

No. 648,190.

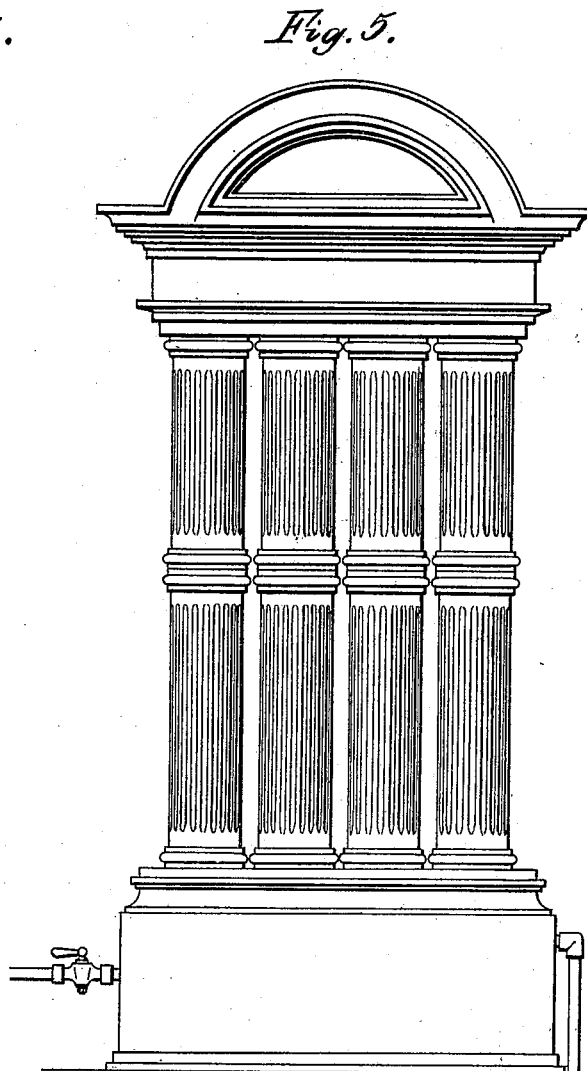
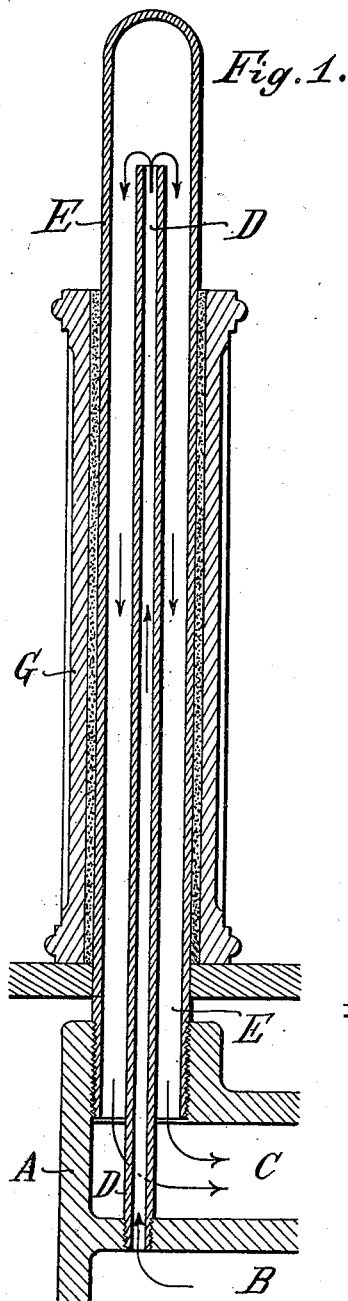
Patented Apr. 24, 1900.

H. CAESAR.
HEATING STOVE OR RADIATOR.

(Application filed Mar. 2, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
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O. Bormann

