

(No Model.)

2 Sheets—Sheet 1.

C. J. SEYMOUR & A. H. MACY.
COMBINED HEATER AND RADIATOR.

No. 598,444.

Patented Feb. 1, 1898.

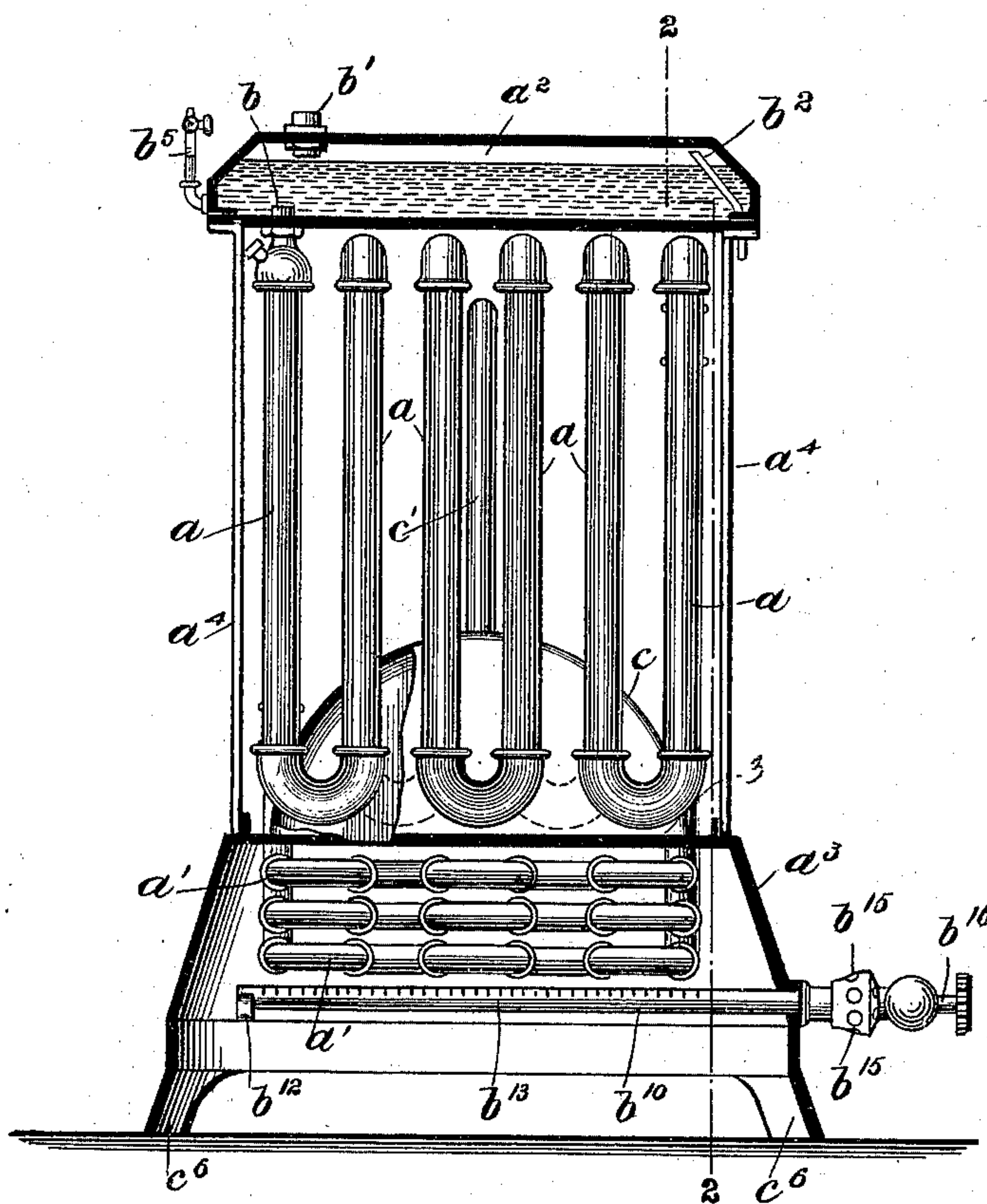


Fig. 1 -

WITNESSES.

Chas. S. Girding

Wm. H. Varnum.

INVENTORS.

Charles J. Seymour
Arthur H. Macy

Wm. H. Churchill
Atty.

