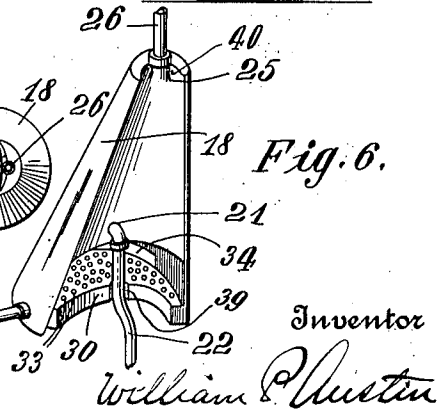
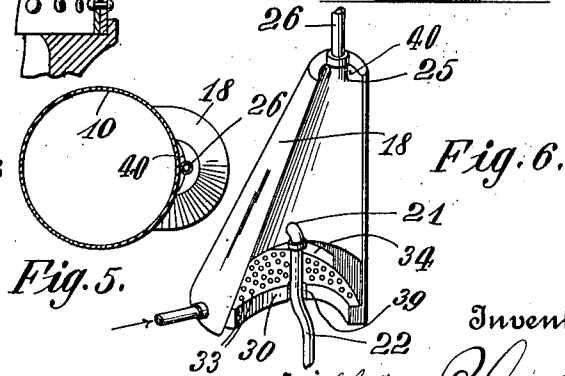
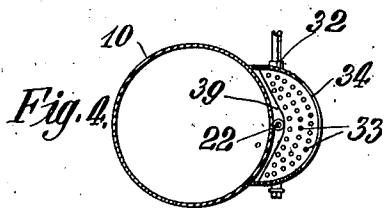
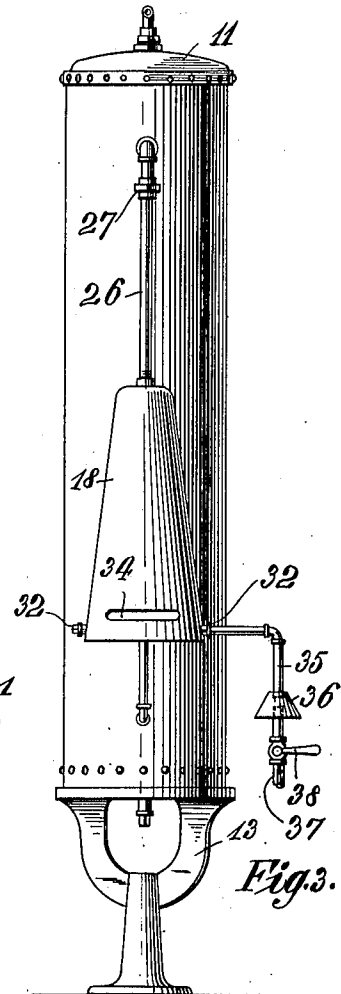
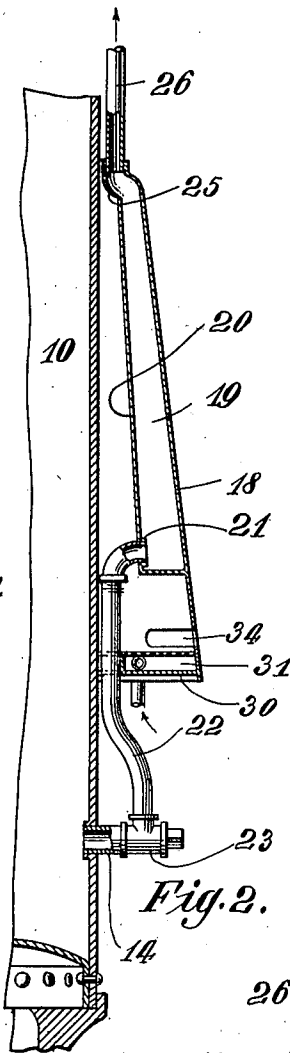
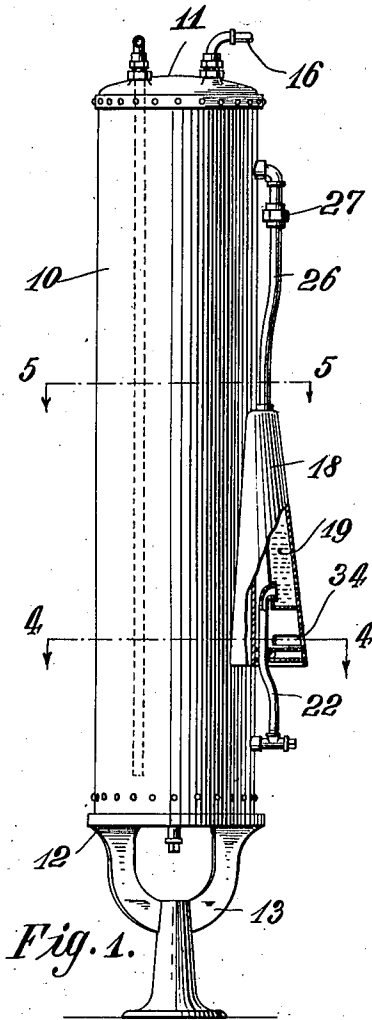


W. P. AUSTIN.
WATER HEATER.
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1,291,714.

Patented Jan. 21, 1919.



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WATER-HEATER.

1,291,714.

