

No. 624,306.

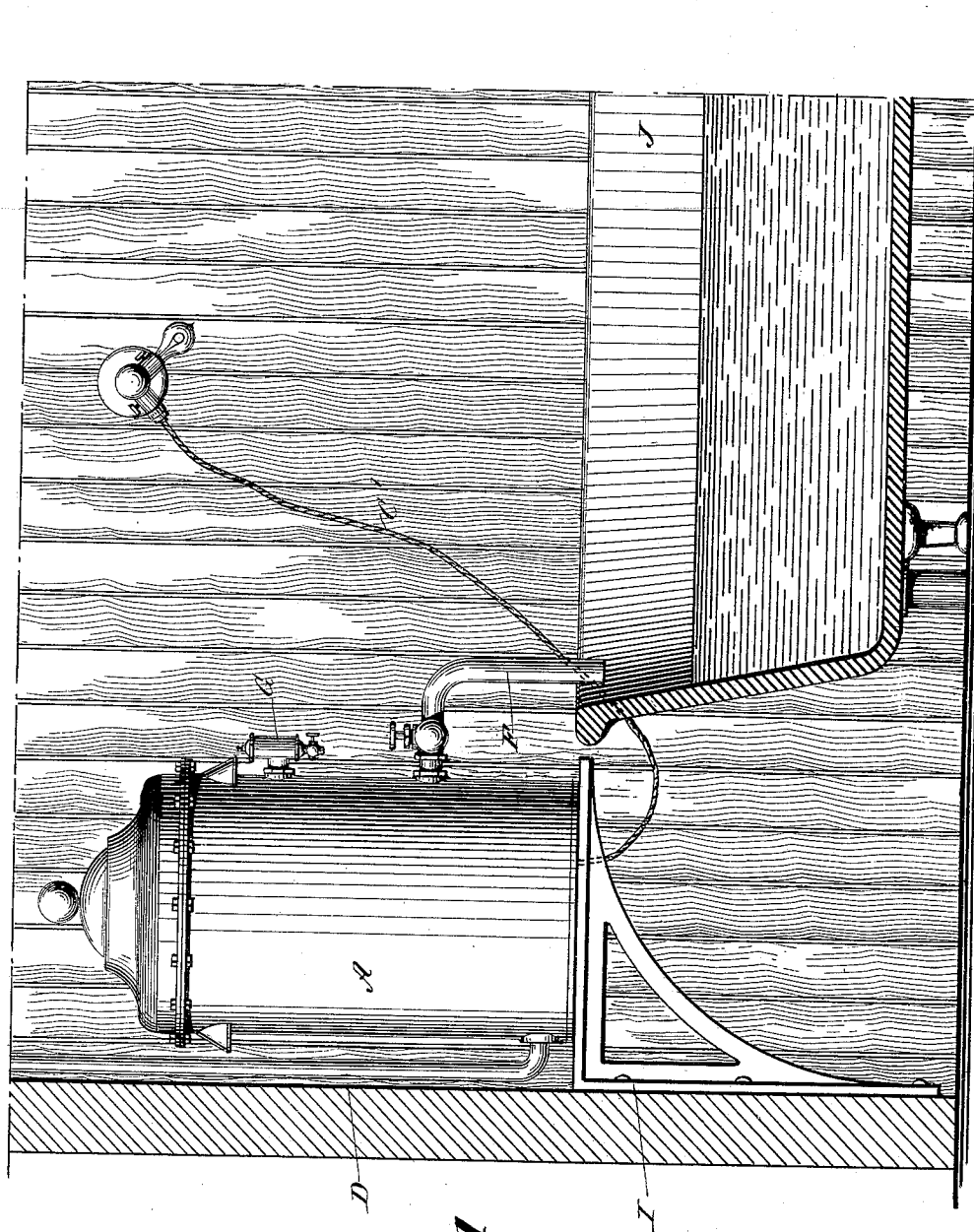
Patented May 2, 1899.

