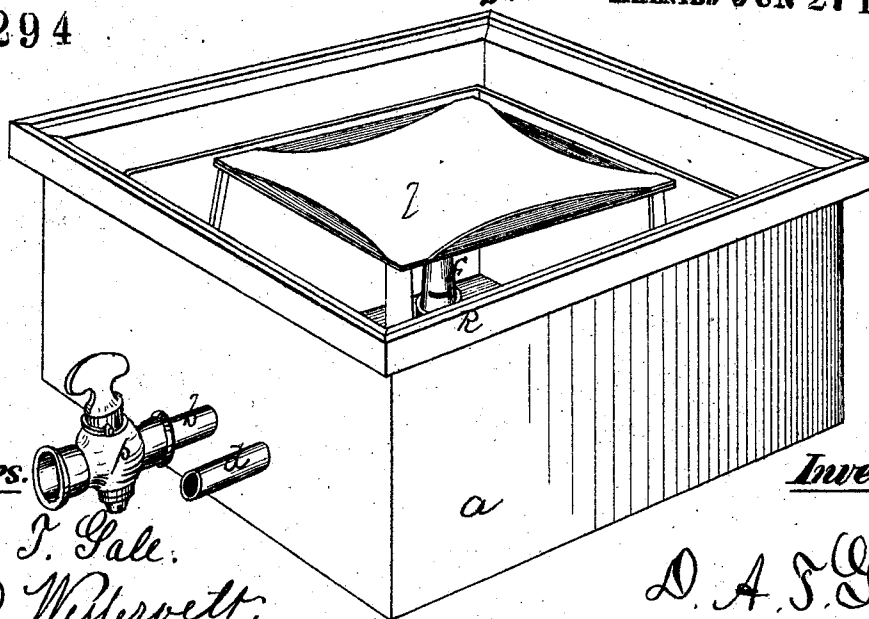


D.A.T. Gale's Heating Register.

116294

Fig. 1.

PATENTED JUN 27 1871



Witnesses.

Edwin J. Gale.
Edward Westervelt.

Inventor.

D. A. T. Gale.

Fig. 3.

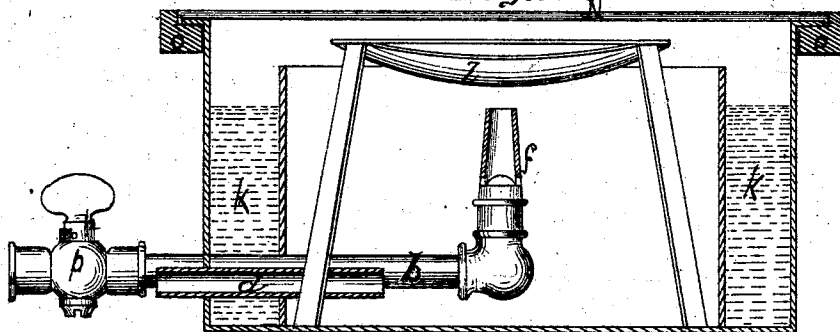
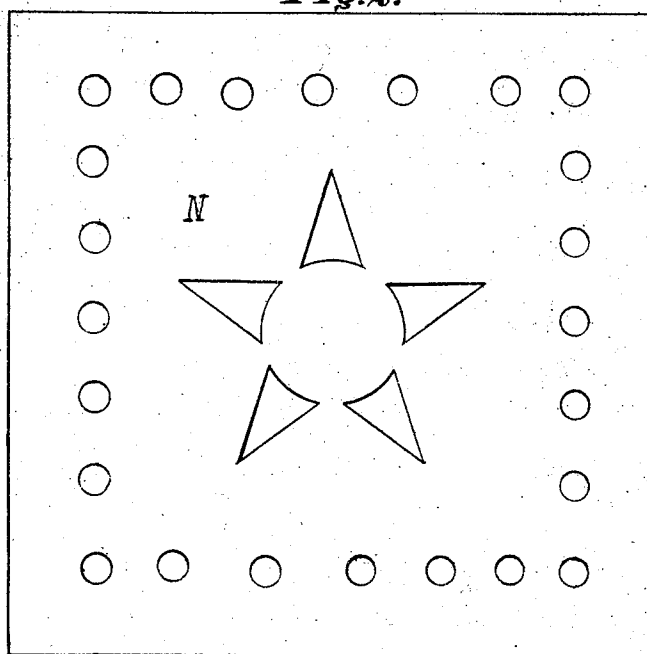


Fig. 2.



