(No Model.)

2 Sheets—Sheet 1.

R. STEEL.

CAR HEATER.

No. 277,626. Patented May 15, 1883.

FIG. 1

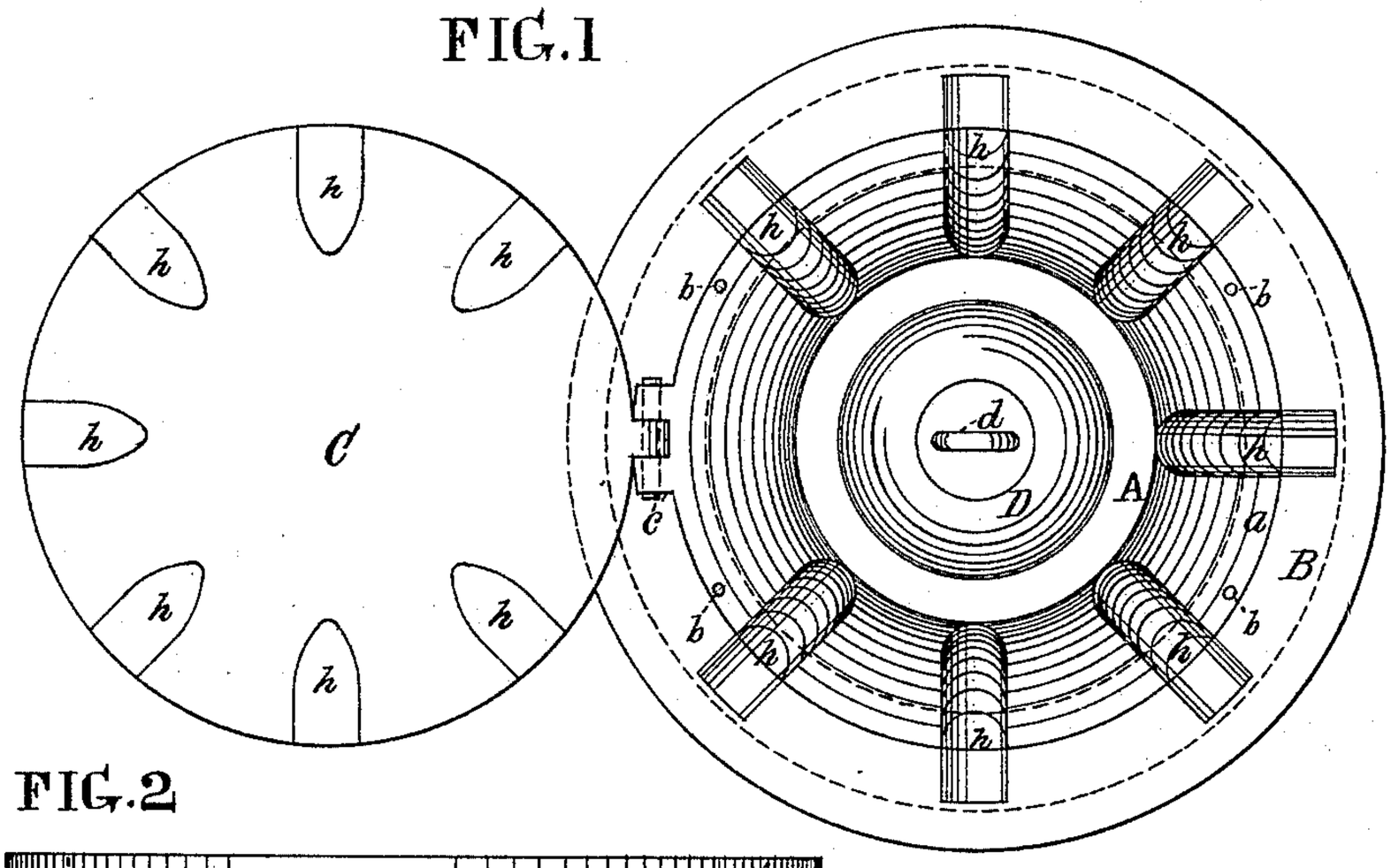


FIG. 2

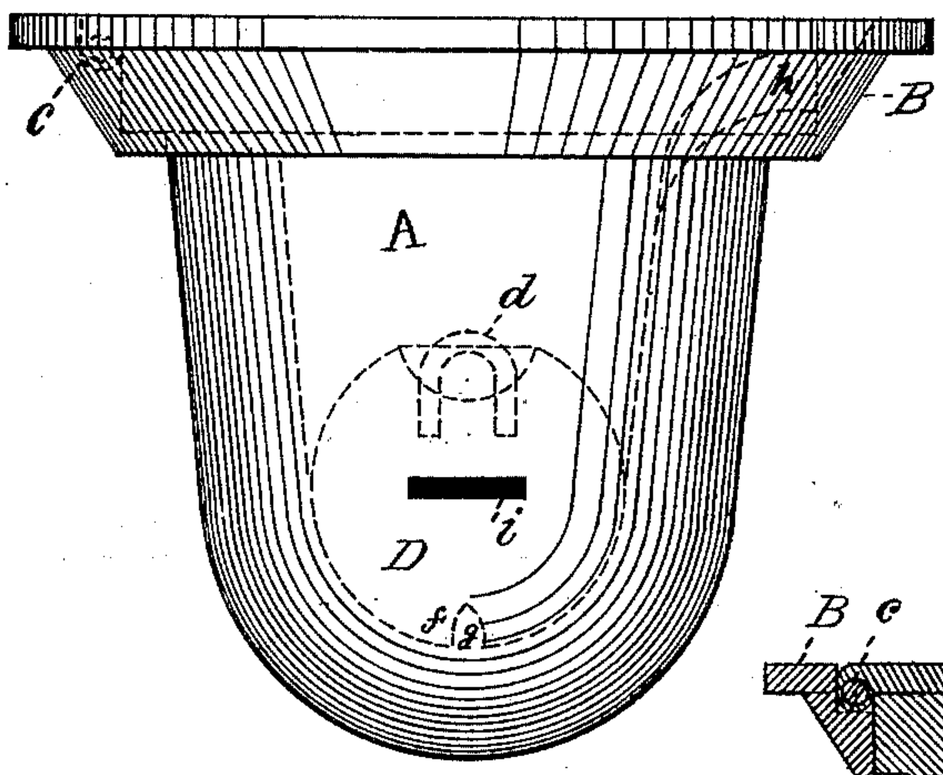
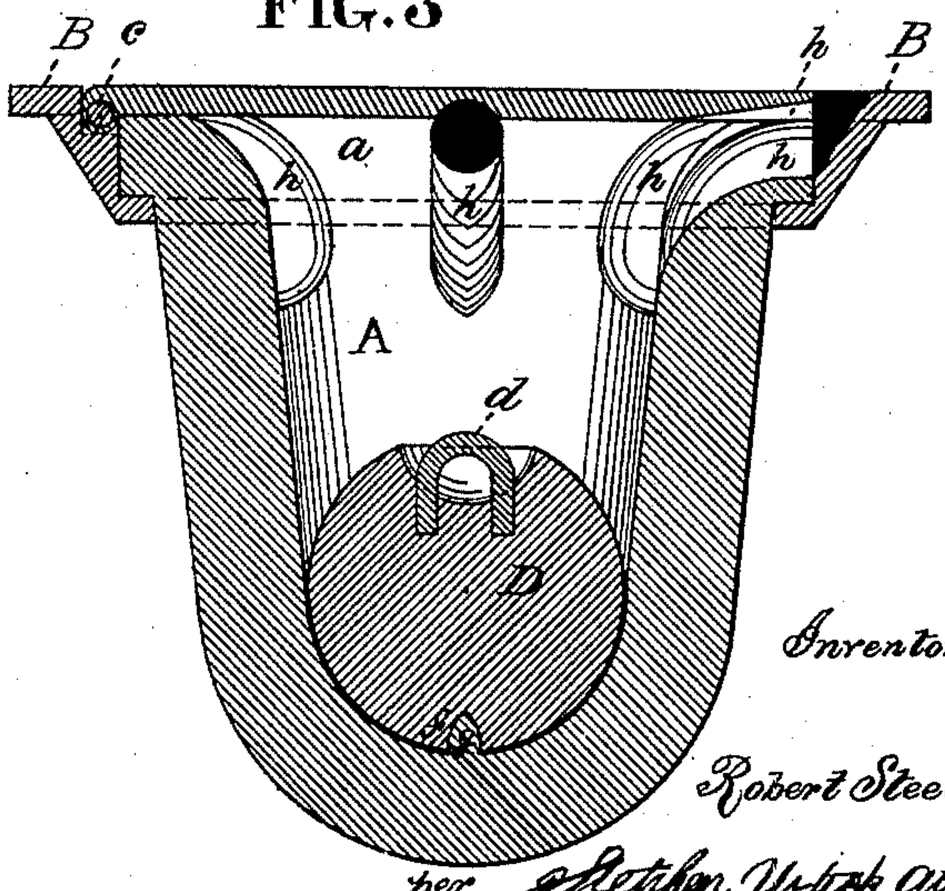


