H. S. THOMASSON.

TANK HEATER.

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1,329,063.

Patented Jan. 27, 1920.

Fig. 1.

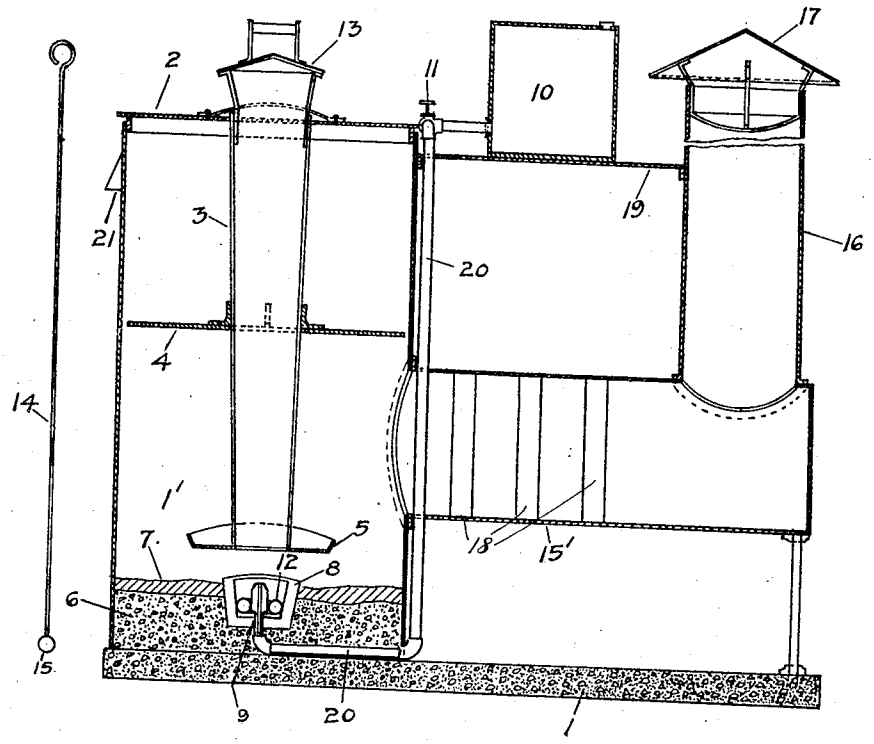
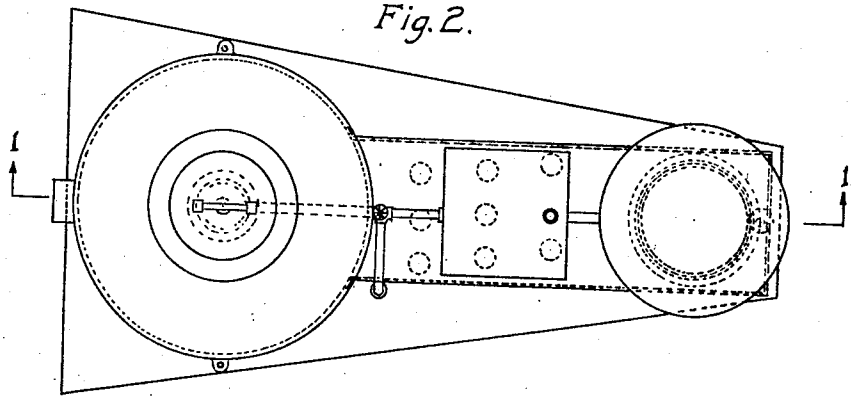


Fig. 2.



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HIRAM S. THOMASSON, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR, BY MESNE ASSIGNMENTS, OF TWO-THIRDS TO C. D. ENOCHS, TRUSTEE, OF MINNEAPOLIS, MINNESOTA.

TANK-HEATER.

1,329,063. Specification of Letters Patent. Patented Jan. 27, 1920.

Application filed February 25, 1918. Serial No. 219,137.

To all whom it may concern:

Be it known that I, HIRAM S. THOMASSON, a citizen of the United States, and a resident of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Tank-Heaters, of which the following is a specification.

The purpose of this invention is to provide an improved oil burning tank heater.

One of the objects of the invention is to provide a simple and inexpensive form of down draft oil burning tank heater.

Another object of my invention is to provide improved means for circulating water in which the heater is immersed.

Another object of my invention is to provide means for sinking the heater to the bottom of the tank.

With these and incidental objects in view the invention consists of certain novel features of construction and combination of parts, the essential elements of which are hereinafter described with reference to the drawing which accompanies and forms a part of this specification.

In the drawing Figure 1 is a section taken on the line 1—1, Fig. 2, and Fig. 2 is a plan view of my improved heater.