J. C. CRAMER.
ELECTRIC WATER BOILER.

(Application filed Nov. 8, 1898.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:
John A. Thompson
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Fig. 1

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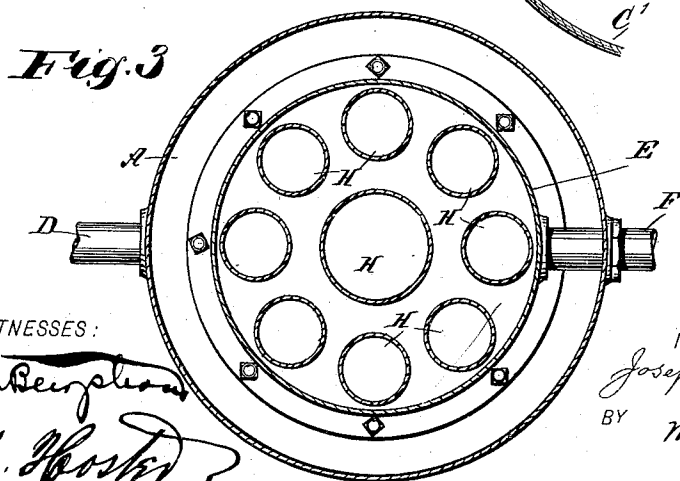
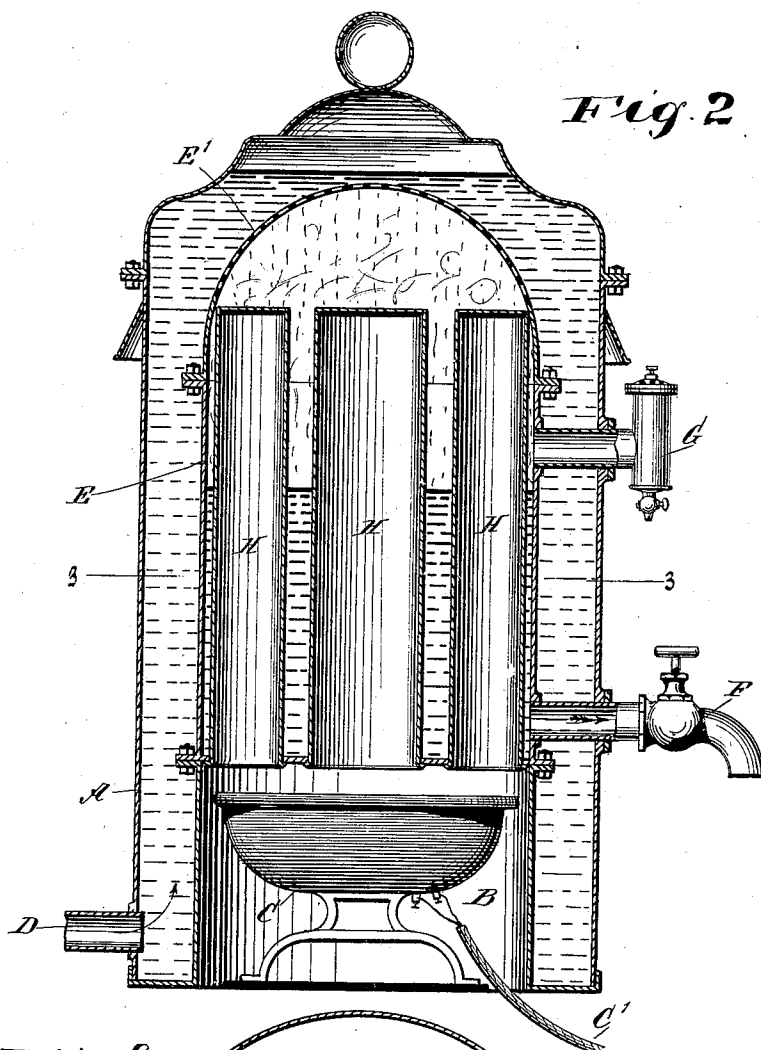
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WITNESSES:

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UNITED STATES PATENT OFFICE.

