

1,020,682.

Patented Mar. 19, 1912.

2 SHEETS—SHEET 1.

Fig. 3.

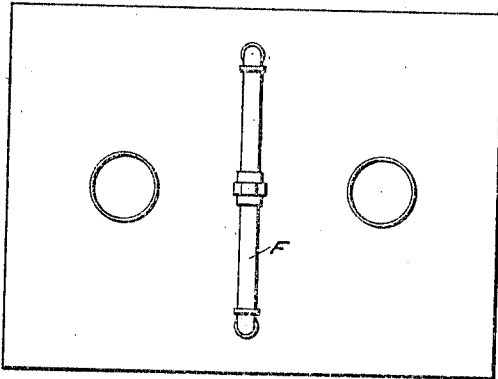
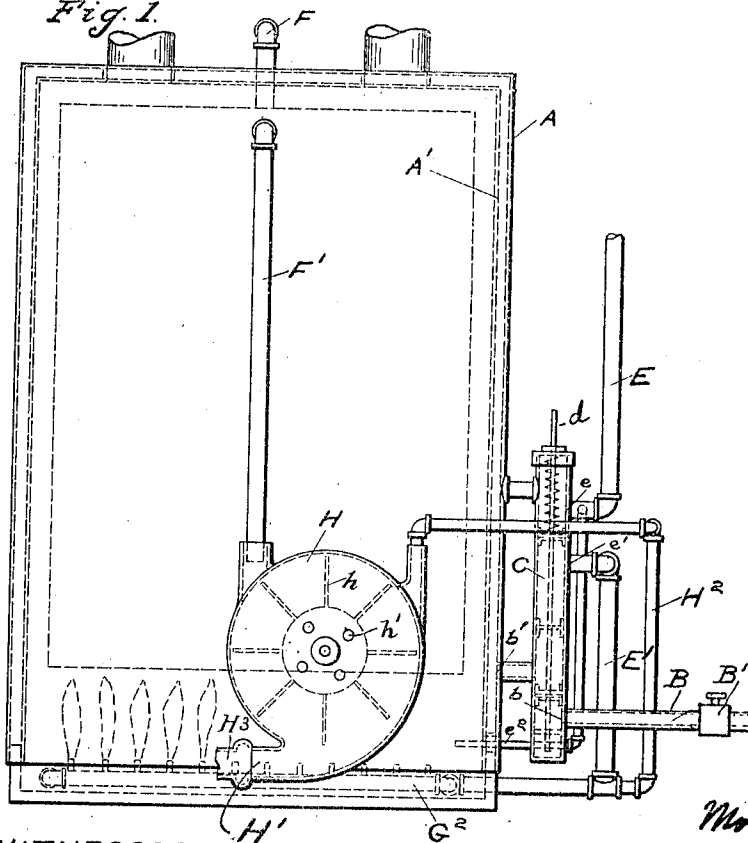


Fig. 1.



WITNESSES

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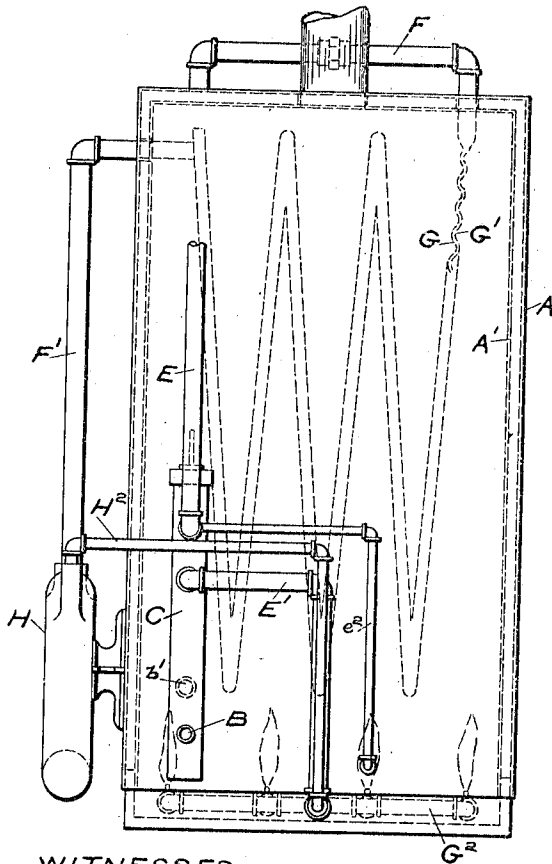
M. BORSODI.
WATER HEATER.
APPLICATION FILED AUG. 28, 1909.

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2 SHEETS—SHEET 2.

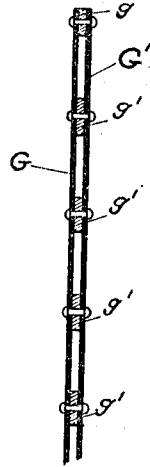
Fig. 2.



WITNESSES

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Fig. 4.



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UNITED STATES PATENT OFFICE.

MORRIS BORSODI, OF SCRANTON, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO LEO KLEINMANN, OF BROOKLYN, NEW YORK.

WATER-HEATER.

1,020,682.

