No. 792,496. PATENTED JUNE 13, 1905.

G. R. BURT.

WATER HEATER.

APPLICATION FILED MAY 27, 1904.

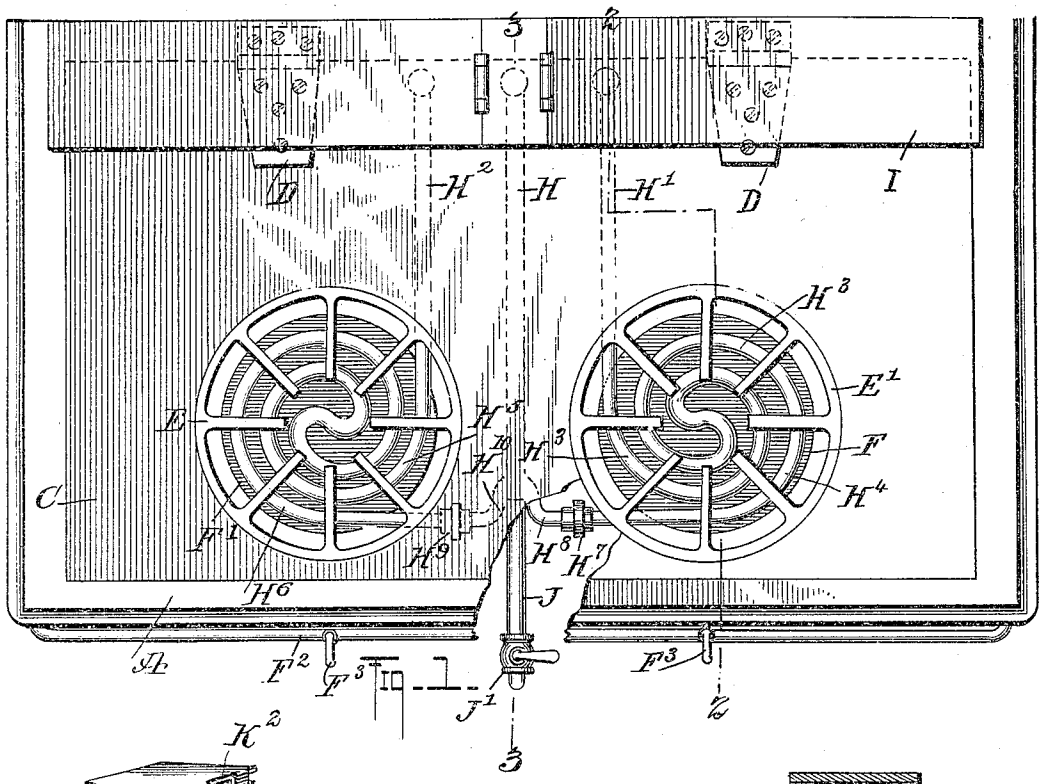

Fig. 1.

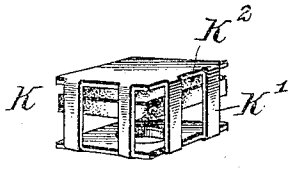

Fig. 4.

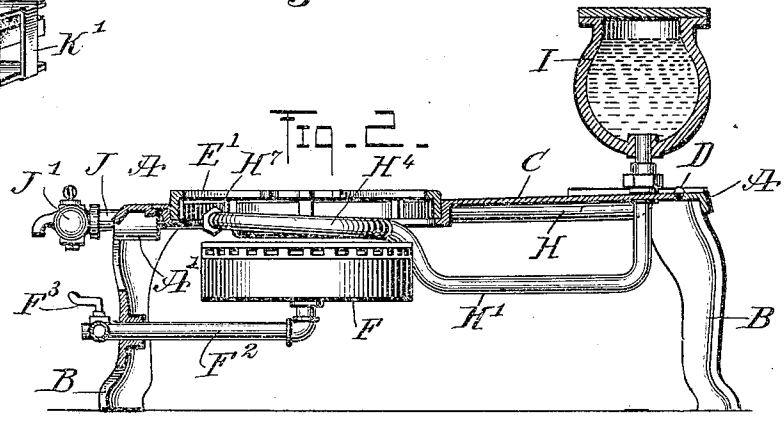

Fig. 2.

