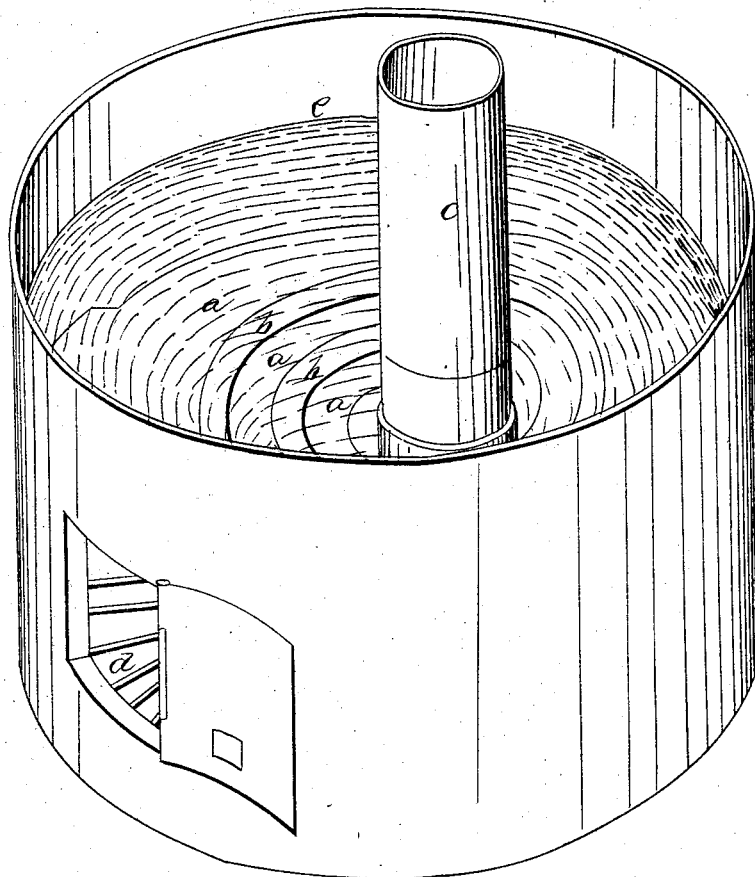


A. Vanordler,
Steam-Boiler Water-Tube.
N^o 844. Patented July 17, 1838

Fig. 1.



UNITED STATES PATENT OFFICE.

ABRAM VANORDER, OF ITHACA, NEW YORK.

BOILER FOR STEAM-ENGINES OR FOR OTHER PURPOSES.

Specification of Letters Patent No. 844, dated July 17, 1838.

To all whom it may concern:

Be it known that I, ABRAM VANORDER, of Ithaca, in the county of Tompkins and State of New York, have invented a new and Improved Boiler for Steam-Engines or for other Purposes, which I denominate the "Labyrinth Steam-Boiler;" and I do hereby declare that the following is a full and exact description thereof.

10 I usually make the exterior of my boiler oval, although it may be cylindrical, or otherwise formed and it is to be placed vertically. The feed door, for fuel, when the boiler is oval, is placed at or near one end, 15 and the flue, through which the heated air is to pass, is coiled around in the form of a flattened scroll, which terminates in a chimney, or flue, at or near the center of the boiler. The top of the boiler is furnished 20 with a safety valve, and the other devices usually attached to steam boilers.

In the accompanying drawing the top is removed for the purpose of showing the construction and arrangement of 25 the flue *a, a, a*. The scroll flue is inclosed at top, but open at bottom and its sides are vertical, extending from the base to about one half the height of the boiler, leaving room for the steam chamber, and for water to 30 cover the flue to the requisite height, as

shown at *e*. The spaces, *b, b, b*, between the coils of the flue are closed at bottom, and the contained water is exposed to the action of the heat over the whole surface of the flue. This flue leads into the chimney *c*. The 35 supply of fuel is through the opening *d*, which leads into the furnace part of the flue. In this part the case or exterior of the flue is double, water being admitted between the two plates, by an extension of the water 40 space into it. The boiler is sometimes placed directly upon brick work, or other suitable foundation, which brickwork in that case forms the lower edge of the flattened scroll flue; but I sometimes form an 45 entire water bottom, of metal, into which the water of the boiler enters freely; in this case the water bottom extends under the whole of the boiler and its included furnace, and the lower edge of the flattened scroll 50 flue is inclosed, and is within the boiler.

What I claim as my invention, is—

The forming of the flue in a flattened scroll, within the boiler, and the combining it with the furnace and other parts in the 55 manner herein set forth.

ABRAM VANORDER.

Witnesses:

ENOS BUCKBEE,
SIDNEY I. COOKE.