Specification of Letters Patent.

Patented Mar. 19, 1912.

Application filed August 28, 1909. Serial No. 515,115.

To all whom it may concern:

Be it known that I, MORRIS BORSODI, a citizen of the United States, and a resident of Scranton, in the county of Lackawanna and State of Pennsylvania, have invented a certain new and useful Water-Heater, of which the following is a specification, the same being a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to appliances whereby water may be heated, or converted into steam, in a very short space of time, and it has for its object the provision of an apparatus of the kind set forth, simple in construction, inexpensive to manufacture, and which operates efficiently in practical use.

To attain the desired end, this, my invention, consists in the construction, arrangement and operation of parts herein set forth.

In order to enable the invention to be fully understood, I shall proceed to explain the same by reference to the drawings which accompany and form a part of this specification, in which—

Figure 1 is a front elevation of an apparatus constructed according to my invention, Fig. 2 is a side elevation of the same, Fig. 3 is a plan view thereof, and Fig. 4 is a view in detail showing a transverse section of my heating chamber.

Like letters of reference indicate like parts in all the views.

Referring particularly by reference characters to the drawings, A, A' represent my double metal casing forming a water jacket and reservoir of my heating apparatus, which is fed by means of the water supply pipe B, intermediate of which is located my supply cylinder C, provided with a piston rod *d* having a series of piston heads. When the water is turned on so as to flow through the pipe B it serves to raise the piston rod *d* a sufficient distance to put the said cylinder into operative connection with the gas and water supply pipes, and to allow the fluid to pass through the port *b* located at the lower part of the cylinder to and through the port *b'* of the casing A, A', and thereby charge the water jacket.

A gas supply pipe E is connected with the upper portion of the cylinder C, which is also connected by the pipe E' with the

burner tube G² which extends into the casing A, A', and is provided with burners, preferably of the Bunsen type. Upon the piston rod *d* being raised, the gas will enter through the port *e* into the cylinder and thence through the port *e'* into the pipe E', and thence to the burner tube G². From the gas pipe a gas pilot tube *e*² is led into the chamber forming the interior of the casing A, A', so as to be positioned a short distance above the burner tube G² and afford a pilot light which may be kept burning continuously. From the water jacket, a pipe F leads to my heating chamber G, G' formed of a pair of plates which are kept a very short distance apart by means of separator strips *g*, placed at the edges thereof, and intermediate strips *g'* which are preferably made shorter in order to allow a free flow of water therethrough. These heating chambers are ordinarily made so that in conformation each pair of chambers will be of V-shape, the plates G, G' being preferably corrugated so as to be more readily heated.

From the various heating chambers, which communicate with each other, the hot water is ordinarily led by a pipe F' to a motor H, provided with blades or paddles *h*, in form resembling an overshot wheel, and having an outlet H' larger than the size of the stream passing thereout, from whence the water is taken to be used by the pipe H² located on a level with the outlet H'. The water falling on the paddles below the pipe H' will serve to rotate the wheel H, and the air thereby drawn in by suction through suitable inlets *h'* in the motor casing will pass to the opposite empty side of the motor and will pass through the pipe H² to the burner tube G² and thus furnish the same with a supply of air under pressure in order to afford a forced draft, so as to constitute a pressure burner in cases where there is a low pressure of gas. The casing for the combined water motor and air blower has ports to allow water to fall at one side thereof and from the said blades, and also orifices *h'* to allow air to rise at the other side thereof from the said blades.

I wish it to be understood that I do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

What I claim as my invention is:—

1. In a device of the class described, a casing to form a water jacket, an inlet pipe for the same, an outlet pipe therefor, a water receptacle connected therewith and contained therein, an outlet pipe therefor, a burner located beneath the said receptacle, a gas supply pipe therefor, a cylinder having two ports at the upper portion thereof for the gas supply, and two ports at the lower portion for the water supply, means to control the supply of the water and the gas consisting of a spring controlled piston to stop the flow of gas, and of another piston to stop the flow of water when the apparatus is not in use, the movement of the said pistons being controlled by the pressure of the water in the said inlet pipe, and means located exterior of the casing to afford a forced draft to the burner by the direct action of the water falling from the outlet of the water receptacle, in combination with means to admit water under pressure into the said inlet pipe.
2. In a device of the class described, a casing to form a water jacket, an inlet pipe for the same, an outlet pipe therefor, a wa-

ter receptacle connected therewith and contained therein, an outlet pipe therefor, a burner located beneath said receptacle, a gas supply pipe therefor, in combination with an air pipe communicating with the burner and a combined rotary water motor and air blower communicating with the water receptacle, the blades of which motor are adapted to be moved by the water and to serve to force air under pressure through the said air pipe, a casing for the combined water motor and air blower having ports to allow water to fall at one side thereof and from the said blades, and also having orifices to allow air to rise at the other side thereof from the said blades, and means to control the supply of the water and the gas, and with means to admit water under pressure into the said inlet pipe.

In testimony of the foregoing specification I do hereby sign the same in the city of New York, county and State of New York this tenth day of July 1909.

MORRIS BORSODI.

Witnesses:

ROB. SCHWARZ,
J. ODELL FOWLER.

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