J. J. LAWLER.

STEAM-RADIATORS.

No. 193,877. Patented Aug. 7, 1877.

Fig. 1.

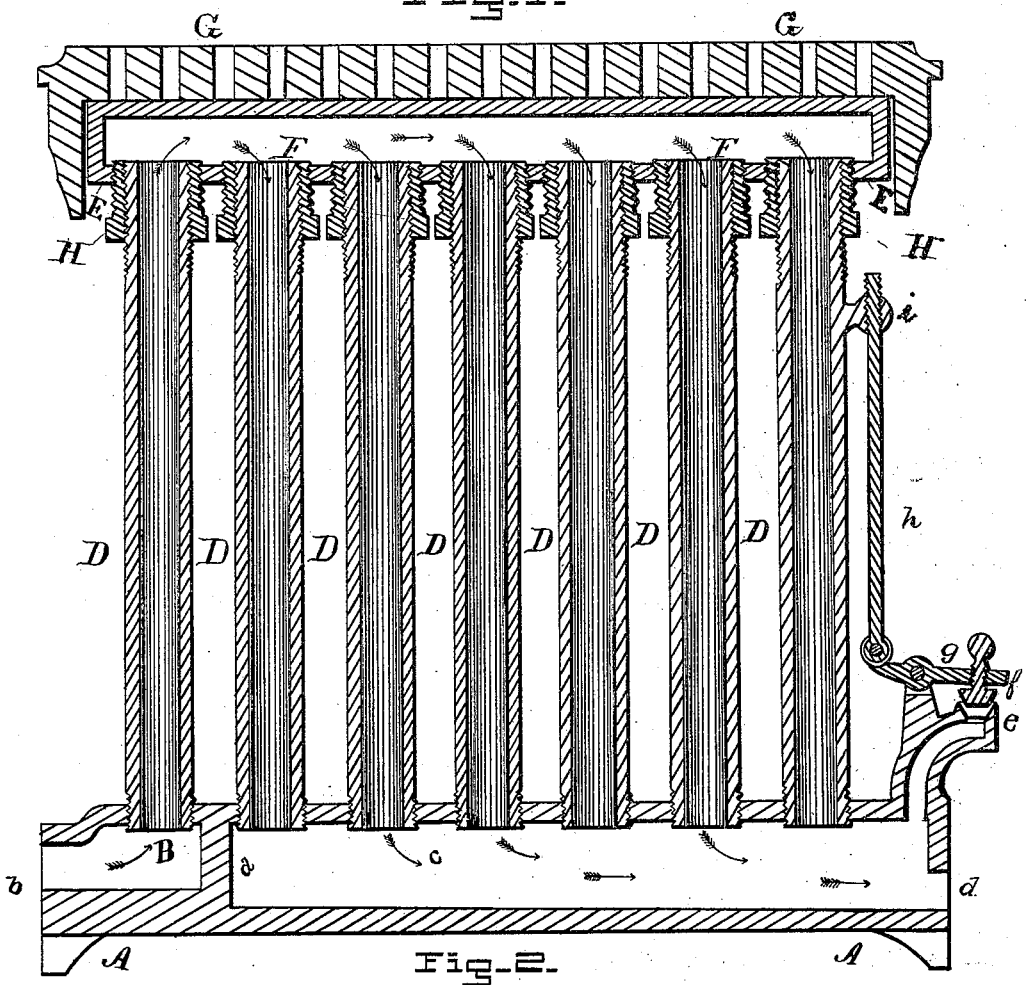
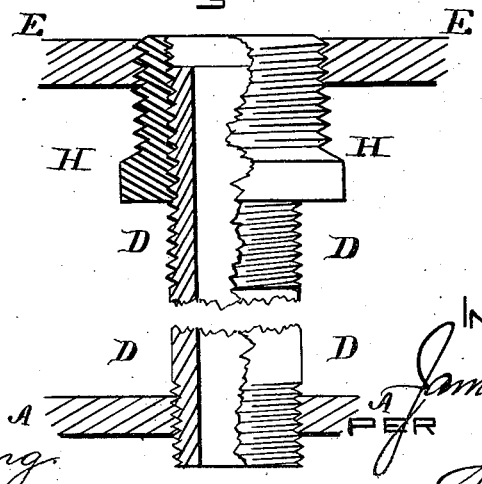


Fig. 2.



WITNESSES:

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JAMES J. LAWLER, OF SCRANTON, PENNSYLVANIA, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO J. W. BROCK, OF SAME PLACE.

IMPROVEMENT IN STEAM-RADIATORS.

Specification forming part of Letters Patent No. **193,877**, dated August 7, 1877; application filed June 27, 1877.

To all whom it may concern:

Be it known that I, JAS. J. LAWLER, of Scranton, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Steam-Radiators; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain improvements in steam-radiators; and the invention consists in the special construction and arrangement of parts, hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, reference being had to the accompanying drawing, which forms a part of this specification, and in which—

Figure 1 is a central vertical longitudinal section, and Fig. 2 is an enlarged vertical section of one of the joints.

A represents the base, which is divided into an inlet-chamber, B, and an outlet-chamber, C, by a partition, *a*, placed near one end between the first and second of a series of pipes, D, which extend from the base to the top E. The top E has but one chamber, F, with which all the pipes D communicate, and is surmounted by a cap-piece, G. The chamber B has an inlet, *b*, through which all the steam passes that is admitted into the radiator, and the first one of the series of pipes D has an outlet, which conveys the steam to the chamber F, from which it may descend through any one of the remaining pipes D to the chamber C. The chamber C has an inclined bottom for draining the radiator of condensed steam off through the exit *d*. The pipes D are provided at both ends with screw-thread, the upper end fitting into a bushing having an inner thread the required size to receive the end of the pipe, and an outer thread of a larger size that fits the thread in the opening of the upper chamber. Above the outlet *d* is located a valve for the admission of air when the steam is condensed and the radiator cooled. This valve consists of a suitable seat, *e*, and valve *f*, attached to a pivoted lever, *g*. This lever has a rod, *h*, attached to the end opposite the valve, whose upper end is secured to a projection, *i*, from one of the pipes D.

When the pipe D is heated it expands, elevating the projection *i*, which carries the rod *h* with it, which act closes the valve. The cooling of the pipe lowers the projection, which opens the valve and lets in the air. A very slight movement of this valve is sufficient for the purpose, and the slowness of the process permits the air in the generator to escape as the generator fills with steam.

In constructing this radiator the end of each pipe is screwed about an inch into the bushing. The bushing is then screwed into the top E, and screwed up to within a short distance of its final resting place. The lower end of the pipe is then screwed into the base to its proper position. The bushing is then screwed up tight. Its thread being larger than that of the pipe, it will cause the bushing to travel farther into the top E than on the pipe D at every revolution, thus drawing upon or binding the threads of the pipe both in the base and top, forming thereby a tight joint.

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

1. In a steam-radiator, the combination of a pipe and bushing, having an outer thread larger than its inner thread, with the base and top piece, as and for the purpose specified.

2. The combination of a steam-radiator with a valve and fulcrumed lever attached to the radiator, substantially as shown and described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JAMES JOSEPH LAWLER.

Witnesses:
W. H. TONKIN,
J. J. MULLEN.