

No. 728,527.

PATENTED MAY 19, 1903.

J. H. WATERS.  
HEATING STOVE.

APPLICATION FILED DEC. 28, 1899.

NO MODEL.

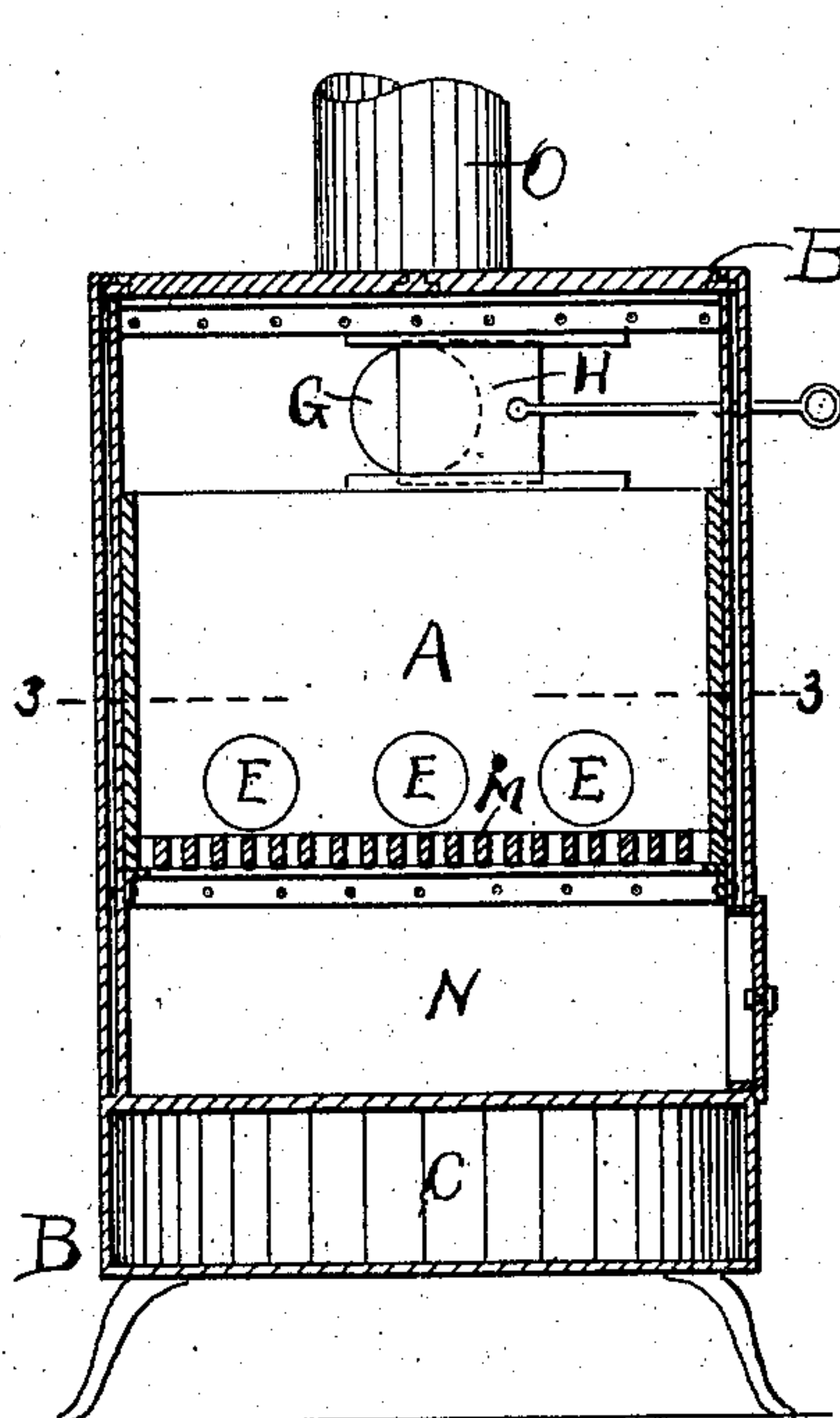


Fig. 1.

