

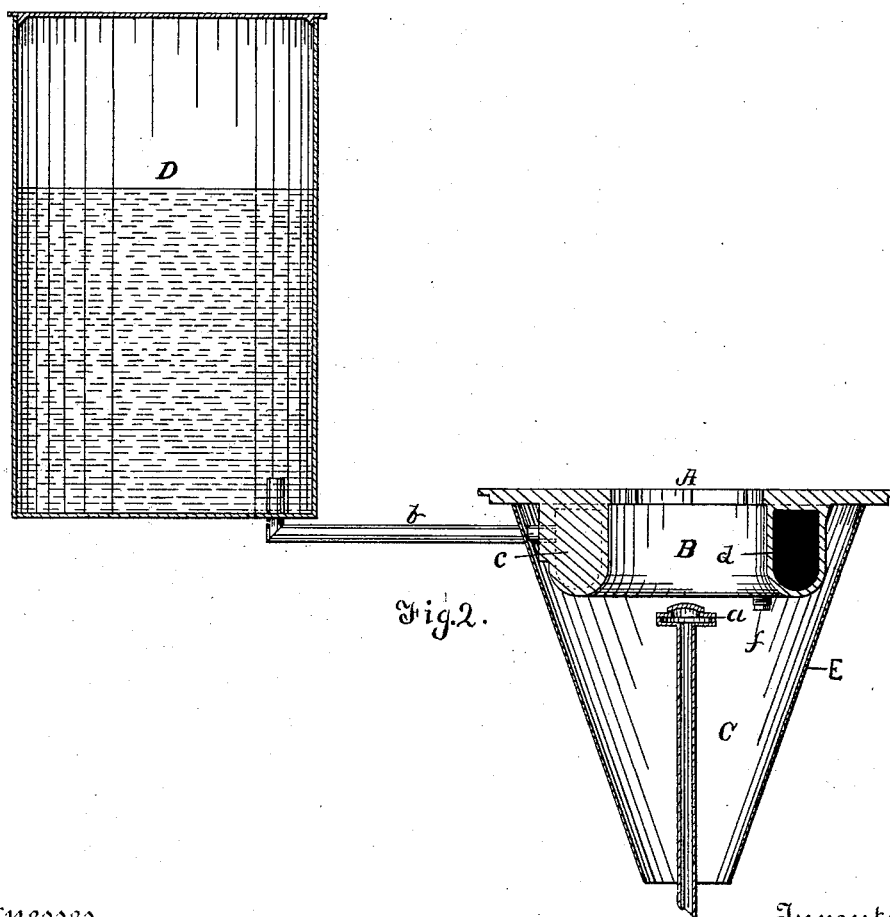
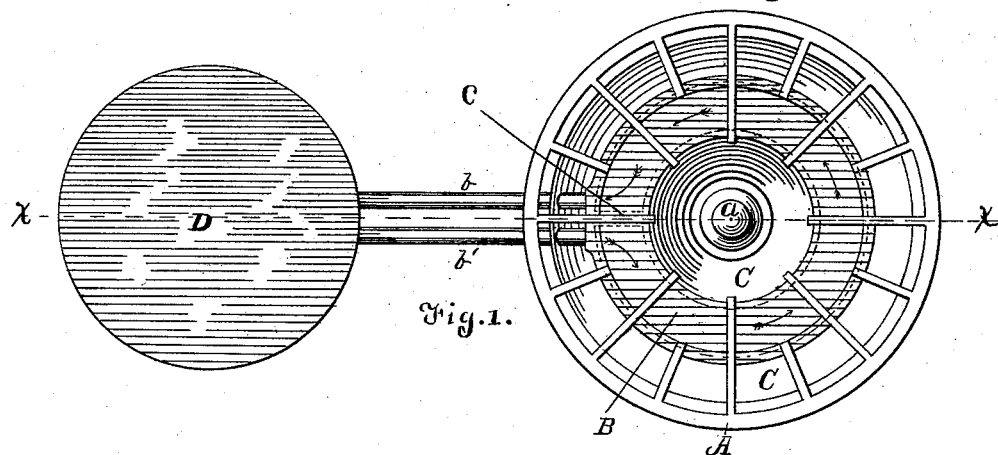
(No Model.)

J. R. DENISON.

WATER HEATER.

No. 347,332.

Patented Aug. 17, 1886.



Witnesses

Araron B. Gates
Arthur P. Sherman

Inventor

James R. Denison
By his Attorneys
Patent and Jamison

UNITED STATES PATENT OFFICE.

JAMES R. DENISON, OF GRAND RAPIDS, MICHIGAN.

WATER-HEATER.

SPECIFICATION forming part of Letters Patent No. 347,332, dated August 17, 1886.

Application filed February 25, 1886. Serial No. 193,179. (No model.)

To all whom it may concern:

Be it known that I, JAMES R. DENISON, a citizen of the United States, residing at the city of Grand Rapids, in the county of Kent and State of Michigan, have invented a new and useful Water-Heater, of which the following is a specification.

My invention relates to that class of water-heaters to be used on gas, gasoline, or oil stoves in such manner that while the water in a tank, connected by pipes, is being heated, cooking by the same jet or blaze may be done without any interruption or loss of heat, thereby economizing the use of one jet for the purpose of cooking and heating water at the same time, and, secondly, the tank may be used for steaming purposes at the same time. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of the heater and tank combined, and Fig. 2 is a vertical section of the device on line *x* of Fig. 1.

Similar letters refer to similar parts throughout the several views.

The grate A, molded with annular heater B, having cavity *d*, partition *c*, and burner *a*, so that the sides of the blaze strike against the heater, and the conical shield and reflector E, reflecting the heat back against the heater, with the connecting-pipes *b* and *b'* and water-tank D, constitute the parts that go to make up the device by which I attain the results stated.

A and B constitute the grate and the annular heater, molded in one piece, annular heater B extending and being entirely below the surface of the grate A, so that it may in no wise interfere with vessels resting on the grate for cooking purposes as completely as if there were no heater attached. The heater B

is provided with cavity *d*, through which the water circulates, and is heated while on its circuit.

D shows a water-tank connected with annular heater B by pipes *b* and *b'*, which enter the heater at each side of partition *c*, one of the pipes serving as a flow-pipe, carrying the water from the tank to the heater, and the other pipe returning the water to the heater, and the other pipe returning the water to the tank after it has made the circuit round the heater B, the return-pipe being a trifle smaller than the flow-pipe, thus assisting in securing a current through the heater.

E shows a conical casing or shield, and reflects the heat back against heater B and protects against currents of air, whereby heat should be lost, and when adjusted C C shows the space inclosed thereby. Owing to the great variety of stoves the construction of the same is such that this shield cannot be attached.

Annular heater B is provided with a plug, *f*, for the purpose of giving vent to the core while being cast and to provide an easy means by which the cavity *d* may be cleaned.

a shows a burner, drawn low for the purpose of allowing the heater to be better represented in the drawings.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination, with a gas, gasoline, or oil stove, of grate A, water-heater B, having cavity *d*, partition *c*, and plug *f*, and connected with tank D by pipes *b* and *b'*, and conical shield E, substantially as described.

JAMES R. DENISON.

Witnesses:

J. M. JAMISON,
AARON B. GATES.