No. 840,235. PATENTED JAN. 1, 1907.

W. F. McGUIRE.

HEATER.

APPLICATION FILED JULY 19, 1905.

Fig. 1.

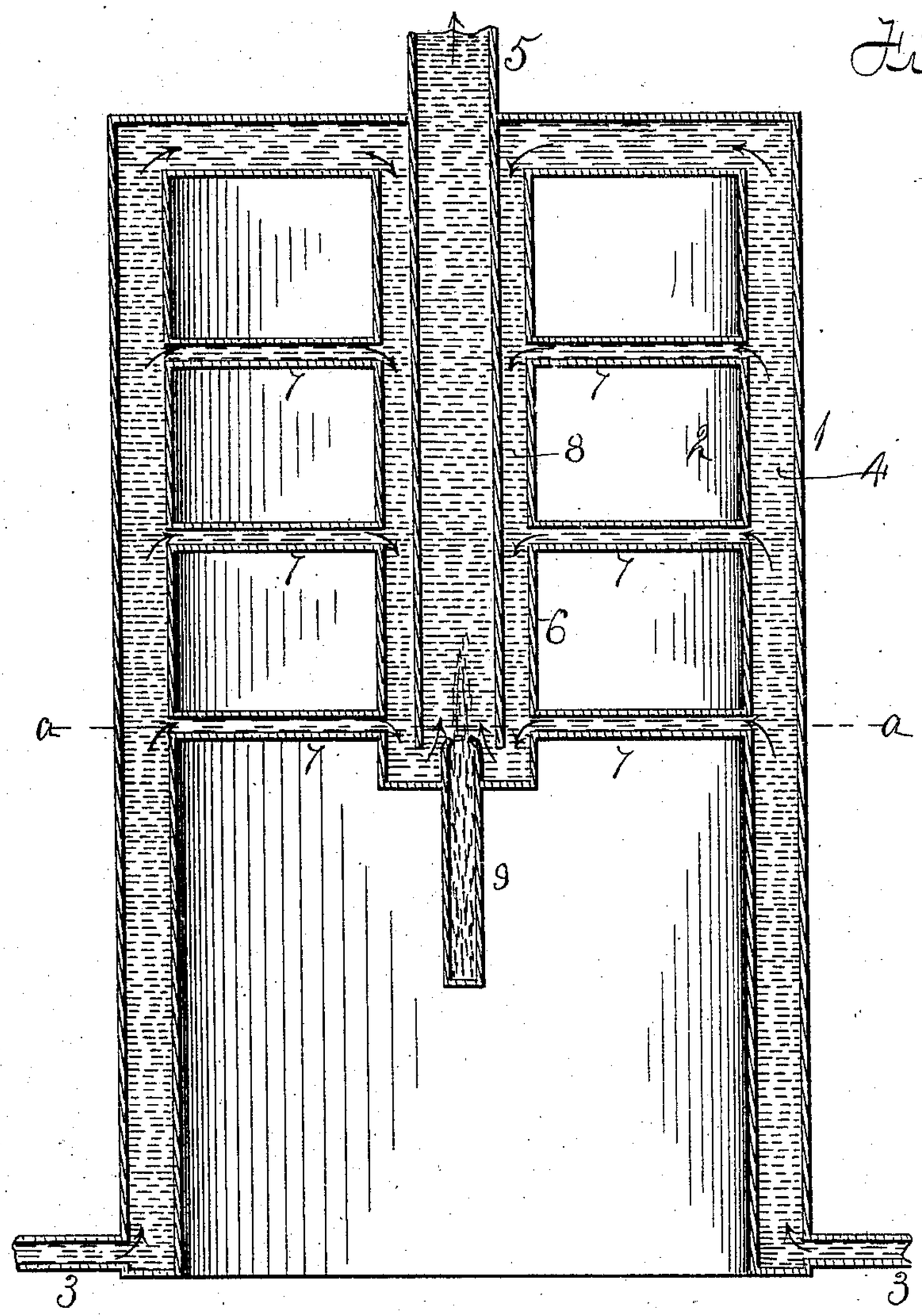
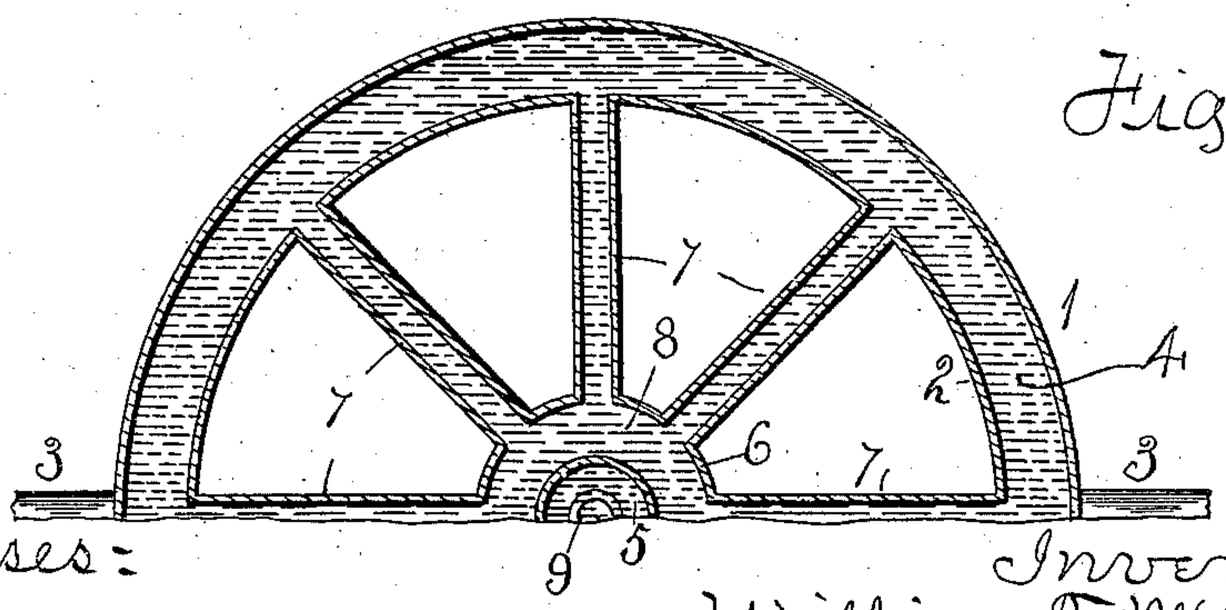