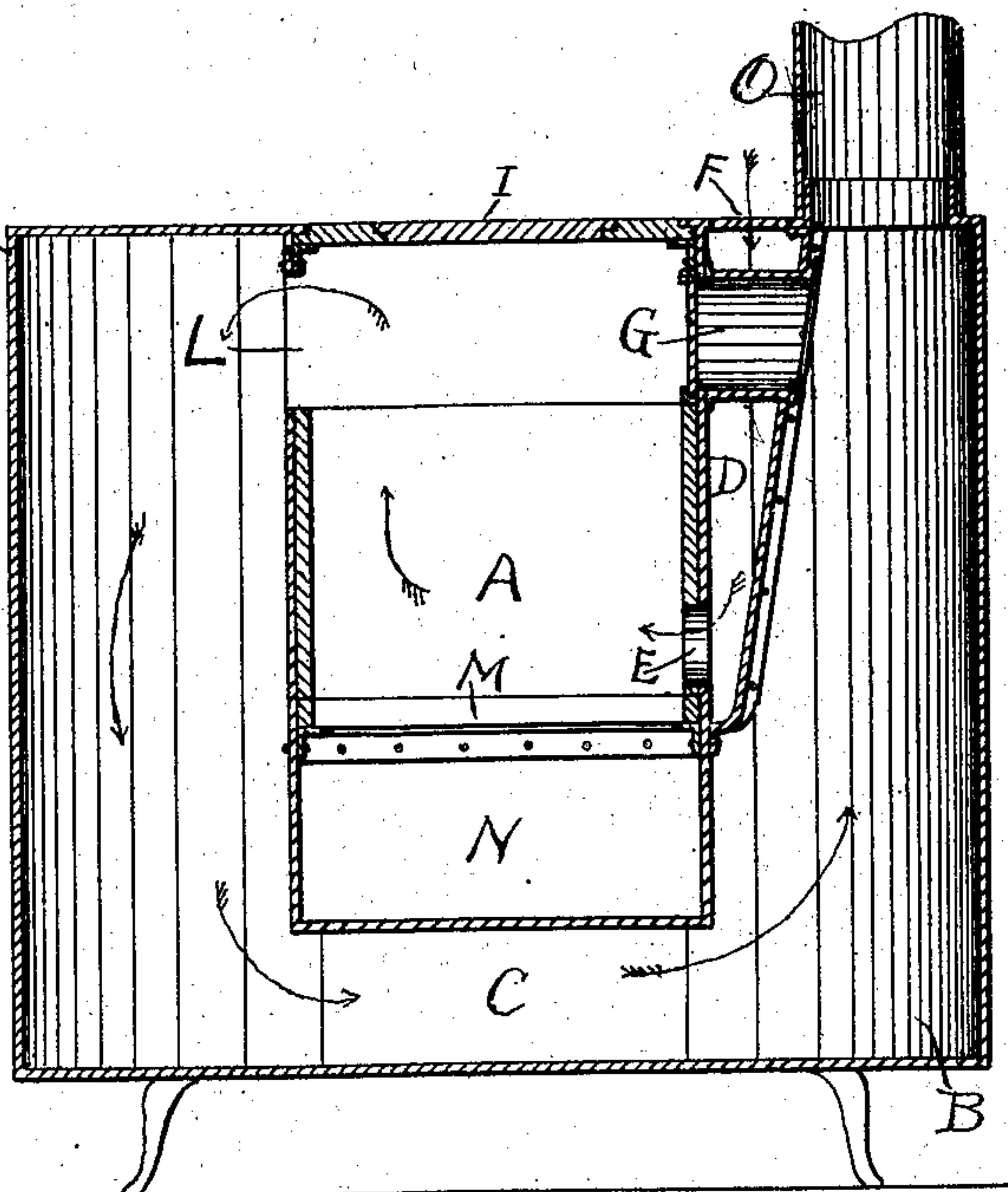


Fig. 2.

