

No. 616,238.

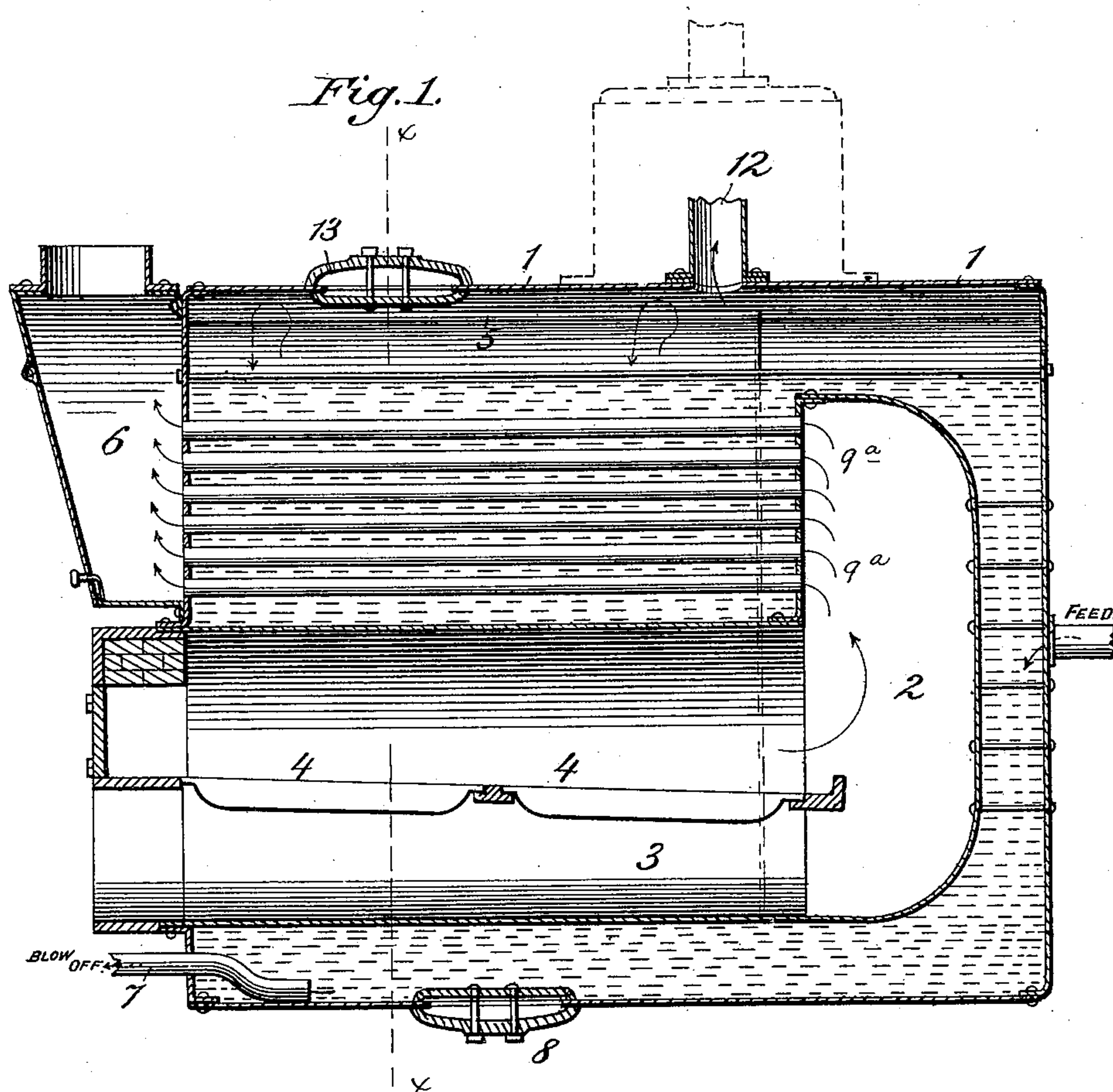
Patented Dec. 20, 1898.

J. JOHNSON.
STEAM BOILER.

(Application filed Mar. 29, 1897. Renewed Nov. 8, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Attest:

H. H. Schott
John B. Peyton

Inventor

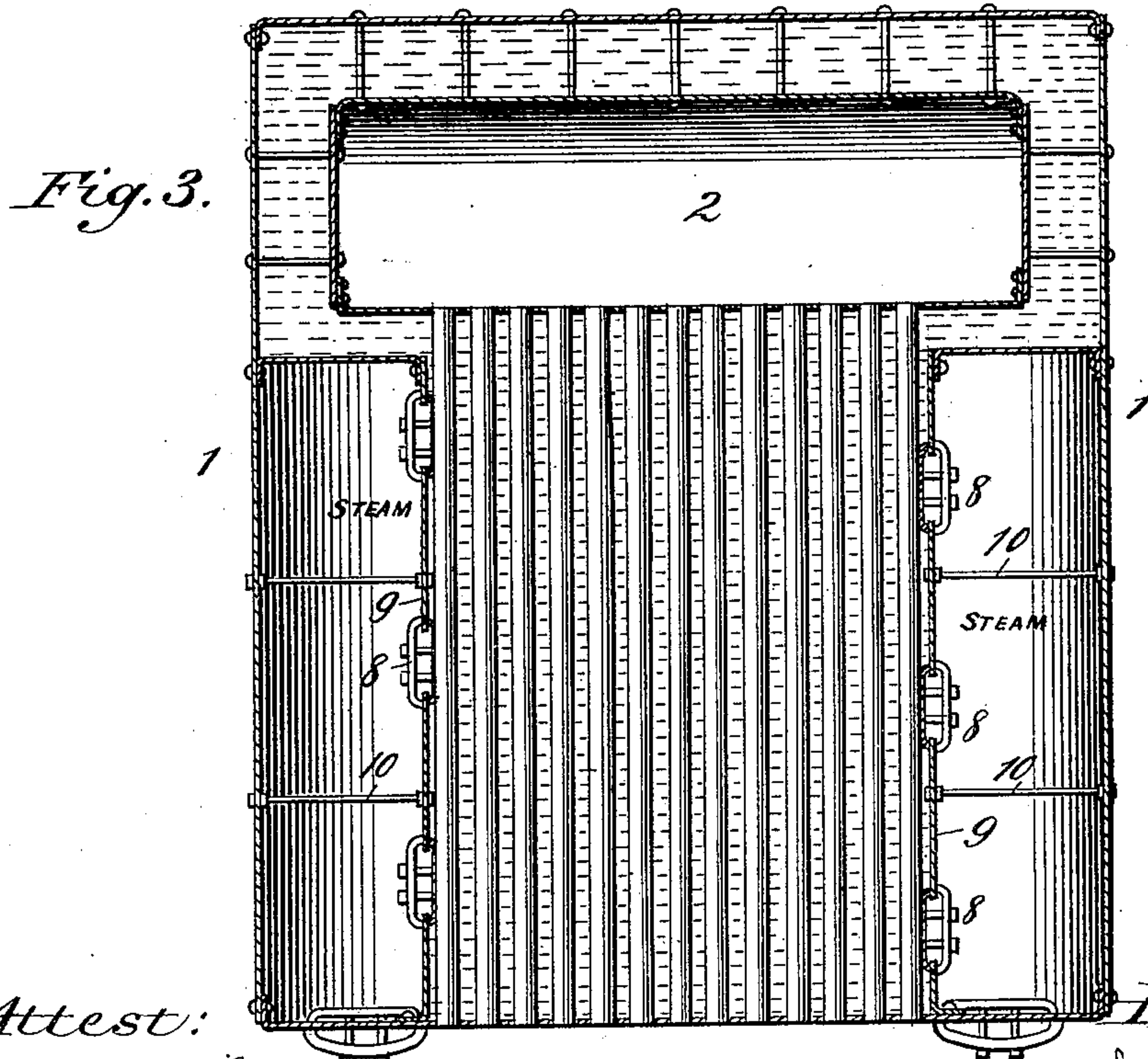
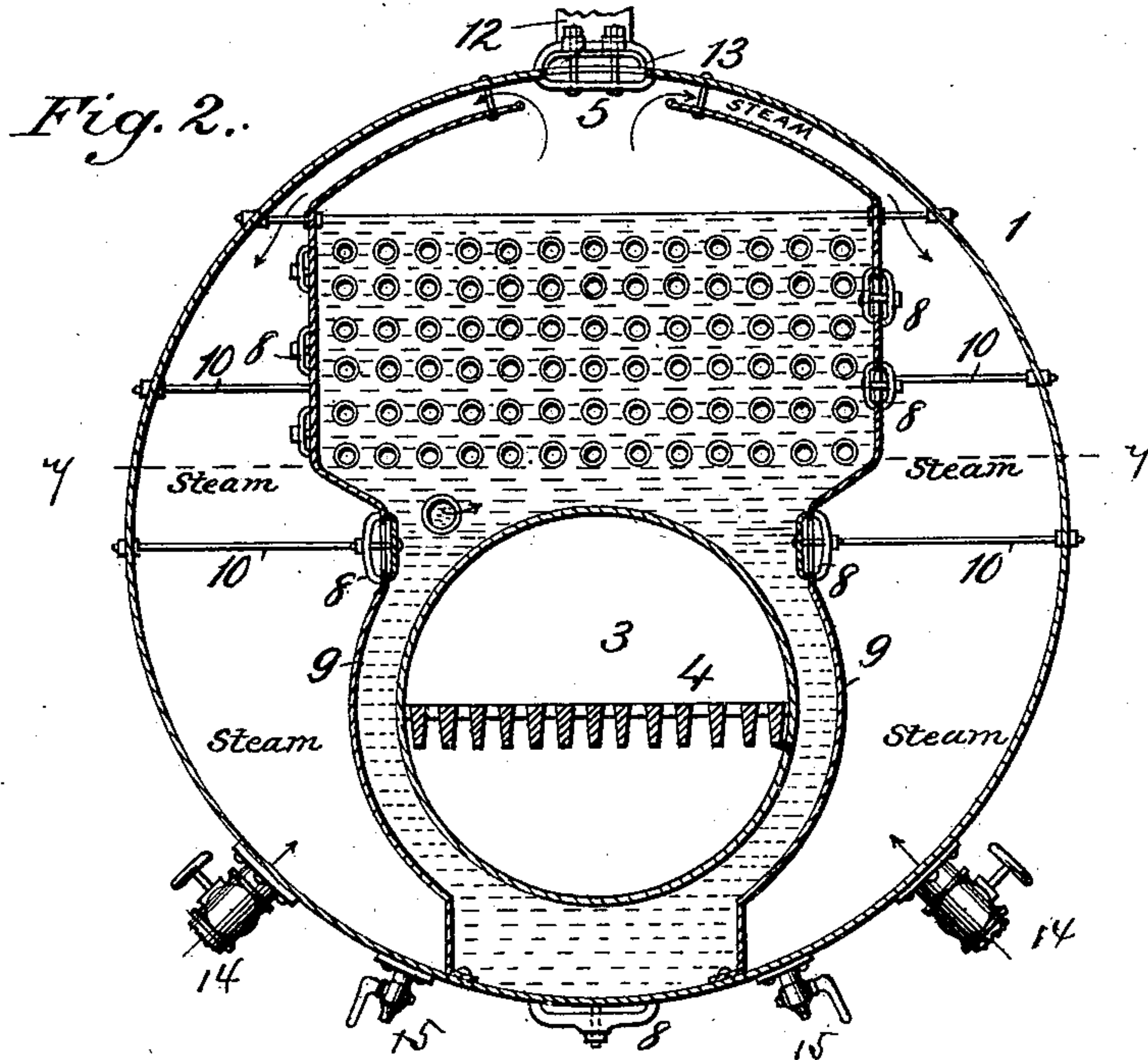
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UNITED STATES PATENT OFFICE.

