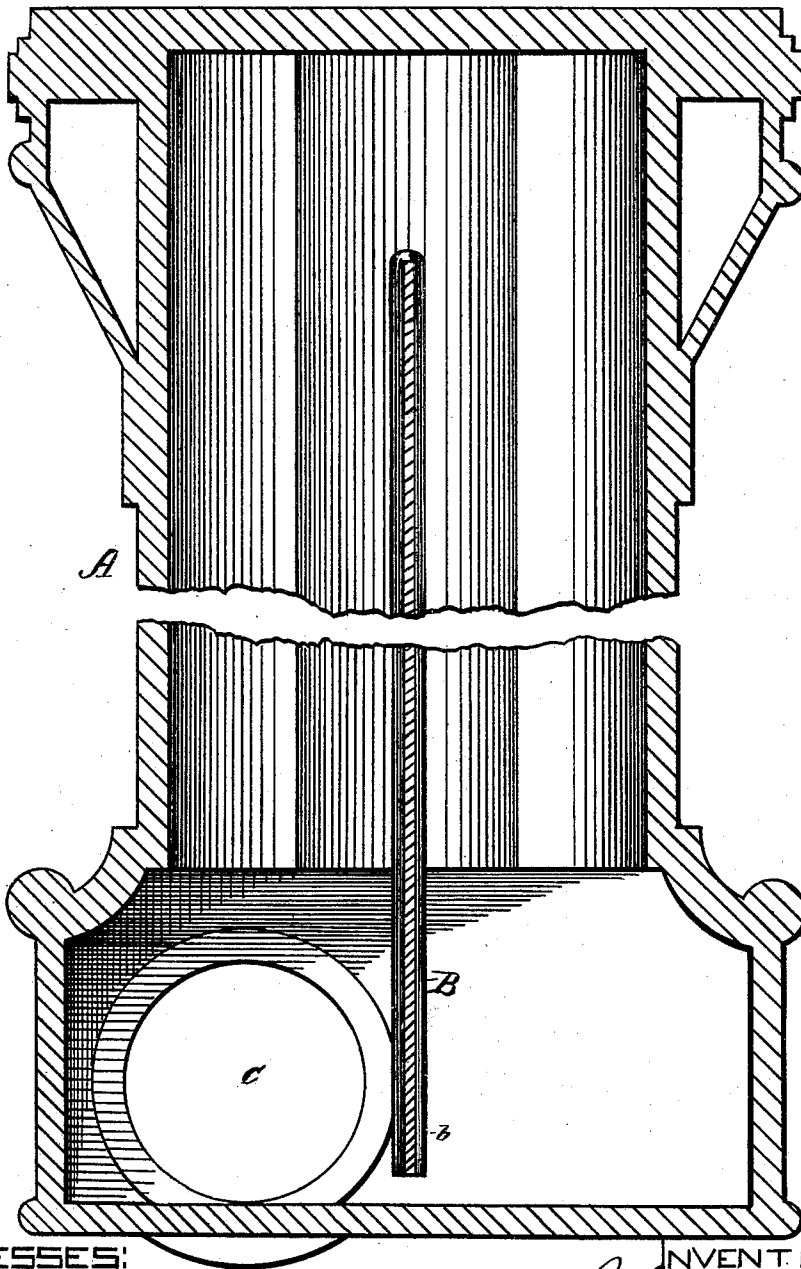


J. R. REED.
STEAM-RADIATOR.

No. 178,190.

Patented May 30, 1876.

Fig. 1.



WITNESSES:

Jas. F. Duhamel.
H. B. Brown

INVENTOR:

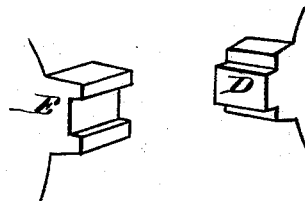
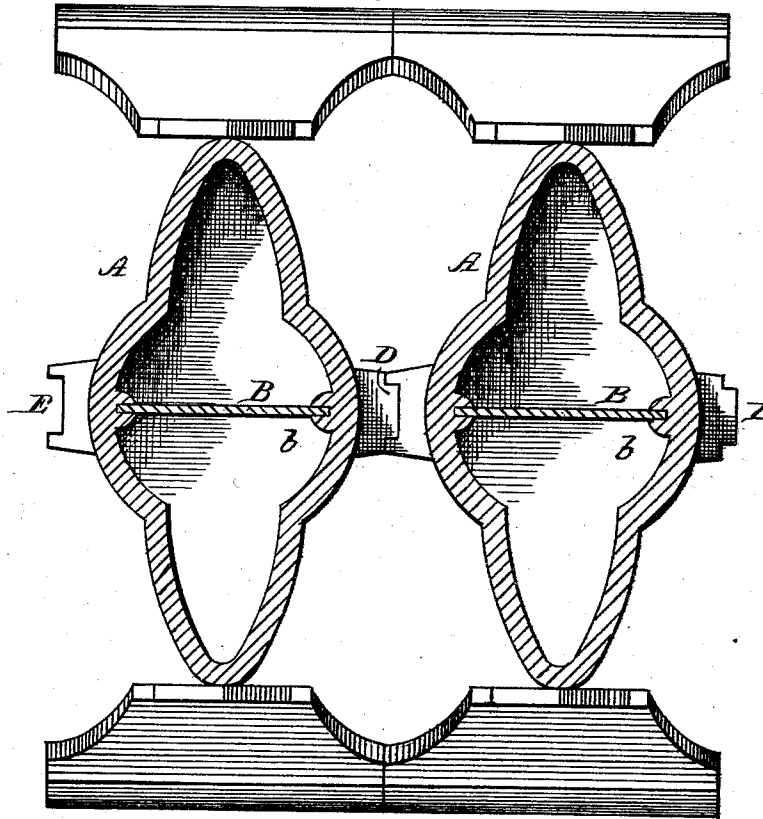
J. R. Reed.
H. J. Abbott.
ATTORNEY.

