

G. T. HICKMOTT.
WATER HEATER.
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1,046,591.

Patented Dec. 10, 1912.

Fig. 1.

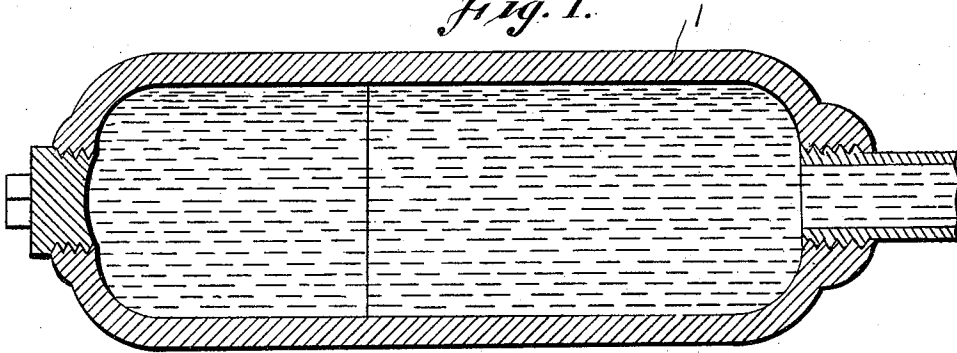
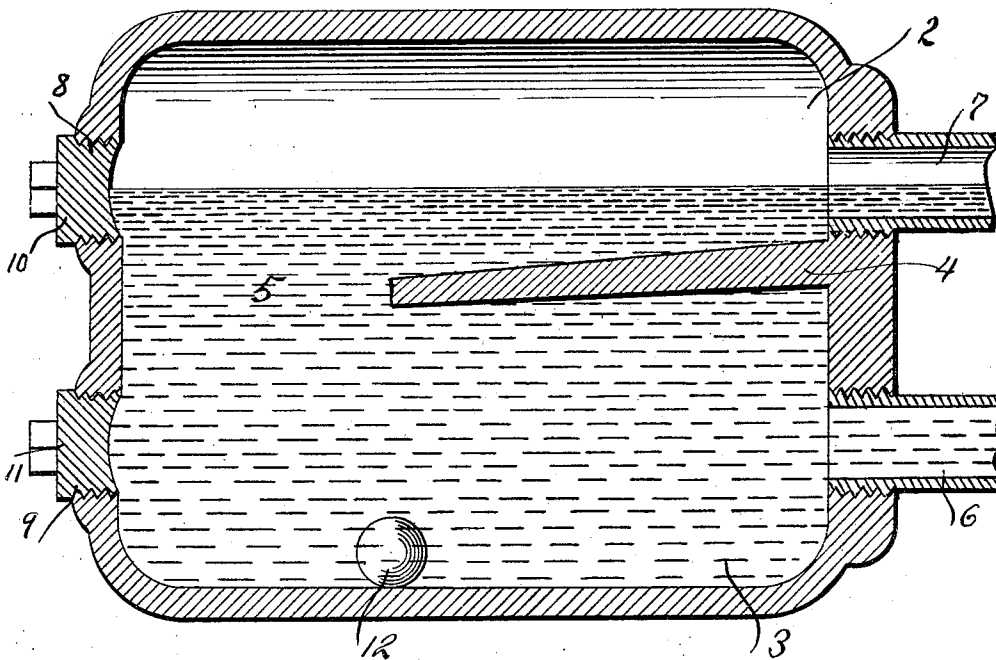


Fig. 2.



Inventor
George T. Hickmott

Witnesses
Francis K. Mac Verhamp
B. J. Kirkham

By

C. L. Parker
Attorney

UNITED STATES PATENT OFFICE.

GEORGE T. HICKMOTT, OF PONTIAC, MICHIGAN.

WATER-HEATER.

1,046,591.

Specification of Letters Patent.

Patented Dec. 10, 1912.

