(No Model.)

H. N. HEMINGWAY.

RADIATOR.

No. 448,036. Patented Mar. 10, 1891.

Fig. 1.

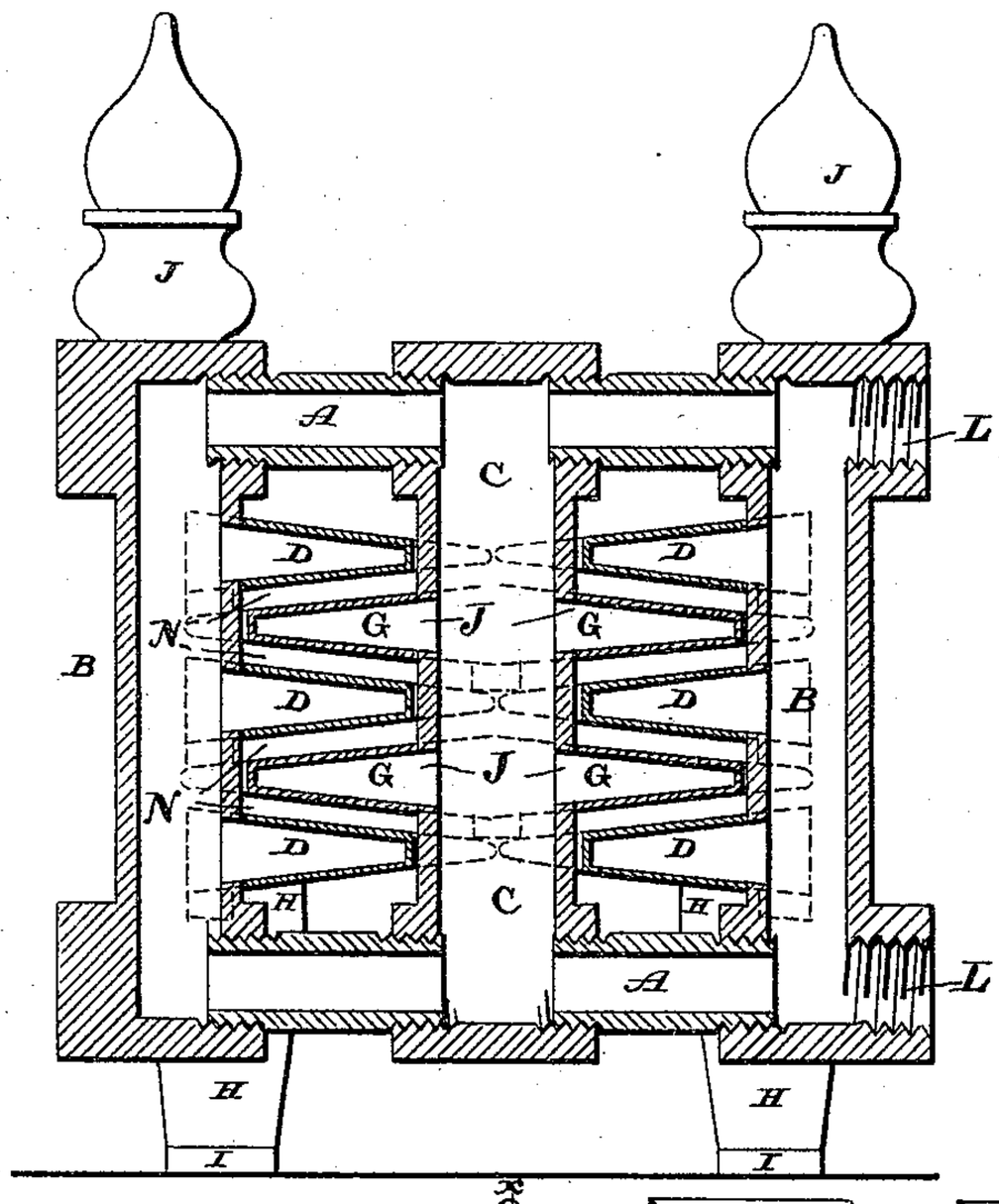

Fig. 3.

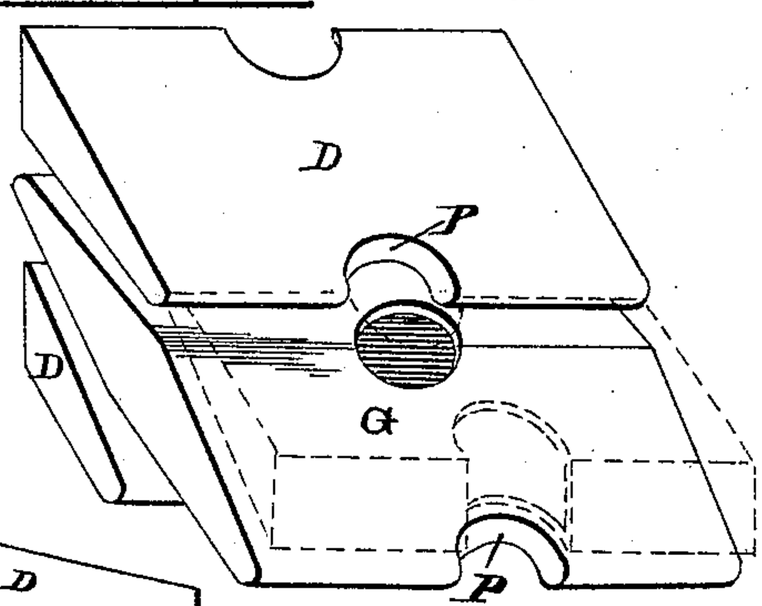

Fig. 2.

