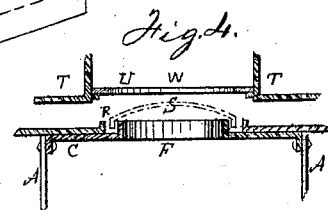
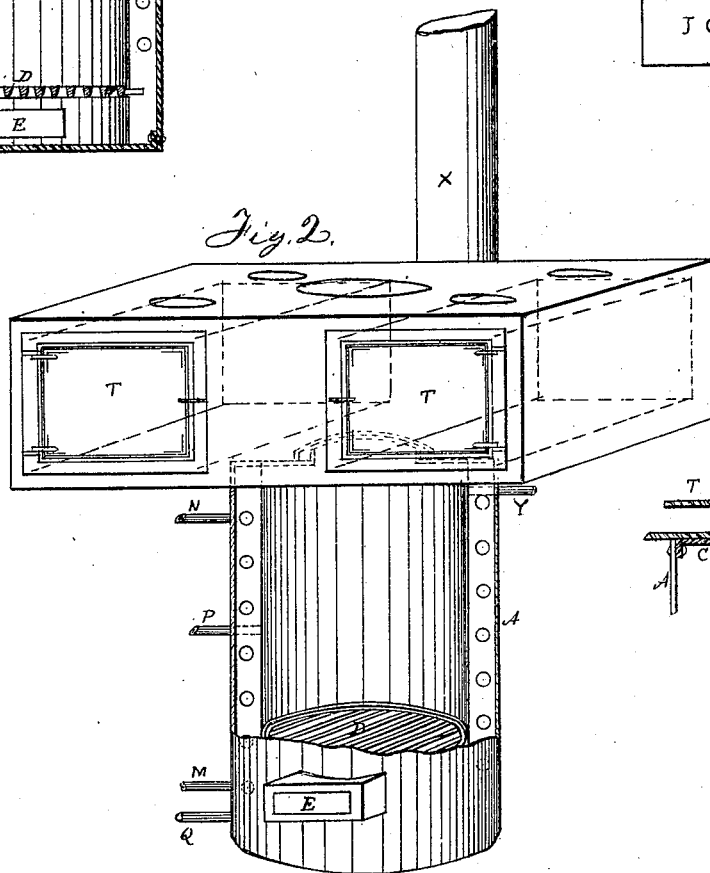
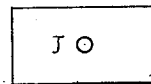
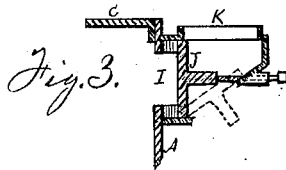
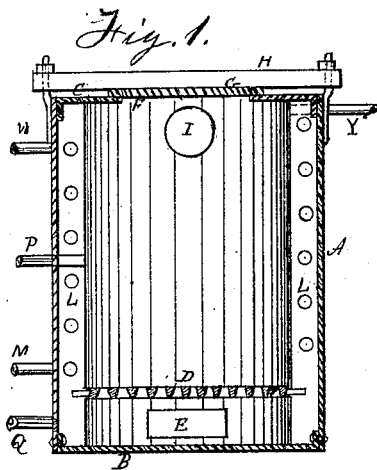


G. H. POND.
GAS RETORT AND HEATING FURNACE.
No. 110,496. Patented Dec. 27, 1870.



Witnesses:

*J. Dennis &
W. Dennis*

Goldsbury H. Pond

United States Patent Office.

GOLDSBURY H. POND, OF RUTLAND, VERMONT.

Letters Patent No. 110,496, dated December 27, 1870.

IMPROVEMENT IN GAS-RETORTS AND HEATING-FURNACES.

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, GOLDSBURY H. POND, of Rutland, Rutland county, in the State of Vermont, have invented an improved Gas-Retort and Heating-Furnace; and I hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawing forming part of this specification.

The nature of my invention and improvements in gas-retorts and furnaces consists in so constructing and arranging a gas-retort that a fire made within it as a furnace for heating buildings, boiling, and cooking, and while the fire is in an incandescent state, or very hot, to close the draught-opening and smoke-escape, and supply steam, melted grease, oil, &c., to the fire while it is hot, so as to make the gas with the fire within the retort;

Also in arranging the water or steam-heating pipe between the soap-stone or fire-brick lining and the outer case of the furnace, and in a device for opening and closing the smoke-flue when it is used as a retort and without the stove or range.

In the accompanying drawing—

Figure 1 shows a retort constructed to make gas and serve as a heating-furnace.

Figure 2 shows a retort in combination with a cooking-stove or range.

I prefer to make my retorts of iron boiler-plate, with a cylinder, A, bottom, B, and top, C, all firmly fastened together inside the cylinder A.

I arrange a tilting-grate, D, for the fire, and an opening, E, in the side for draught, raking the grate, and removing the ashes.

Also an opening, F, in the top to supply fuel, which is closed by the plate G and secured by the bar H, as shown in fig. 1.

I is an opening for the escape of the smoke, provided with a door, J, shown in fig. 3, for closing it; and when this door is open, as shown in dotted lines, the smoke passes up through the opening K.

On the inside of the cylinder A, I coil the water-pipe L for making steam and heating water; the water entering at M and escaping at N; and, inside of the pipe L, I arrange the soap-stone or fire-brick lining; so that the water-pipe is between the lining and the cylinder.

The pipe P is for supplying the melted grease, oil, &c., for making gas, which pipe may be provided with some proper means for distributing the oil or grease over the fire.

Q is the pipe for supplying steam under the grate,

from some boiler, to aid in making the gas; or the steam may be taken from the coiled pipe L.

In fig. 2 the retort is shown with a cooking-stove or range above it.

When I make the retort to be used with a stove, I make a trough, R, around the opening F in the top, and supply it with lead or some metal that will melt at a low temperature, and make a cover, S, to project down into the melted metal and make a gas-tight joint as shown in section, fig. 4.

I make the bottom-plate of the ovens T T to extend across between the ovens; and make an opening, U, in the plate, right over the opening F, to supply fuel to the retort through the boiler-hole V in the top of the stove. After the fuel is put in, the opening U is closed by the cover W to make the smoke pass around the ovens and out into the pipe X applied to the back of the stove between the ovens.

To use the retort, a fire is made in it, which may be used to heat the stove and do the cooking, and also heat a house or hotel; and when the cooking is done for the day, and while the fire is hot, the cover J must be luted with clay and made tight, also the draught-opening E and the cover S put on, when the melted grease or oil must be run into the retort through the pipe P, and a supply of steam through the pipe Q, when the fire will make the gas, which will pass out through the pipe Y into a gasometer, from which it may be used as it is wanted.

What I claim as my invention and improvements in gas-retorts and furnaces is—

1. A gas-retort so constructed and arranged as that a fire may be made within it as a furnace for heating buildings, boiling, and cooking, and, while the fire is incandescent or very hot, close the draught-opening and smoke-escape, and supply steam, melted grease, &c., to the fire while it is hot, so as to make the gas with the fire made within the retort.

2. Arranging the steam or water-heating pipe in furnaces between the soap-stone or fire-brick lining and the outer case of the furnace, substantially as described.

3. In combination with the retort, the door J to close the opening I, constructed and arranged to operate substantially as described, for the purpose set forth.

GOLDSBURY H. POND.

Witnesses:

J. DENNIS, Jr.,
WM. DENNIS.