Feb. 2, 1932. F. M. WOODARD 1,843,309

RANGE WATER HEATER

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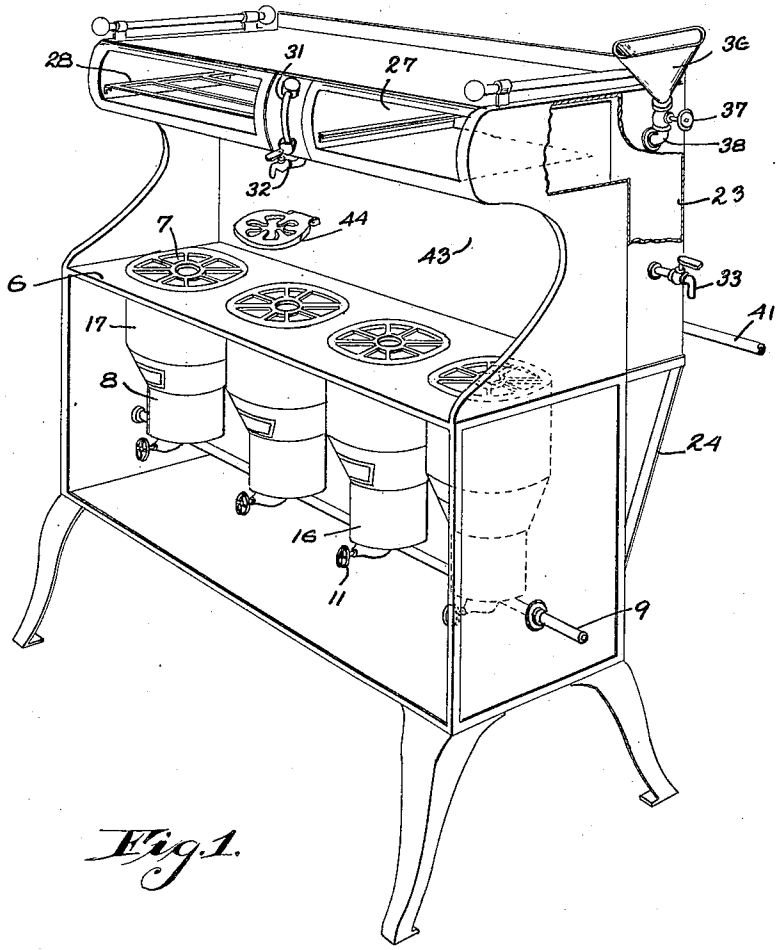


Fig. 1.

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Fig. 2.

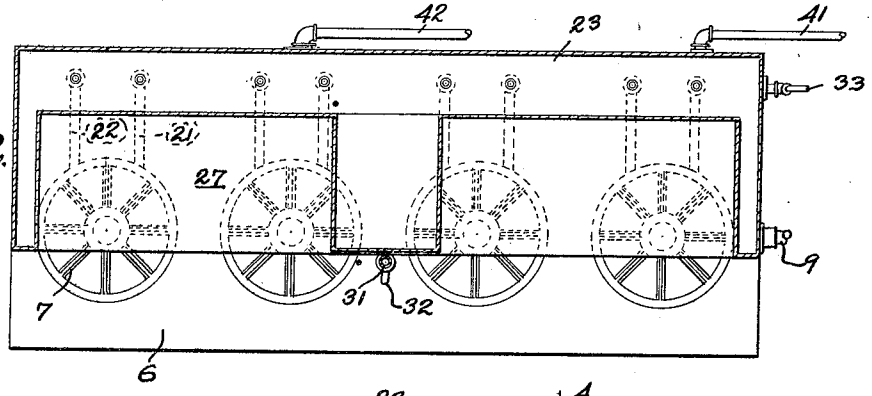


Fig. 3.

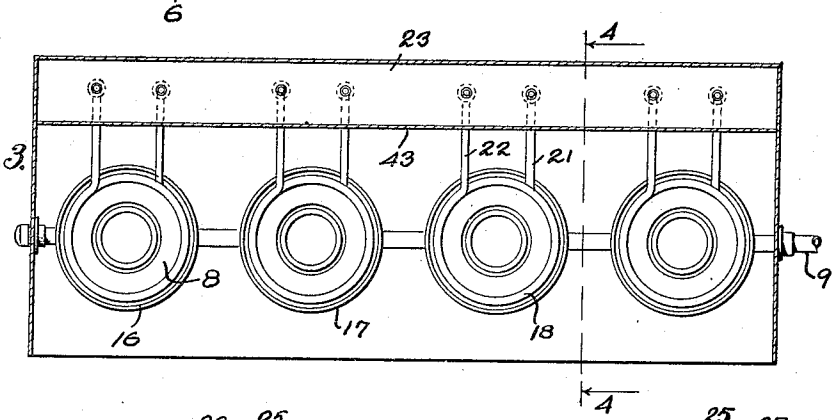


Fig. 5.

