

No. 640,545.

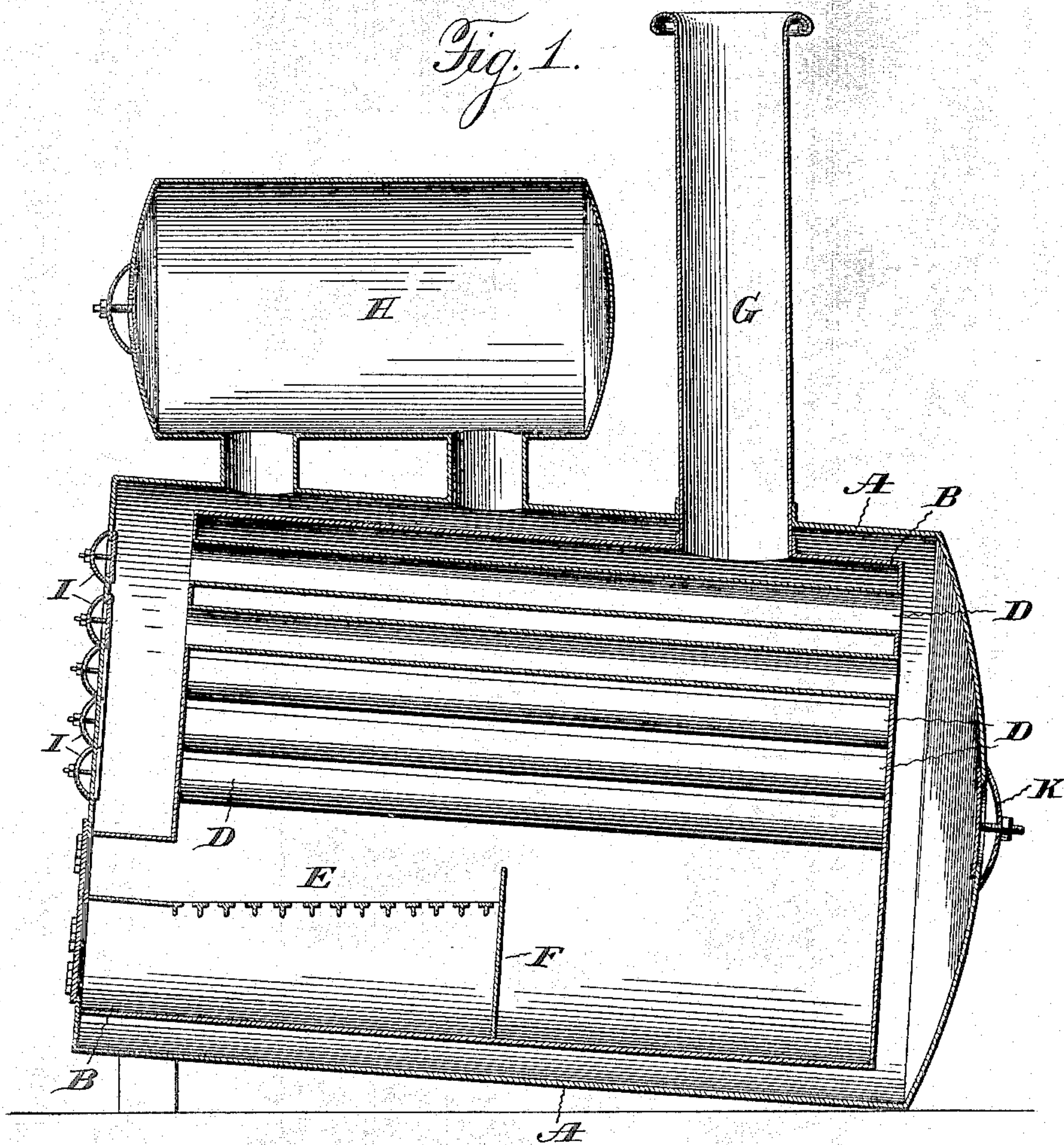
Patented Jan. 2, 1900.

G. H. DRAKE.
BOILER.

(Application filed June 29, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
Jas E Hutchinson
Henry C. Hazard.

Inventor.
George H. Drake, by
Prindle and Russell, his Attys.

