

F. S. HARTWELL.

GAS OVEN.

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999,717.

Patented Aug. 1, 1911.

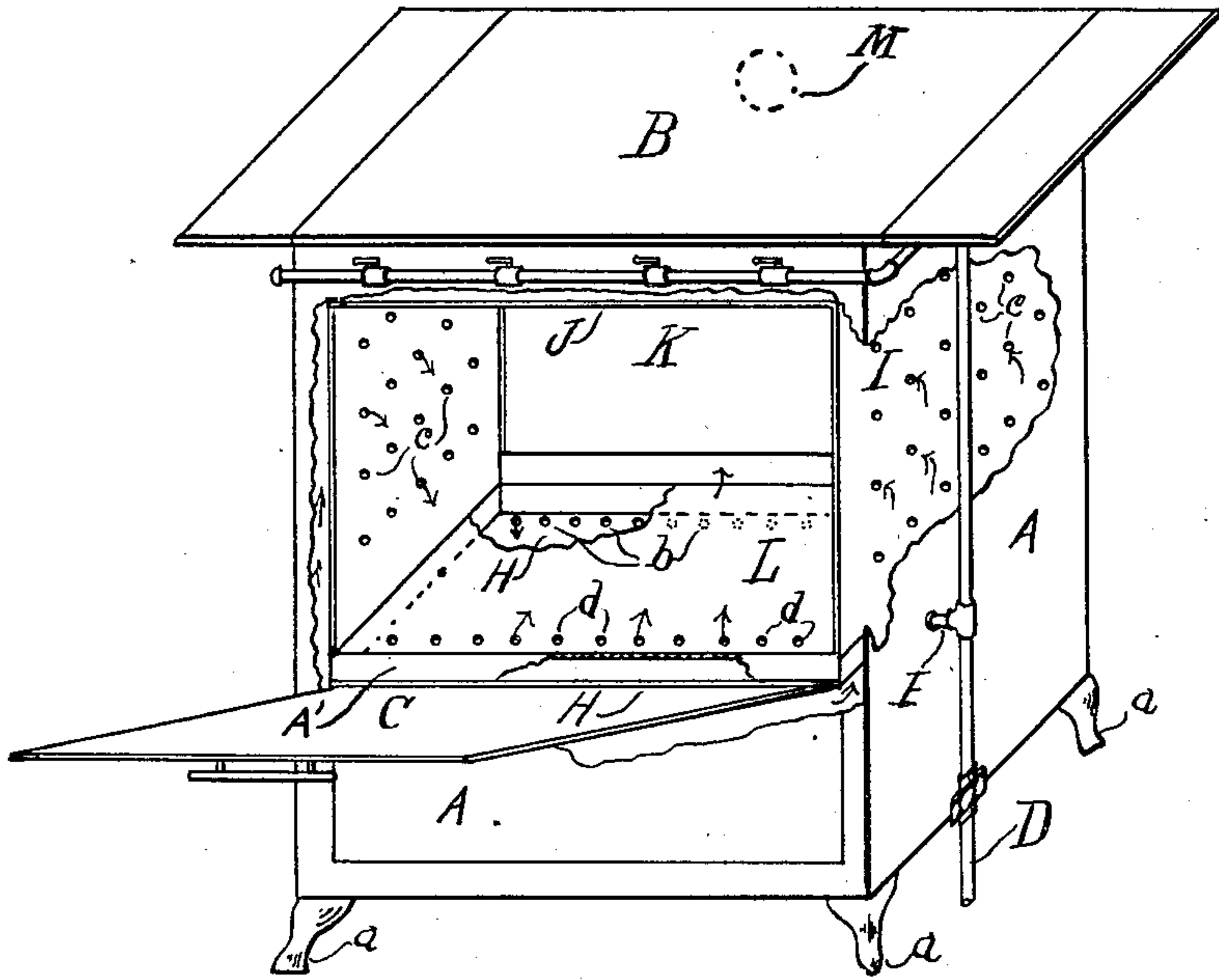


FIG. 1.

