

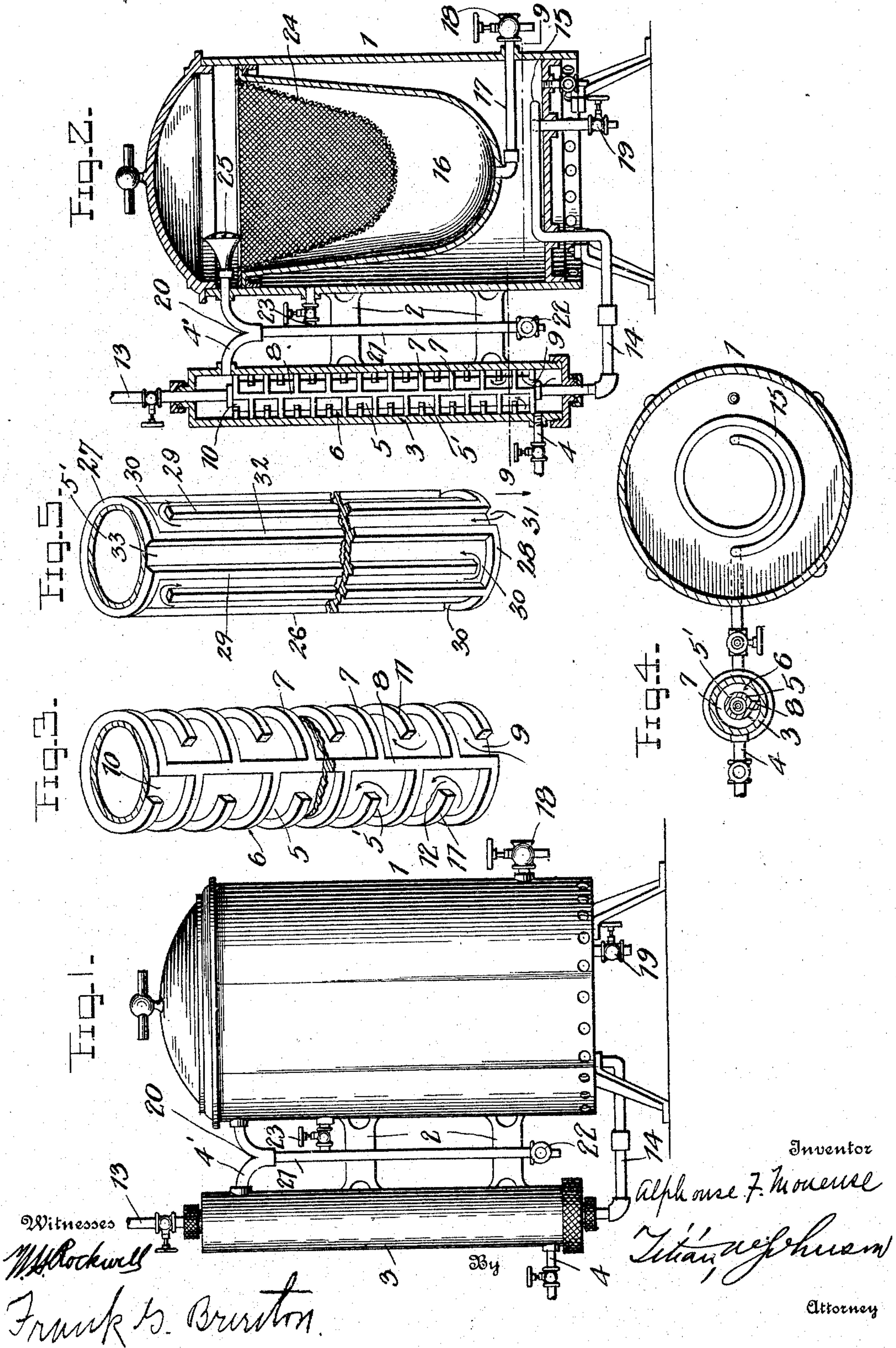
A. F. MONEUSE.