A concrete base 1 is provided to carry the heater as a whole, and serve as an anchor to submerge the heater.

A combustion chamber 1′ carries suspended from its cover 2 a tapered pipe 3 on which is mounted a circular baffle plate 4, at the lower end of which is a flame spreading plate 5.

The bottom of the combustion chamber is preferably filled with concrete 6 covered with asbestos 7, and a burner cap 8 is embedded in the concrete.

A small pipe or nozzle 9 leads by suitable pipes, elbows, etc., to a fuel tank 10 and is controlled by the valve 11.

A ring of asbestos or other suitable material 12 surrounds the pipe 9 to facilitate the lighting of the fuel.

The pipe 3 is closed by a removable cover 13, and to light the heater it is only necessary to open the valve 11 until some of the fuel has run over the ring 12, then by means of the lighter 14, carrying a ball 15 of asbestos dipped into fuel and ignited, the fuel on the ring 12 is ignited by lowering the ball 15 through the pipe 3.

Extending outwardly from one side of the combustion chamber 1′ is a horizontal pipe 15′ connecting with the smoke pipe 16 of any suitable height and having a suitable cover plate 17 for keeping out rain and lessening the disturbance of draft by wind and weather.

When the heater has been lighted, part of the flame will rise upwardly through the pipe 3, but the major part will be spread out by the spreader 5 and directed by the baffle plate 4 through the horizontal pipe 15′ and up through the smoke pipe 16.

As the heater begins to warm up the draft through the pipe 16 quickly overpowers the draft through the pipe 3, and the draft in the pipe 3 is reversed drawing the air for combustion downwardly through the pipe 3 supplying the air for burning the fuel at the burner, the products of combustion all passing out through the pipes 15′ and 16.

Vertical flues 18 in the pipe 15′ facilitate the circulation of the water in which the tank is to be immersed.

The fuel tank 10 is carried by a brace 19 extending between the pipe 16 and the combustion chamber 1′, and the downwardly extending fuel pipe 20 also serves to brace the fuel tank.

A handle 21 is provided to facilitate the moving of the tank, the brace 19 being positioned so as to serve as a convenient second handle.

It is to be noted that the horizontal fuel pipe 22 just in front of the nozzle 9 is embedded in the concrete, and this is important as it prevents the pipe 20 from becoming heated and thereby forcing a fluctuating combustion at the nozzle 9 due to the presence of gas formed in the pipe 20.

While I have described my invention and illustrated it in one particular design, I do not wish it understood that I limit myself to this construction, as it is evident that the application of the invention may be varied in many ways within the scope of the following claims:

Claims:

1. In a tank heater the combination of a vertically positioned combustion chamber, a horizontal pipe leading therefrom intermediate of the ends thereof, a vertical pipe upstanding from the opposite end of said horizontal pipe, a draft pipe leading down-

wardly from the upper end of said combustion chamber to a point near the lower end thereof and tapered to a smaller diameter at its lower end, an oil burner positioned adjacent to said smaller end of said draft pipe, flame spreading means carried by said draft pipe near its smaller end, and a baffle plate carried by said draft pipe and positioned above said horizontal pipe.

2. In a tank heater the combination of a combustion chamber, a burner positioned in the lower portion thereof, means for supplying fuel to said burner, a downwardly extending pipe leading from the exterior of said combustion chamber to a point above and adjacent to said burner, a horizontal outlet for the products of combustion leading from said combustion chamber to a smoke pipe, and a baffle plate in said combustion chamber positioned just above said outlet.

3. In a tank heater the combination of a combustion chamber, a burner positioned in the lower portion thereof, means for supplying fuel to said burner, a pipe leading from the exterior of said combustion chamber downwardly to a point above and adjacent to said burner, a flame spreader positioned at the lower end of said pipe and surrounding said pipe, a horizontal outlet for the products of combustion leading from said combustion chamber to a smoke pipe, and a baffle plate in said combustion chamber positioned just above said outlet.

4. In a tank heater the combination of a combustion chamber, a burner positioned in the lower part thereof and embedded in a heat conveying means, whereby said burner will be kept cool when burning, a pipe leading from said burner to a fuel supply source, and means for supplying a down draft to said burner.

5. In a tank heater the combination of a combustion chamber, a down draft burner, a pipe connecting said combustion chamber with a smoke pipe, a downwardly extending pipe leading from the exterior of said combustion chamber to a point adjacent to and above said burner for supplying a down draft thereto, and a flame spreader carried by the lower end of said last named pipe and positioned therearound.

HIRAM S. THOMASSON.