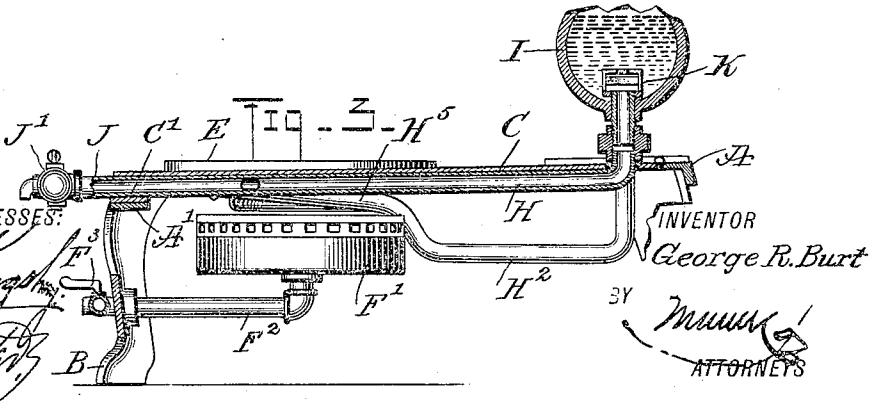

Fig. 3.

WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE R. BURT, OF PERRY, NEW YORK.

WATER-HEATER.

SPECIFICATION forming part of Letters Patent No. 792,496, dated June 13, 1905.

Application filed May 27, 1904. Serial No. 210,045.

To all whom it may concern:

Be it known that I, GEORGE R. BURT, a citizen of the United States, and a resident of Perry, in the county of Wyoming and State of New York, have invented a new and Improved Water-Heater, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved heater for heating water on a gas, gasolene, or oil stove which is simple and durable in construction, easily attached to the stove, and arranged to insure a quick and safe heating of the water.

The invention consists of novel features and parts and combinations of the same, as will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the improvement as applied to a two-burner gas-stove. Fig. 2 is a cross-section of the same on the line 2 2 of Fig. 1. Fig. 3 is a similar view of the same on the line 3 3 of Fig. 1, and Fig. 4 is an enlarged perspective view of the valve for controlling the water flowing from the inlet end of the circulating-pipe into the tank.

The rectangular top frame A of a gas, gasolene, or oil stove is mounted on suitable legs B, and into the said top frame A fits the stove-top C, connected at its rear end by hinges D with the frame A and provided with the usual grates or lids E and E′, located above burners F and F′, connected with a supply-pipe F^2, having valves F^3 for regulating the amount of fuel for the burners F and F′.

To the stove-top C is secured a water-circulating pipe, formed, as illustrated in the drawings, with an inlet H and outlets H′ and H^2, all opening into the bottom of the water-tank I, which is secured on the pivoted lid C of the stove and is of any approved construction and provided with suitable lids for conveniently filling the tank with water whenever it is necessary to do so. The portion of the circulating-pipe for each burner F and F′ is formed in the shape of a double spiral, of which the double spiral for the burner F consists of the spirals H^3 and H^4 and the double spiral for the burner F′ consists of the spirals H^5 and H^6. The spiral H^3 connects at its outer end with the outlet H′ and at its inner end with the inner end of the spiral H^4, connected at its outer end by a coupling H^7 with a branch pipe H^8, leading to the inlet-pipe H for the tank I. The spirals H^5 and H^6 are similarly arranged—that is, the outer end of the spiral H^5 connects with the outlet H^2 and the outer end of the spiral H^6 connects by a coupling H^9 with a branch pipe H^{10}, leading to the inlet-pipe H. The outlets H′ and H^2 extend downward from the tank I below the level of the double spirals H^3 H^4 and H^5 H^6, respectively, while the inlet H rises from the terminals of the spirals H^4 and H^6 to the tank I, as plainly illustrated in Figs. 2 and 3.

By the arrangement described the water freely circulates through the circulating-pipe whenever the burners F and F′ or either one of them are lighted, as the heat from the burners heats the double spirals, and consequently the water therein, so that the water readily flows from the tank I by way of the outlets H′ and H^2 through the double spirals and then returns by the inlet H to the tank in a heated condition.

The forward end of the inlet H is provided with a pipe J, having a draw-off cock J′, which when opened permits of conveniently withdrawing the water as it leaves the spirals H^4 H^6 without returning the heated water to the tank I.