WATER HEATER.

APPLICATION FILED JUNE 20, 1908.

928,063.

Patented July 13, 1909.





# UNITED STATES PATENT OFFICE.

ALPHONSE F. MONEUSE, OF NEW ROCHELLE, NEW YORK.

## WATER-HEATER.

No. 928,063.

Specification of Letters Patent.

Patented July 13, 1909.

Application filed June 20, 1908. Serial No. 439,555.

*To all whom it may concern:*

Be it known that I, ALPHONSE F. MONEUSE, a citizen of the United States, residing at New Rochelle, in the county of Westchester 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 water heaters; and it consists essentially of the novel arrangement and combination of the several parts, as will be hereinafter fully described, and briefly stated in the claims.

The prime object of the invention is to provide an efficient heater, of the type mentioned, over which the water from the main, or water supply, will be caused to circulate slowly, alternately in reverse direction, around the entire surface of the heater, so that by the time the outlet is reached the water will have become sufficiently heated for immediate use.

While my improved heater is adapted for general use in heating water, I have shown it in connection with a coffee urn, wherein by means of certain connecting pipes, the heated water may be supplied directly to the percolator of a coffee urn.

In the drawings; Figure 1 illustrates a side elevation of the heater attached to a coffee urn; Fig. 2 is a central vertical section of the same; Fig. 3, is an enlarged perspective view of the heater removed from its casing; Fig. 4 is a section on line 9—9 of Fig. 2, and Fig. 5 is a perspective view of a modified form of heater.

Referring to the drawings, the numeral 1 designates the urn which may be of any improved construction, and which may have in connection therewith, any suitable burner or burners such as are commonly used for heating water in urns of this character. Secured to the side of the urn by brackets 2, is a cylindrical casing 3, having a valve controlled water inlet 4, at its lower end, and an outlet pipe 4' at its upper end, the pipe 4' being of special construction, as will be presently described. Within the casing 3 I arrange what I term the water heater 5. This consists of a pipe 5' of a diameter slightly smaller than the interior diameter of the casing. Around this pipe and firmly attached thereto, I place a retarding device 6, which consists of a plurality of circular webs 7, one end of each web

being integral with a vertical piece 8 extending preferably throughout the entire length of the pipe 5. The ends of these webs are alternately attached to the piece 8 throughout the entire length of the piece, so that between one end of the bottom web and the lower end of the piece 8, a space 9 will be left to permit the water to begin its circulation and at the top of the pipe, a corresponding opening 10 occurs which permits the water after it has passed many times around the pipe 5, to pass into the urn. By reference to Fig. 3 it will be seen that the water in entering the casing 3 will pass upward through the opening 9 around the pipe 5' through the circular passage formed by the web 11 until it reaches the passage 12, when it will pass up and again around the pipe until it reaches the passage on the opposite side of the piece 8 and so on until it reaches the point of outlet at the top of the casing. The upper end of the pipe 5 is closed, with the exception that a valve controlled steam inlet pipe 13 is let into it. This pipe passes through the top of the casing wherein it is suitably packed and may lead to any source of steam supply.

The lower end of the pipe 5 has connected with it a pipe 14, which passes through a suitably packed opening in the bottom of the casing. Connected with the pipe 14 is a coil 15 which is suitably supported in the bottom of the urn below the receptacle or vessel 16, which receptacle has connected with it in the usual way, a pipe 17 having a faucet 18 thereon through which the contents of said receptacle is drawn off. The pipe 15 is provided with a valve 19 through which the steam may be exhausted.

The pipe 4' is formed with a depending portion 20 to the lower end of which is attached the pipe 21 having a faucet 22 at the lower end thereof and through which hot water may be drawn before it passes into the urn. Connecting the pipe 21 and the outer casing of the urn is a short valve controlled pipe 23 which may be opened to permit the water after it has been passed through the heater to pass into the bottom of the urn, around the vessel or receptacle 16, it being understood that when the bottom of the urn is being filled to the desired extent, the faucet 22 will be closed. The faucet 22 and valve in the pipe 23 may be independently operated as the exigencies of the case may require.



