

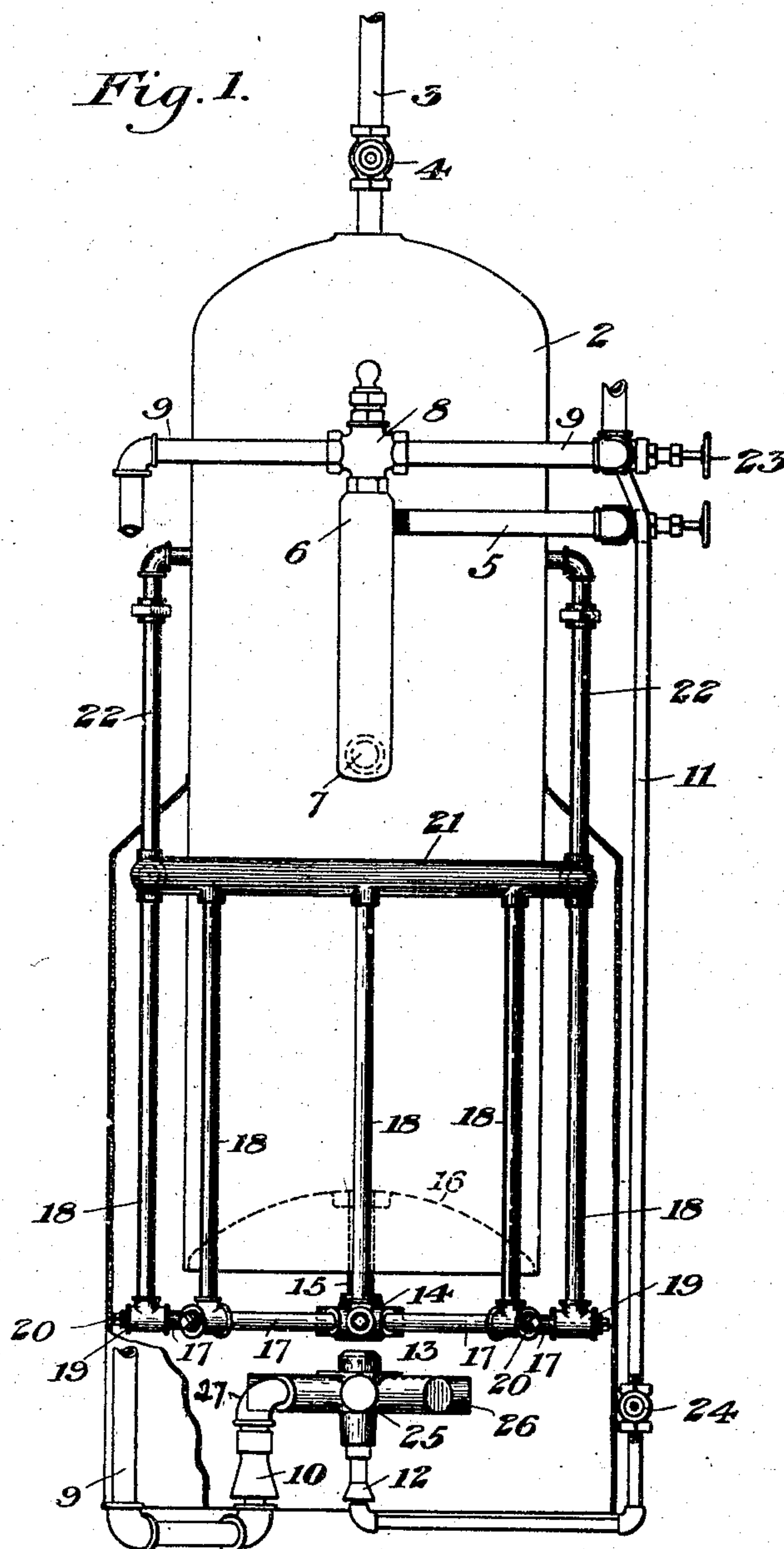
No. 785,189.

PATENTED MAR. 21, 1905.

W. G. TAYLOR.  
WATER HEATER.

APPLICATION FILED APR. 22, 1904.

