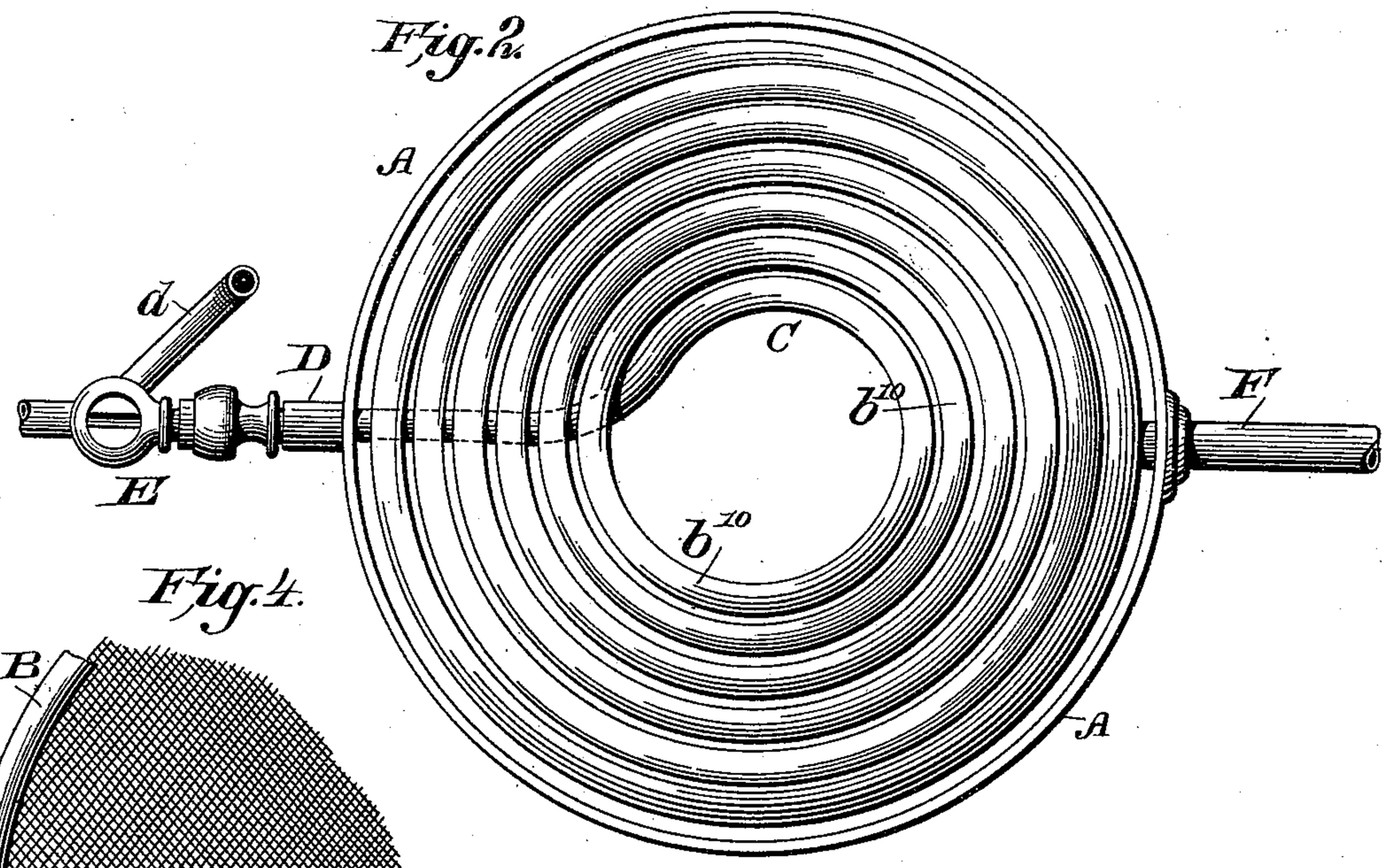


Fig. 4.