Specification of Letters Patent.

Patented Jan. 21, 1919.

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To all whom it may concern:

Be it known that I, WILLIAM P. AUSTIN, a citizen of the United States, and a resident of Hollis, in the county of Queens and State of New York, have invented certain new and useful Improvements in Water-Heaters, of which the following is a specification.

This invention relates to improvements in water heaters and particularly to boiler tanks as combined with ranges or stoves for domestic purposes.

The objects of the invention are primarily, to provide means adjunctive to those ordinarily used for such purposes which can be applied to boiler tanks previously in use as well as in new installations, the heating device being independent of the usual pipes and heat arrangements.

A second object is to provide a heating means in which all of the heat is conserved and therefore operated with the greatest possible economy, without loss by radiation.

And finally to provide such means at far less expense than the customary devices for a like purpose, in forms readily applicable without difficulty, entailing no change in the boiler tank or its connections.

These and other objects are attained by the novel construction and combination of parts hereinafter described and shown in the accompanying drawings, forming part of this specification and in which:

Figure 1 is a side elevation, partially in section, of a water heating jacket made in accordance with the invention and showing its application to a water tank.

Fig. 2 is a longitudinal section of the same taken on the center line, drawn to an enlarged scale.

Fig. 3 is a front view of the jacket and attachments.

Fig. 4 is a transverse sectional view, taken on line 4—4 of Fig. 1.

Fig. 5 is a similar view, taken on line 5—5 of Fig. 1, and,

Fig. 6 is a perspective view of the same, looking from the back side.

In order to provide a supply of hot water for domestic uses, as baths, laundry and analogous purposes, it is common to install a cylindrical tank 10 having a head 11 and base 12, resting upon supports 13, the tank having pipe connections 14 leading from a water-back (not shown) combined with any

ordinary kitchen or cooking range, the water-back being supplied with a constant head of water from any convenient source.

Other pipes, as 16, lead from the tank to where a supply of hot water may be required, and when a fire is maintained in the range the system is usually satisfactory; however, at other times it may be desirable to have a supply of hot water and to provide a substitute, which may be used at an alternative or supplement to the range, is the general purpose of the invention, the same being an improvement over my former Patent (#1,048,271, issued December 24th, 1912).

A hollow semi-frusto-conical casing or jacket 18 is secured to the side of the tank 10, near the lower end, the casing having a water chamber 19 formed between its exterior wall and the integral lining 20; a boss 21 projects transversely inward from the lining to receive the bent pipe 22, which, by means of the T 23, communicates with the inlet 14 near the bottom of the tank.

Another, but vertical boss 25, extends above the top of the jacket 18 and receives the pipe 26 entering the tank 10 near its upper end; a union 27 is placed in this pipe for convenience in making connections between its sections.

Below the jacket 18 is a gas burner 30, supported by the downwardly extended wall of the casing, the burner having a gas chamber 31 supplied through either of the openings 32, the gas passing out of perforations 33 where it may be ignited through the opening 34.

Gas is supplied to the burner through the pipe 35 having the bell 36, through which atmospheric air may be drawn in and mingled with the jet issuing from the pipe 37 and supplied from any convenient source, a cock 38 controlling the flow and hence the flame produced.

As obviously all of the heat from the atmospheric burner must rise under the bottom of the jacket and between the wall of the cylindrical tank and the interior of the jacket, the side edges of which are in intimate contact with the tank, there is substantially no loss of heat; it will be further evident that as the water chamber envelops the entire jacket lining and is con-

tained in the tank also, that the water is so disposed as to take up the heat very readily, no loss by radiation occurring.

The bent pipe 22 permits the jacket to be properly adjusted close to the boiler tank and, together with the pipe 26, holds the jacket rigidly against the tank without any fastening means whatever.

In order to obtain perfect combustion of the gas, air is admitted through the space 39 around the pipe 22 and also at the igniting opening 34, the consumed gases passing out of the opening 40 at the top of the jacket.

The operation of the heater is so simple as to be readily understood without further description and its application will be clearly obvious from the foregoing.

I claim:

1. The combination with a boiler tank, of a hollow walled, semi-frusto-conical casing having its lineal edges suited to the tank, the body of the casing being remote therefrom, pipes communicating between the spaced walls of said casing and said tank, and a burner below the base of said casing adjacent to said tank.

2. The combination with a cylindrical boiler tank, of a semi-conical shell having double walls and a chamber formed therebetween, inlet and outlet pipes forming pas-

sageways between said chamber and said tank, said pipes supporting the shell, a burner formed at the base of said shell, a combustion chamber between said burner and said base, and an igniting opening through said shell leading to said burner.

3. The combination with a cylindrical boiler tank, of a semi-conical casing having its side edges suited to the tank, a burner integrally formed with said casing at its base, a combustion chamber thereabove, an air inlet to said combustion chamber, an ignition opening leading to said combustion chamber, a lining within said casing above said combustion chamber forming a water space, and a pipe communicating between the space and said tank.

4. The combination in a water heater, of an outer casing provided with an outlet opening, an inner casing forming with said outer casing a water receptacle, a storage tank to which said casings are rigidly engaged, a burner below said casing and a combustion chamber between said casing and said tank, said combustion chamber having means for the admission of atmospheric air and the discharge of consumed gases.

In testimony whereof I have signed my name to this specification.

WILLIAM P. AUSTIN.