2 SHEETS—SHEET 1.



WITNESSES

*L. A. Comer*  
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INVENTOR

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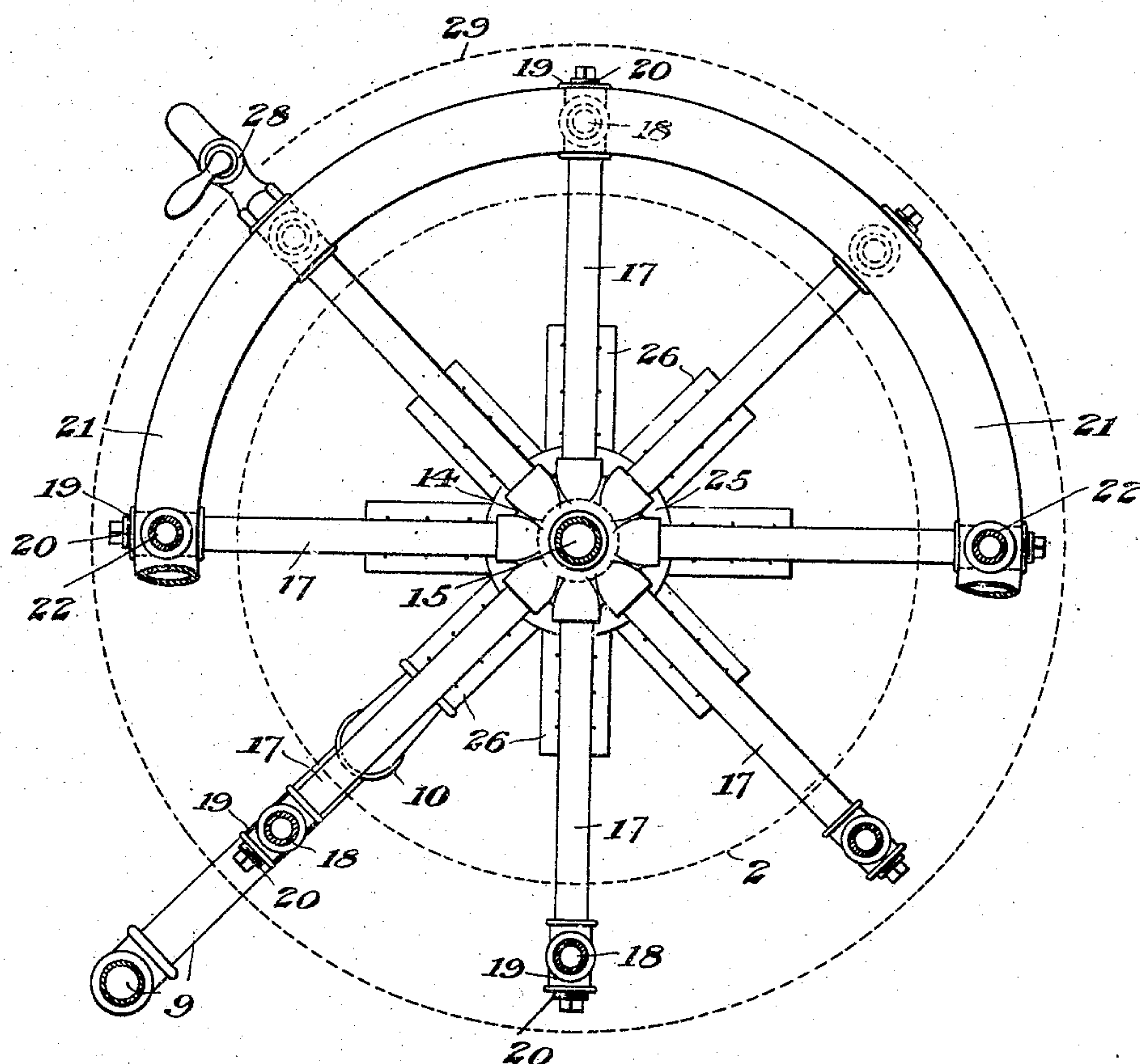
W. G. TAYLOR.

# WATER HEATER.

APPLICATION FILED APR. 22, 1904.

2 SHEETS—SHEET 2.

*Fig. 2.*



**WITNESSES**

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# UNITED STATES PATENT OFFICE.

WILLIAM G. TAYLOR, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO TAYLOR BURNER AND ELECTROPLATING COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

## WATER-HEATER.

SPECIFICATION forming part of Letters Patent No. 785,189, dated March 21, 1905.

Application filed April 22, 1904. Serial No. 204,371.

*To all whom it may concern:*

Be it known that I, WILLIAM G. TAYLOR, of Pittsburgh, Allegheny county, Pennsylvania, have invented a new and useful Water-Heater, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation, partly broken away, showing the preferred form of my heater; and Fig. 2 is a partial cross-section of the same with the tank omitted.

My invention relates to the class of water-heaters wherein the gas-flow to the burner is controlled either by thermostatic or other automatic means and is designed to provide a simple and effective device of this character in which the water will be rapidly and economically heated.

The invention is designed to do away with the coil system, which is expensive and liable to get out of order, and to make a cheaper and more efficient construction.

In the drawings, 2 represents a reservoir or domestic boiler from the top of which leads the house-pipe 3 to the house system. This pipe is preferably provided with a control-valve 4, which is closed when the heater is being cleaned out. The cold-water pipe 5 is shown as leading to the upper end of a water-barrel 6, containing a thermostatic device, this barrel connecting to the reservoir through the bottom pipe 7. The thermostatic device is connected to a gas-valve located in the valve-casing 8, which is placed in the gas-supply pipe 9, leading down to the lower mixer 10. From the other end of the pipe 9, at the top, leads the pilot-light gas-supply pipe 11, which leads to the small mixer 12, supplying the pilot-light burner 13, which is located centrally beneath the central header 14. This header is connected centrally by a pipe 15, leading into the center of the bottom head 16 of the boiler, and from the header lead the radial tubes or pipes 17, which are connected at their outer ends to vertical pipes 18 by T's 19. Each T 19 contains a removable screw-plug 20, which may be removed for cleaning.