UNITED STATES PATENT OFFICE.

D'ALEMBERT T. GALE, OF FORT WAYNE, INDIANA.

IMPROVEMENT IN HOT-AIR REGISTERS.

Specification forming part of Letters Patent No. 116,294, dated June 27, 1871.

To all whom it may concern:

Be it known that I, D'ALEMBERT T. GALE, of Fort Wayne, in the county of Allen and State of Indiana, have invented a new and useful Device for Heating Rooms, Cars, &c., by means of a Heating-Register.

This invention consists in the construction of registers suitably arranged in the floor or otherwise in such a manner that heat may be generated therein by the agency of gas or gasoline, or other suitable heating agent—preferably gas—thereby obviating the expense of stoves or cellar-heaters, and the labor and care of fires of coal or wood fuel. This I accomplish by fitting in the floor a metallic box of size adapted to the surface to be heated, similar to those used in connection with cellar-heaters, with the difference that the heat is generated in the register direct by providing the register-box with pipes and burners. The register-box is also provided with a water-reservoir, which protects damage from overheating, and supplies the air in the room with a desirable moisture. The burner-pipes may connect with pipes in the house, or they may have a separate retort; or, for heating cars, they may attach to the gasoline-retort, which would supply both light and heat. The pipes and burners are provided with cocks to regulate the volume of the heating agent. The register-box is also supplied with an air-pipe to supply air in combustion of the fuel. The burners are provided with a shield of metal or other suitable material. This shield receives the direct blaze, and it serves as a retainer. It also radiates and modifies the rankness of the heat. It also serves as an auxiliary in making a perfect combustion of the fuel. This shield may be made solid, flat, or double, or concave—preferably concave—and forming a vacuum. It is made portable, and can be removed to inspect the burners, or, when necessary, for cooking purposes. The water-reservoir may be cast stationary with the register-box, or separate, which is preferable. When thus arranged it warms a room effectually and economically. It makes an even, pleasant heat, perfectly inodorous.

To enable others skilled in the art to make

and use my invention, I will proceed to explain more fully how I construct it.

Figure 1 is a view of the register-box with the top bearings removed, showing the pipes, burners water-reservoir, and the shield. Fig. 2 is a view of the top or surface plate which covers the register-box, and is provided with openings to allow the heat to radiate. Fig. 3 is a view of the frame upon which the register-box rests, having a raised margin into which the top or surface plate rests.

In the construction of my invention I make a box of sheet-iron or any suitable material, with an open top, and with a margin for a rest. I then introduce the gas and air-pipes, burners, and water-reservoir, as follows: Box *a* being adjusted, it is placed in the floor, and rests on the frame *R*, which is cast to fit with margin *o*. The gas-pipes *b* and air-pipes *d* are placed through perforations made in one side of box *a* at a convenient point for attachment. I then attach burner *f*—any gas-burner—which takes in with the gas a proper proportion of air to make a perfect combustion without smoke. I then place the reservoir *k*, which may be of any shape or material desirable. I fill this reservoir with plain water or lime-water in order to moisten the atmosphere in the room, and to make it odorless. It also protects the register from overheating. I then place my shield *l* over the burner *f*. This I form, in this case, of sheet metal, one side concave and double, so as to make a vacuum, and I shape offsets thereon so as to allow the bottom surface of shield *e* to come within about one inch of burner *f*. The air-pipe *d* may extend just to the outside surface of box *a*; or it may extend to the outside of the building, the object being to supply the burner and room with a continued supply of fresh air. The cocks *p* I place at any point requisite to regulate the flow of the heating agent. The register being thus completed, I place the surface or top plate *N*, which is of cast-iron, to fit with openings, as seen in Fig. 2. I then apply a taper to the burner, and the heat flows immediately.

This is a device long needed, especially for sick rooms, where an even temperature of heat is de-

sirable. It is very pleasant, also, inasmuch as it dispenses with wood, coal, shavings, ashes, and smoke, and is also available at any moment for cooking, heating, &c.

Having thus described my invention, what I wish patented is—

1. Air-pipe *d*, in combination with register-box *a*, as described, and for the purposes set forth.
2. Register-box *a*, pipes *b* and *d*, cocks *p*,

burner *f*, reservoir *k*, shield *l*, and surface plate *N*, in the manner described, and their adaptation for heating rooms, cars, &c., substantially as set forth.

D'ALEMBERT T. GALE.

Witnesses:

EDWIN T. GALE,

EDWARD WESTERVELT.