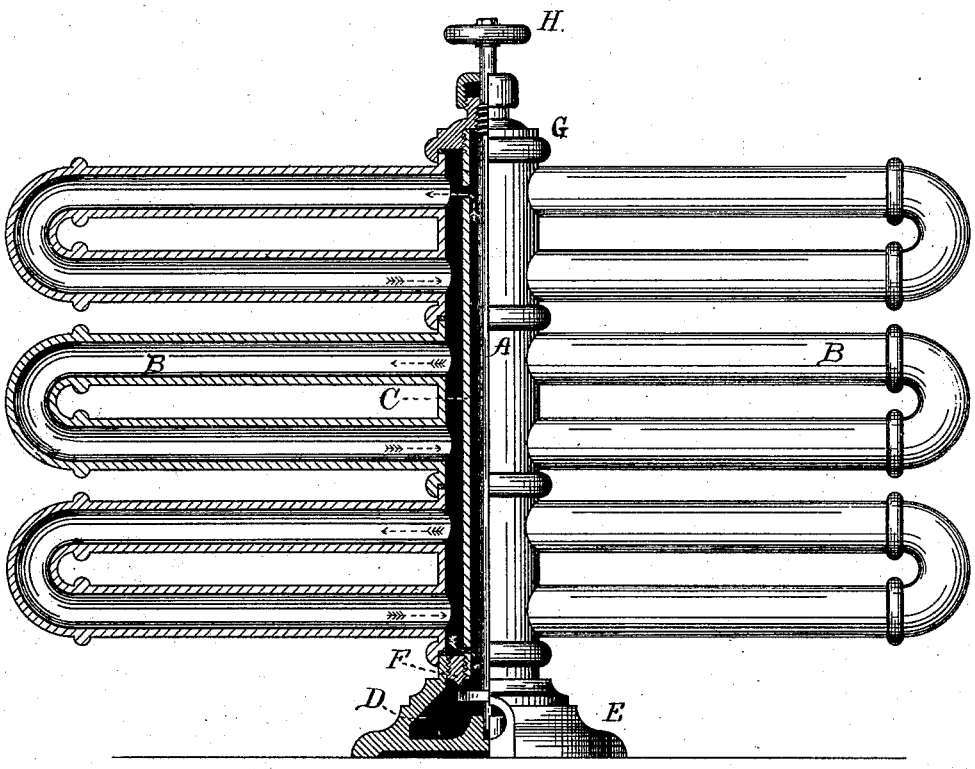
J. H. MILLS.
Steam-Radiator.

No. 198,036. Patented Dec. 11, 1877.



Attest

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UNITED STATES PATENT OFFICE.

JOHN H. MILLS, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN STEAM-RADIATORS.

Specification forming part of Letters Patent No. **198,036**, dated December 11, 1877; application filed April 27, 1877.

To all whom it may concern:

Be it known that I, JOHN H. MILLS, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Steam-Radiators, which improvements are fully set forth in the following specification and accompanying drawing.

The object of this invention is to simplify the construction and operation of cast-metal radiators, so that, by making the sections of certain form, the weight may be less without reducing the strength of the casting, while the arrangement of the central vertical chamber provides a way of joining the sections together with so little labor as to largely reduce the cost of producing a foot of heating-surface in this material.

In the construction of steam-radiators placed in the rooms to be warmed, two difficulties are met with. If made of wrought-iron tubes, they are generally screwed vertically into a chambered base, which, resting on or close to the floor, is poor heating-surface of itself, preventing the best contact of air with the tubes, and necessitating two joints for nearly every single foot of surface. The ends of these vertical tubes must also be covered by an iron or other cap, which increases the cost without increasing the heating-power.

If constructed of cast-iron, the sections are generally heavy, and the number of joints, whether "faced" or "screwed," prevents any reduction in the cost.

It is to this last class that my invention relates, and to the further improvement of having but one valve (a part of the construction) with the hand-wheel at the top of the radiator, easily reached without stooping, and not liable to leakage.

I construct my improved sectional radiator with a central vertical chamber, A, as shown in the drawing, from the sides of which are horizontally projected the tubes B, or such other surface as may be found most desirable, the vertical chamber being in communication above and below around the central tube C, which binds the several sections together.

The advantages of this sectional central construction are that very light castings may be made and joined together with the least possible cost. No labor is required to prepare the joints, a flexible packing answering every purpose, as there is no strain from undue expansion. The sections and other portions can be shipped separately and put together, where used, by any mechanic with a common wrench. Floors and carpets are less encumbered and liable to damage.

The construction of the foot E, having a chamber, D, within the same, with valve-seat F at the top, reduces the cost of even the one valve, and allows the hand-wheel H to be placed in a most convenient position.

I do not confine myself to the precise form of radiating-surface here shown, as the sections may be of any other desired form consistent with a vertical central chamber, through which the whole work of supply and return is effected.

I am aware that heaters have been made with a central body having radial arms in one casting for the entire radiator. I do not claim this construction, but the sectional construction shown, by which means the pieces may be shipped directly from the foundery, and be combined as desired at the place where used.

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

1. A steam-heating radiator, having a series of receiving and returning arms, B, projecting horizontally from the central vertical supply and return chambers A, which, being combined and held together by a central tube, C, or its equivalent, operate substantially as shown and described.

2. In a steam-radiator constructed of vertical sections, having a central supply and return chamber, A, surrounding the induction-tube C, the single joint or point of contact between each two adjoining sections, as shown and described.

3. In sectional steam-radiators the combination of a steam-chamber, D, in the foot E, the central tube C binding the sections together, supplying steam to the top of the radiator, and receiving the water of condensa-

tion at the bottom, the seat F of the valve being secured to one end of said tube and the cap G to the other end, as shown and described.

4. The combination, in a steam-radiator, of a hollow foot or base, E, a central vertical steam-induction tube, C, within the central vertical sectional return-chamber A, the tube C conducting the steam to the top section, which in turn supplies the steam downward to its neighbor, as shown and described.

JOHN H. MILLS.

Witnesses:
ALBERT H. DENNETT,
WILLIAM N. GODDARD.