

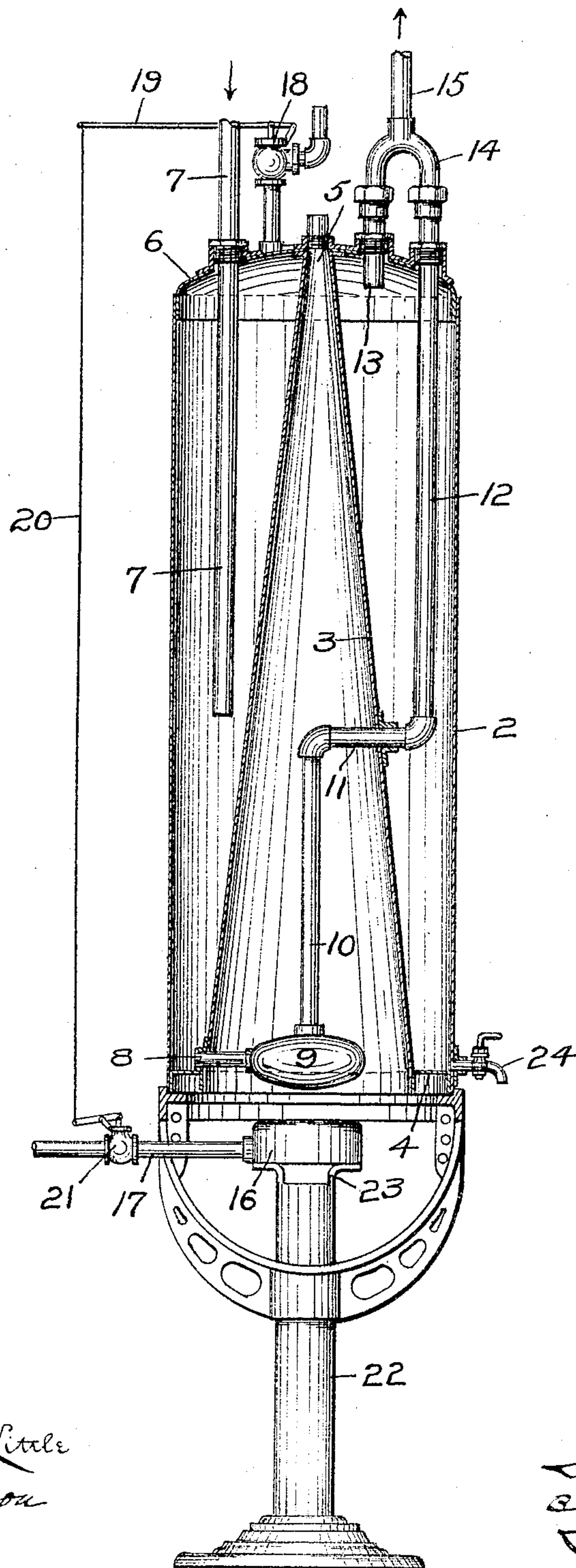
No. 764,725.

PATENTED JULY 12, 1904.

J. M. HONSE.
STAND BOILER.

APPLICATION FILED JAN. 25, 1904.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

JESSE M. HONSE, OF HOMESTEAD, PENNSYLVANIA.

STAND-BOILER.

SPECIFICATION forming part of Letters Patent No. 764,725, dated July 12, 1904.

Application filed January 25, 1904. Serial No. 190,565. (No model.)

To all whom it may concern:

Be it known that I, JESSE M. HONSE, a citizen of the United States, residing at Homestead, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Stand-Boilers, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to stand-boilers, particularly a boiler which is heated by means of a gas-burner located therebeneath; and the primary object is to so construct the boiler cylinder or shell and the water-circulating means contained therein that the water will be rapidly heated with a minimum consumption of gas.

The accompanying drawing is a vertical sectional view of a boiler embodying my invention.

Referring to the drawing, 2 designates the cylindrical outer shell of the boiler, and 3 is an upwardly-tapering or cone-shaped shell within and extending longitudinally of shell 2, with its lower larger end open through the boiler-bottom 4 and its apex opening at 5 through the boiler-dome 6. Depending a considerable distance into the boiler from dome 6 is the cold-water-inlet pipe 7, and tapping the water-space at the base of cone 3 is short pipe 8, which leads to and partially sustains the bulb-shaped chamber 9, which is here shown positioned centrally within the lower end or mouth of the cone. Extending upward from chamber 9 is pipe 10, which deflects laterally at 11 through cone-shell 3 and into the water-space and continues upward through the latter to dome 6, as indicated at 12. Also opening through the dome is short pipe 13, which is connected to pipe 12 by the inverted U-coupling 14, and leading from the latter is hot-water pipe 15, from which the water is drawn for use or which may connect with the water-circulating pipes of the house, as the case may be. Bulb 9 is preferably formed of copper or other thin metal, and positioned centrally therebeneath is gas-burner 16 at the extremity of gas-supply pipe 17, so that the flames issuing upwardly from the burner practically envelop the bulb and rapidly heat the

water contained therein, with the result that a practically constant upward circulation is maintained therethrough and through pipe 10, the supply being drawn from the colder water at the base of the water-space through pipe 8. Connection 14 provides for an outflow of heated water direct from bulb 9, as well as from the upper end of the water-space containing the hottest water. When water is not being withdrawn, said connection serves to return the heated water to the boiler, and thus a constant circulation is maintained. Cone 3 so pockets the heat flowing upward from the burner that substantially all of it is radiated therethrough into the water, thus adding very materially to the heating efficiency of the boiler.

To avoid an explosion in the event of overheating, I provide the boiler-dome with a safety-valve 18, through which the steam may escape when it reaches a predetermined pressure. As the gas-pressure frequently varies, especially at night, when it is subject to its greatest increase, which is just the time the boiler is unattended, I provide for shutting off the gas-supply by connecting the safety-valve arm 19 by cord or wire 20 with valve 21 in gas-supply 17, the connection being such that when arm 18 is raised valve 21 is closed. Thus the boiler is under automatic control and all danger of explosion is averted.

The boiler-sustaining stand 22 may be of the form here shown or of any other preferred construction with a support 23 projecting therefrom for sustaining the burner. At the base of the boiler is the usual drain-cock 24.

I do not confine myself to forming the boiler with an upwardly-tapering internal space nor to the exact location and shape of the water-heating chamber, and it is obvious that the invention may be changed or modified in numerous other particulars without departing from the spirit thereof as defined by the appended claims.

I claim—

1. A boiler comprising inner and outer shells, top and bottom heads inclosing a water-space between the shells, a water-chamber within the inner shell and communicating with the lower portion of said water-space, and a

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circulating-pipe extending upward from said chamber partially through the inner shell and partially through said water-space.

2. The combination of a boiler, a water-
5 heating chamber at the bottom of the boiler and communicating therewith, a pipe extending from said chamber and passing upward through the water-space of the boiler and outward at the upper end thereof, and a circulating-pipe connected to the last-mentioned pipe
10 and having a supplemental pipe connection with the upper portion of the boiler.

3. The combination of a boiler having an

internal upwardly - tapering space opening through the boiler bottom and dome, a chamber within the lower portion of said space, and circulating-pipes connecting said chamber with the lower and upper portions of the boiler water-space. 15

In testimony whereof I affix my signature in presence of two witnesses. 20

JESSE M. HONSE.

Witnesses:

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