Inventor:
Eugene Caesar
By Hermann Bormann
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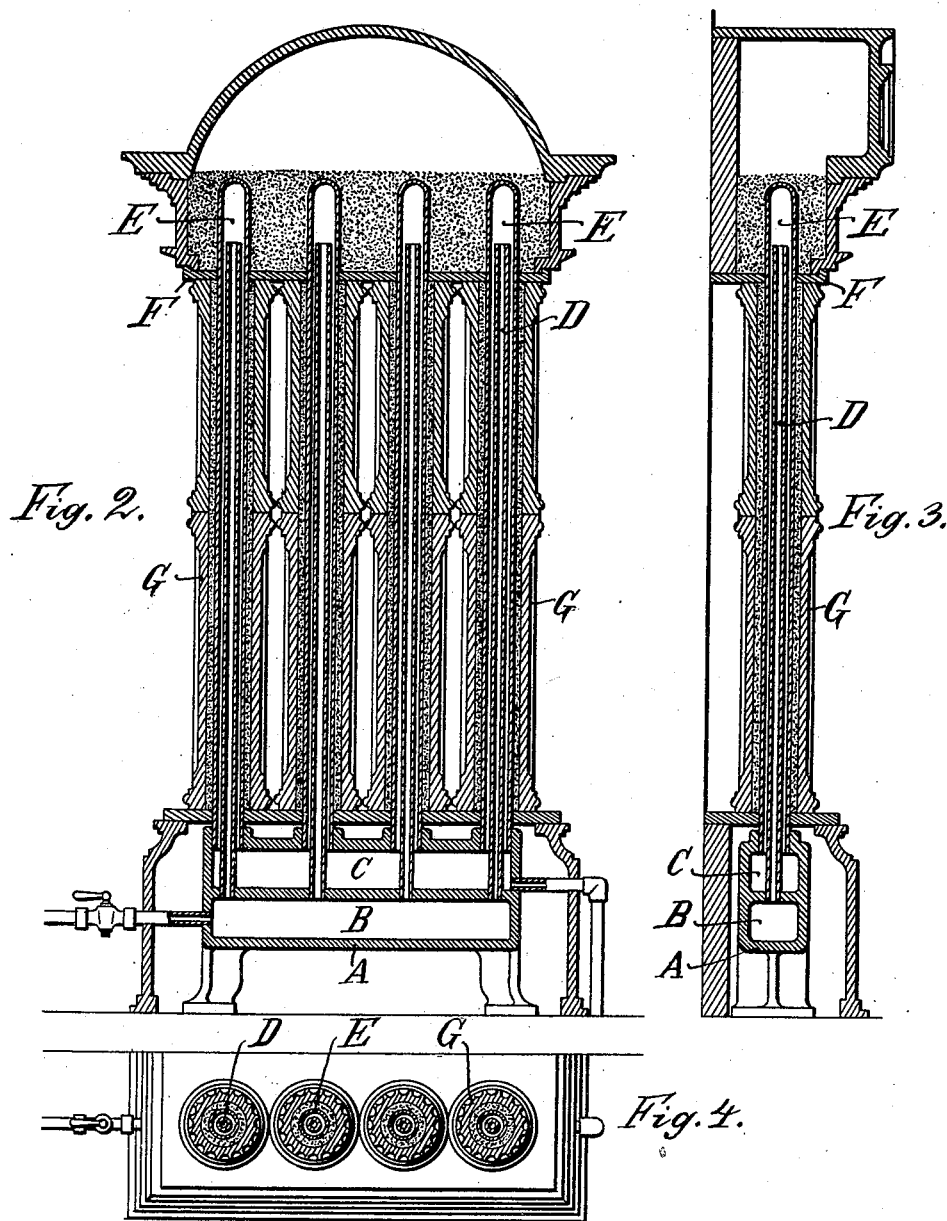
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UNITED STATES PATENT OFFICE.

HUGO CAESAR, OF ST. PETERSBURG, RUSSIA.

HEATING STOVE OR RADIATOR.

SPECIFICATION forming part of Letters Patent No. 648,190, dated April 24, 1900.

Application filed March 2, 1899. Serial No. 707,527. (No model.)

To all whom it may concern:

Be it known that I, HUGO CAESAR, mechanical engineer, a subject of the German Emperor, and a resident of Malaja Possadskaja No. 7, St. Petersburg, Russia, have invented certain new and useful Improvements in Heating Stoves or Radiators, of which the following is a specification.

The heating arrangements ordinarily heretofore used for the rooms of dwelling-houses, such as those in which steam or hot water are used or earthenware stoves, each possesses advantages which are combined in the apparatus which forms the subject of the present invention. For this purpose a system of wrought-iron tube is used, so arranged that each set of two tubes, one inside the other, is surrounded by an outer casing of earthenware or porcelain, a space between the latter and the outer tube being filled with loose sand. By this method of arrangement the following relative proportion of the heat is utilized: If the temperature of the steam in the inner wrought-iron tube reaches to 100° to 105° centigrade, the temperature of the outside of the earthenware casing is about 65° to 70° centigrade—a temperature which is usual in ordinary hot-water heating apparatus or earthenware stoves—or by using steam heated to form 140° to 150° centigrade the temperature of the outside of the earthenware casing will be 100° to 105° centigrade.

It is essential that in the improved arrangement a too-quick cooling of the heating apparatus should not take place, as is the case where direct steam-heating is used, and by the arrangement of the earthenware casing and the thickness of sand inside the heat is maintained for a long time. A still-greater advantage of such a stove is that the heating parts of the apparatus are always kept clean and bright with very little trouble and no disagreeable vapors or odors are given out, as there is no metal part covered with paint, lacquer, or bronze, and the stove causes no dirt or annoyance in the room where it is used.

In the accompanying drawings, which are in illustration of the invention, Figure 1

shows the arrangement and relative proportions of the iron tubes in the earthenware casing. Fig. 2 is a longitudinal section through a stove or radiator. Fig. 3 is a transverse section of the same. Fig. 4 is a plan of the apparatus. Fig. 5 is a front view of a stove made ornamental.

The base A for the system of tubes has two chambers B and C. The chamber B serves for the reception of steam admitted through an adjustable regulating-valve and for its distribution to the inner steam-tubes D. The steam passes up through these tubes, which are open at their upper ends, and displaces the air in the upper closed ends of the outer steam-pipes E and as it becomes condensed runs down as condensed water into the chamber C, from which it can be drawn off. The pipes D and E are held by a plate F, which can be covered with sand.

The earthenware pipes or casings G can be made as ornamental as desired in their appearance, and the architectural or other design of the entire stove may be varied as desired without being confined to the precise shape shown in the drawings.

Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be performed, I declare that what I claim is—

In a heating stove or radiator, a base having steam inlet and outlet chambers, a series of steam-pipes secured to said base, a casing of Dutch tile or terra-cotta enveloping the said steam-pipes and sand or other refractory, loose material between said steam-pipes and said covering or casing, the several parts being so arranged, that expansion or contraction of either the metal parts or the terra-cotta may take place without injuring the Dutch tile or terra-cotta or the joints thereof, substantially as and for the purposes set forth.

Signed by me at St. Petersburg, Russia, this 10th day of February, 1899.

HUGO CAESAR.

Witnesses:

M. BREITFUSS,
E. LOURIE.