No. 855,955. PATENTED JUNE 4, 1907.

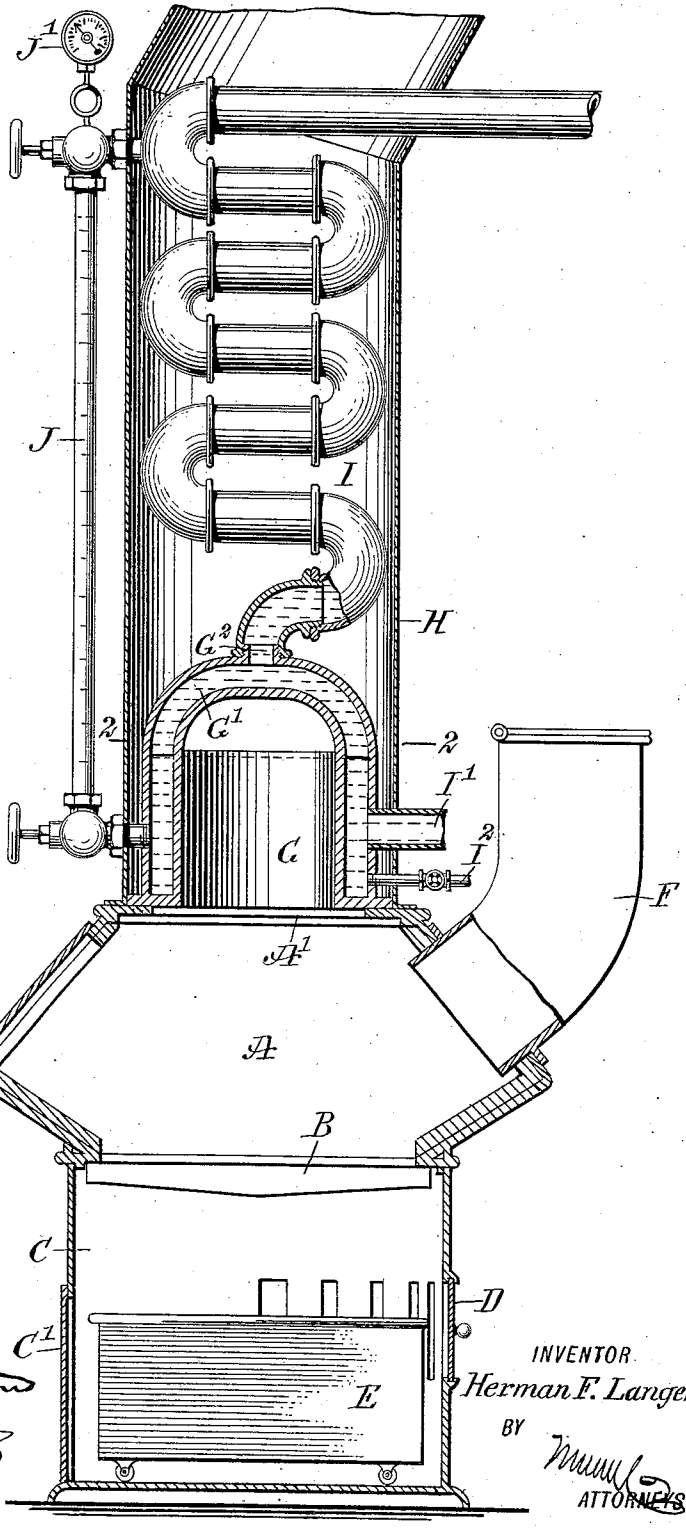
H. F. LANGENHOP.

HEATER.

APPLICATION FILED FEB. 1, 1905.

2 SHEETS—SHEET 1.

Fig. 1



WITNESSES:

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2 SHEETS—SHEET 2.

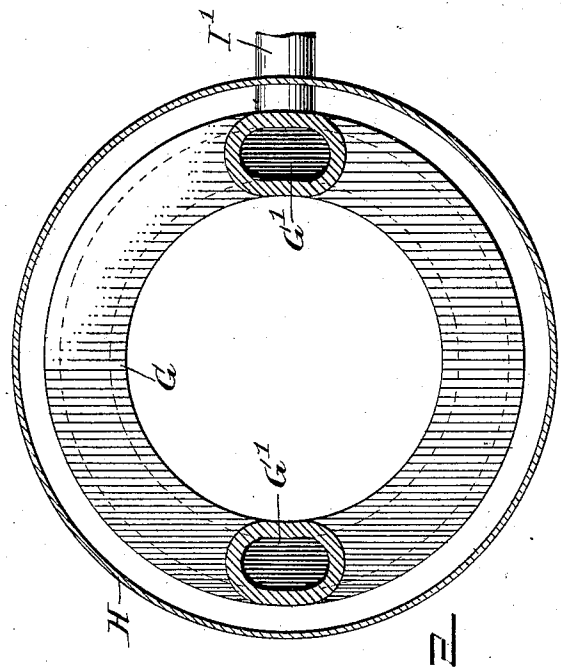

Fig. 2.

