

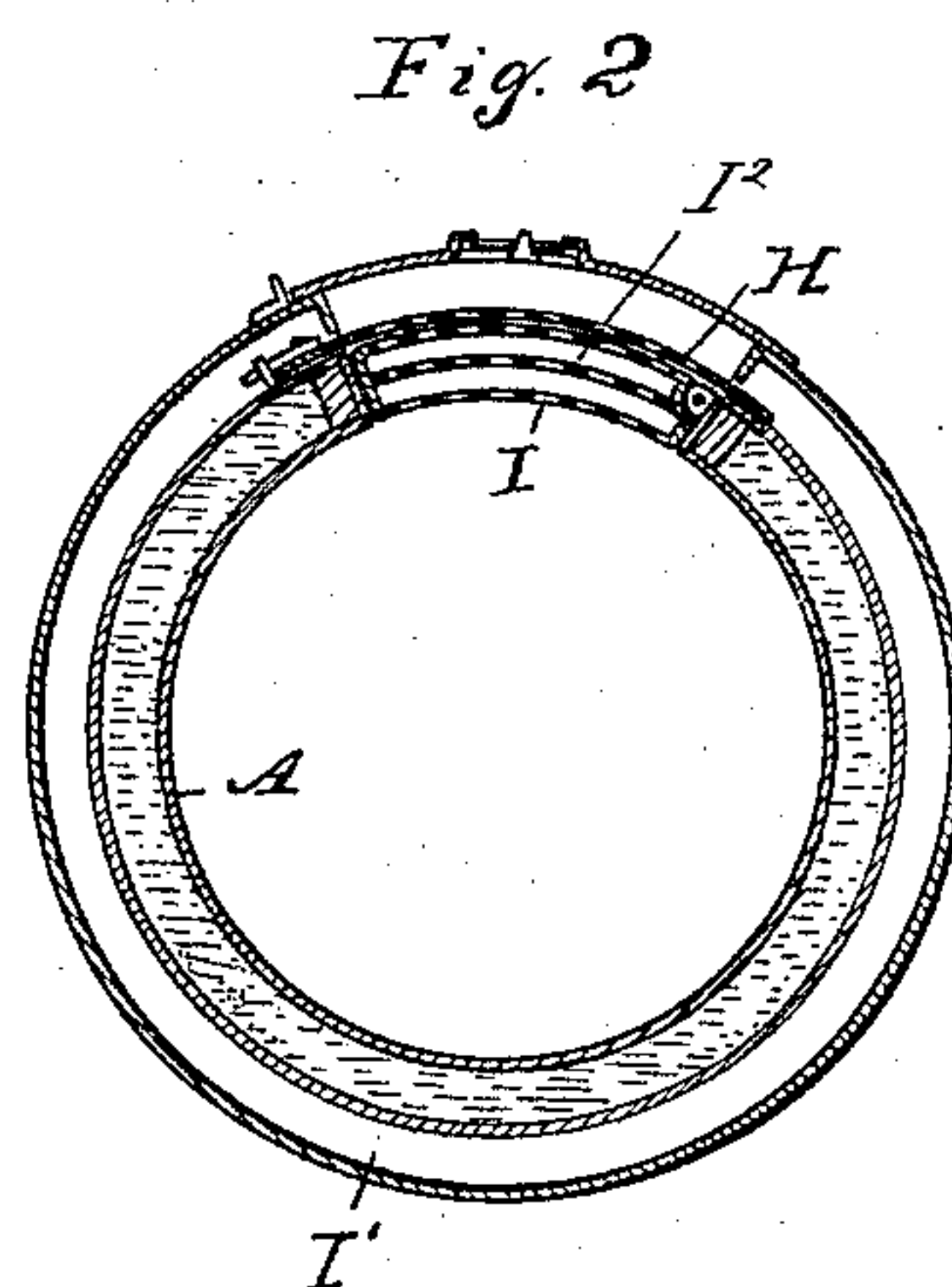