The inner receptacle of the urn is provided with the usual percolator 24 suitably supported near the top of the casing and opening into this percolator is a screened pipe 25 which is a continuation of the pipe 4'.

In operation, cold water is let into the casing 3 through the valve controlled inlet 4, where it passes through the opening 9 which is formed between one of the web sections and the inner surface of the casing 3 and passing onto the pipe 5', it will pass many times around said pipe until it reaches the top of the casing, passing out of the casing into the urn. The temperature of the steam within the pipe 5 is such that by the time the water reaches the upper part of the casing, it will have reached boiling point or such temperature as may be desired. The web sections fit snugly against the inner surface of the casing so that the water is compelled to follow the course defined by the webs.

Referring now to the modification shown in Fig. 5 of the drawings, the retarding device 26 is formed by two circumferential webs 27 and 28 to which are attached a number of strips 29. These strips are alternately connected to the top and bottom web and are of such length that spaces 30 are formed between the webs and the ends of the strips through which the water may circulate circumferentially of the pipe 5'. The lower web 28 is cut away as indicated at 31 so that the water coming into the casing may pass longitudinally of the pipe between the strip 29 and strip 32, which strip 32 has its upper and lower ends connected with the web, so as to separate the inlet opening from the outlet. The upper web is cut away to form the outlet opening 33 which occurs between the strip 32 and the adjacent strip 29. The water entering the inlet 31 will pass upward over substantially the entire length of the pipe and will then pass for a short distance or for the width of the strips 29 circumferentially of the pipe when it will pass downwardly and through the various passages 30, until it finally reaches the outlet when it may pass into the urn or be conducted elsewhere for use in a highly heated state.

#### 50 Claims.

1. A water-heater, comprising a casing having a water-inlet and an outlet, heat-supplying means arranged within the casing, and a retarding-device situated between the walls of the casing and the means for supplying heat, said retarding device being so constructed and arranged that the water will be

caused to flow alternately in reverse directions, circumferentially and longitudinally the heater.

2. A water-heater, comprising a casing provided with a water-inlet and an outlet, heat-supplying means, arranged within the casing, and a retarding device situated between the walls of the casing and the means for supplying heat, said retarding device consisting of a vertical piece provided with a plurality of webs alternately arranged to form water-passages at opposite sides of the vertical piece.

3. A water-heater, comprising a casing provided with a water-inlet and an outlet, a steam-pipe arranged within the casing, a retarding-device formed of a vertical piece having a plurality of circumferentially-arranged webs, said device being situated between the walls of the casing and steam-pipe and having each alternate web abutting against the vertical piece, whereby passageways are formed between the ends of each alternate web, so that the water will be caused to flow alternately in reverse direction.

4. A water-heater, comprising a casing having a water-inlet and an outlet, a hollow body within the casing, means for supplying heat to said body, a retarding device fitting between the walls of the casing and the hollow body, said retarding device being composed of a vertical piece provided with a plurality of webs alternately-arranged at opposite sides thereof, forming communicating water passages.

5. A water-heater, comprising a casing having a water-inlet and an outlet, heat-supplying means arranged within the casing, and a retarding device fitting between the walls of the casing and the means for supplying heat, said retarding device being composed of a vertical piece having a plurality of webs projecting circumferentially from one side of piece, and a plurality of similarly projecting webs alternately arranged at the opposite side thereof, whereby passageways will be formed to cause the water to flow alternately from one side of the vertical piece to the other in reverse directions, and longitudinally thereof.

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

ALPHONSE F. MONEUSE.

Witnesses:

JOSHUA T. ROSE,  
DANIEL F. SNOVER.