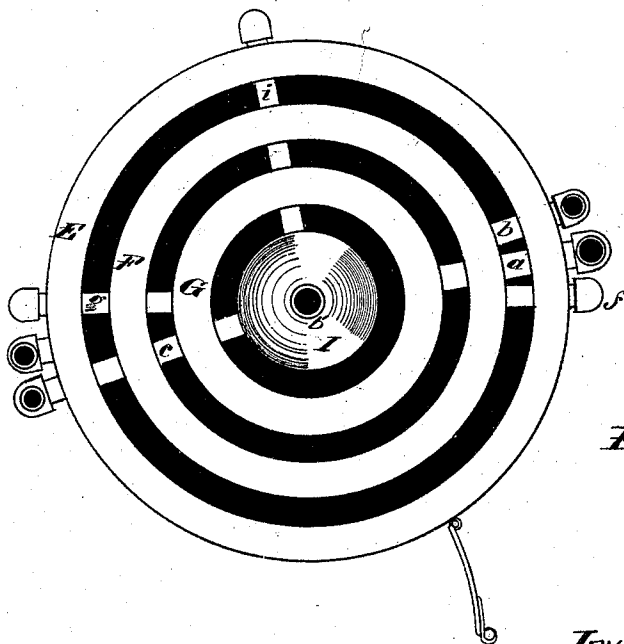
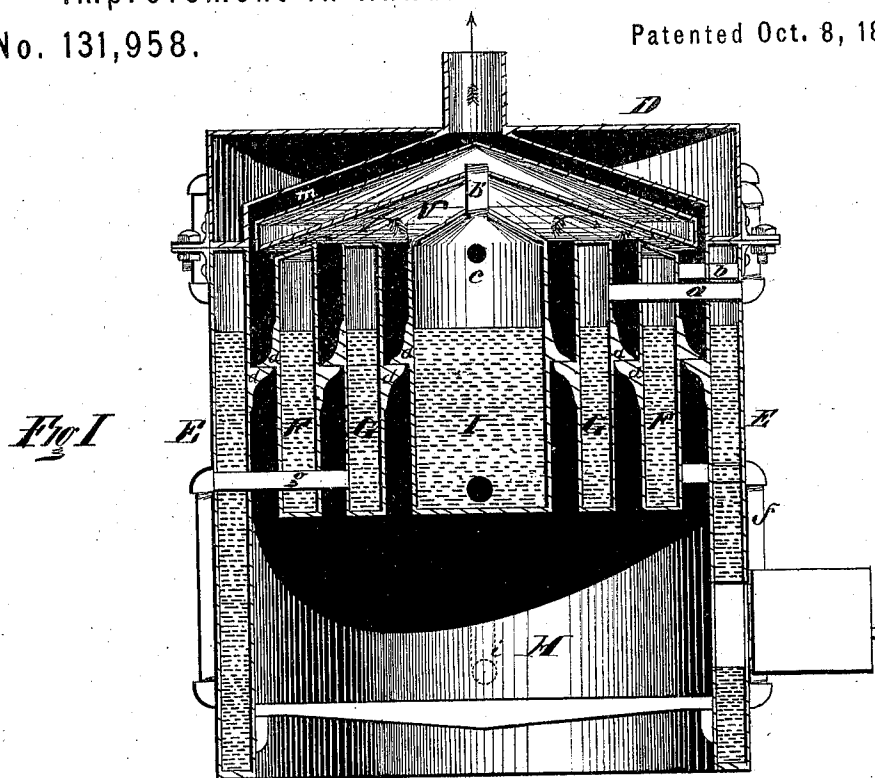


G. L. LAFLIN.

Improvement in Annular Steam-Generators.

No. 131,958.

Patented Oct. 8, 1872.



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UNITED STATES PATENT OFFICE.

GEORGE L. LAFLIN, OF WESTFIELD, MASSACHUSETTS, ASSIGNOR TO EDWARD B. LIGHT AND CATHARINE BAKER, OF SAME PLACE.

IMPROVEMENT IN ANNULAR STEAM-GENERATORS.