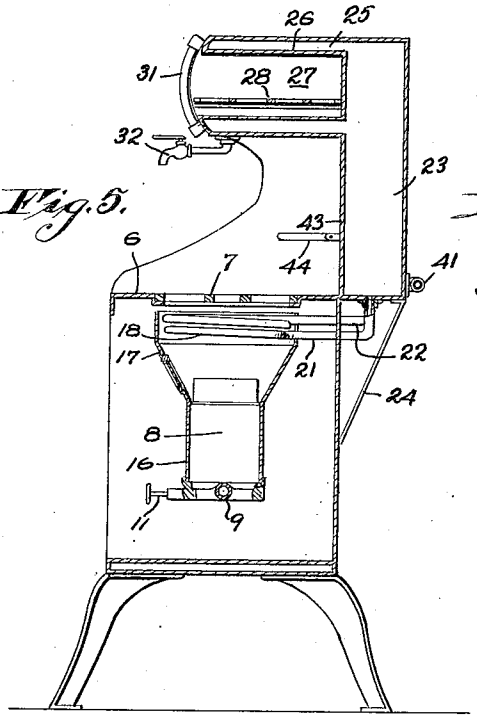
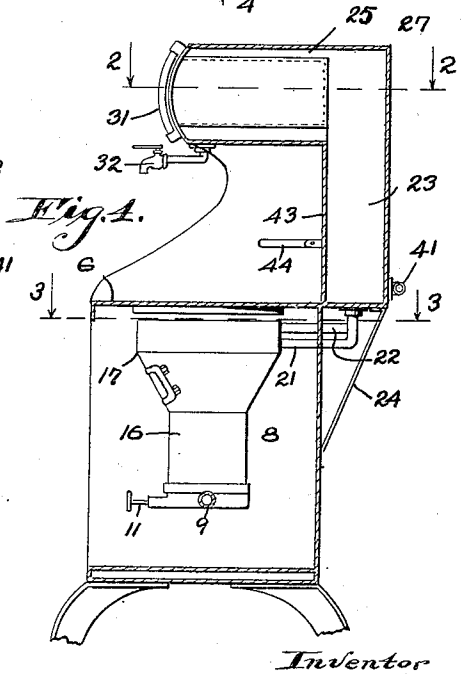


Fig. 4.



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UNITED STATES PATENT OFFICE

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RANGE WATER HEATER

Application filed January 5, 1929. Serial No. 330,492.

This invention relates to water heaters, and has for an object the provision of a novel and efficient type of water heater adapted for installation upon and use in conjunction with the conventional kitchen range.

Another object is the provision of a range water heater so designed as to be capable of operating efficiently upon that type of kitchen range which employs liquid fuel such as kerosene as its source of heat energy.

A further object is the provision of a range water heater comprising a reservoir in the form of a tank rising from preferably the after edge of the top plate of the range and having a horizontal portion extending over the top plate at such a distance therefrom that it does not interfere with the normal use of utensils disposed upon the plate.

A still further object is the provision of a range water heater of the general character described, having a warming oven disposed within the horizontal portion of the reservoir and accessible through the forward side thereof. In the invention's preferable embodiment, the parts are so proportioned and arranged that the combined range and water heater has the appearance of the conventional range having the well known type of warming oven disposed above the top plate.

A further object is the provision of a range water heater as described, having a water-back interposed between the source of heat supply and the top plate, this water-back being in communication with the reservoir so that circulation of water therethrough is maintained to convey heated water from the water back to the reservoir and cooler water from the reservoir to the water-back.

The invention possesses other objects and advantageous features, some of which, with those enumerated, will be set forth in the following description of the invention's particular embodiment which is illustrated in the drawings accompanying and forming a part of the specification.

Referring to the drawings:

Figure 1 is a perspective view of a kitchen range having a water heater embodying the principles of my invention incorporated therewith.

Fig. 2 is a horizontal sectional view, the plane of section being indicated by the line 2—2 of Fig. 4, and the direction of view by the arrows.

Fig. 3 is a horizontal sectional view, the plane of section being taken upon the line 3—3 of Fig. 4, and the direction of view by the arrows.

Fig. 4 is a vertical sectional view, the plane of section being indicated by the line 4—4 of Fig. 3, and the direction of view by the arrows.

Fig. 5 is a view similar to Fig. 4, with the adjacent burner sheath broken away to better disclose the positioning of the water-back.

In its broad conception, the water-back and reservoir comprising the water heater of my invention, is adapted to be installed upon any type of stove or range, regardless of the character of fuel employed. However, one feature of the invention is the construction and arrangement of parts of the water heater in such a manner that it is adaptable for installation upon and use in conjunction with the well known type of liquid fuel range, i. e., a range utilizing kerosene, distillate, gasoline, or similar liquid fuel. Accordingly, the invention is herein described as being incorporated with a liquid fuel burning range of this type, it being understood however, that I contemplate utilizing the water heater on other types of ranges.

