GRAVES & CLARK.

Heating Stove.

No. 90,660. Patented June 1, 1869.

Fig: 1.

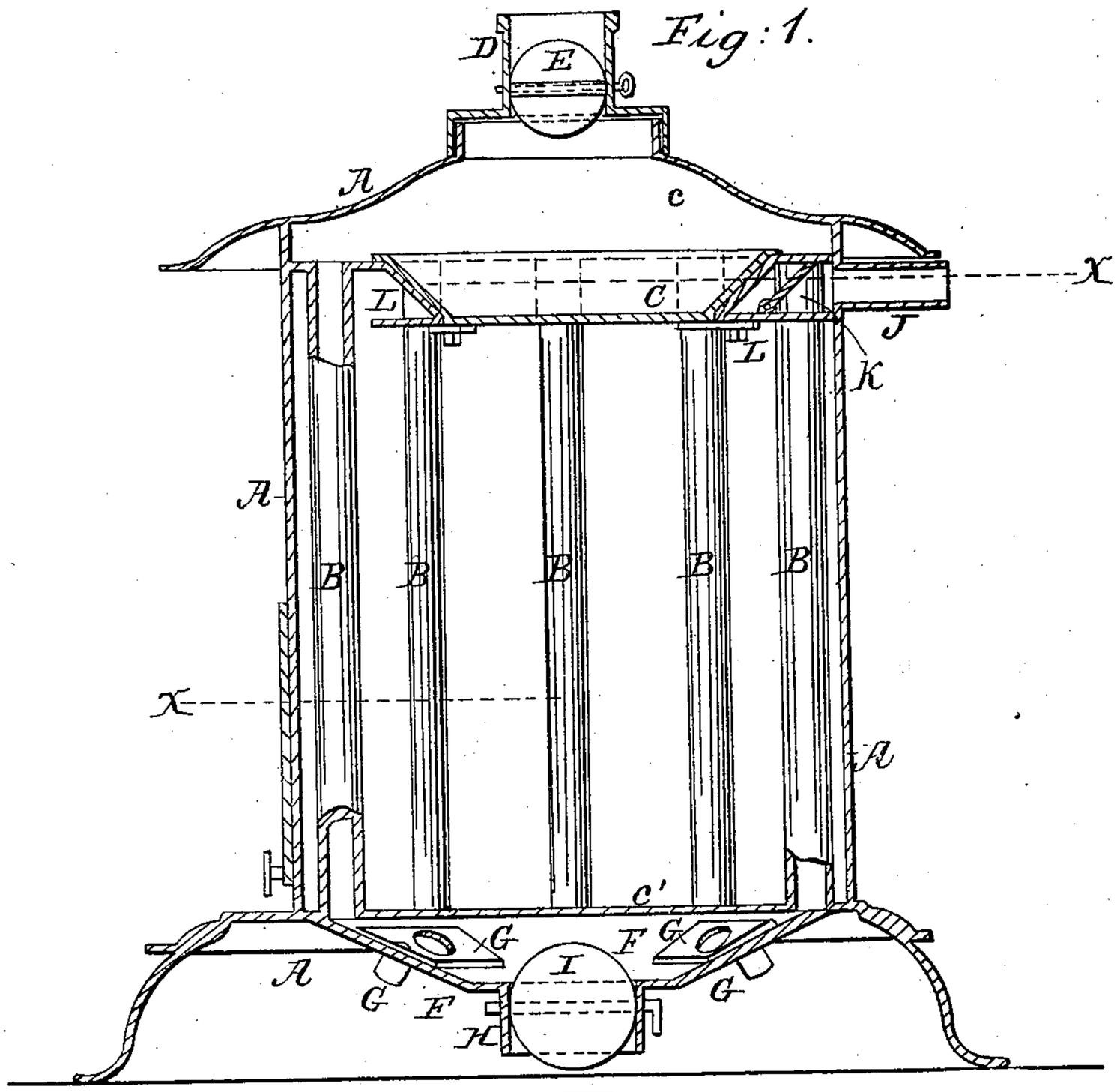
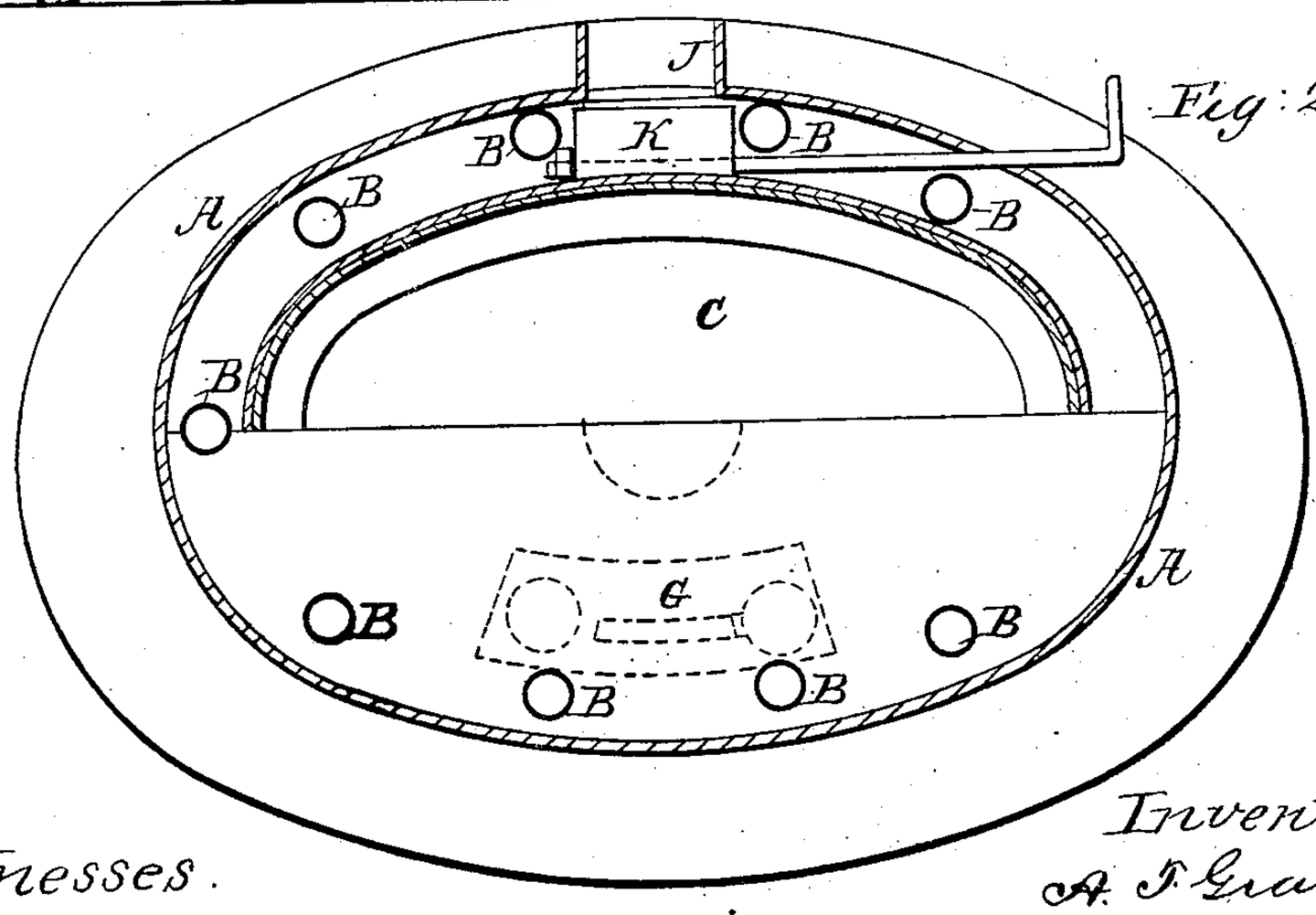


