J. B. HYZER.

Heat Radiator.

No. 54,912. Patented May 22, 1866.

Fig: 1.

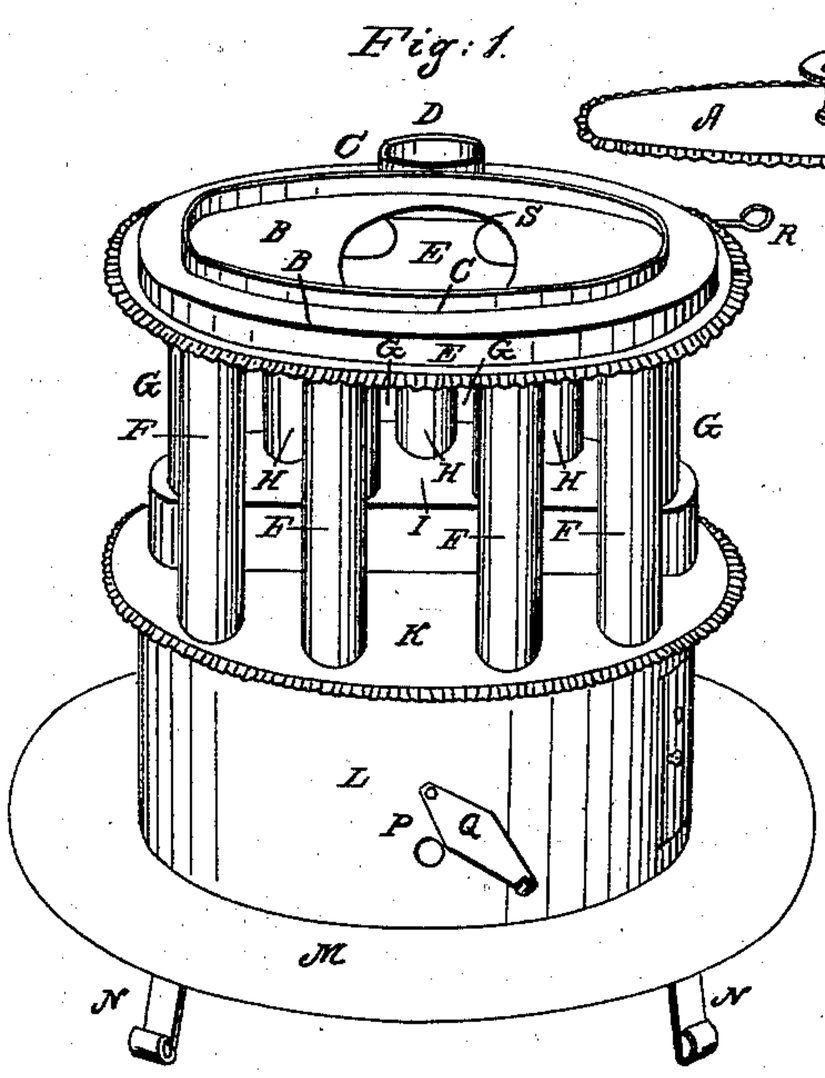


Fig: 2.

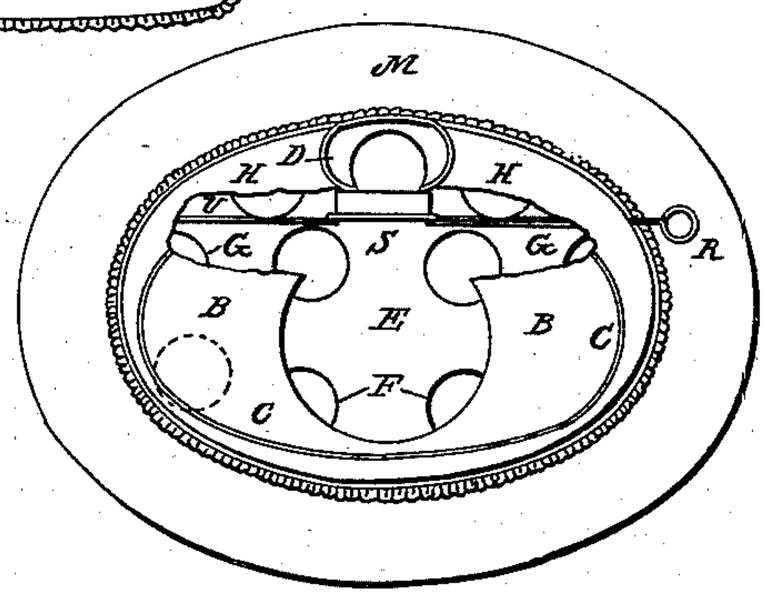


Fig: 3.