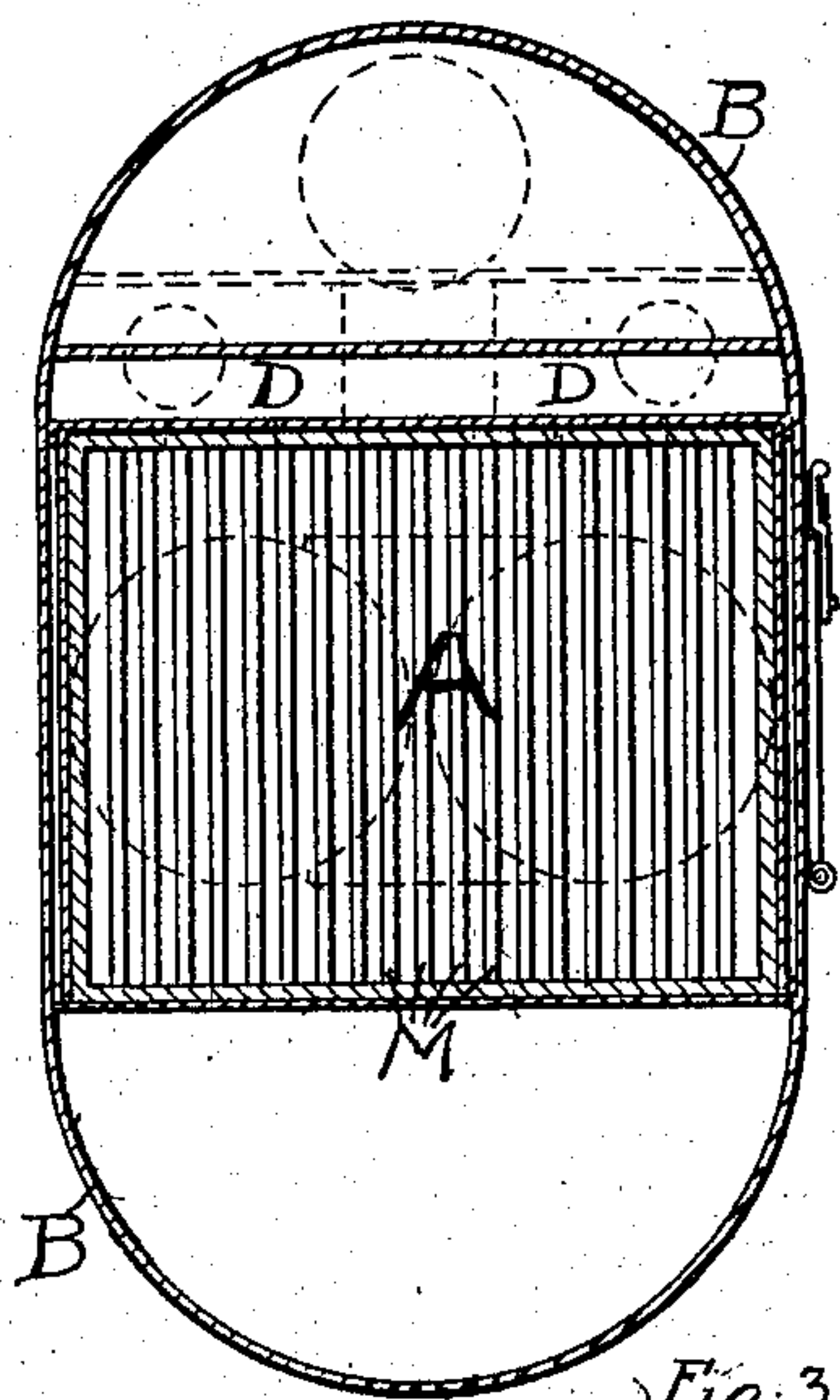


Fig. 3.