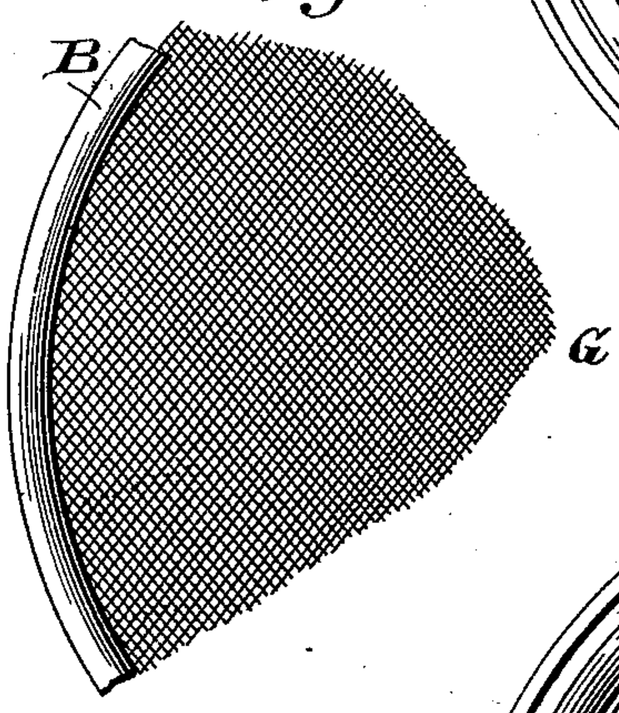
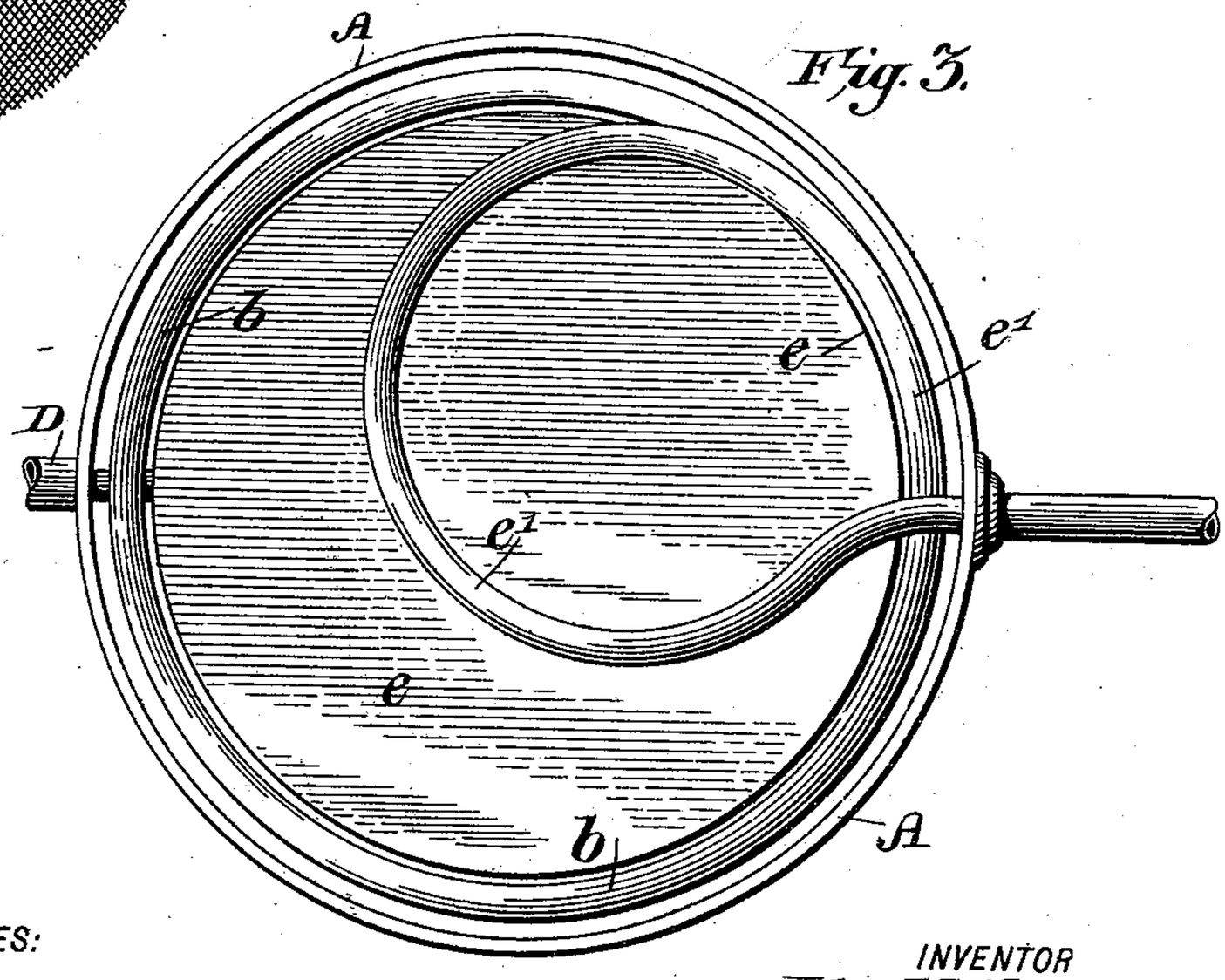


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN M. MURPHY, OF DANBURY, CONNECTICUT, ASSIGNOR OF ONE-HALF TO ALBERT F. PIERCE, OF SAME PLACE.

PORTABLE HEATER.

SPECIFICATION forming part of Letters Patent No. 554,529, dated February 11, 1896.

Application filed September 13, 1895. Serial No. 562,460. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. MURPHY, residing at Danbury, in the county of Fairfield and State of Connecticut, have invented a new and Improved Portable Heater, of which the following is a specification.

This invention relates to certain new and useful improvements in portable heaters for domestic and other purposes, and more particularly for restaurants and eating-saloons; and the invention consists substantially in such features of arrangement, construction and combinations of parts as will hereinafter be more particularly described, and pointed out in the claims.

The object of the invention is to provide against the destruction of the heated water-coil by its constant exposure or contact with both the igniter-jet and the burner proper, whereby the longevity of the entire apparatus is increased and the occasion for replacement and repair of said coil made comparatively small.