Fig: 2.



Witnesses.
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A. F. GRAVES AND T. J. CLARK, OF RED WING, MINNESOTA.

Letters Patent No. 90,660, *dated June* 1, 1869.

COAL-STOVE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, A. F. GRAVES and T. J. CLARK, of Red Wing, in the county of Goodhue, and State of Minnesota, have invented a new and useful Improvement in Stoves; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical section of our improved stove.

Figure 2 is a detail sectional view of the same, taken through the line *x x*, fig. 1.

Similar letters of reference indicate corresponding parts.

Our invention has for its object to furnish an improved stove, or heater, which shall be so constructed as to heat the air and discharge it into the room, so as to heat the room comfortably with a much less consumption of fuel than is necessary when the stove is constructed in the ordinary manner; and

It consists in the construction and combination of the various parts of the stove, as hereinafter more fully described.

A is the body of the stove, into which the fuel is introduced in the ordinary manner.

B are cold-air pipes, which pass up directly through the fire-chamber of the stove, so as to expose the air passing through them to the direct action of the fire.

The upper ends of the air-pipes B open into the hot-air chamber C, which is formed in the upper part of the stove A, in which chamber the air is still further heated, and from which it passes, through the discharge-pipe or pipes D, into the room to be heated, which may be the same room in which the stove is placed, or any other room or rooms into which the said pipe or pipes may lead.

The pipe or pipes D may be provided with a damper, E, to regulate the escape of the heated air, as desired.

The lower ends of the cold-air pipes B open into the cold-air chamber F, which is formed in the lower part of the stove, below the bottom, *a'*, of the fire-chamber.

The cold-air chamber F is provided with openings, and sliding dampers G, by means of which the cold air of the room may be admitted, and be heated by passing through the pipes B.

The cold-air chamber F is also provided with a pipe, H, through which cold air from out of doors may be admitted, heated, and discharged into the room, thus keeping up a constant supply of pure air in the room.

The pipe H is furnished with a damper, I, by means of which the entrance of cold air may be regulated at will, or wholly prevented.

J is the draught-pipe, through which the products of combustion pass to the chimney.

K is a damper, which, when open, allows the products of combustion to pass directly to the flue J.

When the damper K is closed, the said products of combustion are compelled to rise at the forward part of the stove, pass above the damper-plate L, and around the depressed central part of the hot-air chamber C, before they can escape through the pipe J, thus utilizing a larger amount of the escaping heat, causing the fire to burn more slowly, and diminishing the consumption of fuel, while obtaining a sufficient supply of heat.

In using the stove, the dampers K and G are at first left open.

When the fire has burned sufficiently, the damper K is closed, and when the air in the room has become heated, the dampers G are closed, and the damper I is partially or wholly opened, to admit pure air from out of doors, in larger or smaller quantities, as may be desired.

We claim as new, and desire to secure by Letters Patent—

1. The combination of the air-pipes B with the cold-air chamber F, provided with the valve G, with the fire-chamber of the stove, of the general construction herein shown and described.

2. The combination of the damper-plate L and damper K with the fire-chamber of the stove A, and with the depressed middle part of the hot-air chamber C, substantially as herein shown and described, and for the purposes set forth.

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