JOHAN JOHNSON, OF WASHINGTON, DISTRICT OF COLUMBIA.

STEAM-BOILER.

SPECIFICATION forming part of Letters Patent No. 616,238, dated December 20, 1898.

Application filed March 29, 1897. Renewed November 8, 1898. Serial No. 695,905. (No model.)

To all whom it may concern:

Be it known that I, JOHAN JOHNSON, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Steam-Boilers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in steam-boilers and aims to provide a large steam-space and at the same time economize the room occupied by the boiler, so as to adapt it particularly for use on ships. It consists in certain novel features hereinafter described and claimed.

In the annexed drawings, Figure 1 is a central longitudinal section of a boiler constructed in accordance with my invention. Fig. 2 is a transverse section on the line *xx* of Fig. 1, and Fig. 3 is a horizontal section on the line *yy* of Fig. 2.

The boiler 1 is of a cylindrical formation and is provided with two internal longitudinal partitions 9, which rise from the bottom of the boiler in an irregular line to points near the top of the same, where they turn toward the medial line thereof, forming separators, and terminate so as to leave the open space 5. These partitions extend to the front end of the boiler, but are turned to the side in advance of the rear end of the same, thereby presenting a water-chamber, which surrounds the combustion-chamber 2. The said combustion-chamber forms a vertical extension and enlargement of the fire-box 3 containing the grate-bars 4. The fire-tubes 9^a extend from the upper portion of the combustion-chamber to a chamber 6 at the front end of the boiler leading to the smoke-stack. At the bottom of the water-chamber I provide a blow-off pipe 7, water being admitted to the chamber through a feed-pipe at the rear end of the boiler. 8 designates manholes provided in the partitions 9 and the bottom of the water-chamber. These partitions are fastened with-

in the boiler by brace-rods 10, and the space between the same and the boiler forms a chamber to collect the steam generated in the boiler, thereby dispensing with the usually necessary steam-drum. In the top of the steam space or chamber are the manhole 13 and the pipe 12, through which the steam passes to the engine. In the bottom of the said space are the blow-off pipes 15 and the valved feed-pipes 14.

The operation of the device will be readily understood. Water is fed into the water-space through the rear end of the boiler and a fire kindled in the fire-box in the usual manner. The water is thereupon converted into steam and passes into the steam-space, whence it is drawn through the pipe 12 as needed. When the vessel is in port, water may be admitted to the steam-space, where it will be heated. This heated water may be drawn off and carried to the tanks, and thence transmitted to the water-space of the boiler, where it will be quickly converted into steam. When the vessel is under way and a greater quantity of steam is required, the steam-space is gradually emptied of all the water and the entire space utilized to hold steam.

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

The combination with the boiler, of longitudinal partitions therein having their rear ends turned to the sides of the boiler in advance of the rear end of the same, the upper edges of the partitions being turned toward each other and terminating on opposite sides of the medial line of the boiler, a fire-box arranged between the partitions, a combustion-chamber forming an enlargement of the rear end of the fire-box, fire-tubes leading from the combustion-chamber to the front end of the boiler, and a steam-escape pipe leading from the top of the boiler over the space between the upper edges of the partitions.

In testimony whereof I have affixed my signature in presence of two witnesses.

JOHAN JOHNSON.

Witnesses:

JOSEPH HARPER,
JOHN B. PEYTON.