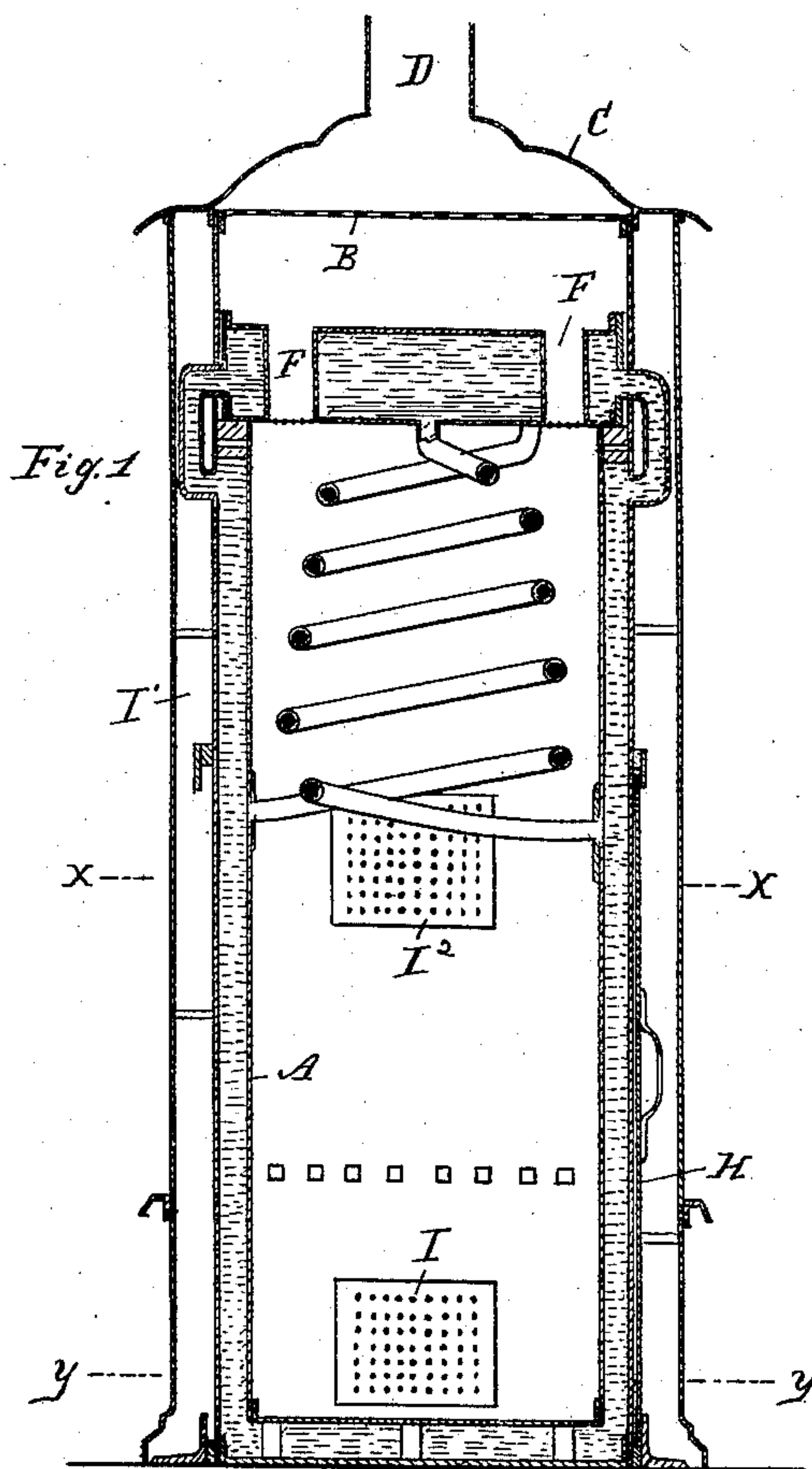
(No Model.)

