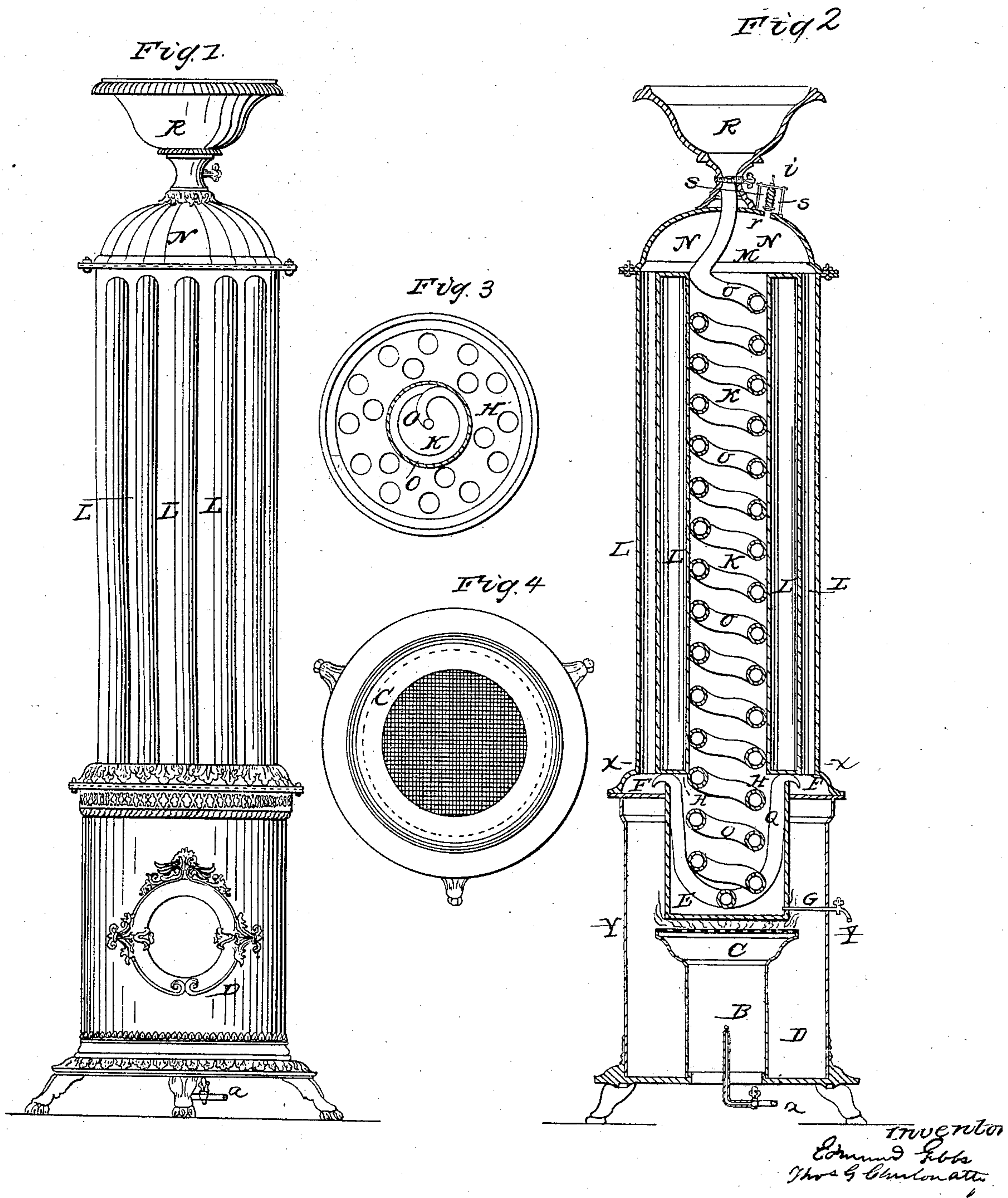


E. GIBBS.
Steam Heater.

No. 18,241.

Patented Sept. 22, 1857.



UNITED STATES PATENT OFFICE.

EDMUND GIBBS, OF MADISON, WISCONSIN.

IMPROVEMENT IN STEAM-HEATING APPARATUS.

Specification forming part of Letters Patent No. **18,241**, dated September 22, 1857.

To all whom it may concern:

Be it known that I, EDMUND GIBBS, of Madison, Wisconsin, have invented a new and useful Improvement in Heaters, being an apparatus for generating steam by gas for heating parlors, chambers, offices, churches, &c., (and the apparatus susceptible of being formed like a stove of the most ornamental kind;) and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawings, lettered to correspond with and made part of this specification, in which drawings—

Figure 1 represents the heater or stove in its outside appearance, Fig. 2, in its central and vertical section; Fig. 3, a top view of the plate at the line X Z; and Fig. 4 a top view and section at the line Z Y.