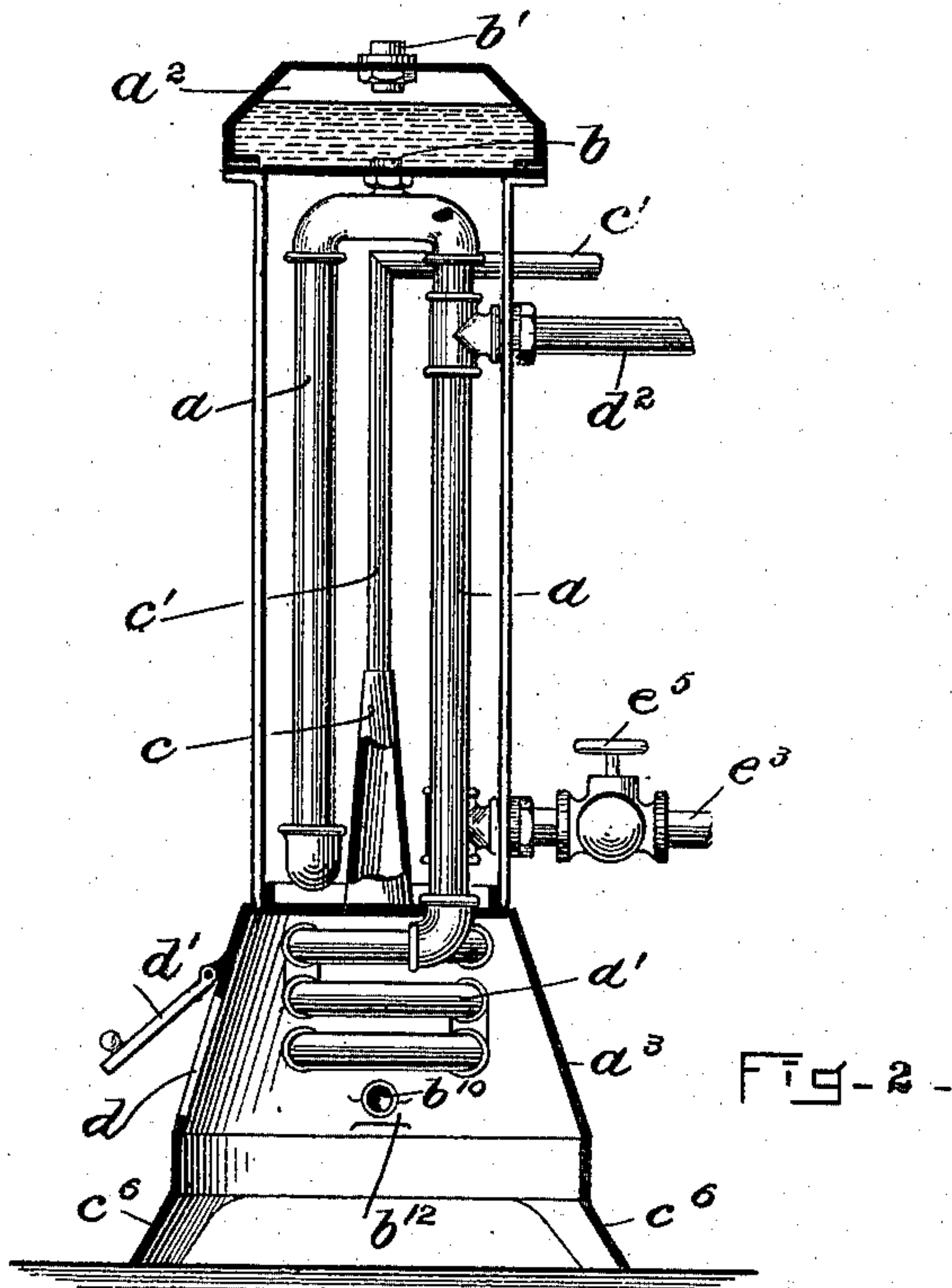
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Arthur H. Macy
By Jas. H. Churchill

UNITED STATES PATENT OFFICE.

CHARLES J. SEYMOUR, OF BROOKLINE, AND ARTHUR H. MACY, OF BOSTON,
MASSACHUSETTS, ASSIGNORS OF ONE-THIRD TO THOMAS F. BOLEMAN, OF
BOSTON, MASSACHUSETTS.

COMBINED HEATER AND RADIATOR.

SPECIFICATION forming part of Letters Patent No. 598,444, dated February 1, 1898.

Application filed January 20, 1897. Serial No. 619,901. (No model.)

To all whom it may concern:

Be it known that we, CHARLES J. SEYMOUR, of Brookline, and ARTHUR H. MACY, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in a Combined Heater and Radiator, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

This invention relates to a portable water heater and radiator especially designed and adapted for use in compartment-houses, flats, offices, and like places, and has for its object to provide a simple and efficient heater and radiator particularly designed to be heated by the combustion of fuel or illuminating-gas.

The radiator comprises in itself a complete hot-water system, as will be described, and may, and preferably will be, provided with an outflow and a return pipe, which may be connected to other radiators or coils of pipes located in the different rooms on the same floor—as, for instance, in a flat.

The base of the radiator is provided with a burner for illuminating or other gas, which burner is preferably of a construction as will be described.

The radiator is provided with an outlet for the products of combustion of the gas, so that the hot-water radiator may be used in isolated or separate rooms provided with a chimney or other suitable outlet for said products.