FIG. 3



Witnesses

Thomas J. Bewley.

Joseph P. Ingram.

Inventor

Robert Steel.

per Stephen Ustick Atty

(No Model.)

2 Sheets—Sheet 2.

R. STEEL.

CAR HEATER.

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FIG. 4

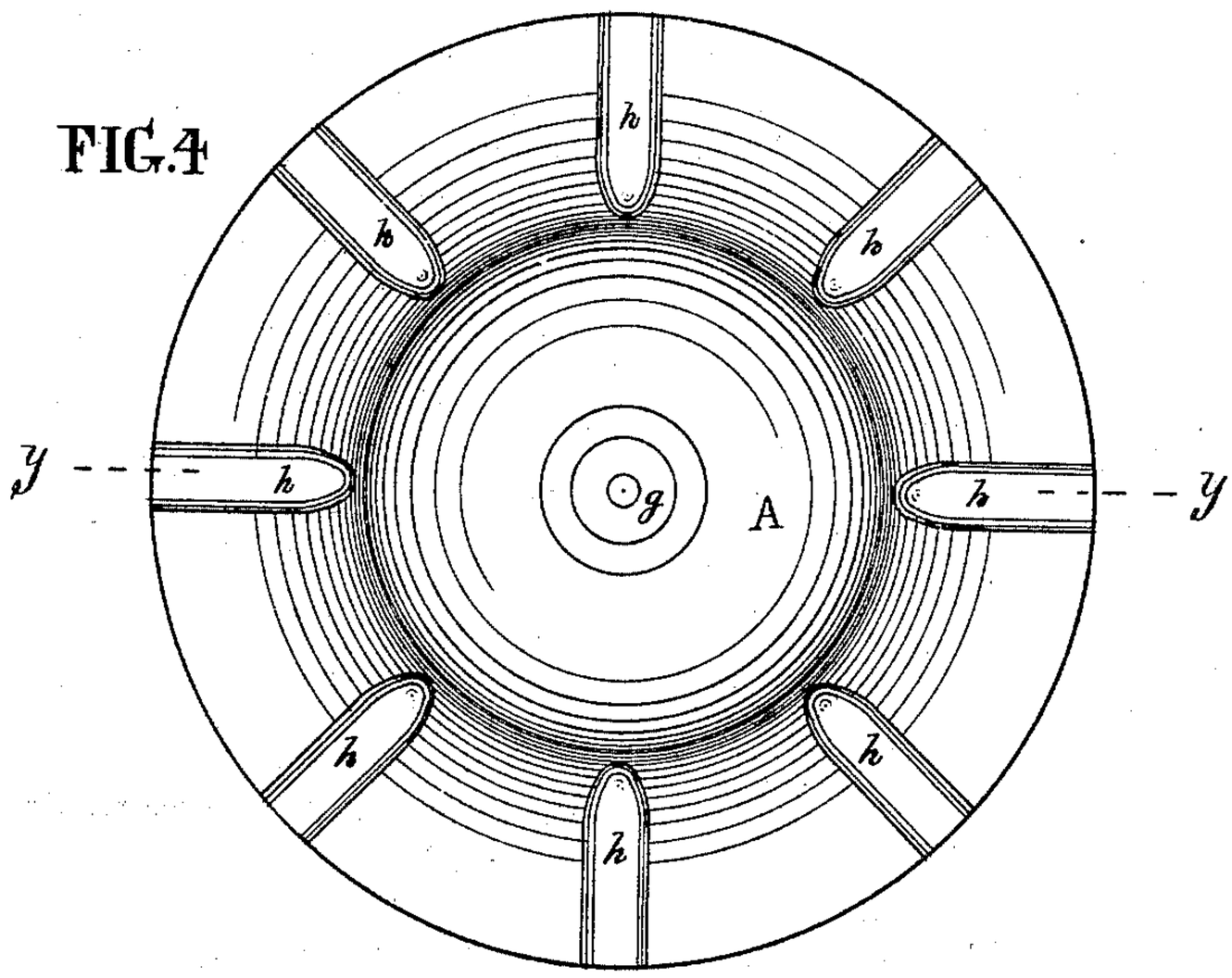
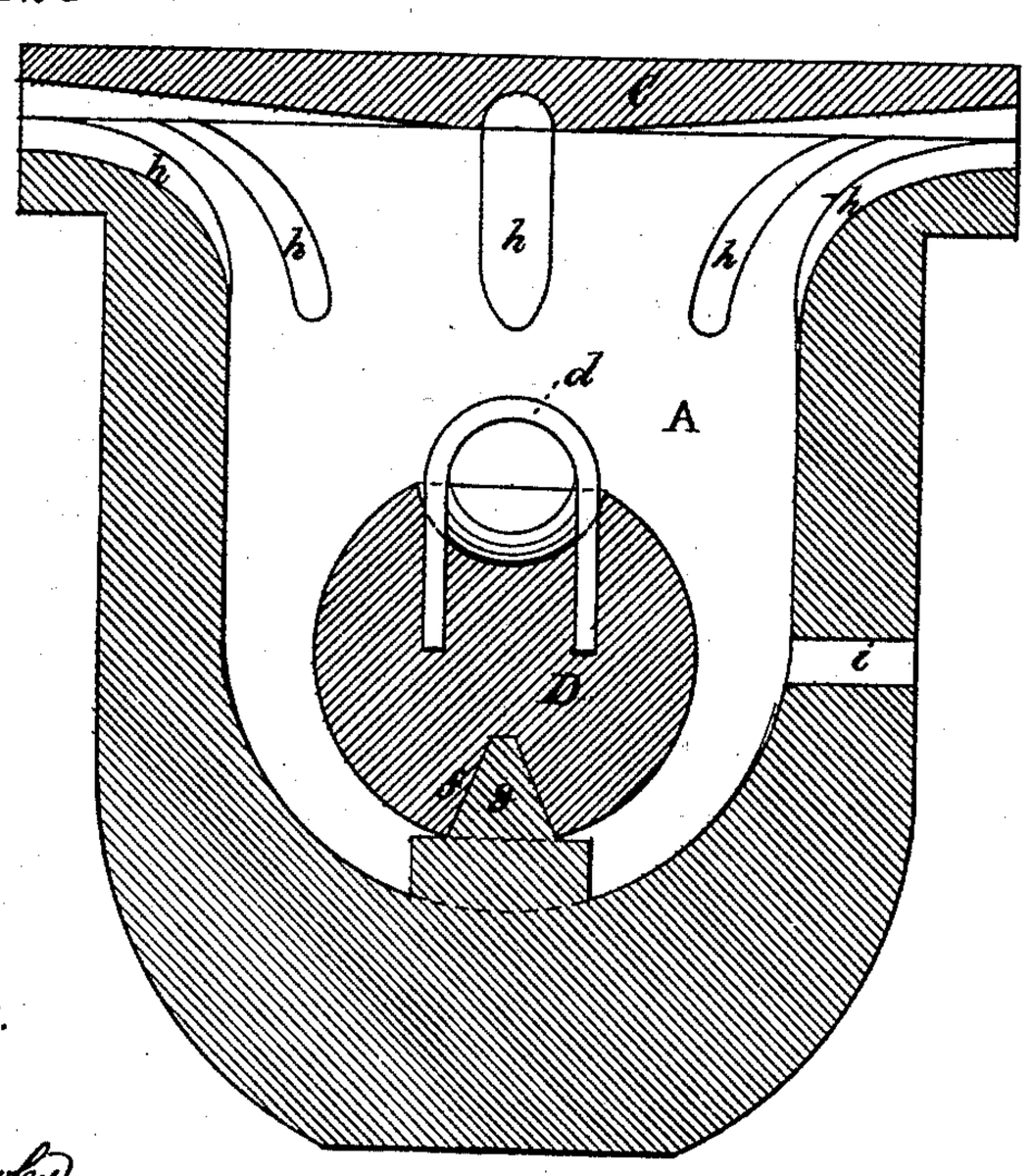


