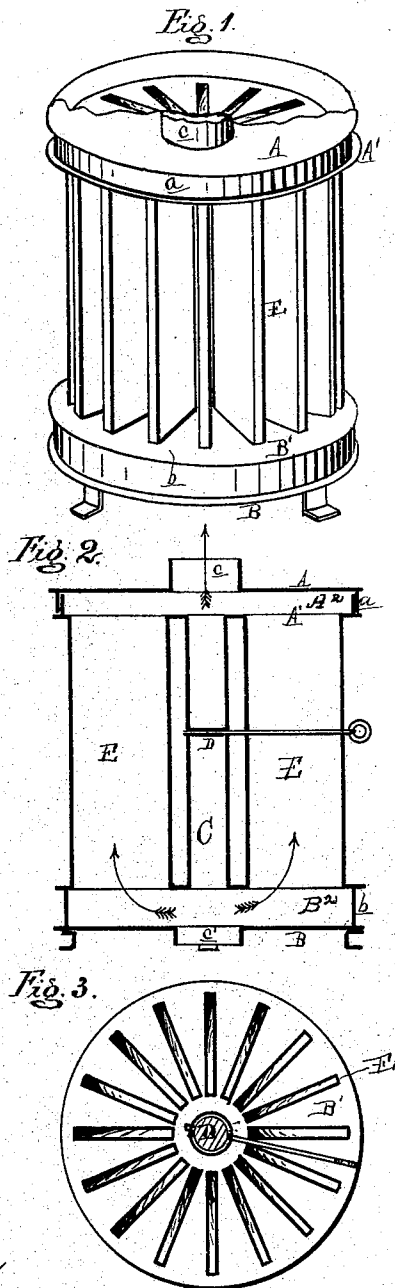


G. A. LATHROP & E. G. GODDARD.

HEATING-DRUM.

No. 176,968.

Patented May 2, 1876



Witness:
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UNITED STATES PATENT OFFICE.

GEORGE A. LATHROP AND EZRA G. GODDARD, OF EAST SAGINAW, MICH.

IMPROVEMENT IN HEATING-DRUMS.

Specification forming part of Letters Patent No. 176,968, dated May 2, 1876; application filed April 23, 1874.

To all whom it may concern:

Be it known that we, GEORGE A. LATHROP and EZRA G. GODDARD, of East Saginaw, in the county of Saginaw and State of Michigan, have invented a new and useful Radiator for Stoves and Furnaces, of which the following is a specification:

In all vertical stove-pipes and flues the core or central column of heated air and gases passes up without radiating the caloric, by contact with the walls of the pipe.

The object of our invention is to break up and subdivide this central core or column into thin sheets and compel the radiation of the heat by passing them through narrow radial chambers of thin sheet metal; and to this end our invention consists in the peculiar construction of the radiator, as more fully hereinafter set forth.

Figure 1 is a perspective view, with a portion of the top plate broken out. Fig. 2 is a vertical section at *x x* in Fig. 3, which is a horizontal section at *y y*.

In the drawing, A represents the top head; and B the bottom head, of our radiator, both of which heads are removable from their flanges *a b*, to facilitate the cleaning and removal of dust. A¹ is an inner head or flue-sheet at the top; and B¹, a similar flue-sheet at the bottom, the spaces between which and the heads A B form the top and bottom chambers A² and B². C is a central flue of the same diameter as the stove-pipe, extending through both inner heads or flue-sheets, and provided with an ordinary butterfly-damper, D. *c* is a collar around a central opening in

the top head A, to receive a joint of stove-pipe, and *c'* is a similar collar around a like opening in the bottom head. E are radial flues of thin sheet metal, connecting the upper and lower chambers. These flues are made as narrow as practicable in cross-section, so as to subdivide the ascending currents into thin sheets, which, being in contact with the metal at each side, readily yield up their heat, which is radiated into the apartment. The damper is to be opened when the fire is started in the stove, or when the heat from the radiator is not required.

It will be observed that the cross-sectional areas of the radial flues are equal in the aggregate to six times that of the central flue, so that the draft cannot be materially impeded or checked.

The radiator may be placed directly over the stove or heater, or in any apartment above or adjoining. The heads being removable the flues can readily be cleaned by passing a thin brush down them.

What we claim as our invention, and desire to secure by Letters Patent, is—

In a radiator, the combination of the chambers A² and B², a central flue, C, provided with a damper, D, and radial flues E, and the openings inclosed by the collars *c c*, all the parts constructed and arranged substantially as described and shown.

GEORGE A. LATHROP.
EZRA G. GODDARD.

Witnesses:

H. MILLER,
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