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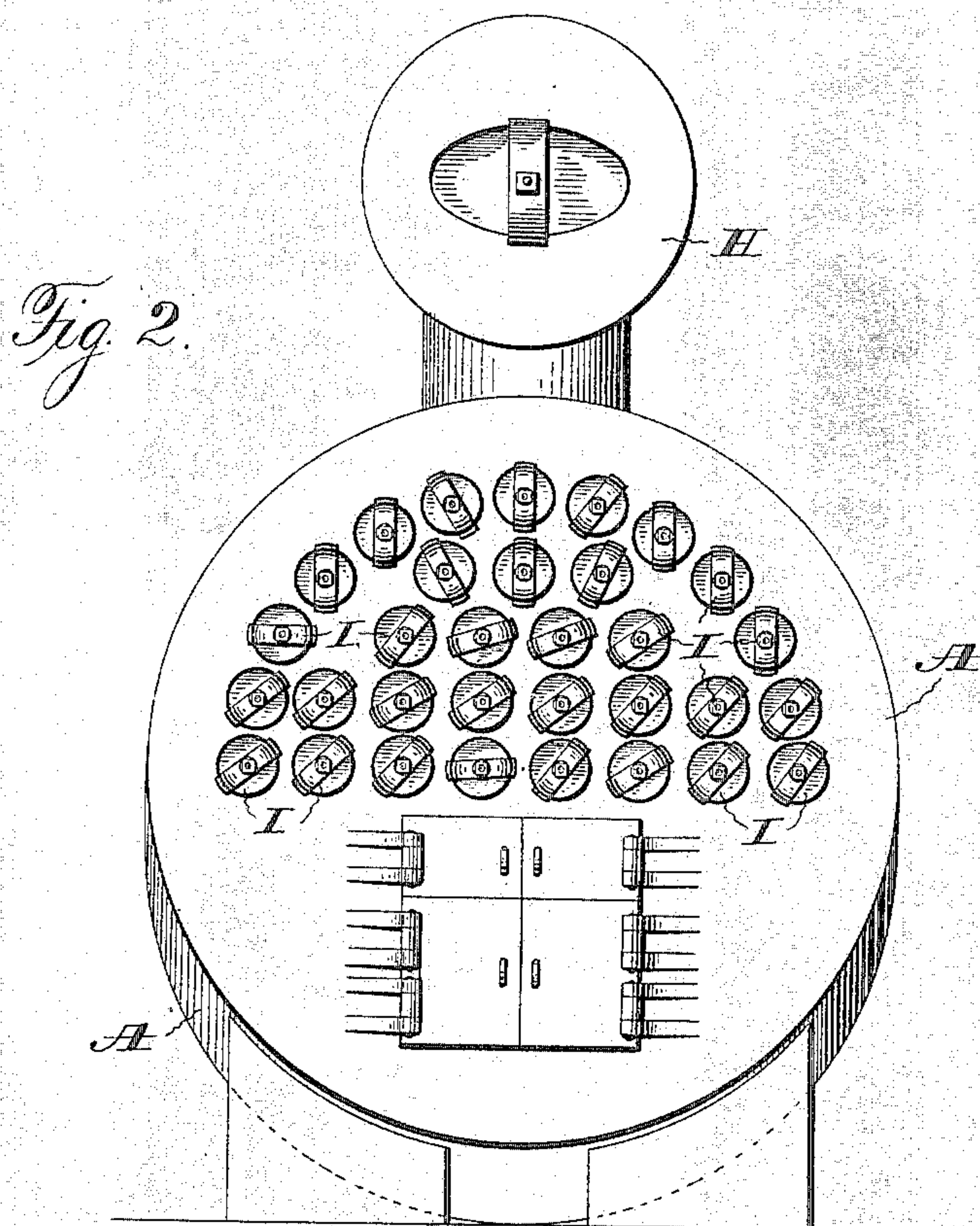
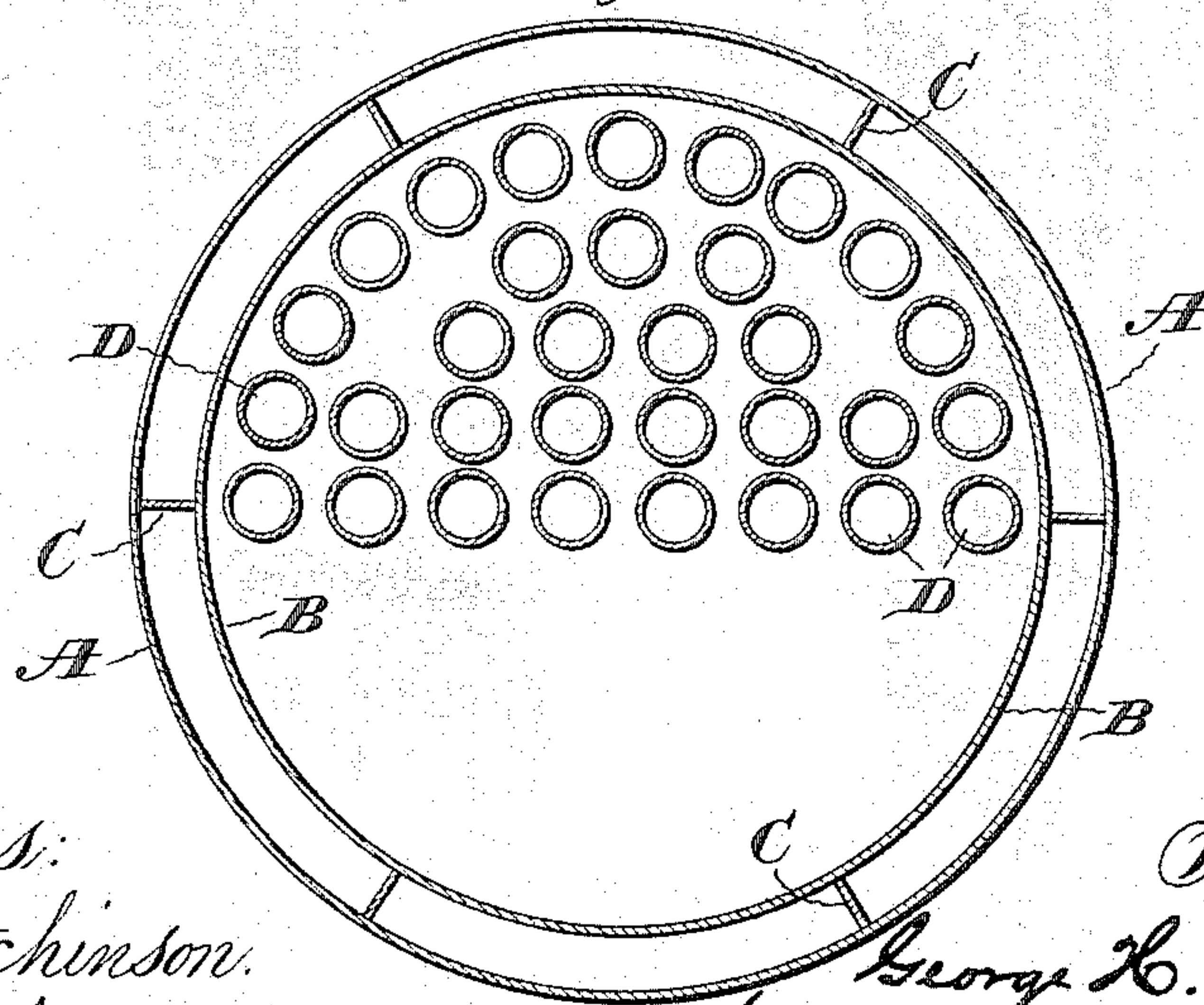