FIG. 5



Witnesses.

Thomas J. Bewley.

E. J. Roberts.

Inventor

Robert Steel.

per Stephen Vottick. atty

UNITED STATES PATENT OFFICE.

ROBERT STEEL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO CHARLES MACE, OF SAME PLACE.

CAR-HEATER.

SPECIFICATION forming part of Letters Patent No. 277,626, dated May 15, 1883.

Application filed December 21, 1882. (No model.)

To all whom it may concern:

Be it known that I, ROBERT STEEL, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Car-Heaters, of which the following is a specification.

My invention consists in the combination of a hot iron ball and a chamber for holding the same with the floor of a railway-car, the ball being connected with the lower port of the chamber by means of a conical recess of the former and a corresponding projection of the latter, and an eye for the insertion of a hook being projected from the upper side of the ball to provide for carrying it to and from the heating-furnace. The chamber has an opening in its front side for the passage of cold air into it from the front of the car, and outlet-channels at its upper side, partly in the under side of the cover, for the passage of warm air into the body of the car.

In the accompanying drawings, which make a part of this specification, Figure 1 is a plan view of the chamber A, with the cover C thrown open. Fig. 2 is a side elevation of the chamber A, cover C, and ring B. Fig. 3 is a vertical section of the same in connection with a portion of the floor of a car. Fig. 4 is a plan view of the chamber A on an enlarged scale, the cover C being removed. Fig. 5 is a vertical section at the broken line *y y* of Fig. 4.

Like letters of reference in all the figures indicate the same parts.

A represents a chamber, made of cast-iron or other suitable material, having a flange, *a*, which fits the annular recess of the ring B, to which it is fastened by means of screw-bolts or rivets *b*, as seen in Fig. 1.

C is the cover of the chamber, connected therewith by means of the hinge *c*.

D is a cast-iron ball, which is of a spherical or other convenient form. It is heated and placed in the chamber A for warming the car. It has an eye, *d*, for the insertion of a hook for lifting it and carrying to and from the heating-furnace, the eye being kept upward in the chamber by the connection of the conical recess *f* of the ball with the like-shaped projection *g* of the chamber, as shown in Fig. 3. The chamber is coated with a non-conducting material to prevent the downward radiation of heat, and thus economize the whole amount for warming the car; and the cover C is also coated with non-conducting material to prevent the heating of the same, the heat being thereby forced to pass from the chamber A through the channels *h*, which are formed partly in its flared mouth and partly in the under surface of the cover C.

The object of preventing any radiation of heat through the cover is to avoid injury to passengers by inadvertently stepping on a hot plate, and also preventing any offensive odor being generated thereon by the surface in any manner becoming foul.

The chamber A has a slot or other opening, *i*, in its front side for the inflow of air, for the purpose of increasing the outflow of the heat through the channels *h*.

I have represented a single chamber A in connection with the floor E of a car; but it is intended to have at least one at each end of a car, and, if found necessary, any desirable number at the side walls or other parts of the car.

The balls D should be made of sufficient size to retain the proper amount of heat during a round trip of a street-car, or, when used in steam-cars, long enough to last between stations at any desirable distance apart.

I claim as my invention—

The combination of the ball D, having an eye, *d*, and conical recess *f*, with the chamber A, having a corresponding projection, *j*, and an inlet-opening, *i*, in its front side for the passage of cold air from the front of the car, and outlet-passages *h* at its upper side for the flow of warm air into the car, substantially as described.

ROBERT STEEL.

Witnesses:

THOMAS J. BEWLEY,

STEPHEN USTICK.