(No Model.) 2 Sheets—Sheet 1.

# S. D. TOMPKINS & J. N. MATLOCK.

## HOT WATER OR STEAM RADIATOR.

No. 323,235. Patented July 28, 1885.

Fig 1

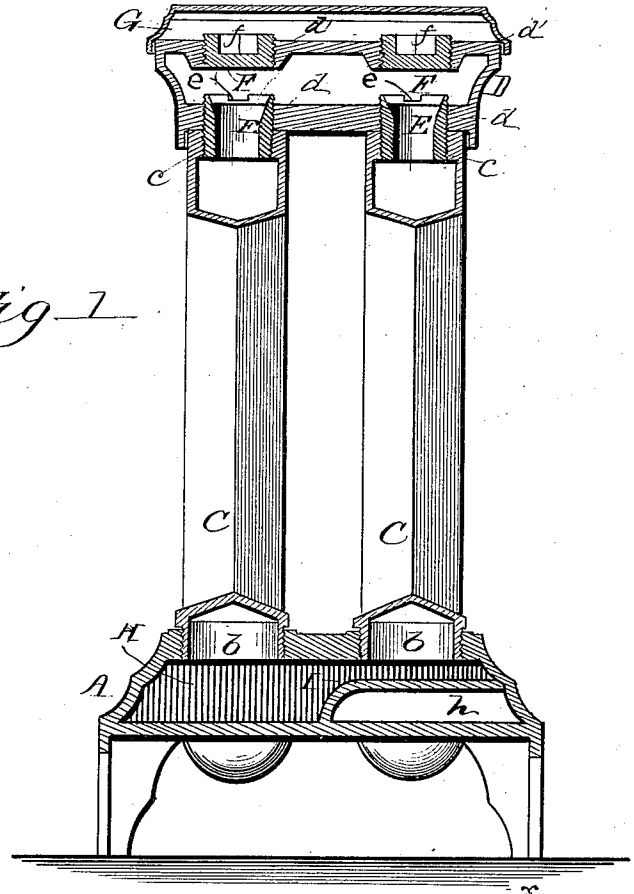
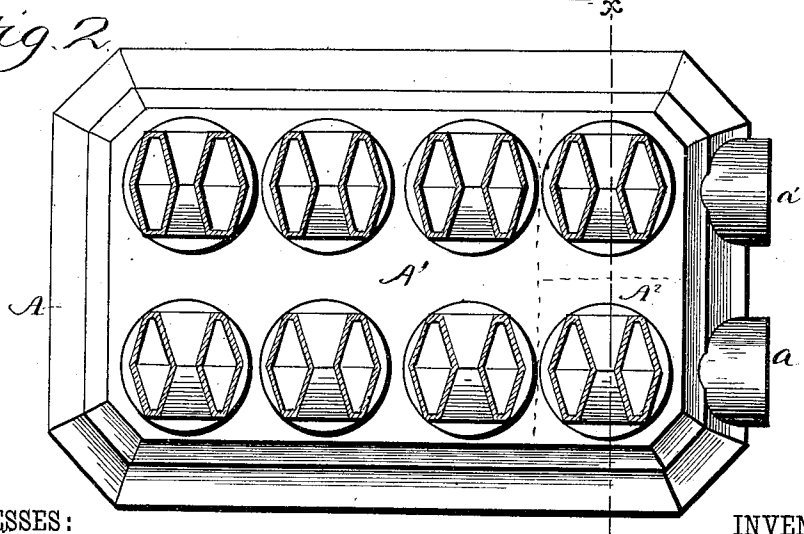



Fig 2.




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(No Model.) 2 Sheets—Sheet 2.

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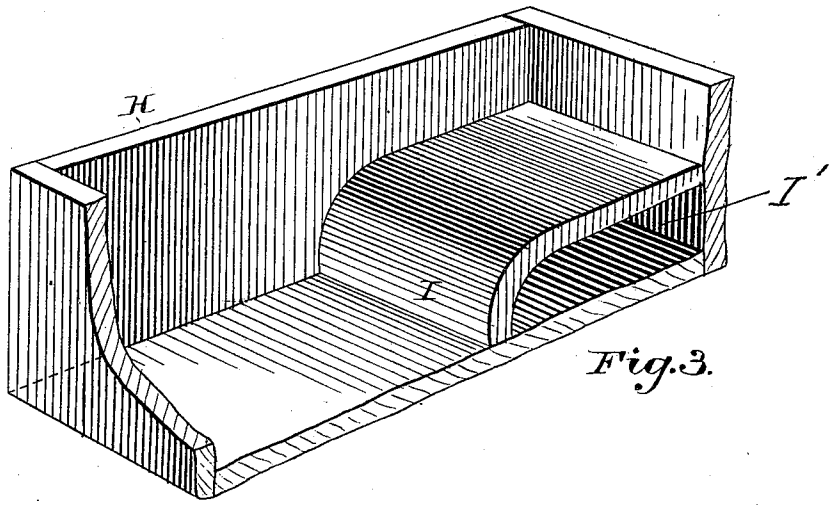



Fig. 3.