These and other features of this invention will be pointed out in the claims at the end of this specification.

Figure 1 represents in section and elevation a hot-water radiator and heater embodying this invention; and Fig. 2, a section of the radiator shown in Fig. 1, the section being taken on the line 2 2, looking toward the left.

In accordance with this invention the hot-water radiator comprises a series of connected and vertically-arranged pipes a and preferably a series of horizontally-arranged and connected pipes a' , which are located below and in line with the pipes a and connected thereto to form a complete loop or coil of pipes. The pipes a a' communicate with an expansion-chamber a^2 , forming the top of the radiator,

and which may rest upon the pipes a or which may be supported upon a hollow base a^3 by intermediate posts, bars, or standards a^4 , the said vertical coil of pipes being exposed to the air, so that the air may circulate freely through or between said pipes. The vertical coil a of pipes communicates with the expansion-chamber a^2 by means of a pipe extension or nipple b , which projects up into the said chamber, and the latter is provided with a water-inlet b' , through which the radiator is filled with water until it reaches a predetermined level in the expansion-chamber. The expansion-chamber is provided with a vent or outlet pipe b^2 , having its upper end extended to near the top of the said chamber and its lower end extended through the bottom of the said chamber, which latter is also provided with a water-gage b^5 .

The water in the radiator-coils a a' is designed to be heated by means of fuel or illuminating-gas, which is burned within the base a^3 below the coil a' of pipes. For this purpose the base a^3 is provided with a gas-burner consisting, as herein shown, of a pipe b^{10} , extended through the front end of the base and supported at its inner end upon a web or bracket b^{12} on the inner side of the base, the said pipe having a series of gas-outlet openings or slits b^{13} , substantially close together and in close proximity to the lowermost pipes comprising the coil a' . The burner b^{10} is adapted to be connected outside of the base with a gas-supply pipe, (not herein shown,) but which may be the gas-pipe in the room in which the radiator is located, and the said burner is further provided with air-inlet openings b^{15} and with a valve having a stem b^{16} , and by which the supply of gas to the burner may be controlled.

The top 3 of the base a^3 is provided with a longitudinal opening over which is placed a hood c , having an outlet-pipe c' , which is extended up between the limbs or members of the vertical coil of pipes and is then extended beyond the radiator and connected to the outlet-opening in a chimney.

The hollow base a^3 is provided with feet c^6 to raise the bottom off from the floor and thereby supply additional air to the burner.

The hollow base a^3 is designed in practice to be cast in one piece, and its top 3 supports both the coil a above and the coil a' below it. The said base is further provided with a suitable opening d in one of its sides, through which access may be had to the coil a' of pipes, and the said opening is normally closed by a cover or door d' . (Shown in Fig. 2.)

As thus far described, it will be seen that the radiator constitutes a complete hot-water system which is simple and efficient for use in isolated or separate rooms—as, for instance, in compartments or flats—the water heated in the coil a' expanding and rising up in the coil a and returning back to the coil a' , the expansion of the water being taken care of in the expansion-chamber a^2 , which is properly vented by the pipe b^2 to avoid accumulation of pressure sufficient to destroy the radiator. Furthermore, as the hood c is extended above the top plate 3 and the radiating-pipes a are disposed along the sides of the hood said hood not only collects the products of combustion and leads them to the pipe c' , but also becomes heated by the hot air from the burner and the heated products of combustion and by radiation serves to supply heat to the radiating-pipes. As the generating-pipes are arranged between the hood and the burner, the heat from the burner acts not only upon the generating-pipes, but, through the hood, upon the radiating-pipes. Manifestly the efficiency of the present device is in the above manner greatly increased.

In practice the heater-radiator may be set up in the kitchen of a flat and connected by an outlet-pipe d^2 and the return-pipe e^3 with radiators of usual construction located in the

various other rooms of the flat. The return-pipe e^3 is provided with a cut-off valve e^5 .

We claim—

1. In a combined hot-water heater and radiator or the like, a hollow base having a top plate provided with an opening, a hood about said opening and above the same, a pipe extending from said hood, generating-pipes in the base below the opening in the top plate, radiating-pipes above the top plate and in proximity to the hood whereby heat from the hood radiates upon the radiator-pipes, and a burner in the base below the generating-pipes and the hood; substantially as described.

2. In a combined hot-water heater and radiator or the like, a hollow base having a top plate provided with an elongated opening, a hood about said opening and extending upwardly, a pipe leading from said hood, generating-pipes below the hood and the opening in the plate, a burner below the generating-pipes and the hood, and a coil of radiating-pipes arranged in proximity to and along the sides of the hood, whereby the products of combustion from the burner are caught by the hood and carried off by the pipe leading therefrom while the hood presents a heated surface serving to supply heat to the radiating-pipes; substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

CHARLES J. SEYMOUR.
ARTHUR H. MACY.

Witnesses:

JAS. H. CHURCHILL,
J. MURPHY.