

R. M. DIXON.

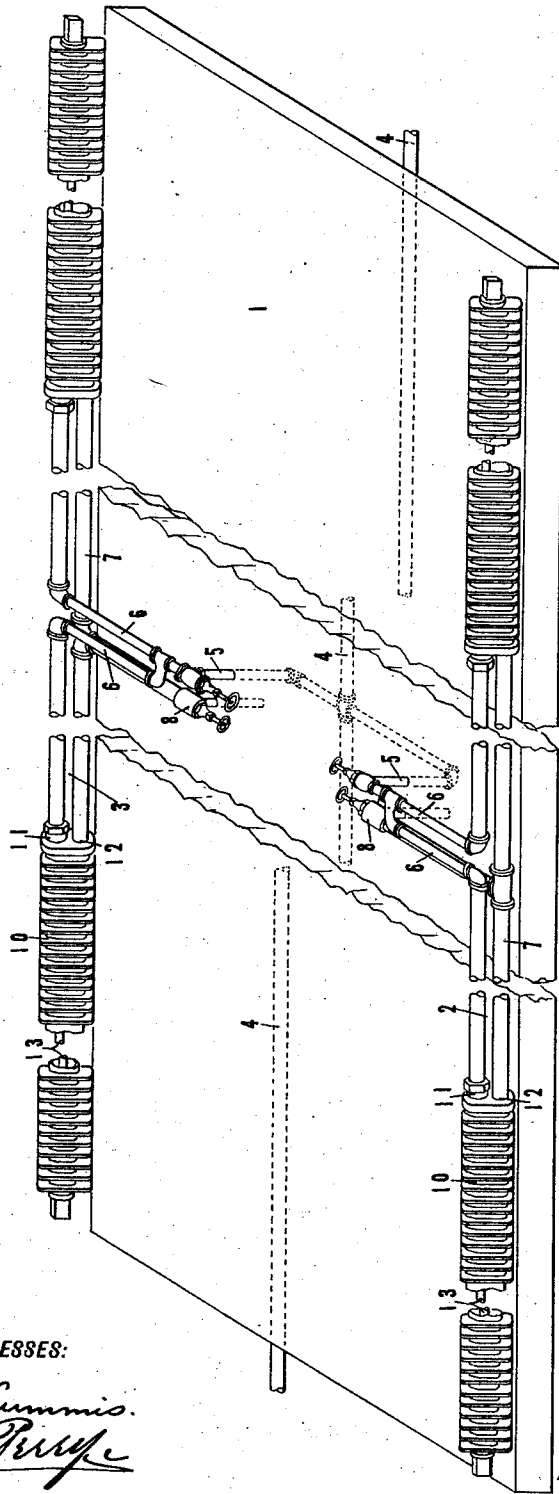
RADIATOR.

APPLICATION FILED APR. 18, 1908.

1,025,518.

Patented May 7, 1912.

2 SHEETS—SHEET 1.



WITNESSES:

H.C. Lummis.
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2 SHEETS-SHEET 2.