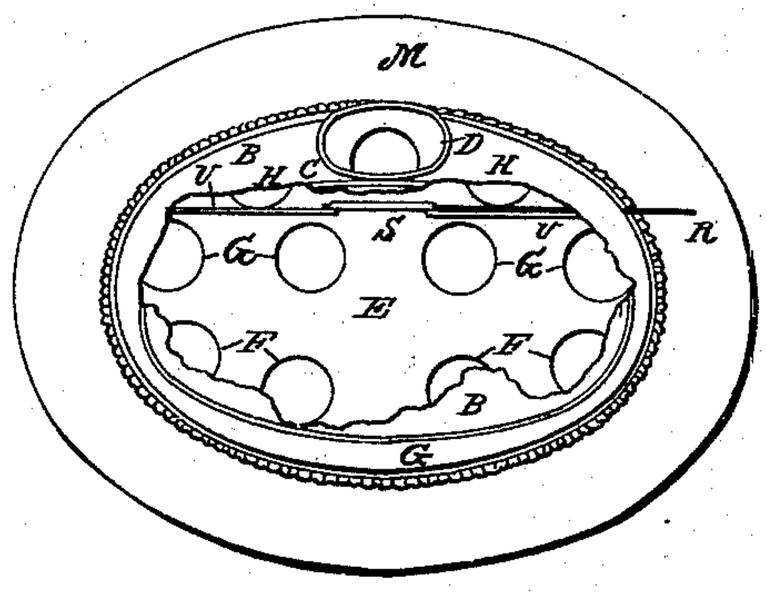
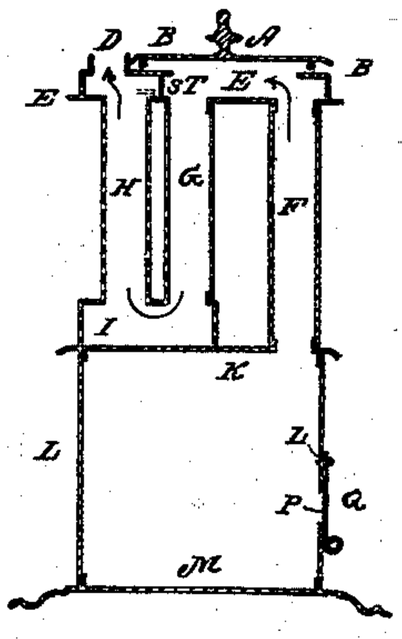


Fig: 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

JACOB B. HYZER, OF JANESVILLE, WISCONSIN.

HEAT-RADIATOR.

Specification forming part of Letters Patent No. **54,912**, dated May 22, 1866.

To all whom it may concern:

Be it known that I, JACOB B. HYZER, of Janesville, in the county of Rock and State of Wisconsin, have invented a new and Improved Heat-Radiating Attachment to Stoves; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view with the cover A removed. Fig. 2 is a top view with the cover A removed and a portion of the upper plate, B, broken away, showing the damper S turned down or back. Fig. 3 is also a top view similar to Fig. 2, except the damper S is turned up. Fig. 4 is a transverse vertical section, showing the arrangement of the flues and air-chambers.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

I construct the fire-chamber or stove L of any desired form or pattern and of any suitable material, providing it with the necessary appendages, as a door, O, for the admission of fuel, a suitable support, as the legs N, and an orifice, P, with a closing-cap, Q, to regulate the admission of air.

On the stove I construct the chamber I, which may either rest on the upper plate, K, or mainly cast in connection therewith.

From the stove (usually from the front portion) I run a series of flues, F, that connect the stove with a hot-air chamber, T, Fig. 4, which hot-air chamber is formed between the plates B and E. The chamber T is also connected to the lower chamber, I, by means of two series of flues, G and H, and is divided by the partition U into two separate apartments connected by the damper S. The two series of flues F and G open into the front apartment of this chamber, while the other series, H, opens into the rear apartment, from whence issues the smoke-pipe D.

The damper S is operated by the rod R, and the chamber I should have an orifice in its end or rear portion to allow the soot and ashes that collect in the chamber to be removed.

When the stove is in operation, by opening the damper S (by turning it down or back to the position shown in Fig. 2 and by dotted lines in Fig. 4) a direct draft is obtained from the stove through the series of flues F into the front apartment of chamber T, and thence through the rear apartment into the smoke-flue D; but by closing the damper S (by turning it up to the position shown in Figs. 3 and 4) the heated air, smoke, and flame must pass up the series of flues F into the front apartment of the chamber T, thence down through the series of flues G into the chamber I, thence up again through the series of flues H, and thence into the smoke-flue D.

It will be observed that a heat-radiating attachment to stoves constructed as herein described possesses a greater amount of direct radiating-surface, or of surface in connection with which the air to be warmed is brought, than the heat-radiating attachments now in use, and consequently its heating capacity is greatly increased.

It will also be observed that the hot-air chambers T and I increase the absorption, and consequently the radiation, of heat, inasmuch as the currents in the flues do not pass continuously through the chambers, but are thereby broken into eddies, or in a measure cease.

The nature of my invention consists in the employment, in connection with a series of ascending flues from the stove, of a hot-air chamber, with a partition and damper so arranged that when the damper is open a direct draft is had from the stove, through the flues and chamber, into the smoke-pipe; but when the damper is closed the heated air, smoke, and flame must pass from the chamber through a second and descending series of flues into another hot-air chamber, and thence through a third or return series of flues into an apartment of the first chamber, from whence the smoke, bereft of most of its caloric, is allowed to escape into the smoke-pipe.

I am aware that ascending and descending flues have been used, and I do not claim them apart from the manner in which they are used; but

What I do claim, and for which I desire Letters Patent of the United States, is—

The combination and arrangement of the flues F and hot-air chamber T (when constructed with the partition U and damper S) with the flues G, hot-air chamber I, and return-flues H, substantially as and for the purpose set forth.

JACOB B. HYZER.

Witnesses:
S. D. LOCKE,
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