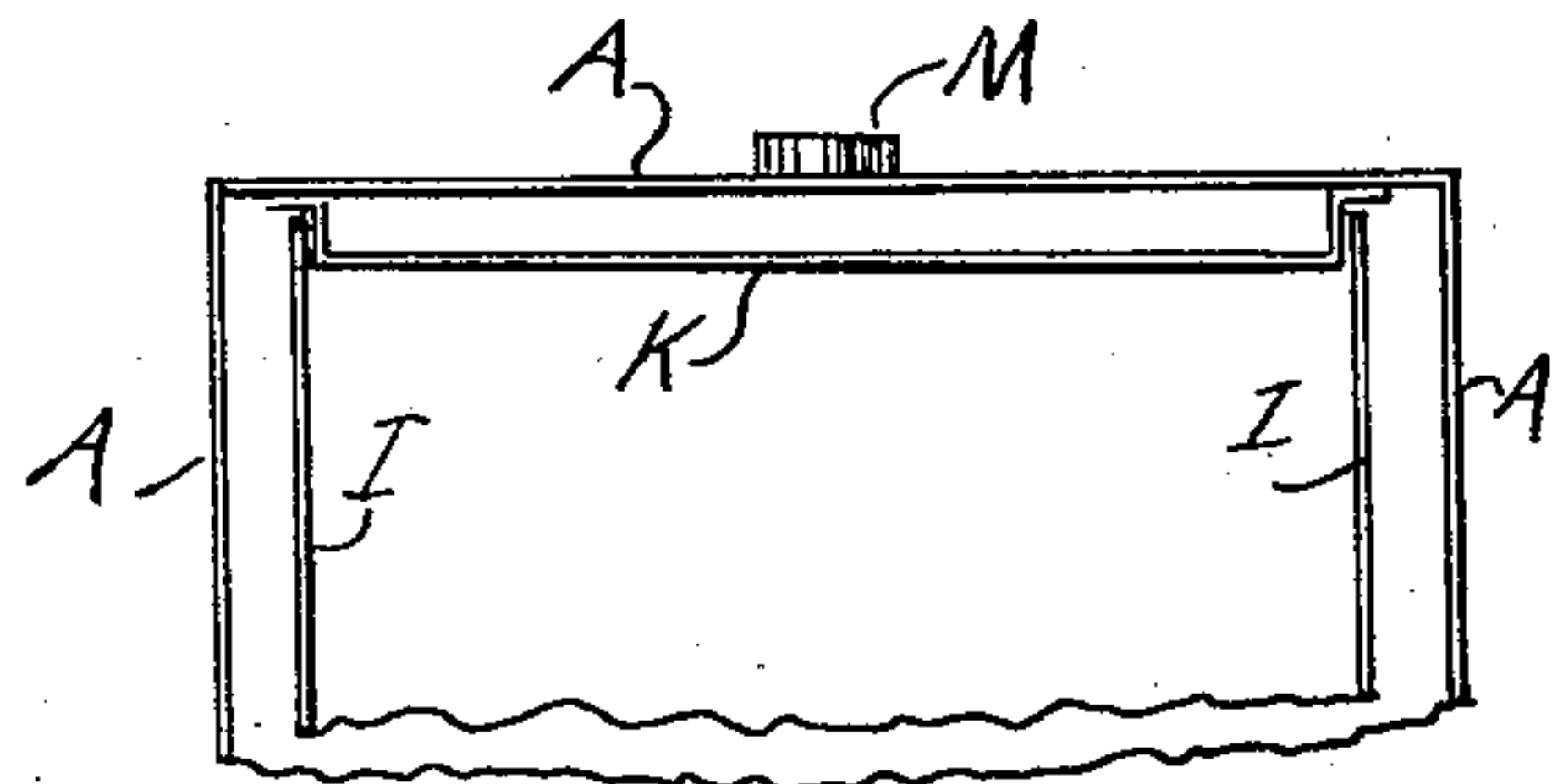


FIG. 3.

