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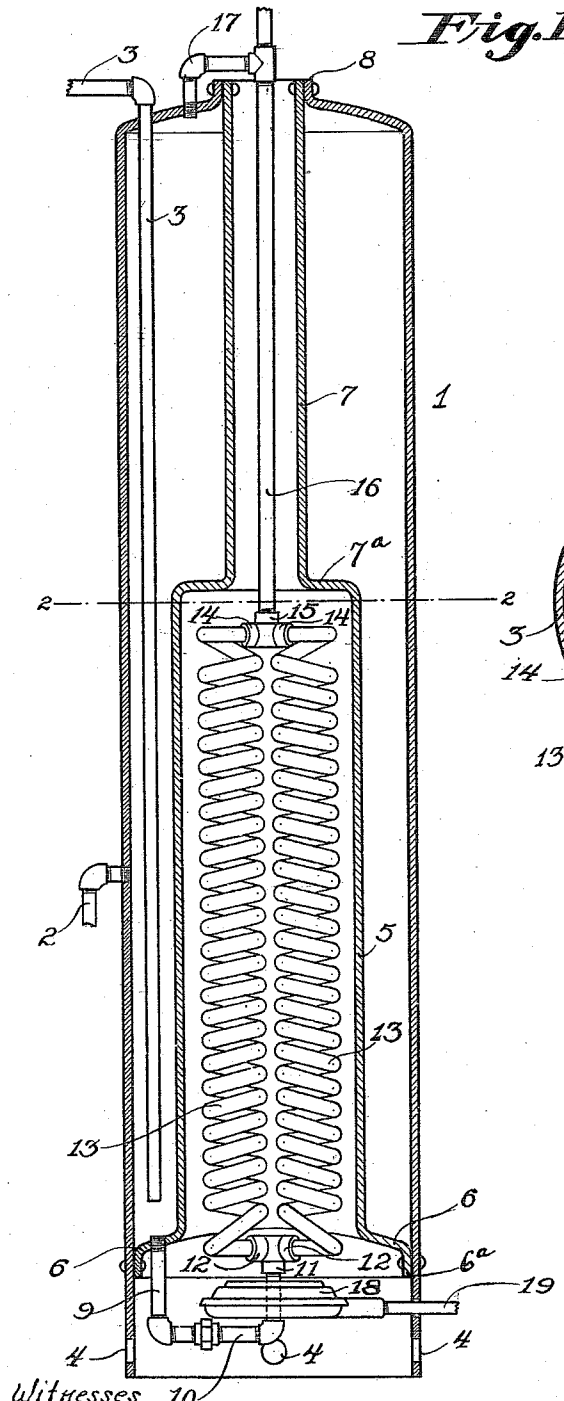
COMBINED WATER HEATER AND BOILER.

APPLICATION FILED JUNE 19, 1909.

985,343. Patented Feb. 28, 1911.

Fig. 1.



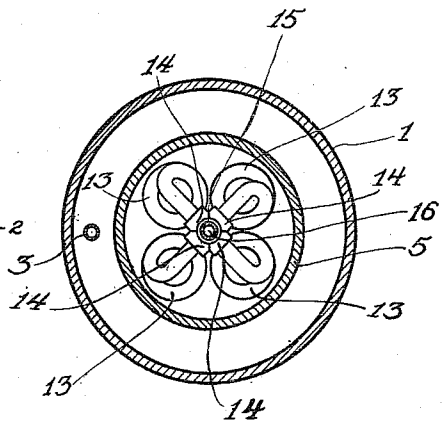


Fig. 2.

Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES HART, OF OAKLAND, CALIFORNIA, ASSIGNOR TO THE HART HEATER COMPANY, A CORPORATION OF CALIFORNIA.

COMBINED WATER-HEATER AND BOILER.

985,343. Specification of Letters Patent. Patented Feb. 28, 1911.

Application filed June 19, 1909. Serial No. 503,199.