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE HENRY DRAKE, OF OMAHA, NEBRASKA.

BOILER.

SPECIFICATION forming part of Letters Patent No. 640,545, dated January 2, 1900.

Application filed June 29, 1899. Serial No. 722,283. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HENRY DRAKE, of Omaha, in the county of Douglas, and in the State of Nebraska, have invented certain new and useful Improvements in Boilers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a view in vertical longitudinal section of my boiler; Fig. 2, a front end view, and Fig. 3 a transverse section on the line *xx* of Fig. 1.

Letters of like name and kind refer to like parts in each of the figures.

The object of my invention is to provide a boiler and furnace equally useful for land or marine purposes, requiring no brickwork or other special setting and being strong and economical of construction, readily accessible for cleaning and repairs, and efficient in operation; and to this end said invention consists in the combined boiler and furnace constructed substantially as hereinafter specified.

In the carrying of my invention into practice I employ two cylindrical shells A and B, one of which is contained in the other, a substantial water-space being left between their circumferential walls and between their end walls. Suitable stays C and C rigidly support the inner cylinder in concentric relation to the outer one. Running longitudinally through the upper half of the inner cylinder B is a series of water-tubes D and D, that establish communication between the spaces at the ends of the cylinders, and at one end of said inner cylinder is a grate E, a portion of the inner cylinder being extended to the adjacent end wall of the outer cylinder and doors being provided in such end wall, so as to give access to the fire-box thus provided in the inner cylinder. The rear or inner end of the fire-box is formed by a partition or wall F at the longitudinal center of the inner shell, whose upper edge reaches close to the lowermost water-tubes. A smoke-stack G is

connected with the inner shell, preferably at the top thereof, near the end farthest from the fire-box, although, if desired, it may be connected at any other preferred point, and a steam-drum H is connected with the outer shell at the top.

In the front end of the outer shell, which is flat, there is provided a hand-hole I in line with each water-tube to give access to the latter for cleaning and removal, while in the rear end of said shell there is a manhole K to enable a man to enter the boiler, and to provide ample space for him said rear end is dished outward, as shown.

When in position for use, the front end of the boiler rests on supports, so that it inclines downward from its front to its rear end.

A very important feature of my construction is the wholly cylindrical form of the two shells, from which flow the advantages of great strength and a satisfactory distribution of water over the outer surface of the inner shell.

Having thus described my invention, what I claim is—

A boiler comprising two, wholly cylindrical shells, the inner shell being supported so that at all points circumferentially it is away from the outer shell, forming a water-space all around the inner shell, and water-spaces being at each end of the inner shell, water-tubes passing from end to end of the inner shell, a fire-box in the inner shell beneath said tubes, hand-holes in one end of the outer shell opposite the adjacent ends of the water-tubes, said shell end being flat, and a manhole in the outer end of the outer shell, said other end being dished outwardly, substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand this 5th day of June, A. D. 1899.

GEORGE HENRY DRAKE.

Witnesses:

L. H. BRADLEY,
L. V. PARDEE.