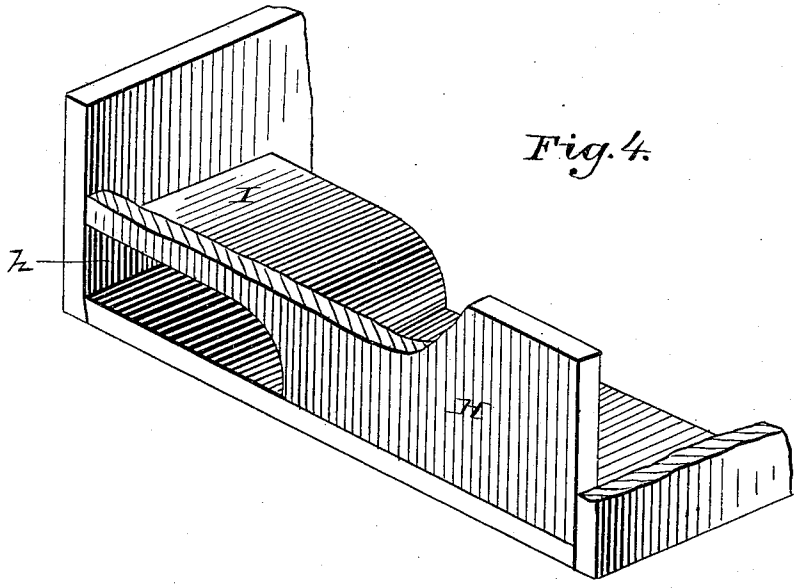



Fig. 4.

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# UNITED STATES PATENT OFFICE.

SAMUEL D. TOMPKINS, OF JERSEY CITY, NEW JERSEY, AND JOHN N. MATLOCK, OF BROOKLYN, NEW YORK.

## HOT-WATER OR STEAM RADIATOR.

SPECIFICATION forming part of Letters Patent No. 323,235, dated July 28, 1885.

Application filed April 28, 1885. (No model.)

*To all whom it may concern:*

Be it known that we, SAMUEL D. TOMPKINS and JOHN N. MATLOCK, citizens of the United States, residing, respectively, at Jersey City, in the county of Hudson and State of New Jersey, and at Brooklyn, in the county of Kings, State of New York, have invented certain new and useful Improvements in Hot-Water or Steam Radiators; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Our invention relates to heat-radiators for hot-water or steam heating; and the novelty consists in the construction, arrangement, and adaptation of parts to secure a perfect circulation, as will be more fully hereinafter set forth, and specifically pointed out in the claims.

The invention is illustrated in the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a vertical cross-section of the invention on line *x x*, Fig. 2; Fig. 2, a horizontal section; Fig. 3, a front perspective view of the vertical and horizontal partitions, with portions of the walls of the base broken away; and Fig. 4, a similar view looking from the rear.

Referring to the drawings, A designates the hollow base, having the inlet *a* and outlet *a'* arranged upon one end. In the upper portion of the base are arranged threaded holes *b*, into which are screwed the threaded ends of the double pipes C. These pipes are of the ordinary construction, except that the upper curved portion is bored to form threaded holes *c*.

D designates the upper casting, which is hollow, and has its lower face provided with screw-threaded apertures *d*, which correspond in number and location with the threaded apertures *c* in the pipes C. In the upper face of the casting D are arranged a number of threaded apertures, *d'*, which, in number and location, correspond with the apertures *d*, but are of such larger diameters as to allow proper expanding tools to be operated through them.

In putting the radiators together, the pipes C are first secured to the base, and the casting D is then placed upon the upper ends of the said pipes, with the apertures *d* properly matching the threaded holes *c*. Threaded thimbles E, provided at their upper edges with diametrically-opposite slots *e*, for the reception of a proper tool for forcing the thimbles into place, are then passed through the holes *d'* and screwed into the threaded holes *d* of the upper chamber and the holes *c* of the pipes C, thus connecting the said chamber with the pipes. The thimbles are forced into the holes *d c* until the bottoms of the slots *e* are approximately even with the inner floor of the casting or chamber D. By the use of proper expanding mechanisms (not shown) projected through the holes *d'*, the thimbles are then expanded into the holes *d*, to properly secure the pipes and casting together, thus insuring a proper steam-tight joint. The holes *d'* are then closed by the threaded plugs F, having rectangular sockets *f*, into which a proper corresponding tool is operated. An ordinary open-work or ornamented plate, G, is then placed upon the top of the casting D, and the radiator is complete and ready to be placed into position and connected with a steam-generator. (Not shown.) To this securing means we attach much importance. It is inexpensive, readily operated, and is efficient. We also attach importance to the construction of the base in its relation to the travel of the hot water or steam, which we will now describe.

Transversely across the inner portion of the base, between the first and second pipes or series of pipes, (or between the second and third in radiators of large size,) is a vertical diaphragm or partition, H. In this partition H is formed an exit-aperture, *h*. From this aperture, or from the edges of this cut-away portion *h*, extends a horizontal partition, I, which forms a hot-water or steam way, I', from the part *h* to the exit *a'* of the base, entirely separate from the water-inlet. In other words, the partition H divides the interior of the base into two chambers of unequal area, A' and $A^2$, and the horizontal partition cuts off from the chamber $A^2$ a space to form the exit steam or water way I'.

The hot water or steam passing in at *a* into

the chamber $A^2$ is forced upward through the first pipe or series C into the large chamber of the casting D, thence down through the remaining pipes to the chamber A′ of the base, and thence through the way I′ to the outlet *a′*, and back to the generator or elsewhere.

What we claim as new is—

1. In a radiator, the combination of a hollow base provided with a vertical partition, cut away to form an outlet, a horizontal partition conforming to the cut-away portion of the outlet-partition and forming one of the walls of said outlet, and pipes C, with an upper chamber connected to said pipes, substantially as described.

2. In a radiator, the combination of a hollow base and pipes having threaded apertures *c* with the hollow casting having threaded apertures *d d′*, the threaded thimbles screwed into the holes *d c* and expanded, and the threaded plugs F, operating in the holes *d′*, whereby the upper chamber is made steam or water tight, substantially as and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

SAMUEL D. TOMPKINS.
JOHN N. MATLOCK.

Witnesses:
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THEO. N. VAN WINKLE.