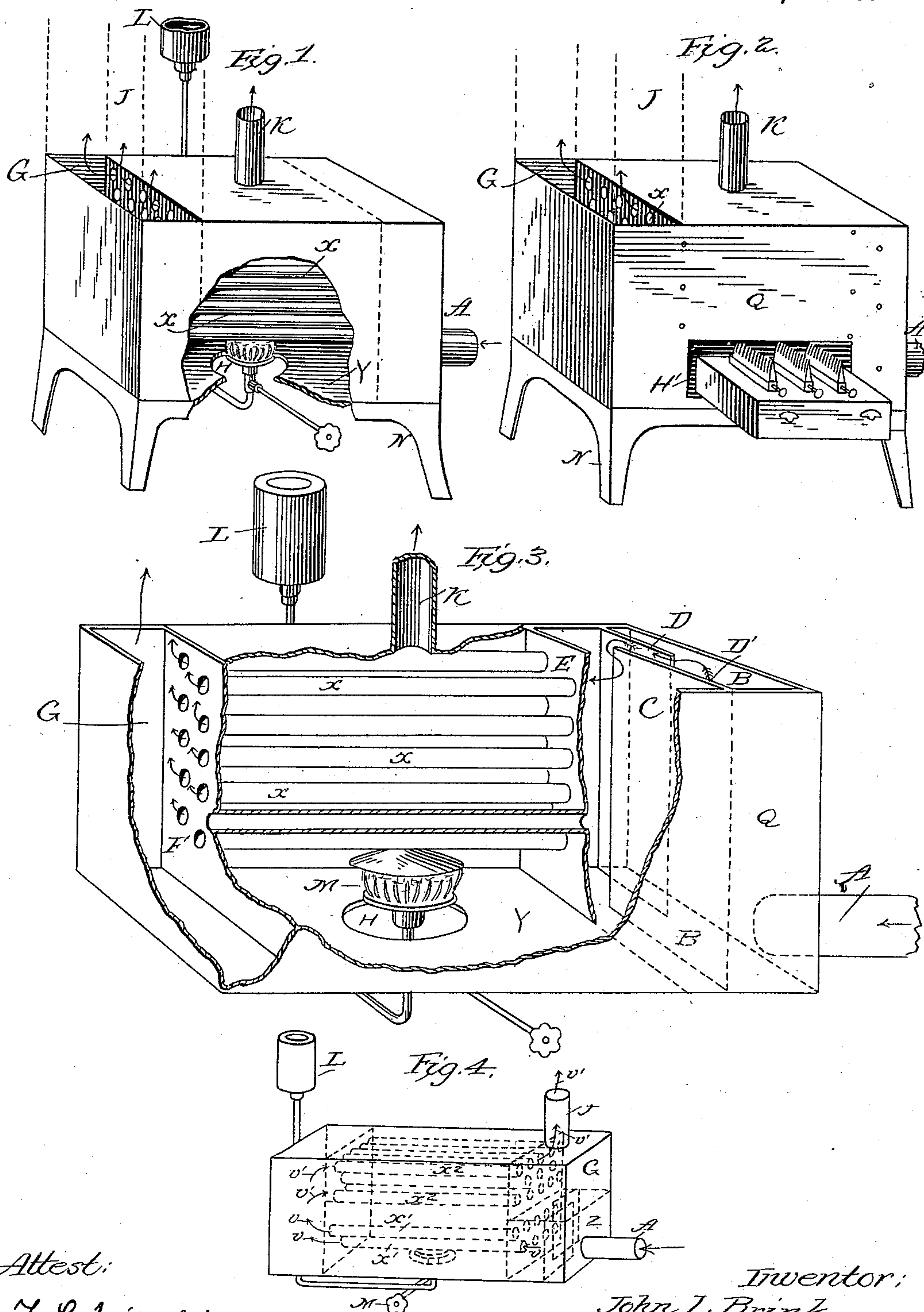


(No Model.)

J. L. BRINK.  
HEATING APPARATUS.

No. 343,219.

Patented June 8, 1886.



Attest:

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# UNITED STATES PATENT OFFICE.

JOHN L. BRINK, OF DUBUQUE, IOWA, ASSIGNOR OF ONE-HALF TO A. C. DENNIS, OF SAME PLACE.

## HEATING APPARATUS.

SPECIFICATION forming part of Letters Patent, No. 343,219, dated June 8, 1886.

Application filed June 5, 1885. Serial No. 167,717. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN L. BRINK, of Dubuque, in the county of Dubuque and State of Iowa, have invented a new and useful Improvement in Heating Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention is an improvement in an apparatus for heating rooms and other compartments required to be kept at a comfortable temperature.