Application filed March 25, 1912. Serial No. 685,999.

To all whom it may concern:

Be it known that I, GEORGE T. HICKMOTT, a citizen of the United States, residing at Pontiac, in the county of Oakland and State of Michigan, have invented certain new and useful Improvements in Water-Heaters, of which the following is a specification.

The present invention relates to a device for heating water and especially hard water.

It is well known that hard water is made softer by heating it, whereby lime is thrown down and forms a coating upon the interior of the boiler. In such devices it is very important that some automatic means be provided for keeping the bottom wall of the same clean or free from this coating of lime.

It is therefore an important object of my invention to provide in a boiler for continuously heating hard water, novel means to prevent the coating of the bottom wall of the boiler with the lime.

A further object of my invention is to provide means for returning the cleaning or freely rolling element to its proper position in the shell of the boiler should it be displaced therein by the agitation of the water.

A further object of my invention is to provide a device of the above mentioned character, which is simple in construction, cheap to manufacture, and continuous and expeditious in operation.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same, Figure 1 is a horizontal sectional view through the device, taken above the inclined partition plate, and, Fig. 2 is a central vertical longitudinal sectional view through the same.

In the drawings wherein for the purpose of illustration I have shown a preferred embodiment of my invention, the numeral 1 designates the shell or casing of the heater or boiler, which may preferably be approximately elliptical in horizontal cross-section, as shown. This shell 1 is divided into upper and lower compartments 2 and 3, by a partition plate 4, preferably formed integral with one end wall of the shell. The free end of this partition plate terminates at a point near and spaced from the opposite end wall of the shell 1, for providing a

contracted opening 5, establishing communication between the compartments 2 and 3, as shown. The partition plate 4 is slightly inclined and extends downwardly toward its free end. Water is supplied into the lower compartment 3 through an inlet pipe 6 and discharges from the compartment 2 through an outlet pipe 7. Access is had to the interior of the compartments 2 and 3 through screw-threaded openings 8 and 9 respectively, which are normally closed by removable plugs 10 and 11, as shown.

The numeral 12 designates a freely rolling element or ball, which normally travels about on the bottom wall of the shell 1, for breaking up the deposits of lime thereon.

The operation of the device is as follows:—The shell 1 is exteriorly heated by any suitable means. The pipes 6 and 7 may have connection with a holding tank filled with the water which is to be heated, or the pipe 6 may be connected with such tank and the pipe 7 may be directly connected with a spigot. As the water in the shell 1 is heated a continuous circulation is set up, such water in the compartment 3 passing through the restricted opening 5 into the compartment 2 and hence through the pipe 7. This water when being heated is under violent agitation which causes the ball 12 to travel or roll upon the bottom of the shell 1, breaking up the deposits of lime which pass with the water through the pipe 7. When the agitation of the water is very severe the ball 12 may be carried upwardly sufficiently to be thrown upon the partition plate 4. For this reason I have inclined this partition plate so that the ball will roll off the same and be returned to its requisite position upon the bottom wall of the shell 1.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same and that certain changes in the shape, size, and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claim.

Having thus described my invention, I claim:

A heating device of the character described, comprising a normally closed stationary shell having at one end thereof spaced upper and lower outlet and inlet openings, said shell being adapted to be externally heated, an approximately horizon-

tal partition plate disposed between the outlet and inlet openings and connected with the end of the shell below the outlet opening, said partition plate being inclined longitudinally toward its free end which is disposed near and spaced from the opposite end of said shell, said partition plate dividing the shell into upper and lower compartments having communication through the restricted passage at said free end of said partition plate, and a ball freely rolling

within the shell to normally travel in engagement with the bottom wall of the shell and to roll off of the inclined partition plate if it should be thrown thereon by the agitation of the boiling water.

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

GEO. T. HICKMOTT.

Witnesses:

FRANK L. DOTY,
HAZEL OLMSTED.

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