It will be noticed by looking at Fig. 2 that the radial pipes are arranged so that two of them are always in line with each other, thus enabling a cleaner to be run through the length of two of the tubes to clean out scale or other deposits.

The vertical pipes 18 lead to an annular tube 21, surrounding the intermediate portion of the reservoir, and from which two pipes 22 lead upwardly and into the sides of the boiler above the pipe 7, leading from the water-barrel.

The hand-valve 23 controls the gas-supply for both burners, while the lower valve 24 controls the supply to the pilot-light burner.

The main burner consists of a hollow body portion 25, having a series of radial burner extensions 26 extending beneath and in line with the radial pipes 17. These burner extensions 26 are closed at their outer end with the exception of one into which projects the pipe 27, leading from the mixer 10. The pilot-light supply-pipe and burner extend centrally through the hollow body of the main burner and are independent of it.

In the operation of the device the cold water flows in through the water-barrel and entering the boiler or reservoir sinks to the bottom through the warmer water therein. It then passes out through the bottom pipe, through the lower header and the pipes 17 and 18, into the ring 21. As the water flows through the header and pipes 17 it is heated by the pilot-light and by the main burner at such times as the gas is supplied thereto. When a cock is opened in the house system, the flow of water through the cock passes through a conduit of much smaller area than the combined areas of the vertical pipes 18. The flow through these pipes is therefore comparatively slow, thus insuring a rapid heating of the water in the header and radial pipes. The water entering the pipe 21 passes up through the vertical pipes 22 and into the upper portion of the heater.

In order to wash out the heater, I preferably provide one of the T connections 19 with a valved extension 28, as shown in Fig. 2.



By closing the valve 4 and opening the valve in pipe 28 the water will flow out and wash out the pipes. I preferably inclose the heating-pipes by a surrounding casing 29, which  
 5 may be of metal lined with asbestos or other suitable material. This casing preferably incloses the lower part of the heater and is contracted or extended inwardly to the reservoir or boiler part above pipe 21. This casing  
 10 may be provided at one side with an offtake-flue in the usual manner. The heated gases are thus retained in contact with the pipes 18 and the ring 21 as they rise around the heater-body.

15 The advantages of my invention result from the peculiar arrangement of circulating-pipes in connection with the domestic boiler. The water is thus heated rapidly and economically without the use of expensive coil systems, and the pipes may be rapidly and easily  
 20 cleaned.

Variations may be made in the form and arrangement of the heater and its various parts without departing from my invention.

25 I claim—

1. A heater having a central reservoir, a water-supply pipe leading into said reservoir, a pipe connection leading down from its lower head to a separate central header, and a hollow  
 30 ring surrounding the boiler and having pipes leading down to the header, said ring having connections leading into the boiler; substantially as described.

2. A heater having a central reservoir, a water-supply pipe leading into said reservoir, a pipe extending horizontally around at least a part of an intermediate part of the reservoir and having pipe connection therewith, pipes  
 35 leading down from the curved pipe and entering the bottom of the heater, and a burner arranged to heat the water in said downwardly-extending pipes; substantially as described.  
 40

3. A heater having a central reservoir, a water-supply pipe leading into said reservoir, a hot-water pipe leading from its top, a pipe leading from its bottom down to a separate central header, pipes leading from said header up to a ring extending around an intermediate part of the boiler, a pipe connection from  
 50 said ring into the boiler and a burner beneath the header; substantially as described.

4. In a heater, a boiler having pipe connection to a central lower header, pipes leading outwardly and radially from said header and  
 55 upwardly to a ring extending at least partially around an intermediate portion of the boiler, and removable cleaning-plugs in the ends of the radial pipes; substantially as described.  
 60

5. In a heater a reservoir or boiler having a hot-water outlet at its top, a cold-water inlet leading into its intermediate portion, a hollow ring extending at least partially around the boiler and having depending pipes connected  
 65 to a central lower header, a connection between the header and lower part of the boiler, and pipes leading from the ring into the boiler; substantially as described.

6. A header having a central reservoir, a cold-water pipe leading to a thermostatic barrel connected to the reservoir, a header below the reservoir and connected thereto, radial pipes leading from the header and connected  
 75 to a ring extending at least partially around the boiler, pipes leading from said ring into the boiler, a burner below the header and a gas-supply to the burner having a valve connected to the thermostatic device; substantially as described.  
 80

In testimony whereof I have hereunto set my hand.

WILLIAM G. TAYLOR.

Witnesses:

GEO. B. BLEMING,  
 JOHN MILLER.