To all whom it may concern:

Be it known that I, CHARLES HART, citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Combined Water-Heaters and Boilers, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to water heaters especially adapted for domestic use, and the principal object of the same is to provide an attachment for range boilers by means of which the water may be quickly heated with the minimum expenditure of fuel.

In carrying out the object of the invention generally stated above it is contemplated employing an ordinary type of range boiler which is in communication with a source of water supply, said boiler having mounted therein a casing the bottom of which forms the bottom closure for the boiler, said casing also being provided with a plurality of pipe coils which are in communication with the boiler and which are also arranged so as to be directly in the path of movement of heat from a burner so that said coils will be kept in a heated condition, the said burner also serving to heat the casing and thereby warm the water within the boiler.

In the practical application of the invention it will be understood, of course, that the essential features are necessarily susceptible of changes in details and structural arrangements, but one preferred and simple embodiment thereof is shown in the accompanying drawings, wherein—

Figure 1 is a central vertical sectional view of the improved range boiler, showing the water heater attachment therein. Fig. 2 is a horizontal sectional view taken on the line 2—2, Fig. 1.

Referring to the accompanying drawings by numerals 1 designates the boiler which is of the usual cylindrical type and arranged in a vertical position. Said boiler is provided with the usual intermediate supply pipe 2 and the water inlet pipe 3 which extends through its top and extends down into the boiler and terminates adjacent the bottom thereof. The base of the boiler is open and the sides thereof are provided with a plurality of regularly spaced apart transverse openings 4. A casing 5 is mounted within said boiler 1, the base 6 of said casing being outwardly flared to form an annular flange which is riveted and soldered, or otherwise secured to the lower portion of the boiler, thereby closing the bottom portion of the boiler as is shown in Fig. 1. The upper portion of said casing 5 terminates in a reduced neck 7 forming a flue the upper end of which projects into a centrally located flanged opening 8 formed in the top of the boiler 1 and is riveted or otherwise rigidly secured therein.

An outlet pipe 9 depends from the base 6 of the casing 5, said pipe communicating with the interior of the boiler 1, and having its outer end connected with an angular pipe section 10 which is connected to a vertical branch 11 of a five-way coupling the four radiating horizontally arranged branches 12 of which each connect with a pipe coil 13. Said pipe coils 13 are vertically arranged and extend through the casing 4 their top convolutions being connected with horizontally arranged radiating branches 14 of a five-way coupling the upstanding vertically arranged branch 15 of which connects with a pipe 16 extending through the neck or flue 7 of said casing and extends beyond the upper end thereof and connects with a faucet or the like, not shown. At a point just above the upper end of the boiler, said pipe 16 is tapped for connection with an angular pipe section 17 which projects through the top of the boiler to establish circulation of the water.

A gas or liquid burner 18 surrounds the pipe 10 immediately below the lower five-way coupling, said burner being provided with a feed pipe 19 which extends through the base of the boiler 1 and connects with a source of fuel, not shown.

As will be observed by reference to Fig. 1 of the accompanying drawings, the arrangement of the casing 5 within the boiler 1 is such that said boiler is entirely sealed thereby, so that the heat from the burner 18 is caused to pass through said casing and thereby keep the boiler and its contents in a warm state. And it will be further seen that by the arrangement of the four coils within the casing, the heat in passing through the same is caused to pursue a tortuous passage through the coils, thereby keeping the water in said coils thoroughly heated. Another distinctive feature of the invention is in the arrangement of the

burner within the base of the boiler, the heat therefrom is concentrated and directed through the casing 5 so that none of said heat is wasted. Obviously the openings formed transversely through the base of the boiler are for feeding air to the burner.

What I claim as my invention is:—

A heating attachment for a boiler comprising an inlet pipe communicating with said boiler, an outlet pipe for said boiler, a coupling secured to said outlet pipe, heating coils connected at their lower ends to said coupling, a second coupling connected to the upper ends of said coils, an outlet pipe leading from said upper coupling, a pipe connected to said upper outlet pipe for returning heated water to said boiler. and a burner surrounding said lower outlet pipe and positioned beneath said coils.

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

CHARLES HART.

Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."