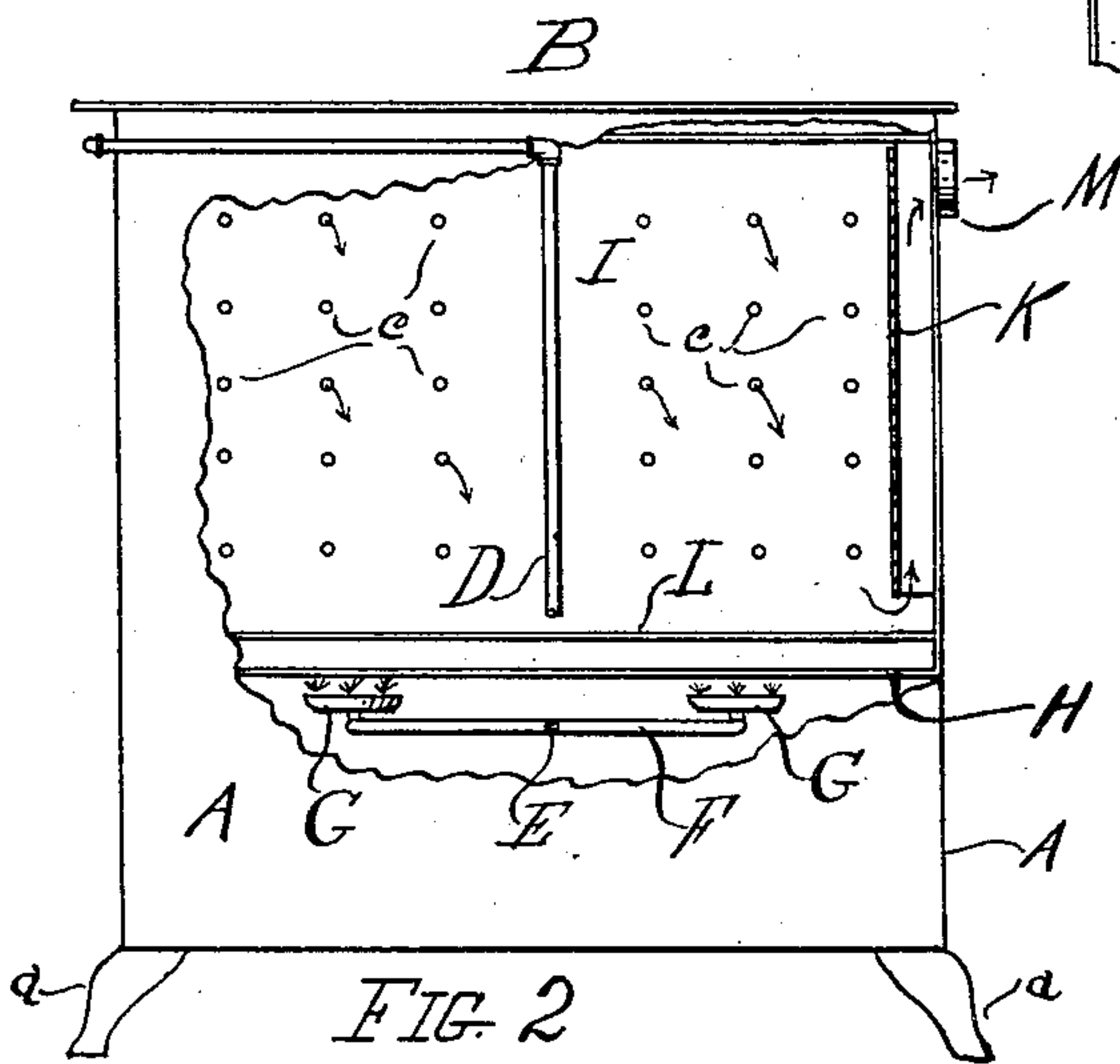


FIG. 2.

WITNESSES:

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GAS-OVEN.

999,717.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FLOYD S. HARTWELL, a citizen of the United States, residing at Sioux City, in the county of Woodbury and State of Iowa, have invented certain new and useful Improvements in Gas-Ovens, of which the following is a specification.

My invention relates to gas ovens, and the object is the construction of an oven heated by gas in which all the heat is evenly distributed, which bakes uniformly and evenly in all parts and saves the consumption of gas.

As is well known, in ovens heated by gas the heat generated by the burners located under the floor plates rises and after circulating through the oven passes out at the top or through ventilating flues into the outer air. This movement of the heat currents is necessary to heat the oven thoroughly and to carry off the vapors and moisture from the dough. With such an oven, however, the heat is never uniform except when the burners are supplying more heat than the flues of the oven can carry away. And when this is the case the oven becomes overheated and burns the bread. When the gas is turned low, insufficient heat is supplied to bake properly except at points directly between the burners and the flues, with the result that the bread must be turned around in the oven from time to time in order to be evenly baked. These undesirable features are overcome by the invention herein described, in which the oven is so constructed that the heat currents fill the oven first and pass out at the rear on the floor line, being evenly distributed over the floor, while the circulation of air drives the excess of heat and the vapors out through the ventilating passage. The oven is so arranged that however low the burners are turned the heat fills the oven evenly, which not only bakes uniformly but saves in the consumption of gas.

