(No Model.)

P. I. MILLER.

HOT AIR REGISTER.

No. 458,403. Patented Aug. 25, 1891.

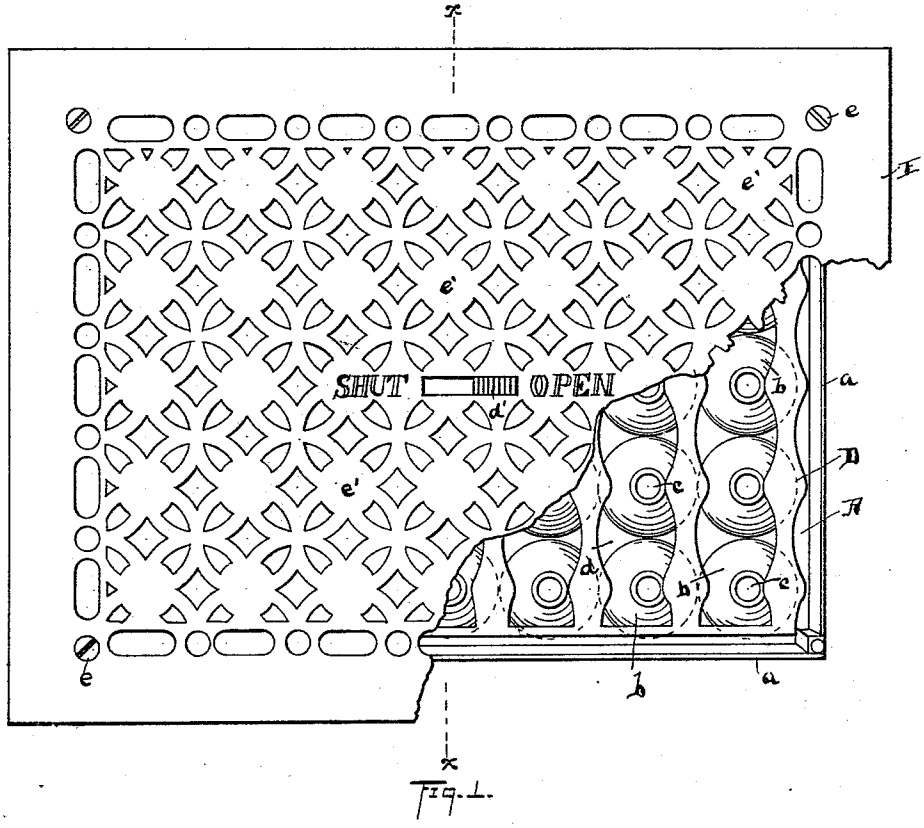


Fig. 1.

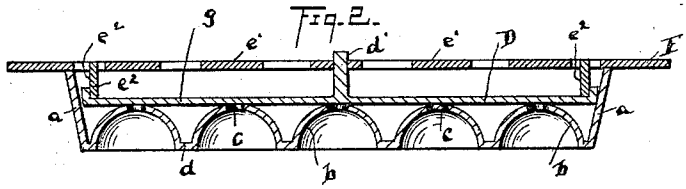


Fig. 2.

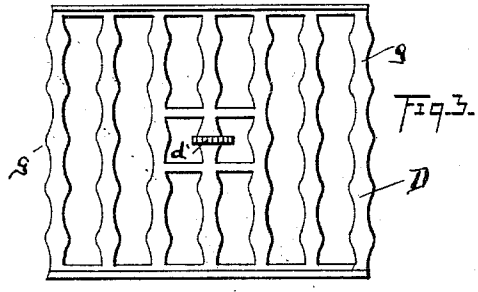


Fig. 3.

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UNITED STATES PATENT OFFICE.

PETER I. MILLER, OF CLEVELAND, OHIO.

HOT-AIR REGISTER.

SPECIFICATION forming part of Letters Patent No. 458,403, dated August 25, 1891.

Application filed December 26, 1890. Serial No. 375,907. (No model.)

To all whom it may concern:

Be it known that I, PETER I. MILLER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Hot-Air Registers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilledin the art to which it appertains to make and use the same.

My invention relates to hot-air registers, and is an improvement on the common and well-known style of register in which a series of vanes or slats are arranged to turn axially and to stand edgewise vertically when open and to lie down and overlap when closed. In this latter style of register the dust or dirt which unavoidably accumulates through the grating with which the opening is covered is always disturbed when the vanes are turned to open or close, and hence when the register is opened does it especially occur that the dust thus raised is carried out into the room, where its presence at all times is offensive. This latter class of registers is further objectionable on account of the noise unavoidably occurring when they are opened and closed. My improvement is designed to overcome these objections and to furnish a register which will secrete the accumulating dirt until it is removed by hand, and which is quiet in operation, and simple, cheap, and convenient in construction.