The range is shown as comprising a top plate 6, having preferably a plurality of grids 7 therein, below each of which a burner 8 is disposed, these burners, in the case of a liquid fuel burning stove, may be either of the wick type or of the atomizing type, the latter burner being chosen for the purpose of disclosure. All the burners 8 are supplied with fuel through a supply pipe 9 leading from a suitable reservoir (not shown) and the burners may be selectively controlled by valves 11. Each of the valves 11 is in communication with the pipe 9, and leads to the atomizer of the associated burner 8. Since these burners form no portion of my invention, they are not described in detail herein, it being understood that any suitable type of burner may be employed.

Each burner 8 is surrounded by a suitable apron or sheath 16, the upper portion 17 of which flares upwardly to accommodate the water-back 18 which forms a portion of the water heater of my invention. This water-back is formed of any suitable conduit such as copper tubing, and is preferably in the form of a coil corresponding substantially in diameter to the grid 7 below which it is positioned and in axial alignment therewith, so that the normal flow of heat from the burner 8 upwards through the grid 7, is not interfered with.

Inlet and discharge pipes 21 and 22 respectively, lead from the opposite ends of the coil 18, to a reservoir 23 which rises from preferably the after edge of the top plate 6, as clearly shown upon Figs. 1, 4, and 5. If, instead of being positioned upon the top plate 6, the reservoir 23 is placed in back of the stove and supported by suitable braces 24, the effective area of the top plate 6 is not diminished, and the process of assembling the stove is facilitated because of the greater ease of attaching the inlet and outlet pipes 21 and 22 to the reservoir 23.

A horizontal portion 25 of the reservoir 23, is spaced a sufficient distance above the top plate 6, to permit handling of receptacles and other utensils upon the top plate 6, without interference, but extends over at least a portion of the grids 7 so that any heat which would otherwise be wasted by passing around the utensils disposed upon the top plate or grids, will strike this horizontal portion 24 and be at least partially absorbed by the water therein.

The forward wall 26 of the horizontal portion 24, extends inwards to define a warming oven 27, with the result that this warming oven 27 is completely surrounded except at its forward side, by the water reservoir. A suitable shelf 28, preferably in the form of a grating, may be provided within the warming oven 27; and the warming oven may also be provided with a suitable closure, if desired.

It is obvious that a single warming oven 27 or a plurality thereof, may be provided, this choice depending largely upon the length of the stove. In the event that more than one warming oven 27 is employed, a gauge glass 31 may conveniently be positioned between any two of the warming ovens, this gauge glass being in communication at both its ends with the interior of the horizontal portion 24, and permitting observation of the amount of water contained within the reservoir. However, the gauge glass 31 may be disposed in any other convenient location. Furthermore, a faucet 32 leads from the lower side of the horizontal portion 24, with the result that receptacles resting upon the top plate 6, may conveniently be filled with water from the reservoir 23. In addition to this, another faucet 33 is provided in the main portion of the reservoir 23, so that water may be withdrawn therefrom at a lower level than that of the faucet 32.

Means for filling the reservoir 23, are provided. In the event that the stove is intended for use in localities where water under pressure is not available, the reservoir 23 is provided with a funnel 36, communicating through a valve 37 and a conduit 38 with the interior of the reservoir 23. However, when the stove is intended for installation where water under pressure is available, inlet and outlet pipes 41 and 42 are provided, preferably leading through the back of the reservoir 23, to the interior thereof. Under such circumstances, the hot water from the reservoir 23, may be piped to any desired location.

The forward face 43 of the reservoir 23, may be provided with any suitable finish to serve as a splasher plate, or it may be provided with a separate splasher plate which may be conveniently removed whenever desired. This splasher plate may also have one or more warming shelves 44 of any desired type, mounted thereupon.

Thus it may be seen that I have devised an unusually efficient type of range water heater, in that the reservoir is so positioned that the water contained therein is adapted to absorb most of the heat ordinarily wasted by passing around the utensils disposed upon the top plate of the range. It is believed however, that the principal source of heat for the water within the reservoir, will be through the water-backs 18, one of which is associated with each of the burners 8.

It is to be understood that the details of the invention as herein disclosed, are subject to alteration within the spirit or scope of the appended claim.

I claim:

A range comprising a top plate, a burner disposed therebelow, a water reservoir extending upwards from the rear of said top plate, a portion of said reservoir extending over said top plate and being spaced thereabove, a warming oven disposed within said portion of the reservoir and enclosed thereby except at the front, and a water-back disposed adjacent said burner and in communication with the lower end of said reservoir.

In testimony whereof I have signed my name to this specification.

FRED M. WOODARD.