Sept. 1, 1925. 1,552,292

H. A. FULLER

BOILER ATTACHMENT

Filed March 21, 1924

Fig. 1.

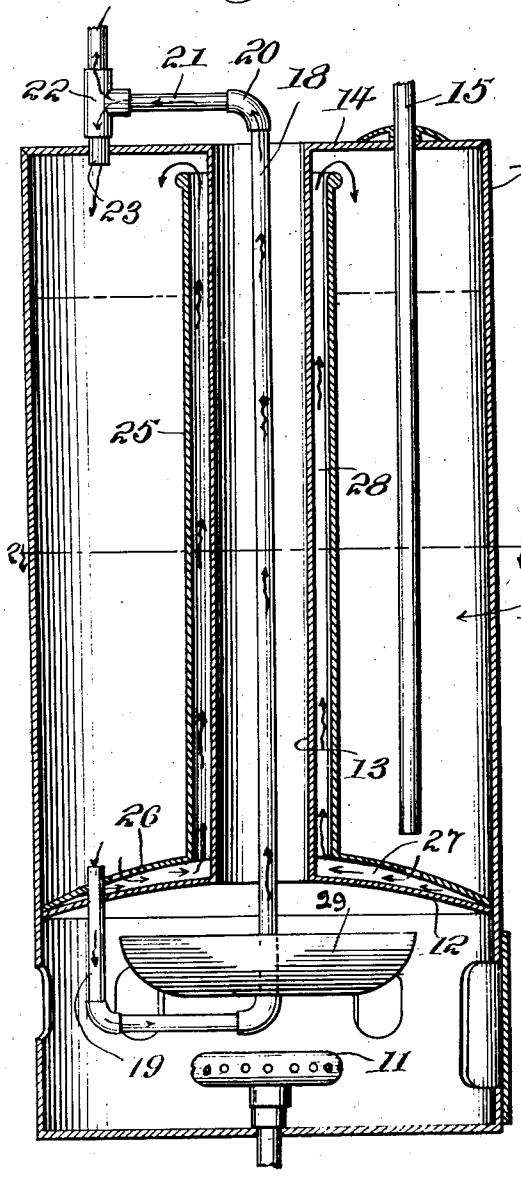


Fig. 2.

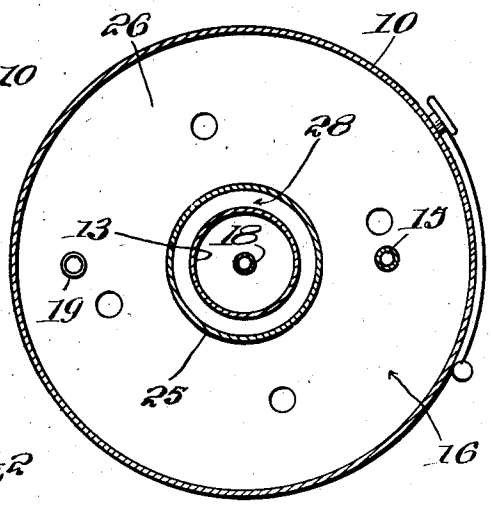
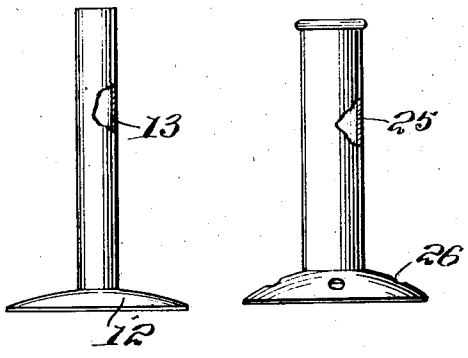


Fig. 3. Fig. 4.



Harry A. Fuller

INVENTOR

BY Victor J. Evans

ATTORNEY

WITNESS: J. L. Wright

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UNITED STATES PATENT OFFICE.

HARRY A. FULLER, OF LONG BEACH, CALIFORNIA.

BOILER ATTACHMENT.

Application filed March 21, 1924. Serial No. 700,904.

To all whom it may concern:

Be it known that I, HARRY A. FULLER, a citizen of the United States, residing at Long Beach, in the county of Los Angeles and State of California, have invented new and useful Improvements in Boiler Attachments, of which the following is a specification.

The object of this invention is to provide means for promoting circulation in that class of boilers or water heaters, employed chiefly for domestic purposes, in which a heating unit is positioned directly below the water compartment, and in which a central smoke flue is provided.

A further object is to provide an attachment adapted to surround the smoke flue, and to extend across the lower dome, in the form of a perforated flange, a space being provided between the flange and the dome, and outside of the smoke flue in which chamber water circulates, the water passing thence upwardly to the top of the water space of the boiler.

With the foregoing and other objects in view, the invention consists in the novel construction and arrangement of elements disclosed herein, it being understood that modifications may be made within the scope of the claims without departing from the spirit of the invention.

In the drawings, Figure 1 is a view showing the boiler in vertical section; Figure 2 is a horizontal section, on line 2—2 of Fig. 1; Figures 3 and 4 (on a reduced scale) show the tubular elements which are mounted concentrically in Figure 1, and which carry respectively the dome 12 and the perforated flange 26.

The outer casing or jacket of the boiler is designated 10, and mounted in the lower portion thereof is a burner 11, a dome 12 being positioned a short distance above the burner. A smoke flue 13 extends from the space beneath the dome to the upper end of the boiler, the top plate or dome being shown at 14. Water intake pipe 15 extends through element 14 to a point slightly above the dome 12 and discharges into the water space 16.

A pipe 18 for heated water passes vertically through the smoke flue, into the space beneath the dome 12, and an extension 19 of this pipe passes through the dome and terminates just above the latter, in the water space 16.

The upper end of pipe 18 has connection by means of L-member 20 with pipe 21 leading to a T-connection 22, and a spud 23 establishes communication with the upper end of the boiler and the water space thereof. A portion of a hot water service pipe is designated 24.

An attachment or percolator, designed to improve circulation, includes a tubular portion 25 open at both ends and having a diameter greater than that of the smoke flue, and further includes a perforated flange 26, which may have a concave lower surface, this flange being carried by the lower end of tube 25.

The flange 26 extends usually to the edge of the dome 12, and is spaced above the latter except at the edge, providing a chamber 27 into which water passes from water space 16. The circulation is then upwardly through annular chamber 28 around the smoke flue, the water passing over the top of tube 25 to the upper part of space 16. The walls of the smoke flue are hot, and extended circulation is provided immediately adjacent to the heated surfaces. It is unnecessary to add that elements 25 and 26 are placed in position before the top plate or dome of the boiler is welded or otherwise secured in place.

Above burner 11 is an element 29 constituting a baffle member, a chamber in which may have communication with pipes 19 and 18 through which the water passes in the direction of the arrows.

What I claim is:

In a device of the class described, a casing, a dome spaced above the bottom of the casing, a smoke flue open at both ends and extending vertically from the dome to the top of the casing, a water supply pipe extending into a space above the dome, a hot water pipe extending upwardly through the flue, said pipe having communication with

the upper part of the casing, a tube surrounding the flue and spaced therefrom, and a perforated flange carried by said tube and having the major portion thereof spaced above the dome, the space between the flange and dome being of approximately the diameter of the casing and having communication with the space around the flue, the dome and flange extending to the wall of the casing, and said hot water pipe communicating with the interior of the casing above the perforated flange.

In testimony whereof I affix my signature.

HARRY A. FULLER.