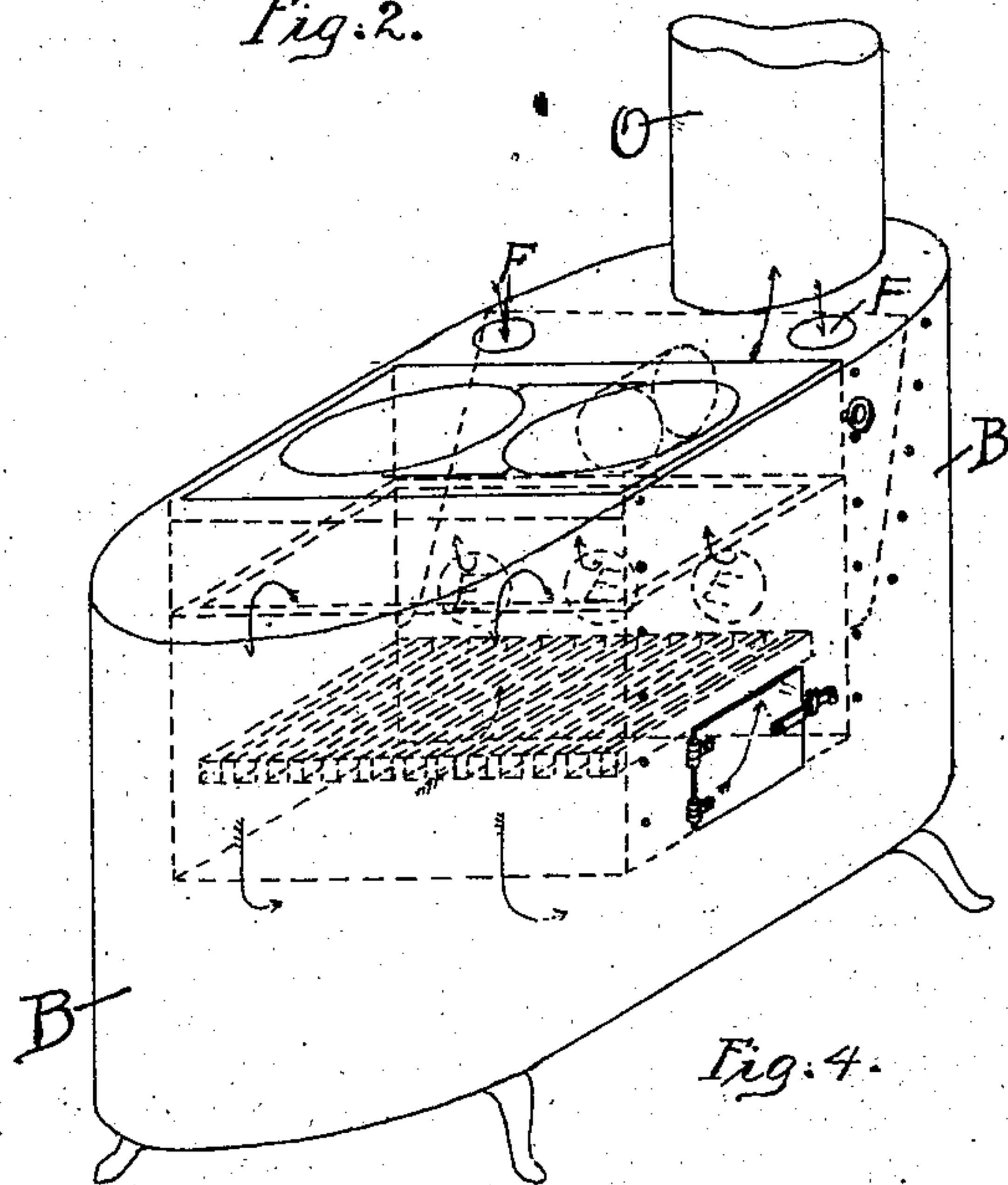


Fig. 4.

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## HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 728,527, dated May 19, 1903.

Application filed December 28, 1899. Serial No. 741,819. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES H. WATERS, a citizen of the United States, residing at Tacoma, in the county of Pierce and State of Washington, have invented a new and useful Improvement in Heating-Stoves, of which the following is a specification.

My invention pertains to stoves of the air-tight pattern, in which my improvement consists of a fire-box or combustion-chamber located within the stove.