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UNITED STATES PATENT OFFICE.

HENRY N. HEMINGWAY, OF AUBURN, NEW YORK.

RADIATOR.

SPECIFICATION forming part of Letters Patent No. 448,036, dated March 10, 1891.

Application filed May 24, 1890. Serial No. 353,064. (No model.)

To all whom it may concern:

Be it known that I, HENRY N. HEMINGWAY, of Auburn, in the county of Cayuga and State of New York, have invented certain new and useful Improvements in Radiators; and I do hereby 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in radiators; and it consists in certain novel features of construction which will be fully described hereinafter, and pointed out in the claims.

The object of my invention is to produce a radiator in which the steam or water chambers consist of a series of horizontal chambers which are connected by means of pipes, and which are placed one above the other and made to overlap in the manner hereinafter fully described and shown.

In the accompanying drawings, Figure 1 represents a vertical section taken on the dotted line X X of Fig. 2. Fig. 2 is an end view. Fig. 3 is a detached perspective view of one of the central chambers and two of the end chambers in solid lines and of the end chambers in dotted lines, the pipes which connect and support the chambers being omitted.

G represents a vertical series of flat horizontal central steam or water chambers, which are preferably made in diamond shape, as shown. Passing vertically through the center of these chambers G is a supporting and connecting pipe C, which has the openings J, that communicate with the said chambers, as shown in Fig. 1, and these chambers are supported a suitable distance one above the other, as is also shown in Fig. 1. Connected to the upper and lower ends of this central pipe C are the horizontal pipes A, and attached to the outer ends of these pipes A are the vertical end pipes B. Each of these pipes are provided with communicating openings at the various points of attachments, as shown, and one of the end pipes B is provided with the upper and lower inlet and outlet openings L.

Supported by the end pipes B and extending inward therefrom are the flat horizontal chambers D, which are connected interiorly at their outer ends with the pipes B, and are closed at their inner ends, as shown. These chambers are placed one above the other and extend inward between and overlap the ends of the central chambers, as shown, but separated therefrom sufficiently to form the horizontal air circulating and heating spaces N. The chambers D are preferably pointed at their inner ends or triangular, as shown, to correspond to the shape of the ends of the central chambers, as shown, and preferably have their inner ends extend past the central pipe by having a cut-out portion P, in which the said pipe passes, and which braces the inner ends of the said chambers and holds them against lateral or twisting strain, as will be readily understood. The chambers G and D are preferably placed at an incline outward, as shown in Fig. 2, from the wall of the room, so that the air circulates between the chambers and is thrown outward into the room.

By means of a radiator of this construction it will be seen that a large heating-surface is obtained in a very small space and the air confined between and made to come directly in contact with the surface of the chambers, as shown.

Secured to the corners of the lower chambers D are the hollow feet H, to the lower ends of which the wooden blocks I are applied by inserting them in a socket formed for their reception for the purpose of preventing the feet from burning the carpet or floor, as they are otherwise likely to do.

Upon the upper ends of the pipes B are placed the ornaments J of any suitable shape or configuration.

While I preferably place the chambers at an inclination for the purpose described, they may be placed level, if preferred, without departing from the spirit of my invention.

Used in connection with the radiator is a movable foot-rest L, which consists of two flat bars which extend in between the chambers, which are provided with hooks or bends at their inner ends to catch behind the pipes B, and thus prevent them from becoming displaced. On the under sides of these bars are formed stops O, which catch against the outer edges of two of the chambers D, and prevent the bars from being forced inward until they are raised for that purpose. The outer

ends of these bars are connected by a pipe, which forms a rest for the feet, and when the foot-rest is not needed it can be forced in out of the way.

While I here show only one series of chambers G through which a vertical pipe passes, it will be readily understood that there may be several of these series placed side by side and their ends made to overlap, and hence I do not desire to limit myself to one series, as here shown.

Having thus described my invention, I claim—

1. A radiator consisting of a vertical series of flat horizontal chambers which overlap each other at their ends and separated a suitable distance for the circulation of air, vertical pipes which pass through and support the said chambers, and horizontal pipes which connect the said vertical pipes, substantially as shown and described.

2. A radiator consisting of a central vertical series of diamond-shaped chambers, a vertical pipe which passes through them, a series of chambers which are triangular in cross-section, which extend between and overlap the edges of the diamond-shaped chambers, vertical pipes connected to the outer edges of the triangular chambers, and horizontal pipes which connect the vertical pipes, substantially as specified.

3. A radiator consisting of a vertical series of diamond-shaped chambers in cross-section, a pipe which passes vertically through the center of said chambers, horizontal pipes connected with the said central vertical pipe, two end vertical pipes connected with the outer ends of the horizontal pipes, and chambers which are triangular in cross-section, which are secured at their outer edges to the said end pipes, and their inner edges extending beyond the central vertical pipe provided with a cut-away portion for the said pipe, substantially as specified.

4. The combination, with a radiator composed of a central vertical series of horizontal chambers and vertical and horizontal pipes connecting and supporting them, of hollow feet connected to the outer corners of the lower chambers and connected therewith and the wooden blocks placed in the lower ends of the feet, substantially as shown and described.

5. The combination, with a radiator having vertical and horizontal pipes and a series of horizontal chambers connected between their edges to the said vertical pipes and separated from each other, of a foot-rest consisting of a V-shaped frame having its ends provided with hooks adapted to catch behind the vertical pipes and projections a suitable distance from its ends to catch against the outer edges of the chamber, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY N. HEMINGWAY.

Witnesses:
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GEO. H. MACOMBER.