To these ends the invention consists in a register having a pan provided with a series of openings about the bottom thereof and a sliding shut-off and a novel construction of grate or cover, all substantially as shown and described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of my improved style of register, with a portion of the cover broken away to disclose the parts beneath, the slide or shut-off being carried to the right to uncover the openings beneath. Fig. 2 is a cross-section of the register on line $x\,x$, Fig. 1, the slide or shut-off being in position to close the openings, and Fig. 3 is a perspective view of the slide.

The base of the register consists of a shallow pan A, provided, preferably, with slightly-flaring sides a and a series of substantially semi-spherical elevations b, arranged, preferably, in parallel rows and extending above its bottom surface c. These elevations are provided with openings d at their top of suitable size for the passage of heat or air. All of these elevations start from a common plane on the bottom of pan A, and are exactly even in height, so that they may all be uniformly and tightly closed by the sliding shut-off D. The tops of the said elevations are therefore flattened about the openings c, so as to give a smooth even surface for the shut-off and to make the closure complete; but it will be seen that by reason of this construction of the pan with the novel arrangement of the openings above its surface, substantially as shown, there is left an open space about each elevation extending to the bottom of the pan, which serves to receive and hold all the dust and dirt that may be deposited in the register. It will also be observed that when thus deposited it is where it cannot be disturbed by the operating mechanism nor caught up by the current of air rushing through the openings c, and therefore will remain quiet until the pan is taken out and cleaned. The sliding shut-off is formed with a series of parallel strips or bars g, corresponding in number and arrangement to the openings c in the several series of elevations, the said strips or bars being flat and smooth on their lower surface and slightly widened, as here shown, at the point where they cover the openings c, so as to make the covering complete. This shut-off rests immediately upon the tops of the elevations at all times, and being comparatively light and having its contact-surface limited to the tops of said elevations, it is easily moved back and forth and is practically noiseless in moving. The top plate or cover E is secured to the pan A by screws e at the corners and is designed to come flush with the floor, as in other registers. This pan may be made in any preferred ornamental design so far as its openings are concerned, but in any case should be so constructed as to cover the openings c, so as to prevent dirt or particles from dropping into the same. Thus, as shown in the drawings, the cover E is formed with the circular designs e, of standing material, which are so distributed and arranged as to come di-

rectly over openings *c*. This construction not only prevents anything from dropping into said openings, but also serves as a check to the air or hot currents rushing through said openings, and thereby diffusing the heat more thoroughly about the floor of the room than is possible in the old construction of register, in which the heat-currents shoot directly up to the ceiling. In my construction the currents are checked and diverted by the stops *e'* and the heat deflected, so that it escapes from the register in diffusing lines and warms the lower strata of cold air instead of going directly to the ceiling. I have also found that this style of register becomes hot when a current of hot air is passing through, and that it serves itself as a heater for a time after the furnace has been cooled by replenishing with coal, and when otherwise there would only be an escape of corresponding cool air. The shut-off D has a short central post *d'* working in a slot in plate E, by which it is moved back and forth within fixed limits to open and shut the register. As here shown, the cover E has downwardly-extending flanges *e'*, which bear lightly on the shut-off and keep it down closely in working position. These flanges may be located at or near the center, if preferred, or in any position where they will be found to serve their purpose. It will be seen that the entire register may be bodily removed or separated and removed in parts.

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

1. In an air or heat register, a bottom plate having perforations for the passage of air and heat and a wall about its sides, the top plate engaged by said wall, and a sliding shut-off in the chamber between said plates, substantially as described.

2. The pan-shaped bottom part having raised perforated portions for the passage of air or heat and a sliding shut-off over said perforated portions, substantially as described.

3. In a register, a bottom part having its surface formed with a series of separate elevations with openings in their top center and a shut-off, substantially as described.

4. In a register, the bottom pan having substantially semi-spherical elevations with openings in their top and a sliding shut-off, substantially as described.

5. The perforated bottom, the sliding shut-off, and the open-work top with standing material directly over the perforations in the bottom, substantially as described.

6. The pan-shaped bottom part having raised perforated portions scattered over its surface and depressions about said raised perforated portions on its top surface and a sliding shut-off formed with flat strips or bars to close said perforations, substantially as described.

7. The register herein described, consisting of the base having substantially semi-spherical elevations with central openings, an open-work sliding shut-off resting on said elevations, and an open-work cover having projections on its under side bearing upon the said shut-off, substantially as described.

Witness my hand to the foregoing specification this 9th day of December, 1890.

PETER I. MILLER.

Witnesses:
N. L. McLANE,
H. T. FISHER.