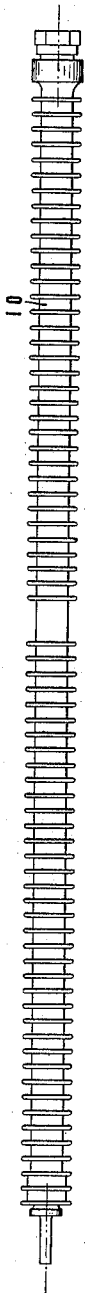


Fig. 2-

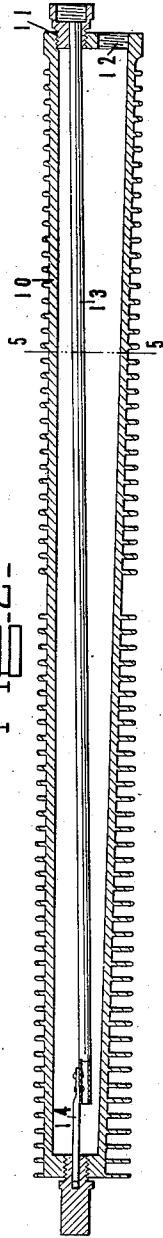


Fig. 3-

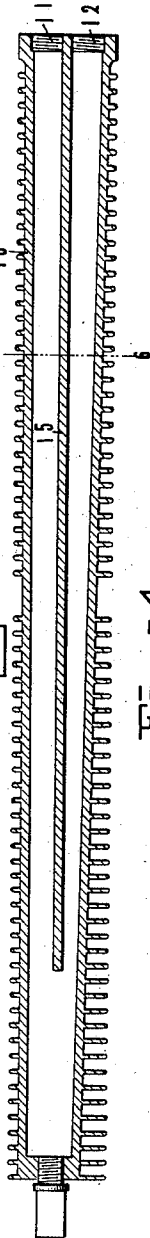


Fig. 4-

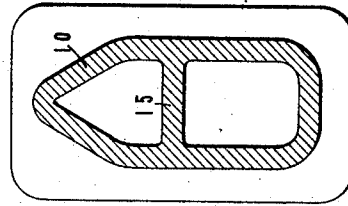


Fig. 5-

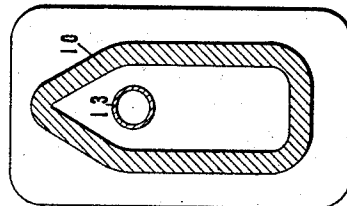


Fig. 6-

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UNITED STATES PATENT OFFICE.

ROBERT M. DIXON, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO THE SAFETY CAR HEATING & LIGHTING COMPANY, A CORPORATION OF NEW JERSEY.

RADIATOR.

1,025,518.

Specification of Letters Patent.

Patented May 7, 1912.

Application filed April 18, 1908. Serial No. 427,893.

To all whom it may concern:

Be it known that I, ROBERT M. DIXON, a citizen of the United States, residing at East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Radiators, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to heating apparatus, and more especially to steam heating apparatus adapted for use in railway cars or like structures.

One of the objects of the invention is to provide a radiator of new and improved construction, such that a greater amount of heating surface will be presented to the interior of the car than it has been possible to obtain in radiators of equal size of this general character, as hitherto constructed.

Another object of the invention is to provide for better distribution of the heat within the railway car.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the application of which will be indicated in the appended claims.

In the accompanying drawings, wherein is illustrated one of various possible embodiments of my invention, Figure 1 is a view showing in perspective the floor plan of a railway car, provided with a heating system equipped with radiators constructed in accordance with the invention. Fig. 2 is a view in plan of the improved radiator. Fig. 3 is a horizontal sectional view showing the interior construction of the radiator. Fig. 4 is a view similar to Fig. 3, but showing a different embodiment of the invention. Fig. 5 is a view in vertical section taken substantially on line 5—5 of Fig. 3, and Fig. 6 is a similar view taken on line 6—6 of Fig. 4.

Similar reference characters refer to similar parts throughout the several views of the drawings.

Referring now to the drawings, 1 indi-

cates the floor of a railway car having mounted thereon independent heating systems as at 2 and 3 respectively, each of which is supplied with steam from the train pipe 4. The steam is conducted from the train pipe by risers 5 and thence through conduits 6 to the radiators, which are located upon either side of the car near the ends thereof. The water of condensation is returned from the radiators through conduits 7 and is discharged beneath the floor of the car by means of traps 8.

Inasmuch as the radiators are identical but one thereof need be described in order to impart a clear understanding of the invention. This radiator consists of a chambered casing 10, provided at its inner end with admission and discharge ports 11 and 12, which are connected with the conduits 6 and 7 as above described. The dimensions of the interior of said casing gradually diminish in a direction toward the end of the car. Communicating with the admission port and leading therefrom longitudinally of the casing is a conduit or passageway 13, the opposite end of which is open and terminates at a point adjacent the outer end of the casing. In Figs. 3 and 5 of the drawings this conduit or passageway is constituted by a section of piping of suitable length which is inserted in the admission port 11, the opposite end of which is supported by means of a rod 14 which takes in a recess formed in a plug which closes the outer end of the casing. In Figs. 5 and 6 this passageway is formed by the upper walls of the casing and a web 15, which is cast within the casing and forms an integral part thereof.

In order to provide a fall for the circulating medium the conduits or passageways are inclined downwardly from the admission ports to the points at which they discharge the circulating medium into the interior of the casing.