The object of my invention is to obtain a larger heating-surface for the amount of fuel consumed and to so regulate and adjust the fire-draft as to utilize a maximum amount of heat from a minimum amount of fuel. I attain these results by means of the device illustrated in the accompanying drawings, in which—

Figure 1 is a vertical cross-section of a stove constructed with my improvement. Fig. 2 is a vertical section lengthwise of the same. Fig. 3 is a horizontal section at 3 3, and Fig. 4 is a perspective view of the stove with my improvement indicated as constructed therein.

Similar letters refer to similar parts in the several views.

My invention comprises a fire-box A, located within a stove B. The stove is preferably oblong or elliptical in shape, and the fire-box is designed to extend from side to side and also to the top of the stove. The fire-box is securely anchored to the body of the stove and is so located that a space C is provided between the bottom of the ash-pit and the bottom of the stove. In connection with the fire-box is a hot-air draft-chamber D, with ports E E E near the bottom opening into the fire-box and with intake air-openings F F, with dampers at the top. Near the top of the fire-box and passing through D is a direct-draft pipe G, provided with a damper H. In the opposite side of the fire-box is opening L to provide an indirect draft when H is closed. The fire-box is provided with a suitable grate M at a proper position to provide an ash box or pit N below. The damper H is designed to be opened only when starting a fire or when a strong draft is temporarily required. As soon as the fire is well started H is to be closed, when the heat of combustion is drawn through L and downward un-

der the fire-box and thence up and out the smoke-pipe O, as indicated by the arrows. By means of this circulation of the flames and smoke about the stove a maximum amount of heat is utilized before passing out of the smoke-pipe. The supply air for combustion is regulated by means of the dampers F F. The air in passing through the chamber D becomes thoroughly heated before entering the fire-box, and thus produces a more thorough combustion and a higher heat than if cold air were used.

It will be observed that the fire-box extends to the top of the stove and is closed at the top by the removable covers I, which permit access to the fire-box from the top for supply of fuel and which also enables the top above the fire-box to be heated. It will be further observed that the indirect-draft opening L is in the upper part of the wall of the fire-box, which insures an upward draft through the fire-box and at the same time causes the escaping products of combustion to leave the fire-box at a point where they will heat the top of the stove to one side of the fire-box and also the side of the stove from the top to the bottom, as illustrated by the arrows in Fig. 2 of the drawings.

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

A heating-stove consisting of an external air-tight drum, and an internal fire-box located within the drum and having its upper part in close contact with the top of the drum, with the body portion depending within the drum to divide the interior of the drum into spaces, one on the side next to the smoke-exit pipe, another on the side farthest from the smoke-exit-pipe side, and another beneath the fire-box and in communication with the side spaces, a valve-controlled direct-draft pipe between the fire-box and smoke-exit pipe leading from the external drum, an air-supply or draft flue leading from outside of the air-tight drum and extending along the fire-box from its upper to its lower portion and delivering into the lower part of the fire-box whereby the air is heated before it enters the bottom of the fire-box, and an indirect-draft opening between the upper part of the fire-box and the upper part of the side

space farthest removed from the smoke-exit  
pipe, whereby the air introduced at the bot-  
tom of the fire-box is caused to pass up-  
wardly toward the top of the box and finds  
5 its escape through the indirect-draft opening  
at the upper end of the fire-box adjacent to  
the top of the outside drum, the several  
parts being relatively arranged as specified,  
whereby air is excluded from between the  
10 external air-drum and internal central fire-  
box except such air as is admitted into the fire-  
box at the bottom through a preliminary  
heating-flue and then directed from the up-  
per part of the fire-box next to the top of the

drum into the side space farthest removed 15  
from the smoke-exit pipe and thence down  
through said space and into the space be-  
neath the fire-box and thence into and up  
through the space on the side next to the  
smoke-exit pipe and thence out through said 20  
pipe at the top of said space, substantially as  
described.

In testimony whereof I affix my signature  
in the presence of two witnesses.

JAMES H. WATERS.

Witnesses:

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EMILE S. LEMME.