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UNITED STATES PATENT OFFICE.

HERMAN F. LANGENHOP, OF NEW YORK, N. Y.

HEATER.

No. 855,955. Specification of Letters Patent. Patented June 4, 1907.

Application filed February 1, 1905. Serial No. 243,651.

To all whom it may concern:

Be it known that I, HERMAN F. LANGENHOP, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Heater, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved stove or heater, arranged to utilize the heat arising from the burning fuel in the fire-box to the fullest advantage, to heat a room in a building by radiation of heat from the stove or heater and to heat water, air or both and conduct it to radiators or registers for heating other rooms in the building and to assist in heating the room in which the heater is located.

The invention consists of novel features and parts and combinations of the same, as will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional side elevation of the improvement arranged as a steam or water heater; and Fig. 2 is an enlarged sectional plan view of the same, on the line 2—2 of Fig. 1.

The improved hot water or steam heater illustrated in Figs. 1 and 2 is provided with a fire-box A provided in its bottom with a suitable grate B and mounted on an ash-pit C having a damper D for regulating the amount of air required for the proper combustion of the fuel burning on the grate B. In the ash-pit C is arranged an ash-pan in the form of a box E, mounted on wheels and adapted to be wheeled in and out of the ash-pit C through a suitable door C'.

The fire-box A is preferably in the form of two frusta of cones, united at their bases, and the upper frustum is provided in its sides with one or more filling devices F in the form of tubes extending upwardly and provided at the top with a suitable cover which, when opened, permits filling of the device F with the necessary fuel, the latter, by its own weight, charging the fire-box A, so as to maintain a uniform burning of the fuel in the fire-box. The top of the fire-box A is provided with an opening A' and on the said top is set a heat-controller in the form of an annular chamber G, the opening of which registers with the opening A', so that the heat and gases arising from the burning fuel in the fire-box A pass up through the opening of the annular chamber into a smoke or gas flue H leading to a chimney. From the top of the annular chamber G extends an inverted U-shaped pipe G' having an outlet G^2 connected with one end of a coil-pipe I arranged within the flue H and connected at its upper end with suitable radiators in the building, the radiators having a return-connection I' with the lower portion of the chamber G. The latter is also provided with a valved supply pipe I^2 connected with a suitable water-supply for filling the chamber G and the coil I with the necessary amount of water.

A gage J is connected with the upper portion of the coil I and with the chamber G, so as to indicate the height of the water in the coil, and a suitable pressure-gage J' is connected with the upper end of the gage J, to indicate the pressure of the steam in the coil.

If the device is to be used as a steam-heater, then the coil I is filled to the desired height and the heat arising from the burning fuel and passing through the opening of the chamber G and up through the flue H heats the water contained in the chamber G and coil I, to generate steam, which passes to the radiators for heating distant rooms, the water of condensation being returned to the chamber G by the return-pipe I'.

If the device is to be used as a hot-water heater, then the chamber G, coil I and all the radiators are filled with water in the usual manner, so that the water, when heated by the fuel burning in the fire-box A, rises in the coil I to the several radiators, and returns by the return-pipe I'.

The heater is provided with the usual fixtures, such as thermometers and the like, also regulating devices for controlling the flow of the hot water or steam and the like, and also with automatic devices for working the damper D (D'), but as such fixtures are common in devices of this kind it is not deemed necessary to further describe or show the same.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A heater, comprising a fire box having an enlarged opening in its top, a smoke flue surrounding the said opening, an annular chamber having an external flange at its lower

end, said chamber resting upon the top of the fire box with its bottom extending over the opening of the fire box to expose the same to the direct action of the products of combustion, an inverted U-shape pipe connected with the top of the said chamber, a coil in the smoke flue and having its lower end connected with the U-shape pipe, the upper end of the coil extending out through the smoke flue and adapted for connection with a radiator, and a return pipe leading from the annular chamber out through the flue.

2. A heater, comprising a fire box having an opening in its top, a smoke flue on the top of the fire box, a heat controller in the form of an annular chamber and arranged on the top of the fire box within the smoke flue, said chamber being of less diameter than the smoke flue and through the opening of which passes the smoke and gases from the fire box to said flue, an inverted U-shaped pipe connected with the top of the annular chamber, a coil in the smoke flue, said coil having its lower end connected with the U-shaped pipe and its upper end extending out through the smoke flue for connection with a radiator, and a return pipe leading from the lower portion of the annular chamber out through the smoke flue.

3. A heater comprising a fire box formed of two conical sections united at their bases, the fire box having an enlarged opening in its top, an upwardly extending filling tube connected with the upper section of the fire box, a smoke flue on the top of the fire box, an annular water chamber on the top of the fire box within the smoke flue with its bottom extending over the opening of the fire box, a coil in the smoke flue and having its lower end connected with the annular chamber and its upper end leading out through the smoke flue for connection with a radiator, and a return pipe leading from the lower portion of the annular chamber out through the smoke flue.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HERMAN F. LANGENHOP.

Witnesses:

THEO. G. HOSTER,

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