D. G. FLETCHER.

Radiator.

No. 27,950. Patented April 17, 1860.

Fig. 1

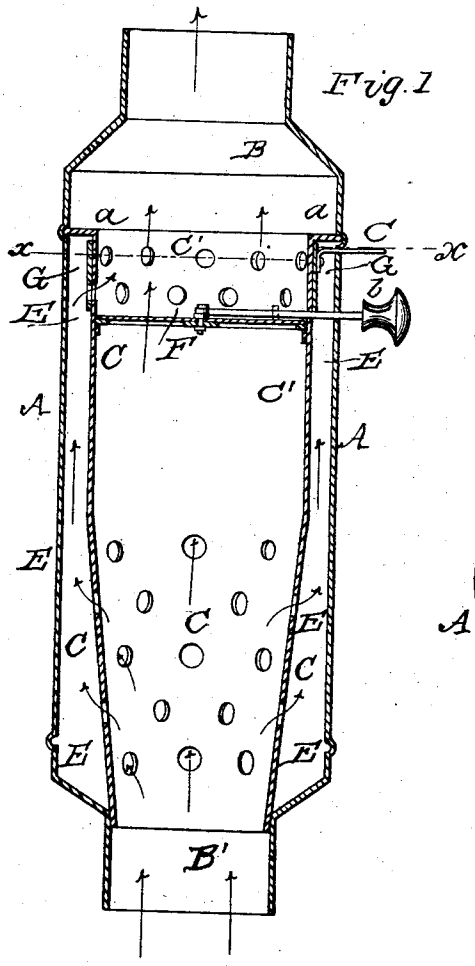
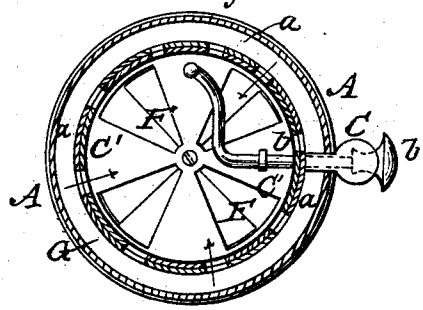


Fig. 2



WITNESSES

J. W. Coombs.

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UNITED STATES PATENT OFFICE.

D. G. FLETCHER, OF RACINE, WISCONSIN, ASSIGNOR TO HIMSELF AND JAMES YATES, OF SAME PLACE.

HEAT-RADIATOR.

Specification of Letters Patent No. 27,950, dated April 17, 1860.

To all whom it may concern:

Be it known that I, D. G. FLETCHER, of Racine, in the county of Racine and State of Wisconsin, have invented a new and useful Improvement in Heat-Radiators; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a vertical diametrical section taken through my improved heat radiator and draft regulating cylinder or drum. The direction of the heated air and smoke up through the same is indicated by arrows. Fig. 2 is a horizontal section taken through Fig. 1, as indicated by the red line *x*—*x*. In this figure the central register is shown partially open.

Similar letters of reference indicate corresponding parts in both figures.

This invention is an improvement in heat radiators, through which the smoke and heated air, ascending from a furnace or ordinary stove, situated in the lower story of a building is to be conducted for economizing fuel by abstracting the heat from the products of combustion in their upward passage, and radiating it into the room.

To enable those skilled in the art to fully understand my invention I will proceed to describe its construction and operation.

In the drawings, A represents a cylindrical drum with caps, B B′, to which the stove pipes are attached leading from a lower story to the chimney in the upper story.

C is a conical perforated interlining which increases in width from the lower cap, B′, to about midway of the drum, the sides, C, of this lining then continue up to the top or cap, B, parallel with the sides of the drum, A, and connects with this drum by a cap plate *a*, the whole forming a space, E, which is wider between the bottom of the drum and the lining, C, than between said drum and lining C′, as shown by Fig. 1.

F represents an ordinary register arranged within and near the top of the inner cylinder, C′, having a sliding handle, *b*, for opening or closing it, this is shown clearly in Fig. 2, above this register the cylinder, C′, is perforated, as shown by Fig. 1.

G is a perforated band arranged suitably around and near the top of the cylinder, C′, so that it (the band) will serve as a register for the flue space, E, by entirely or partially opening the perforations in the head of the cylinder, C′, above the register, F. *c* is a handle for moving the band, G.

The cylinders are to be made of sheet metal, while the register, F, may be of cast metal, and the whole fitted up so as to adapt it to its previous requirements in a building.

The operation of my invention will be fully understood by the following description: The register, F, is so arranged in the radiator that a direct draft may be obtained to the chimney when it is entirely open so that, in warm weather, when the room in which the radiator is arranged is not required to be heated, the smoke and heated air will pass directly up through the smoke pipe to the chimney and the space, E, between the inner and outer cylinder being closed by its register at the top of the drum, the air in this space will serve to a great extent as a non-conducting medium, and the heat will pass up the chimney without being radiated out in the room. In cold weather when the room is to be heated the radiation is controlled by partially opening the direct draft register, F, and creating a draft through space, E, by opening the register, G, so that the heated air, &c. will pass through the lower perforations in the conical cylinder, C, up through the space, E, and out again through the perforations above the register, F; thus the draft will be retarded, and, at the same time, the heated air will be conducted up between and from the bottom to the top of the two cylinders.

The object of giving a conical shape to the cylinder, C, is to allow free draft into the space, E, in the lower part of the drum, so that the heat will be freely thrown to the outer radiating surface, namely, the cylinder, A.

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

The arrangement and combination as herein shown and described of the perforated conical cylinder C, registers F, G, air space E, within the drum A, for the purpose specified.

D. G. FLETCHER.

Witnesses:
J. H. HINDS,
JOHN B. ADAMS.