

S. GARDINER, Jr.
Ventilating Reflectors.

No.149,388.

Patented April 7, 1874.

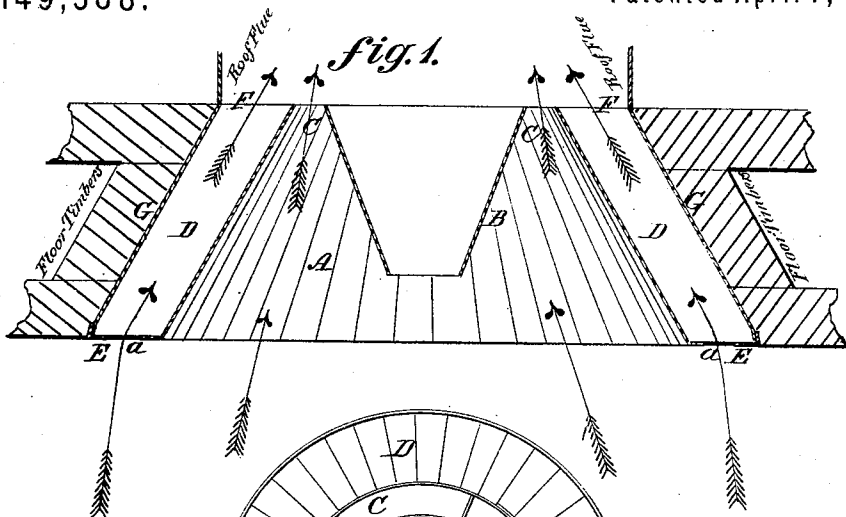


fig.2.

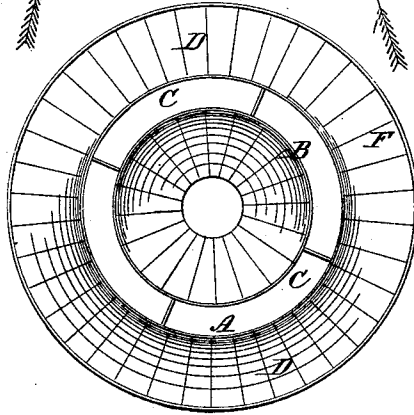
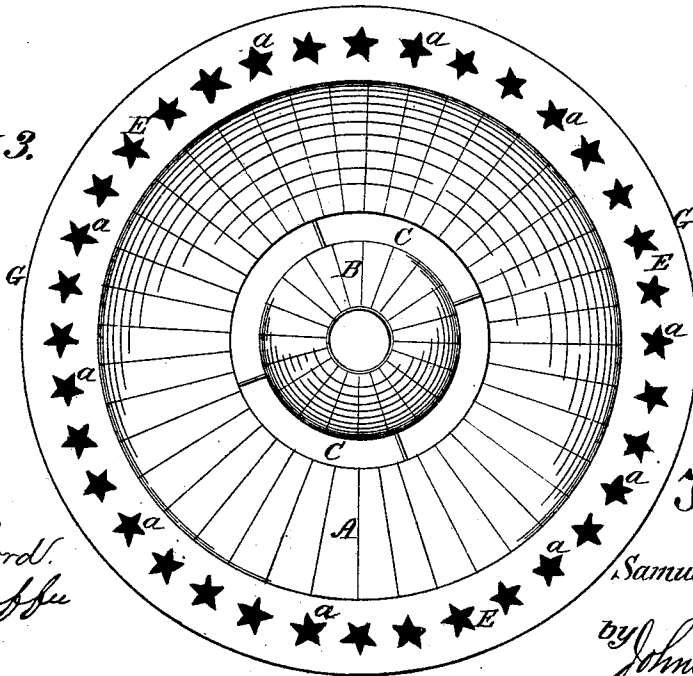


fig.3.



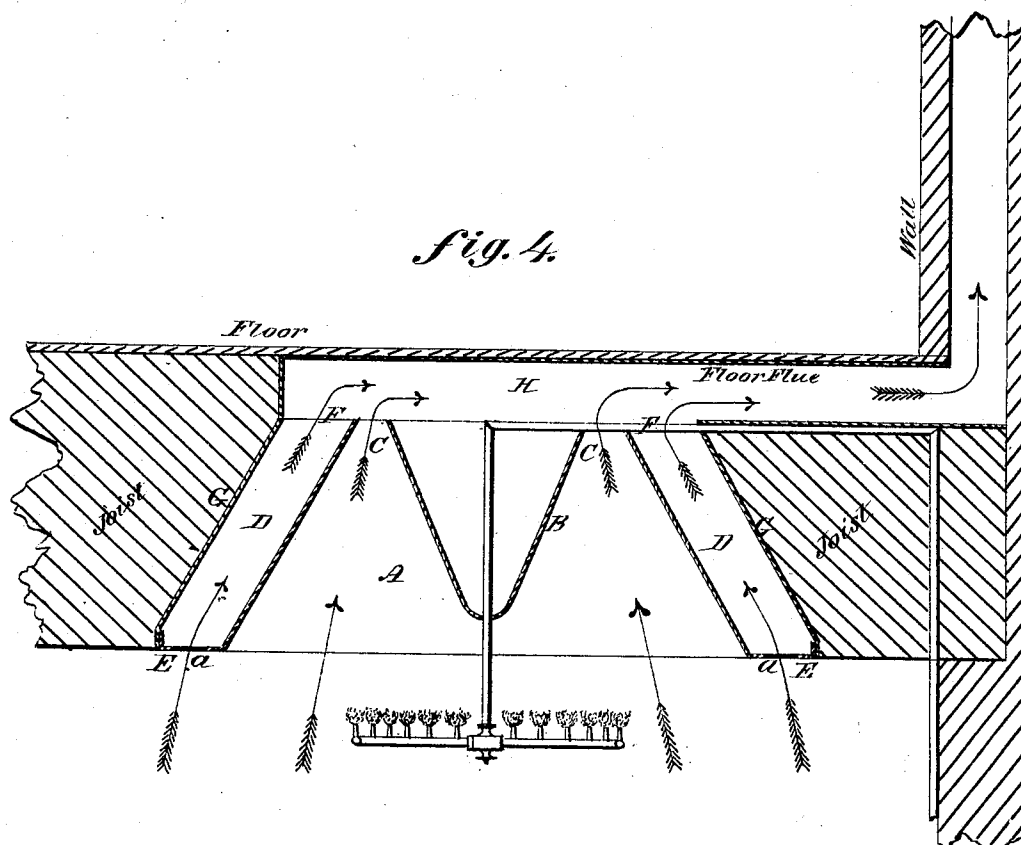
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UNITED STATES PATENT OFFICE.