My invention is of the nature of a stove, the upper part of which is arranged with boiler, pipes, and steam-chambers, in fact a complete steam circulating and condensing apparatus set over a gas-blazer fixed in a cylinder supported on a basis with feet, this lower part with the upper part forming an ornamental upright cylindrical stove fit for parlor, chamber, office, or hall. Of course large halls will require several heaters.

My stove is arranged for a single gas-burner, because it is more economical to use two stoves than increase the size or burners for one stove. My stove is also gaged for using about a quart of water. I have with that quantity operated the stove for sixteen hours consecutively, and then drawn off a pint of water, this being the quantity remaining in a stove constructed without any extra accuracy in its joints and fittings. The pressure is usually gaged to a pound and a half.

My mode of applying the water is to supply it in a small stream by means of an ornamental vase on the top of the stove, the vase communicating with a coil of pipe passing down a central cylinder and into the boiler, and this coil ending in a double issue opening into a trough around the top of the cup or boiler, into which the water falls in a thin sheet. The bottom of this cup being immediately over a gas-blazer, steam is generated. This steam, rising up through the channels of the circulating and condensing apparatus is condensed, and returned in a heated condition to the boiler to be used over again. This cup or boiler has

a faucet which is intended as a gage, the water being shut off when the quantity is sufficient to flow out at this gage.

A is an ordinary gas-tube and faucet fitted with a fish-tail burner B.

C is an ordinary gas-blazer.

D is a cylinder resting on a base and feet. This cylinder has openings 3 at top. On cylinder D the boiler E rests by means of the trough F around its top. The boiler is covered by the shell H, which serves in connection with F to form a steam-chamber and trough, and also a plate into which the central cylinder K and the vertical tubes L surrounding it are inserted, thus making this chamber connect with a similar chamber formed above for these cylinder and tubes to open into, and marked M on the bottom plate and N on the dome thereof. These chambers and tubes and cylinder are made steam-tight. On the center of dome N an ornamental vase R rests, and this vase communicates by a faucet with a coil of pipe O, winding down through the cylinder K and into the boiler E until it ends in a U-shaped pipe, which rises up from near the bottom of the boiler and, riding over the top of the boiler into the trough F, discharges by an issue of water from each prong P and Q into said trough during the flow of water from the base. The dome N also carries a safety-valve S, not absolutely necessary, but provided as a matter of prudence. The pipe and faucet G is set into the boiler E a sufficient distance from its bottom to make it act in concert with the trough F in the matter of the quantity of water to be used—that is to say, the trough F and the boiler below the gage G have about the same capacity. Nothing is gained by using an excess of water; but time is lost. The gas is lighted through a door or opening in cylinder D.

I connect the cock (marked *a*) to the gas-pipe or fixture in the building with metal or flexible tubes, which supplies gas to burner B. I turn on the gas at A and apply a light to the top of the blazer, (marked C,) which throws a flame round the bottom and sides of the boiler E. I then turn on the gage-cock, (marked G,) also the water-cock of the vase or reservoir, which allows the water to run down the coil O and into the water-space (marked F) in two small streams. When the chamber F is full, the water flows down the sides of

the boiler E in a thin sheet, which reaches the bottom in a state of vapor. I continue to let the water run until it reaches the gage-cock G. I then shut the cock G and the water-cock above N. Steam begins to generate from the bottom of boiler E and ascends through the tubes K and L, where condensation takes place by coming in contact with cold surfaces. The condensed water returns to the chamber F. By the time the water is evaporated in the boiler E the water is boiling in the water-space F, furnishing the quantity of steam required, which, passing through the boiler E and coming in contact with its heated bottom and sides, is rarefied and gives a much higher degree of heat than is obtained from low-pressure steam in the ordinary way. The condensed steam returns to the water-space F and is heated several times over, which allows the apparatus to continue at work for six or

eight hours without any attention. When the pressure becomes great enough to raise the valve S, turn down the cock A, which reduces the heat under the boiler, condensation takes place, and a loss of pressure is the consequence.

Having thus fully described my heating-stove (being a heater in which an ordinary gas-blazer is used under a boiler for generating steam for warming rooms, offices, halls, &c.,) what I claim is—

The boiler E, with its trough F, operating in combination with the coil of pipe O and its prongs P and Q, or their equivalents, arranged for the purpose specified.

EDMUND GIBBS.

Attest:

B. W. FERGUSON,

THOS. G. CLINTON.