A. F. BEHL.

FLUID FUEL WATER HEATER.

APPLICATION FILED DEC. 16, 1915.

1,210,585. Patented Jan. 2, 1917.

Fig. 1.

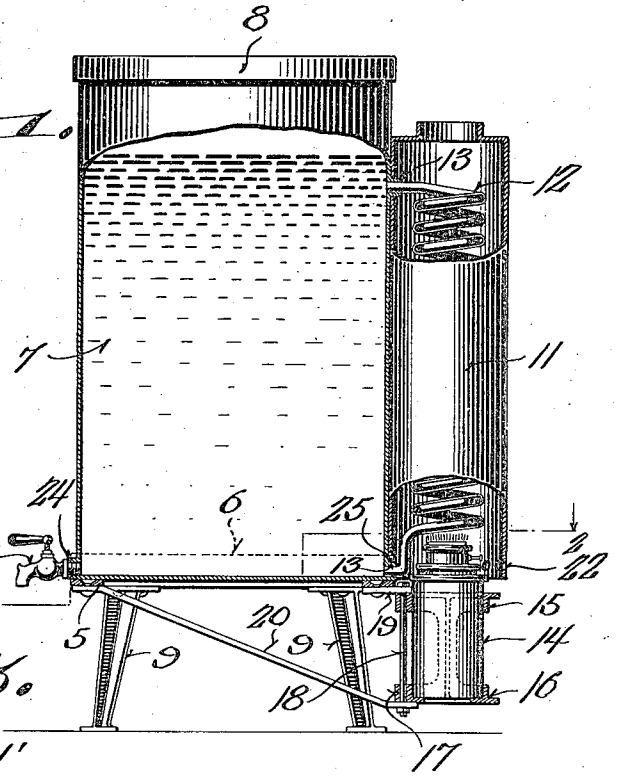


Fig. 3.

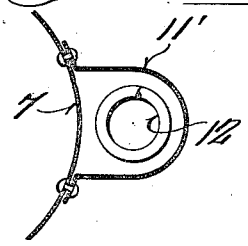
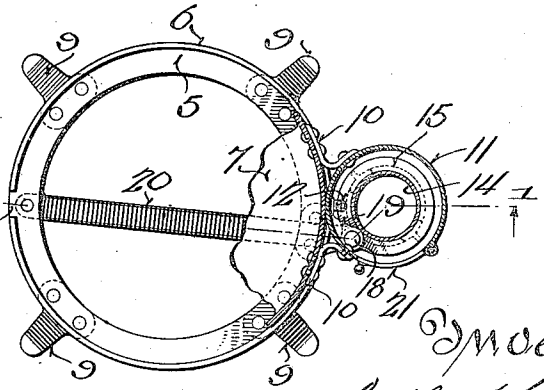


Fig. 2.



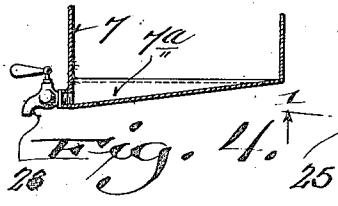


Fig. 4.

Witnesses:

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UNITED STATES PATENT OFFICE.

ARTHUR F. BEHL, OF MILWAUKEE, WISCONSIN.

FLUID-FUEL WATER-HEATER.

1,210,585. Specification of Letters Patent. Patented Jan. 2, 1917.

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To all whom it may concern:

Be it known that I, ARTHUR F. BEHL, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Fluid-Fuel Water-Heaters; and I do hereby declare that the following is a full, clear, and exact description thereof.

The present invention relates to new and useful improvements in water heaters and the like and is more particularly adapted to the provision of a water heater of a small and portable type wherein the heating member comprises a fluid fuel burner.

It is in general the object of the present invention to provide a compact and efficient heater of the class described, and it is more specifically an object to facilitate the manipulation of the burner member of the heater by the provision of means whereby ready access may be had thereto for cleaning or refilling.

It is further an object to provide such a heater which may be manufactured at a minimum cost consistent with sufficient strength and durability of parts.

With the above and other objects and advantages in view, the invention resides more particularly in the novel combination, arrangement and formation of parts more particularly hereinafter described and particularly pointed out in the appended claim.