SAMUEL GARDINER, JR., OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN VENTILATING-REFLECTORS.

Specification forming part of Letters Patent No. **149,388**, dated April 7, 1874; application filed February 11, 1874.

To all whom it may concern:

Be it known that I, SAMUEL GARDINER, Jr., of Washington, in the District of Columbia, have invented certain new and useful Improvements in Ventilating-Reflectors, of which the following is a specification:

In reflectors which are inserted in openings in the ceilings of rooms, the case which forms the reflector is fitted closely to the timbers of the ceiling, and the heated air escapes into a ceiling or floor flue by an open space surrounding an inner inverted cone of the reflector, as shown at C C in the central inverted cone, Fig. 1, of the accompanying drawings. The case of the reflector becomes highly heated from the gas-burners, and endangers firing the wood-work to which the reflector-case is fastened, while the ventilation through the opening C C is imperfect, as it only carries off the highly-heated air direct from the burners.

It is the object of my invention to avoid these serious objections and disadvantages attending this class of reflectors; and the means by which this is accomplished consists in the combination of a cold-air-ventilating chamber opening into the floor-flue at the top of the reflector and into the room at its bottom, with the reflector-opening and the said floor-flue, whereby the cold-air-ventilating chamber forms a junction at the floor-flue with the hot-air opening, which, producing a strong suction at this point, draws the cold air into the floor-flue through the cold-air chamber, and this avoids danger of fire to the floor-timbers where they join the reflector, and also keeps cool the flue running under the floor or ceiling, while the ventilation from the room is greatly increased by the means designed to render the walls of an inserted reflector fire-proof.

In the accompanying drawings, Figure 1 represents a vertical section of an inserted ventilating-reflector embracing my invention and as applied to a direct roof-flue; Fig. 2, a top view of the crown or apex; Fig. 3, a bottom view, showing the perforated flange; and Fig. 4, a similar section to Fig. 1, showing the junction of the hot and cold air flues at F with the ceiling-flue.

The reflector has the usual outer cone A and the central inverted cone B, through which passes the gas-pipe for the ring of burners, and forms the hot-air outlet C, between the two cones. Encompassing the outer cone-

reflector A, I form chamber D, the bottom whereof is closed by a perforated flange, E, or grating, the openings *a* wherein are sufficiently numerous to make ample communication with said chamber D and the hall, and which communication is separate and distinct from the central hot-air outlet. The chamber D is open at the apex F of the ventilator, and joins the central outlet C in the ventilating escape-flues. This surrounding chamber D is, therefore, interposed between the outer cone A and the ceiling or wall-casing, for the formation of a distinct draft of cold air direct from the hall, which, meeting the hot draft from the ventilator at the top, neutralizes the heat to a great degree, and thereby causes a strong upward current by suction through the cold-air chamber, thereby separating the burner-ventilator entirely from contact with the wood-work and maintaining the escape-flues comparatively cool.

When the receptacle for the reflector is plastered it forms the outer wall of the cold-air chamber; but in the absence of such outer wall I combine with the lower perforated flange an outer metallic casing, G, which is seated upon and fitted to the outer edge or rim of the flange E, and terminates on a level, or thereabout, with the crown of the reflector.

I prefer to use this outer metallic casing, because it affords greater security against fire; but the formation of the independent cold-air-ventilating chamber is not dependent upon its employment.

The flange in the example shown forms a part of the reflector and the bottom of the cold-air chamber; but it is obvious that it may be dispensed with, and the outer wall of the reflector and the outer wall of the cold-air chamber connected by cross-arms or grating in any suitable manner which will permit of open communication of the cold-air chamber with the hall.

I claim—

The combination of the reflector-plate, the wall-casing and the central inverted cone B with the cold-air-ventilating chamber D, the hot-air outlet C, and the floor or escape flue, with which D and C form a junction at F, substantially as described, and to obtain the advantages stated.

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