A further object of the invention is to provide for the easy and rapid discharge or emptying of contents from the water-coil simultaneously with the cut off of the supply, thereby tending to the cleansing of the water-coils by the action of the weight of the column of water that is constantly maintained in the coil above the point of supply as long as said supply is on.

A further object of the invention is to provide for a more even distribution of heating throughout the interior of the heater and to cause the flame of the burner to better impinge upon the surfaces against which it is supposed to come directly, or nearly so, into contact.

A still further object of the invention is to provide for the equality of draft or air supply throughout the body of the heater, so that combustion will be complete, the heater rendered less smoky and the escape of the products of combustion less obnoxious and unpleasant, all as will more fully hereinafter appear, when taken in connection with the accompanying drawings, wherein—

Figure 1 is a vertical sectional elevation of a portable heater embodying the features of my improvements. Fig. 2 is a bottom plan view of the lower or under water-coil. Fig. 3 is a similar view of the upper water-coil, a limited portion of which only is visible owing to the deflecting-disk placed thereon. Fig. 4 is a detail of the wire-gauze disk or screen located between the deflecting-disk and the top of the heater, and Fig. 5 is a detail view.

Before proceeding with a more full description I desire to say that the present invention is intended as an improvement on my former invention covered by application for patent filed December 19, 1891, Serial No. 415,600. In such former application the general arrangement of the heater consists of an outer body or wall within which is inclosed an inner and outer water-coil, the interior of the wall or body being divided into an upper and lower chamber or compartment by a peculiarly-shaped division-plate. In such former application an auxiliary pipe passes along the gas-supply pipe and terminates in a jet at the burner proper, which jet is kept constantly lighted, so as to ignite said burner proper by the act of turning on the supply-cock arranged in said supply-pipe. It was due to several small defects in the former invention referred to that led to the present improvements.

In the present invention I employ substantially the same form of heater-body A, and provide the same with a suitable top B, that is removable and formed with a number of openings or holes *a* for the escape of heat and creating the proper draft.

Arranged in the body A is a continuous coil of pipe C, formed in three horizontal layers *b b′ b*^{10}, the upper layer or coil, *b*, being connected with the discharge-pipe F and having its inner coil extended downward, as at *c*, and connected with the central layer or coil, *b′*, the outer coil of which extends downward, as at *c*^{3}, and connects with the outer coil of the bottom layer, *b*^{10}. (See dotted lines in Fig. 2.) The inner coil of the bottom layer, *b*^{10}, connects with the supply-pipe D, which has a cock E and which enters the casing or body A at a point above the said bottom layer, as shown. The cock E is constructed with a port *c*^{2}, which, when turned to register with the opening of the pipe B, permits a supply of water to pass into the heating-coil, it being also formed with a similar but smaller port

c', which, when the water is cut off by turning the port c^2 around, will be brought into communication with a small drain-pipe d, leading from the casing in which the cock is arranged and works.

It will be observed that by having the supply-pipe enter above the bottom layer of coil b^{10} a quantity of water will always remain in the lower layer of coils whichever direction the cock E may be turned, and at the same time all of the coils of both series just referred to will be emptied of their contents as soon as the cock E is turned to cause its port c' to be brought into communication with the drain-pipe d. By thus arranging the ports so that the lowermost coil will always have a quantity of water contained therein this said coil is prevented from being burned out or destroyed, as it otherwise would be, owing to the constant exposure thereof to the heat of the igniter-jet, even though such jet be small, as it must necessarily be. Should it ever be desired to empty this lower coil it is simply necessary to do so by blowing the same out or letting the water therein evaporate, as it must do within a reasonable time after the supply of water to the coil is shut off. Placed on top of the upper series or set of coils b is a disk or diaphragm e, which is slipped beneath the terminating portion e' of the coil so as to be maintained properly in place. This disk is smaller in diameter than the body of the heater, as shown, by which a space is created between the wall of the heater and the edge of the disk. This construction and relative arrangement causes a draft-space around the water-coil, and the disk itself deflects the flame from the burner beneath in such manner as to cause it to impinge all around in a more desirable manner. Any flame rising above the said disk is prevented from rising too high or is deflected back upon the disk through the medium of a wire-gauze disk G arranged within the movable lid or cover at a point above said disk e. This wire-gauze disk may in some instances be dispensed with, but for all general purposes its use is preferred.

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

1. In a portable heater, the combination of a heating-coil composed of an upper and a lower series of coils communicating with each other, a supply-pipe situated higher than the lowermost coil, a drain-pipe connected with the supply-pipe, and a valve having ports communicating respectively with the said supply and drain pipe when said valve is turned, one port being closed while the other is opened, and vice versa, substantially as described.

2. In a portable heater, the combination of an outer wall, or body having removable perforated lid or cover, a heating-coil, a supply and a discharge pipe therefor, a disk located on top of said coil and being of a diameter less than that of the main body, and a perforated metallic disk located within the removable lid above the disk first named, substantially as described.

JOHN M. MURPHY.

Witnesses:
REBECCA N. PIERCE,
LEVI P. TREADWELL.