JOSEPH CAMERON CRAMER, OF LOS ANGELES, CALIFORNIA.

ELECTRIC WATER-BOILER.

SPECIFICATION forming part of Letters Patent No. 624,306, dated May 2, 1899.

Application filed November 8, 1898. Serial No. 695,861. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH CAMERON CRAMER, of Los Angeles, in the county of Los Angeles and State of California, have invented a new and Improved Electric Water-Boiler, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved electric water-boiler which is simple and durable in construction, very effective in operation, and arranged to obtain a large heating-surface in a comparatively small space to insure the raising of the temperature of the water in a short time.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement as arranged for use in a bath-room. Fig. 2 is an enlarged sectional side elevation of the improvement, and Fig. 3 is a sectional plan view of the same on the line 3-3 in Fig. 2.

The improved boiler is provided with a shell A, formed in its lower portion with a fire-box B, in which is set an electric heater C of any approved construction and connected by wires C' with a suitable source of electricity-supply. The shell A is connected at its lower end by a pipe D with a suitable source of water-supply to fill the space between the shell A, the fire-box B, and a shell forming the compartment E with water, as indicated in Fig. 2. The shell forming the compartment E extends directly above the fire-box B and is formed in its top E' with perforations to permit the water in the upper portion of the shell to pass through said perforations in jets and upon tubes H, extending within the compartment E, the lower ends of the tubes opening into the top of the fire-box B.

The upper perforated portion of the shell forming the compartment E is dome-shaped, so that in the gradual rising of water in the shell A it will first spray through perforations near or at the base of the dome, and the amount of the spray will gradually in-

crease as the water rises to the top of the dome. By this construction the water will be more quickly heated than would be possible were a large amount of water admitted at once.

The compartment E is provided at its lower end with a valved discharge-pipe F for discharging the water in a bath-tub or other receptacle, and near the upper end of said compartment is arranged a steam-gage G of any approved construction and serving to let out any steam that may form in said compartment.

In using the device the electricity is turned on to cause the heater C to generate heat, which rises from the fire-box B into the tubes H to highly heat the same, the water flowing into the shell A by the supply-pipe D and finally rising in the shell and flowing through the perforated top E' in small jets upon the heated tubes H, so that the water is quickly raised to a higher temperature. The water accumulates in the lower part of the compartment E, and as it surrounds the heated tubes more heat is received from the latter; the water being finally withdrawn from the compartment through the valved outlet-pipe F in a highly-heated state. It is evident that as the water has to pass upward in the shell A it receives units of heat from the fire-box B and also from the compartment E, into which it finally passes after being sprayed through the top of E onto the tubes. By reference to Fig. 3 it will be seen that a large number of tubes H are provided in the compartment E, and consequently a very large heating-surface is obtained to insure a rapid heating of a large quantity of water.

As illustrated in Fig. 1, the shell A is set on a shelf I in close proximity to a bath-tub J, into which opens the valved pipe F, so that when the valve thereof is opened the heated water flows directly into the tub for immediate use.

The electric heater C does not form an integral part of the boiler proper and is set on the shelf I, and then the shell A is placed over the heater to bring the latter in proper position on the fire-box.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

A water-heater, comprising a fire-box open at the bottom, so that it may be placed over a heater, a series of heating-tubes closed at the top and opening into the fire-box, a shell
5 inclosing the tubes and forming a water-compartment, the said shell having a dome-shaped top provided with small perforations

to permit water to spray onto the tubes, and a water-reservoir surrounding both the shell and fire-box, substantially as specified.

JOSEPH CAMERON CRAMER.

Witnesses:

JAMES A. COOPER,
H. D. GLASENER.