The object of my invention is to produce an economical heating apparatus adapted to be used in any compartment, either in connection with the chimney or without, in a small space, with facility and regulation and ready for action. It is designed to take the place of gasoline, gas, or oil heating-stoves, and may be used in a dwelling-house, car, or other compartments where it is desired readily to raise the temperature of the room or rooms.

My invention consists, essentially, in a box adapted to be permanently fixed in some suitable place—such as a cellar or basement or lower room—or to be moved from place to place in the compartment, having a series of air-heating pipes communicating with an air-chamber in each end of the box, and passing through a central chamber, which has provision in its lower part for a flame or equivalent heating agent and in the top an escape for the necessary draft. The box is provided with openings and a circuitous passage for the cold air at one end and openings for the escape of hot air at the other. I have shown in connection with this some modifications, whereby it is adapted to different heating agents.

In the accompanying drawings, Figure 1 is a perspective view of my heating-box with a section left out for the purpose of showing the burner and adjacent parts. Fig. 2 shows the same with the arrangement for using kerosene instead of gasoline. Fig. 3 is an enlarged view of Fig. 1, with the shell broken away to show the interior construction. Fig. 4 is a modification.

The general form of the box is indicated at Q in all of the figures. At one end is a hot-air chamber and at the other a cold-air chamber. Intermediate between the two is a heating-chamber, which is occupied by the pipes,

among which the flame or heating agent passes, and through which the air passes from the cold-air chamber, thereby receiving the heat in its heating capacity.

A pipe, A, from any convenient source conducts the currents of outside cold air which is led into the section B of the chamber C. In this chamber are two diaphragms, D D', which may be made of any suitable shape, running each lengthwise partly across from the opposite sides, and extending beyond each other, substantially as shown in the drawings. By this arrangement there is no waste of the heat, as the action of the cold air is continuous, and the heat cannot escape through the chamber B and the pipe A. Extending from the wall E of this chamber to the wall F of the chamber G, and within the heating-chamber, is a series of pipes of any suitable shape (more or less in number) open at both ends, which are subjected to the heat produced from gasoline or kerosene burners introduced into the chamber Y at openings H H', Figs. 1 and 2. The heat thus generated is transmitted to the flues, and thence to the air passing through them, and the hot air is carried through the flues and into the chamber G by the draft, and by the action of the cold-air current forcing it in that direction. The chamber G is the outlet and distributing point for the heated air, and may be carried directly from that point into the room where the heater is placed, or into one or more rooms upon the same or floors above through conveyers J, Fig. 1.

K is a pipe or chimney, which may be used for carrying off the smoke and odor from the heating-box, preventing its escape into the car or rooms; but where the burners or heaters produce no odor or smoke this may be dispensed with, and a simple opening for the draft may be made in the top of the central chamber.

An ordinary gasoline-reservoir, L, and M the ordinary gasoline-burners and attachment, and N the supporting-frame for heating-box, are shown in Fig. 1.

Heat can as readily in a similar way be generated and carried from the flues X by arranging the heating-box Q in connection with the cold-air conductor immediately over a wood or coal fire contained in a stove, and in this



way the superfluous heat of a stove when occasion requires be transmitted to a room above by suitable extension of the hot-air pipes.

5 The heating-box can be so arranged as to adapt it to heat railroad or street cars, using conveyers prolonged from pipes for carrying the heat around the sides of the car adjoining the seats.

10 In street-cars the heating apparatus may be placed under the seat, and so adapted in its connection as to readily heat the interior. Immediately over the burner a deflector,  $a'$ , made in the inverted conical shape, may be placed for the purpose of throwing the heat more  
15 generally through the box, and also protecting the flues from burning out. The cold-air conductor A need not in all cases extend to the outside air; but the air in the room itself may be used instead of the outside air.

20 In Fig. 4 is represented another arrangement of my invention, by which the cold-air current A is made to pass through a certain set of the flues  $x'$ , in the direction of the darts  $v$  into the chamber  $z$ , to return through a se-

ries or set of flues  $x''$ , in the directions of the 25 darts  $v'$  into the distributing heating-chamber G, from whence the heat is carried through conveyers J, thus obtaining an additional heat of the cold-air current, as well as demonstrating the fact that the cold-air chamber C and 30 warm-air or distributing-heat chamber G can be placed at one and the same end of the heating-box Q as well as at either end.

I claim as my invention—

In combination with the heating-box hav- 35 ing central chamber and end chambers with air-flues through the central chamber opening into the end chambers, and inlet and outlet openings, the overlapping walls D D', contained in the chamber C, substantially as de- 40 scribed.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN L. BRINK.

Witnesses:

FRANK H. WEIHE,  
PETER KIENS, Jr.