

A. B. SMITH.

Radiator for Steam-Heaters.

No. 129,994.

Patented July 30, 1872.

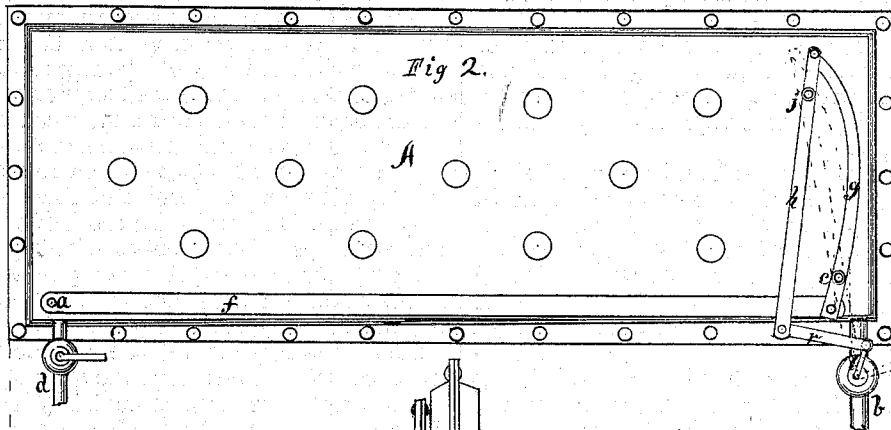
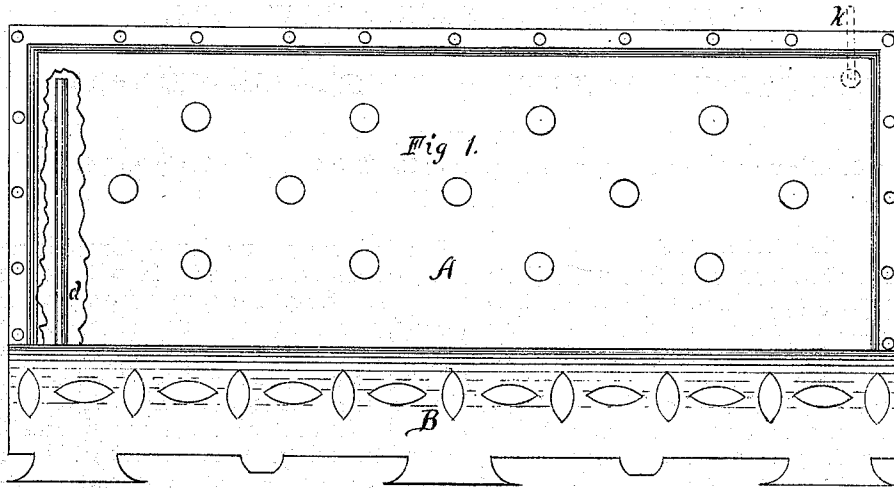
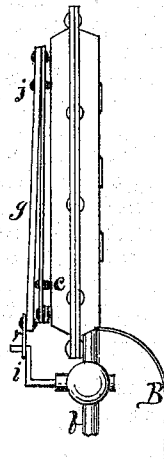


Fig. 3.



Witnesses.

J. A. Loughborough.
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Inventor:

A. B. Smith
by Wm. S. Loughborough
Att'y

UNITED STATES PATENT OFFICE.

AMOS B. SMITH, OF GENEVA, NEW YORK.

IMPROVEMENT IN RADIATORS FOR STEAM-HEATERS.

Specification forming part of Letters Patent No. 129,994, dated July 30, 1872.

SPECIFICATION.

Be it known that I, AMOS B. SMITH, of Geneva, in the county of Ontario and State of New York, have invented certain Improvements in "Radiators for Steam-Heaters," of which the following is a specification:

The object of my invention is to provide steam radiators with cheap automatically-acting governors to open or close the steam-valve; and it consists in actuating the latter by means of an expansion-bar, connected thereto by means of one or more multiplying-levers and a suitable connecting-rod.

Figure 1 is a front elevation of a radiator with an ornamental base. Fig. 2 is a rear elevation of the same, showing my invention attached. Fig. 3 is a right-hand-end elevation of Fig. 2.

The radiator A is preferably made of sheet metal. By means of the ornamental base B, Figs. 1 and 3, I am able to form the body of the radiator so as to descend at the lower edge from the steam-pipe to the drip-pipe, and by connecting the base to the radiator so as to expose an equal width of the latter at each end, as shown in Fig. 1, it may be set horizontally in the room instead of inclined, as heretofore made and used. The radiators may be made into long, narrow panels, and to constitute a portion of the entire base around the room. Upon the back side of the radiator I attach the expansion-bar *f*, of copper or other suitable expansive metal, which is rigidly attached at *a*, and the opposite end is pivoted to the lever *g*, the axis or fulcrum of which is at *c*, and its upper end is pivoted to lever *h*, whose fulcrum *j* is also fixed to the radiator or to a plate attached thereto. The lower end of lever *h* is pivoted to the rod *r*, connecting it with the stem *i* of the drip-valve. If desired, any ordinary air-valve may be used and attached, as indicated by the dotted lines at *k*,

Fig. 1; but my experience shows no necessity for an air-valve at all. It will be seen that the heat from the radiator will expand the bar *f*, and such expansion through the levers *g* and *h* will close the valve, the valve-crank being so set as to effect this result. The cooling of the radiator, as when the steam-supply is cut off, contracts the bar *f*, and thereby opens the valve, thus permitting the condensed steam to drip back into the water-space of the boiler and leave the radiator entirely empty and ready for use, to be immediately heated when the steam-valve is again opened for that purpose. It will be seen that this entirely obviates the necessity of waiting for the cold water to drip back into the boiler after letting on the steam before the radiator can be heated, as is the case with those heretofore in use. When a radiator is not required to be heated for any considerable length of time the rod *r* may be slipped off from the crank of the valve-rod, which permits the valve to be kept closed.

I prefer to extend the steam-pipe *d* well up in the radiator-case, as shown in Fig. 1, whereby the case may be made perfectly square and set horizontally, and yet the condensation in the case will not interrupt the steam-pipe.

The drip-valve may be centrally located, if desired, in which case the lower edge of the case may slope each way. The rod *r* may be provided with two or more holes for attachment to the crank of the valve-rod.

What I claim as my invention is—

The automatically-acting valve-governors for radiators of steam-heaters, composed of the expansion-bar *f*, levers *g* and *h*, and connecting-rod *r*, operating substantially in the manner and for the purposes set forth.

A. B. SMITH.

Witnesses:

PATRICK MCINTYRE,
THOMAS A. O'HARE.