I have illustrated my invention in the accompanying drawing, in which—

Figure 1 is a perspective view of my oven with the door open, illustrating the invention, some of the parts being shown with broken lines. Fig. 2 is a side view of the same with a part of the outer casing and lining broken away, the rear lining being shown in section. Fig. 3 is a plan view of a part of oven showing the attachment of the back lining to the rear wall of the outer

casing, the top of the oven and the top lining being removed.

In the drawing A is the body of the oven or outer casing which rests on the legs *a*.

B is the top and C the door, hinged at the bottom in the usual manner, showing when open the interior of the oven and linings.

D is the feed pipe from the source of gas supply from which a branch pipe E leads under the oven. From the pipe E other pipes F lead to the burners G, distributed in the usual way under the floor of the oven. The burners are directly under the bottom H which is secured at the sides to the perforated side linings I and extends back to the rear wall of the oven. Spaces are left between the side linings and the outer casing A through which the hot currents of air may pass around the sides of the oven as shown by the arrows. The top lining J is secured on each side to the side linings and extends backward to the rear wall of the outer casing A to cover the space between the rear wall and the back lining K. The latter has no perforations and is bent at the sides where it is secured to the rear wall of the outer casing to form a passage for the outgoing currents of air. Above the bottom H is a false bottom L secured to the side linings and extending to the rear as far as the outer casing. The bottom H has a row of holes *b* near the back opening into the space between the two bottoms, the side linings being perforated by numerous small holes *c*, while the false bottom has a row of holes *d* near the front opening into the oven. The back lining does not extend down to the false bottom, but leaves a gap or passage at the floor of the oven opening into the space at the rear through which the heated air passes out of the oven. The plate A' closes the space between the two bottoms in front, the space being wholly inclosed except for the holes mentioned. The side and top linings and the two bottoms are made integral with each other and form a box or frame adapted to slide into the oven through the door-way and to be removed for cleaning or renewal. These parts lap over the rear lining and form closed joints around the rear lining and the rear wall of the outer casing to close off the back space from communication with the other spaces around the oven and to prevent any of the

draft from entering the rear space without first passing through the oven.

The bottom H is first heated by the burners, a portion of the draft passing around the sides in the spaces and into the oven through the holes *c*. Another part of the draft enters the space between the two bottoms through the holes *b*, passing under the false bottom, heating it at the same time, and into the oven through the holes *d*. As the air cools and settles it is drawn to the back of the oven through the passage at the floor and into the space at the rear and out at the top through the ventilator M. The burners being situated in the space under the oven which communicates directly with the spaces at the sides, permits a part of the heat currents to pass freely up the sides and into the oven through the perforations, the rest of the draft entering the oven at the bottom and insuring an even distribution of heat.

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

1. A gas oven comprising an outer casing, perforated side linings forming spaces between the casing and side linings, a double perforated bottom, a solid back lining forming a space between said back lining and the rear wall of the casing and a passage between the lower end of the back lining and the upper bottom of the oven into said space, burners situated under the bottom of the oven within the outer casing, whereby the heat currents are conducted into the baking chamber at the sides and bottom and out at the bottom at the rear, substantially as described.

2. A gas oven comprising an outer casing, perforated side linings forming spaces between the casing and side linings, a bottom

with perforations near the rear, burners situated under the bottom, a false bottom having perforations near the front, a solid back lining forming a space at the rear and a passage between the lower end of the back lining and the false bottom of the oven into said space, a ventilator near the top of said rear space, whereby the heat currents are conducted into the baking chamber at the sides and bottom and out through the passage at the lower end of the solid back lining at the rear, substantially as described.

3. A gas oven comprising an outer casing, an inner frame or lining adjustable within the casing and having a double bottom, the lining being perforated at the sides and forming spaces between the casing and lining, the lower of the bottom members having perforations near the rear, burners situated under the lower bottom, the upper bottom having perforations near the front opening into the interior of the oven, the perforations in the lower bottom opening into the space between the two bottoms, a solid back lining secured to the rear wall of the casing and forming a space at the rear between the back lining and the casing and a gap or passage between the upper bottom and the lower end of the solid back lining opening into the space at the rear, whereby the heat currents are conducted into the interior of the oven at the sides and in front and out from the baking chamber at the rear, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

FLOYD S. HARTWELL.

Witnesses:

H. C. GARDINER,
A. J. JOHNSON.