In the drawings: Figure 1 is a vertical sectional view taken through the improved heater on the line 1—1 of Fig. 2. Fig. 2 is a top plan view of the heater with the major portion of the tank and casing broken away to more clearly disclose the base structure, this view being taken roughly as indicated by the line 2—2 of Fig. 1. Fig. 3 is a transverse sectional view through a slightly modified form of the burner casing. Fig. 4 is a vertical sectional view through the lower portion of the body tank, showing a modified structure including a drain.

Referring now more particularly to the accompanying drawings, the improved heater comprises a base including an annular plate 5 provided with an upstanding circumferential flange 6 wherein is seated the tank 7 which is adapted to contain the water to be heated and which is closed by a suitable cover 8. The base plate 5 is supported by a plurality of outwardly divergent legs 9 so arranged as to prevent possibility of the heater tipping over due to weight of the burner member carried at one side thereof, when the burner member would be comparatively full and the tank empty.

Disposed vertically at one side of the tank and secured thereto by the angular bracket members 10 is a cylindrical casing 11 in which is longitudinally disposed a heating coil 12 having its ends directed laterally and secured in nipples 13 carried by adjacent upper and lower portions of the tank.

The burner member may be of any desired type but is preferably adapted for burning kerosene or the like and comprises a cylindrical body member 14 which has its upper end projecting into the casing 11. This burner body seats in a bracket member including annular connected seating and holding portions 15 and 16 respectively each of which is provided with an apertured ear 17 through which is passed a pivot rod 18 which is carried by a lug 19 projecting outwardly from an adjacent portion of the body ring 5 and a brace 20 which is disposed diagonally under the body ring and engages with the rod at its lower end, the rod being headed at both ends outwardly of the lug and brace whereby a simple and sufficiently strong structure is provided for pivotally mounting the burner bracket. The pivotal axis of the bracket is disposed laterally of a plane including the axes of the tank and casing, and the adjacent side of the casing is provided in its bottom with a door 21. Thus the burner may swing entirely outwardly of the casing whereby access may be had thereto for cleaning and refilling, the door 21 when closed normally holding the burner in proper operative position in the casing. The lower portion of the casing is provided with a series of apertures 22, to admit a proper current of air for the burner.

At the bottom of that side of the tank opposite the burner there is provided a faucet 23 which is carried by a nipple 24 of the tank and this nipple 24 and the lower nipple 13 of the heating coil, seat in recesses 25 formed in the flange 6 of the body plate, and thus the proper position of the tank with respect to the burner structure is determined and the tank is held against rotation on the base, it being noted that the tank is readily removable by lifting it from the base.

From the foregoing it is observed that an exceedingly simple and efficient heater mem-

ber has been provided. The present structure is particularly adapted for use in rural communities where kerosene forms the chief available fuel. It is observed that the casing 11 in addition to confining the heat of the burner to the coils 12 serves as a chimney for the burner.

In Fig. 3, a modified form of casing is employed comprising a metal sheet U-shaped in cross section and having its side edges secured to the side of the tank whereby the portion of the tank between said side edges forms a wall of the casing. In this structure part of the heat of the burner thus applies directly to the tank for heating the water therein, and in addition a simpler structure is procured than in the form of casing heretofore described.

Fig. 4 illustrates a slight modification of the tank wherein a drainage means for the tank is provided comprising a channel 7^a disposed transversely in the bottom of the tank and taperingly enlarged in depth toward its front end, which carries the usual outlet faucet 23.

I claim:

A water heater comprising a base portion, legs supporting said base portion, a tank detachably seated on the base portion, a vertically extended coil carried by the tank and communicating therewith at spaced points, and open bottom casing carried by the tank and surrounding the coil, a bracket depending from one side of the base portion adjacent the casing, a heater member pivotally carried by the bracket and adapted to swing to extend into the bottom of the casing, one side of the casing being cut away to permit swinging movement of the burner member outwardly thereof and a door for closing said cut away portion.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

ARTHUR F. BEHL.

Witnesses:
GEO. W. YOUNG,
M. E. DOWNEY.