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Fig. 2



WITNESSES:

Jas. F. Duhamel,
H. B. Brown

INVENTOR:

John R. Reed
FER

H. H. Abbott
ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN R. REED, OF WESTFIELD, MASSACHUSETTS.

IMPROVEMENT IN STEAM-RADIATORS.

Specification forming part of Letters Patent No. **178,190**, dated May 30, 1876; application filed March 6, 1876.

To all whom it may concern:

Be it known that I, JOHN R. REED, of Westfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Steam Heaters or Radiators, of which the following is a specification:

This invention relates to improvements in the construction of cast-metal heaters or radiators; and consists of the details described and claimed, as follows:

In the accompanying drawing, forming part of this specification, Figure 1 is a vertical section through one of the circulating-pipes or radiators, showing a nozzle for either the entrance or exit of the steam, and also showing a diaphragm dividing the pipe into two chambers or passages. Fig. 2 is a horizontal section through two circulating-pipes, showing the said pipes set upon their tops instead of upon their bases, and exhibiting the under sides of said tops or ornamental caps.

In these figures, A is a cast-metal pipe, of any suitable dimensions and shape of section, provided with a diaphragm, B, extending from near its bottom to a point more remote from its top. C is a nozzle for either the entrance or exit of the steam and water of condensation, another similar nozzle being provided on the opposite side of the casting, and on the opposite side of the diaphragm, so that the steam entering either one of the nozzles shall circulate around the diaphragm and escape through the other nozzle into another of the series of pipes, until its final escape from the heater.

The small space beneath the diaphragm is for the circulation or escape of the water of condensation.

In casting a section or pipe forming one of these radiators, the core of the mold, around which the pipes are cast, is built up around the diaphragm B, which is made of a thin plate of wrought-iron.

In forming the core care is taken to remove the molding-sand, so that the shoulders *b* will be formed embracing the edges of the diaphragm at the time of casting. When the core is removed, the diaphragm remains securely embedded in the walls of the pipe.

To make a casting of so thin a piece as the diaphragm in the same mold with the pipe would be next to impossible, or extremely un-

certain of accomplishment, and to fit in a diaphragm of sheet metal after the casting of the pipe would be costly by reason of the extra trouble and time required.

The tops of these sections or pipes are finished off into ornamental designs, as seen in the drawing, such as leaves or other designs, so that when put together a continuous and uniform top or finish is seen. The base of each pipe is similarly made to match its fellow. No separate plates or hollow caps or bases are required to be fitted, as is ordinarily the case in setting steam-heaters composed of a series of radiating-pipes.

D and E are respective tongues and grooves, formed near the abutting tops of the pipes A. When the said pipes are set up, they are united at bottom by short sections of pipe or threaded thimbles; and as their tops approach each other, as the pipes are screwed close together upon the thimbles, the tongues D are sprung into the grooves E, thus securing the pipes together in a series or system of any desired number. The said thimbles are tapped into the nozzles C, and thus form the communicating passages between the several pipes A.

By the devices herein described, a very efficient and handsome cast-metal heater is made, of cheap construction, which can readily be varied in size and ornamental pattern, to suit various requirements of taste and location, without departing from the principle underlying the means constituting this invention.

Having thus fully described these improvements in the construction of steam-heaters, as of my invention, I claim—

1. In a steam heater or radiator, the combination of the pipe A, having the shoulders *b*, with the diaphragm B, substantially as shown and described.

2. In a steam heater or radiator, a wrought-iron diaphragm, B, introduced or cast in a pipe or section of a steam-heater, substantially as shown and described.

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

JOHN R. REED.

Witnesses:

H. B. SMITH,
HENRY FULLER.