In use the steam which is supplied by the train pipe passes through the risers 5 and conduits 6 into the admission port of the radiator, and is then conducted by conduit 13 to the opposite end of the interior of the casing. The water of condensation flows from the casing through the discharge port 12, a suitable fall being provided therefor

by reason of the fact that the bottom wall of the casing is inclined in a direction toward the middle portion of the car.

Casing 10, as will be observed, is provided throughout its length with transversely extending radiating ribs which operate to increase the radiating surface of the radiator. The radiating ribs formed exteriorly of the bottom wall of the casing gradually decrease in length from the outer end of the casing toward the center of the car, and, inasmuch as the radiator rests upon the floor of the car, these ribs provide for a proper inclination of the bottom wall of the casing, insuring the discharge of the water of condensation.

It will accordingly be seen that I have provided a construction well adapted, to attain among others, all of the ends and objects above enumerated in a simple yet efficient manner.

The radiators, constructed in accordance with the present invention, provide a maximum amount of heating surface with the utilization of a minimum amount of space within the car. Moreover, a greater amount of heat is distributed at the ends of the car where most desired than it has been possible to obtain in heating systems as heretofore provided.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. A radiator for railway cars and the like provided with inlet and discharge ports and formed to provide a passage the bottom of which slopes downwardly toward the discharge port with the radiator in horizontal position, and heat-radiating flanges upon the outer surface of said radiator, said flanges projecting below said bottom to progressively greater distances whereby the lower ends of said flanges lie in a substantially horizontal plane with the radiator in a horizontal position.

2. A radiator for railway cars and the like having formed therein inlet and discharge ports adjacent the same end thereof and formed to provide converging upper and lower walls, and radiating flanges upon said radiator and projecting therefrom to a progressively greater extent from the end adjacent said ports toward the opposite end thereof.

3. A radiating device of the class described comprising a casing having its ad-

mission port connected with a pipe adapted to conduct thereto a circulating heating medium and its discharge port connected with water discharging means near the admission port, the interior walls of said casing converging from the admission end toward the opposite end thereof, said casing being provided exteriorly with a plurality of radiating ribs and having a passageway downwardly inclined relative to a horizontal plane in the normal position of the casing for conducting the circulating medium from the admission port to a point near the opposite end of the casing.

4. A radiating device of the class described, comprising, in combination, an elongated casing having admission and discharge ports disposed adjacent each other at one end thereof, a passageway downwardly inclined relative to a horizontal plane in the normal position of the casing connected with the admission port and extending to a point near the opposite end of the casing and transversely extending radiating ribs provided exteriorly of said casing, the radiating ribs formed upon the bottom wall thereof, gradually increasing in length from the ported end of said casing toward the opposite end thereof, whereby the bottom wall of the casing will be downwardly inclined in a direction toward the said discharge port when the radiating device rests with its lower ribs upon a horizontal surface.

5. A radiator for railway cars and the like having formed therein inlet and discharge ports adjacent the same end thereof and formed to provide converging upper and lower walls, radiating flanges upon said radiator and projecting therefrom to a progressively greater extent from the end adjacent said ports toward the opposite end thereof, a conduit extending within said radiator from said inlet port to a point adjacent the opposite end, and means adjacent said opposite end to support said conduit and permit free expansion and contraction thereof.

6. A radiating device of the class described, comprising an elongated casing having admission and discharge ports which are disposed adjacent each other at one end thereof and having an independent conduit downwardly inclined relative to a horizontal plane in the normal position of the casing extending from the admission port to a point near the opposite end of the casing, a stem connected with a free end of said conduit, and a plug threaded into said casing and having a recess in which said stem is seated.

7. A radiating device of the class described comprising an elongated casing having admission and discharge ports which are located adjacent each other at one end there-

of, a plug seated in the admission port of
said casing, an independent conduit down-
wardly inclined relative to a horizontal
plane in the normal position of the casing
5 seated in said plug and extending through
said casing to a point near the opposite end
thereof, a plug seated in the end of said
casing adjacent the free end of said conduit,
and a stem connected with the free end of

said conduit, said last mentioned plug hav- 10
ing a recess in which the end of said stem
is seated.

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

ROBERT M. DIXON.

Witnesses:

JOHN T. CLARK,

SAMUEL L. ALPERT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."