In order to prevent the water from returning to the tank I or drawing colder water from the latter whenever the draw-off faucet J′ is opened, a self-acting valve K is provided, located within the tank I on the terminal of the inlet H. This valve K is provided with a cage K′, containing a valve K^2, made of rubber or other suitable material and lifted off its seat on the terminal end of the inlet-pipe H whenever water circulates through the pipe, as previously described; but when the faucet J′ is opened then the valve K immediately drops and seats itself to close the inlet-

pipe H at its terminal to allow free flow of the heated water directly from the spirals H^4 and H^6 to the pipe J and draw-off faucet J'.

It is understood that the convolutions of the double spirals H^3 H^4 and H^5 H^6 are sufficiently spaced apart to permit the flame from the burners F and F' to readily pass up to the grates or lids E' and to the pots, kettles, or the like supported thereon, so as to heat the same without much interference on the part of the double spirals.

When it is desired or necessary to clean or gain access to the burners for other reasons, then it is only necessary to swing the stove-top C upward into an inclined position, thus raising the double spirals of the burners to give free access to the same.

The pipe J rests on a bent portion C', formed on the forward end of the stove-top C, and the said bent portion is seated in a saddle A', formed on the front member of the frame A, so as to hold the stove-top normally in a horizontal position on the frame A and to allow of swinging the stove-top upward, and with it the circulating-pipe, whenever it is desired to gain access to the burners F and F'. When the burners are in action and the water circulates through the circulating-pipe, as described, it is evident that the water in passing through the double-spiral portion first flows spirally inward in one direction and then spirally outward in a reverse direction, and hence the water is subjected to the action of a large amount of heat and quick heating of the water is the result.

The device is very simple and durable in construction and can be cheaply manufactured and readily applied to stoves now in use.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A stove having a hinged top and a water-heating attachment, comprising a tank secured to the top of the stove, and a water-circulating pipe carried by said top and having its ends rigidly connected with the said tank, one end being the outlet from the tank and the other the inlet for the tank, the inlet and the outlet terminating in connected spirals and the said outlet dipping to a lower plane than the spirals and the inlet rising from its spiral to the tank.

2. A stove having a hinged top, a tank supported upon said top to move therewith, and a water-circulating pipe also attached to the said top and having its ends connected with the said tank, a portion of the pipe extending over the top of the burner of the stove.

3. A water-heater attachment for stoves, comprising a tank, a water-circulating pipe having its ends connected with the said tank, the said circulating-pipe having a portion over the burner of the stove, a draw-off faucet connected with the said circulating-pipe, and a valve within the tank for automatically closing the return end of the pipe on opening the faucet.

4. A water-heating attachment for stoves, comprising a tank, a water-circulating pipe having its ends connected with the said tank, the said circulating-pipe having a portion in double-spiral form arranged over the burner of the stove, a draw-off faucet connected with the said circulating-pipe, and a valve within the tank for closing the return end of the pipe on opening the faucet.

5. A water-heating attachment for stoves, comprising a tank, a water-circulating pipe having its ends connected with the said tank, one end being the outlet from the tank and the other the inlet for the tank, the inlet and the outlet terminating in connected spirals and the said outlet lying in a lower plane than the spirals and the inlet rising from its spiral to the tank, a draw-off faucet connected with the said inlet, and a valve within the tank said valve being automatically operated to close the inlet by the opening of the faucet.

6. The combination with a stove having a plurality of burners, of a water-heating attachment, comprising a tank, an outlet-pipe from the tank for each burner, each pipe having a portion arranged over its respective burner, a single circulating-pipe connected at its inner end with the tank and between its ends with the terminals of said burner portions of the pipe, and a draw-off faucet in said circulating-pipe.

7. The combination with a stove having a plurality of burners, of a water-heating attachment, comprising a tank, an outlet-pipe from the tank for each burner, each pipe having a portion arranged over its respective burner, a single circulating-pipe connecting the tank with the terminals of said burner portions of the pipe and having a draw-off faucet, and a valve within the tank for closing the inner end of said circulating-pipe to prevent the exit of water therethrough.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE R. BURT.

Witnesses:
WM. D. PAGE,
J. N. WYCKOFF.