Fig. 2.



Witnesses:
J. Hulme.
E. Behel.

Inventor:
William F McGuire.
By A. O. Behel.
Atty.

UNITED STATES PATENT OFFICE.

WILLIAM F. McGUIRE, OF ROCKFORD, ILLINOIS.

HEATER.

No. 840,235. Specification of Letters Patent. Patented Jan. 1, 1907.

Application filed July 19, 1905. Serial No. 270,434.

To all whom it may concern:

Be it known that I, WILLIAM F. McGUIRE, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Heaters, of which the following is a specification.

The object of this invention is to construct a heater with a central water-discharge, around which is located the water-supply and a depending steam-generating pipe having its open upper end communicating with the lower end of the discharge-pipe.

In the accompanying drawings, Figure 1 is a vertical central section through the upper portion of the heater. Fig. 2 is a transverse section on dotted line *a a*, Fig. 1.

The heater represented in the drawings comprises two shells 1 and 2, suitably separated. Inlet-pipes 3 are located near the lower ends of the shells and communicate with the space 4 between the shells. A central discharge-pipe 5 has a connection with the upper end of the outer shell 1, its lower end being open. Around this central discharge-pipe is located a tube 6, having its lower end closed, and its upper end is connected with the inner shell 2 and communicates with the space 4 between the two shells. Radial pipes 7 form communications between the space 4 between the shells 1 and 2 and the space 8 between the tube 6 and central discharge-pipe 5. A pipe 9 is supported by the closed lower end of the tube 6 and has its lower end closed. The upper end of this pipe is open and extends slightly into the lower end of the central discharge-pipe 5. The upper end of this pipe 9 is somewhat contracted.

The arrows on the drawings indicate the direction of the flow of water from the inlet-pipes 3 out through the central discharge-pipe 5. All of the water escaping by way of the central pipe 5 must flow to the lower end of the pipe before it can enter the pipe. As the heat is greater near the lower end of the central discharge-pipe 5 than at the top of the heater, the water, passing up and out through the discharge-pipe, will be the hottest in the heater. By the employment of the pipe 9, extending from the tube 6, the heat will come in direct contact therewith and convert the water therein into steam and force it up the central water-discharge pipe 5, thereby creating a circulation of water through the heating system.

I claim as my invention—

In a water-heater, the combination of an outer water-space, a central tube having a closed lower end, its upper end communicating with the outer water-space at the top of the heater, a discharge-pipe located within the tube and extending upward through the top of the heater, and a steam-generating pipe connected with the closed lower end of the tube and having its open upper end contracted and located axially with relation to the lower end of the discharge-pipe.

WILLIAM F. McGUIRE.

Witnesses:
A. O. BEHEL.
J. HULME.