No. 610,292. Patented Sept. 6, 1898.

J. A. THORNTON.

HEAT STORAGE STEAM RADIATOR.

(Application filed May 10, 1894.)

(No Model.)

Fig. 1.

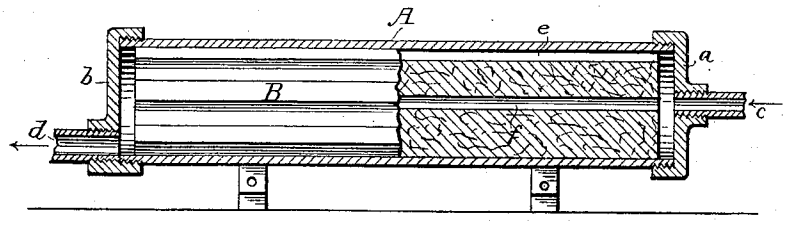
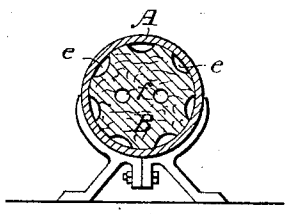


Fig. 2.



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UNITED STATES PATENT OFFICE.

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HEAT-STORAGE STEAM-RADIATOR.

SPECIFICATION forming part of Letters Patent No. 610,292, dated September 6, 1898.

Application filed May 10, 1894. Serial No. 510,723. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. THORNTON, of the city of Baltimore, State of Maryland, have invented certain new and useful Improvements in Heat-Storage Steam-Radiators, of which the following is a specification, reference being had to the accompanying drawings, wherein—

Figure 1 is a longitudinal vertical section of a steam-radiator provided with the present improvements, and Fig. 2 is a cross-section thereof.

A is a cylindrical metallic heat-conducting casing, usually of wrought-iron, having metal heads or caps *a* and *b*, with which are connected the steam inlet and discharge pipes *c* and *d*, respectively.

Located within the casing A is a heat-storage body B, consisting of a core or block of earthenware, fire-clay, terra-cotta, or other suitable non-metallic material. This earthenware block is of cylindrical shape and of such a diameter as to fit snugly within and fill the outer metallic casing. To form passages for the traverse of the admitted steam, the earthenware core or block is fluted or corrugated—that is to say, it is provided at its periphery with longitudinally-extending grooves *e e*. In addition to the external grooves *e e* the block B may be provided with one or more central longitudinal perforations or holes *f f*, constituting steam-passages, two such holes being shown.

The inclosed earthenware block or core absorbs and stores heat when steam is admitted, and subsequently gives it gradually off. Consequently the radiator is especially adapted for heating railway and tramway cars where steam can be admitted only at short intervals from time to time.

The objects of the external corrugations or grooves *e e* are to constitute steam-passages; to enable the block or core to be inserted readily in place in the casing when the latter has not a smooth bore, owing to the presence of burs or fins due to the method of making; to permit the rapid initial heating of the apartment in which the radiator is located, since the external grooves permit the steam to come directly in contact with the metallic casing, through which the heat is at once radiated into the apartment, and to extend the duration of the heat-storing capacity of the radiator, since owing to the circumstance that only a portion of the earthenware block is in contact with the metallic casing the heat is less rapidly conducted away than would be case if the entire periphery of the block were in contact with the metallic casing.

In case the length of the radiator requires it the core may be composed of a plurality of the earthenware blocks.

To prevent the flaking and scaling off of the core due to the admission of steam and alternating contraction and expansion, the clay or other material of which the core is composed is preferably, before baking, mixed with a non-combustible fibrous material, such as asbestos or mineral wool. These incorporated non-combustible fibers prevent the disintegration of the earthenware core.

It will be noted that the steam-passages are formed by the relative shape of the core and inclosing casing.

I claim as my invention—

1. A radiator consisting of an outer conducting-casing, and a steam-pipe opening thereinto, combined with an inclosed heat-storage body of earthenware or analogous material filling said casing, the casing and storage body being relatively shaped to form steam-passages between them, substantially as set forth.

2. A radiator consisting of an outer conducting-casing, and a steam-pipe opening thereinto, combined with an inclosed heat-storage body of earthenware or analogous material filling said casing and formed with longitudinal grooves to form steam-passages between it and the casing.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JAS. A. THORNTON.

Witnesses:
ARTHUR S. BROWNE,
PAUL M. BURNETT.