Specification forming part of Letters Patent No. 131,958, dated October 8, 1872.

To all whom it may concern:

Be it known that I, GEORGE L. LAFLIN, of Westfield, Hampden county, Commonwealth of Massachusetts, have invented an Improved Steam-Generator and Water-Heater, for house-warming purposes, of which the following is a specification:

My invention relates to the construction of an apparatus for house-warming purposes that may be used either to generate steam or heat water, to be conveyed by pipes to the desired points, and consists in the arrangement, within a boiler-case and above the fire, of concentric reservoirs for the reception of the water to be heated, spaces being left between these reservoirs to form fire-passages, and the reservoirs being connected severally to each other by piping to form water communications, and at points above the water by piping to a steam-receiver above the boiler, where the steam is accumulated in quantity for use. My invention also relates to the arrangement, in connection with the reservoirs, of a chamber above and communicating with the same, and having its inner surface concave, so as to concentrate and deflect the heat over the tops of the reservoirs, for the purpose of increasing the heating-surface and more perfectly utilizing the heat; and my invention also relates to the combination, with the above-mentioned parts, of a boiler-cap, constructed so as to form also a drum to store the steam and present a large interior surface to the contact of the heat.

In the drawing, Figure I is a sectional elevation; and Fig. II, an end view of my heater having the top portion removed.

The object of my invention is to form a heater that shall be peculiarly adapted for house-warming purposes, by having in the minimum amount of room the water-space, the flues for conducting the heat, the fire box, and the reservoir for the retention of a body of steam, so arranged as with little fuel to supply all steam needed, and be practically easy of construction. I arrange within an upright boiler-case, E, made double, as seen in Fig. I, to contain part of the water to be heated, a series of continuous water-spaces placed concentrically to the case E, and having their bottoms sufficiently raised within the case E to leave the fire-box H. These reservoirs F G I

are in effect connected with each other by being severally connected to the one, E, by the pipes *f g i*, to secure the water communication, and by pipes *a b c* above the water-line. Similarly connected ports are formed to conduct the steam to the drum D. The height of water may be determined by an ordinary float-valve, and indicated by a water-gage. In the concentric arrangement of reservoirs spaces are left between each as a fire-flue, and in order that the heat may be made to come directly in contact with the tops of the reservoirs F G I, as well as with their other three sides, and in order to provide an auxiliary chamber for the reception of steam, where it may be superheated if desired, I place above the reservoir I and connected to it by the port *b'*, the steam-chamber, V-formed to have its concave under surface deflect the heat rising through the flues over the tops of the reservoirs F G I before allowing it to escape past its sides and over its top surface, as indicated by the arrows in Fig. I, this chamber V, thus, by its construction and arrangement relative to the flues and reservoirs, enabling steam to be produced and kept with a small expenditure of fuel. The outer case E and inner reservoirs may be formed angular or of any curve, though in practice I form them cylindrical and cast them of iron, each entire, and each with two or more lips, *d*, to rest upon corresponding ones upon its next cylinder, so that the one, F, being suspended within the one, E, holds the next, when inserted in place. The cylinders, when arranged in place, are tapped from the outside of case E and severally connected to it and to the drum D, the pipes serving to hold all of the cylinders and case together. The chamber V and drum D I also cast, and the latter is fitted to and securely clamped to the top of case E. If desired, a flue may be carried through the center of reservoir I, and the chamber V be connected with any other of the inner reservoirs without any of its functions being thereby changed. In this generator the hot water may be forced through the heating-pipes of a building, or steam alone, and the steam may be made to blow off at a pressure less than that exerted by the head of water from a hydrant or cistern used to fill the boiler.

Now having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The arrangement within the case E of the series of concentric reservoirs, constructed substantially as described, and connected severally to the case E and drum D, for the purpose as specified.

2. In combination with the reservoirs F G I and with the flue-passages between them,

the chamber V, constructed and arranged substantially as shown.

3. In combination with the reservoirs E F G I and with the chamber V, the drum D, constructed to form with top surface of chamber V the flue m.

GEORGE L. LAFLIN.

Witnesses:

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