R. B. OWEN.

CAR HEATER.

No. 372,275.

Patented Oct. 25, 1887.



Attest:
John Schuman.
[Signature]

Inventor:
Russell B. Owen.
by his Atty.
[Signature]

UNITED STATES PATENT OFFICE.

RUSSELL B. OWEN, OF DETROIT, MICHIGAN, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE DETROIT HEATING AND LIGHTING COMPANY, OF SAME PLACE.

CAR-HEATER.

SPECIFICATION forming part of Letters Patent No. 372,275, dated October 25, 1887.

Application filed March 10, 1887. Serial No. 230,320. (No model.)

To all whom it may concern:

Be it known that I, RUSSELL B. OWEN, of Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Car-Heaters; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to new and useful improvements in car-heaters.

It is the object of my invention to furnish a car-heater which is so constructed as to present an absolute guarantee against setting fire to a car in any of the contingencies which a long experience has taught to guard against; and to this end I have embodied in my construction the following principles:

First. I construct the whole fire-box and all portions communicating therewith in one single structure, in contradistinction to the usual practice of constructing it in detachable sections bolted or otherwise secured together. Experience has demonstrated that however securely such sections may be secured together they are liable to come apart in case of accident.

Second. The use of cast-iron or other material liable to be broken in case of accident is avoided where it may interfere with the paramount object of safety.

Third. The doors which afford access to the fire are doubly or triply guarded by safety-doors so arranged that their different manner of opening forms a lock against their being accidentally opened under any contingency.

Fourth. The usual draft and smoke openings are so arranged that all danger of fire or cinders issuing through them is effectually guarded against.

Fifth. No portion of the heater which is liable to become hot enough to form a source of danger by contact with inflammable material is exposed.

In the drawings, which accompany this specification, Figure 1 is a vertical central section of a car-heater embodying the objects of my invention. Fig. 2 is a horizontal section on line *xx* or *yy*, both sections being alike.

The heater proper, A, is of the kind known

as a "hot-water-circulating heater," and it is constructed of boiler-iron, so as to form a water-jacket upon all sides, top, and bottom, suitable connection being provided between the different portions to produce an efficient circulation of water within the heater, and with the ordinary outside connections, by means of which the car is heated in the manner well known. I do not intend to confine myself to any peculiar arrangement or connection of any portion of such water-jacket; but all the parts thereof are connected integrally by riveting, and no portion of the outside shell is exposed to the direct heat of the fire. This all-around water-jacket incloses the combustion-chamber, the heating-coils, if there are any provided, and the ash-pit within it, and where needed for strength the outer and inner shell may be stayed together in the usual manner, as shown in Fig. 1. The egress of smoke and products of combustion is provided for through a perforated top plate, B, also riveted to the water-jacket, and with perforations small enough to prevent incandescent coal or flame from passing through it, and over this I place an ornamental outside cover, C, also firmly secured thereto, and which carries the usual exit-flue, D. The means provided for, to pass the gases and smoke from the combustion-chamber through the water-jacket on top consist in a suitable number of smoke-flues, F, preferably of small size, of the required number, so as to prevent, in case of upsetting, the spilling of the fire through them. These flues, if deemed necessary, may also be screened.

The fire and ash-pit doors I I², respectively, are made with air-spaces to prevent their becoming heated on the outside, and for the ingress of air they are provided with perforations in suitable numbers, but small enough to prevent fire or cinders issuing through them. The usual slides are omitted in these doors. These doors are hinged and may have suitable locking devices, and are flush on the outside with the water-jacket. Over these doors I secure a sliding outside door, H, which runs in suitable guides secured to the outside of the water-jacket. This door, which covers both the ash-door and fire-door, is preferably of steel, has a locking device which locks it in its

closed position, and has perforations corresponding with the perforations in the fire and ash-pit doors.

5 Over the outside of the whole heater I place a jacket, I', which may be, if desired, of ornamental shape to give the heater the usual ornamental outside appearance of being constructed in sections. It makes a tight joint on top and
10 as to prevent the access of air to the stove, except through the air-feeding devices in the doors of said jacket, said doors being arranged in the usual manner, preferably sliding, one communicating with the fire-door and the other
15 with the ash-pit door, and having the usual register for the admission of air.

What I claim as my invention is—

The combination, with the double shell of the heater, of the hollow perforated ash-pit door, the hollow perforated fire-door, each 20 made with air-spaces to prevent their becoming heated on the outside, a sliding door over said doors and perforated as described, and an outside shell having fire and ash-pit doors and air-registers, all substantially as described, and for 25 the purpose specified.

R. B. OWEN.

Witnesses:

H. S. SPRAGUE,

T. E. ROBERTSON.