Oct. 25, 1932. L. EMANS 1,884,634

PORTABLE HOT WATER HEATER

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Fig. 1.

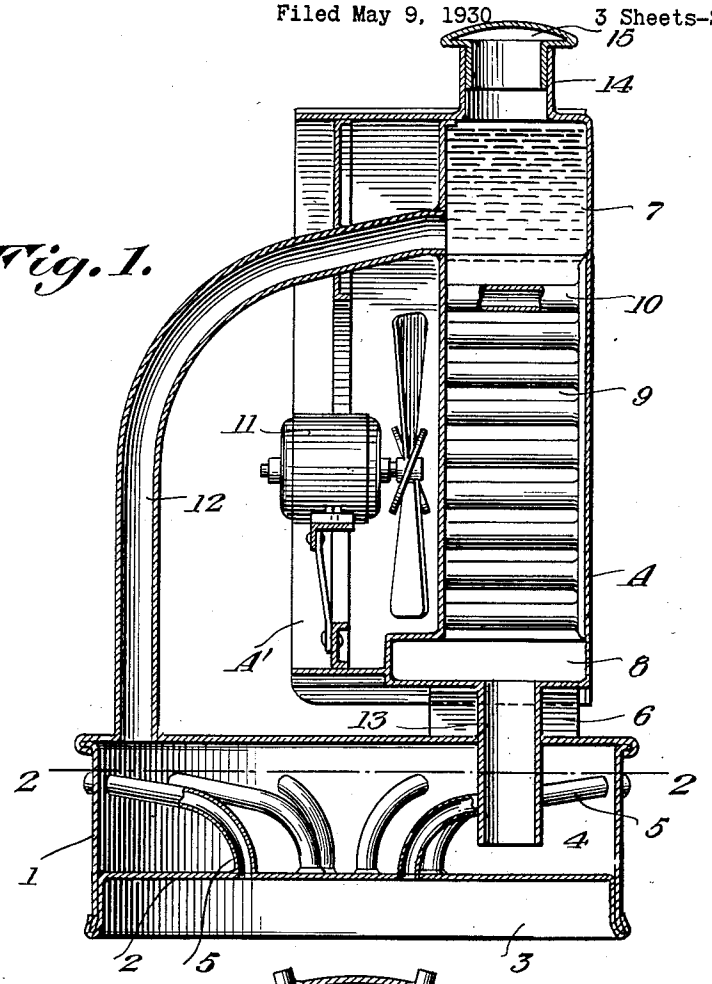
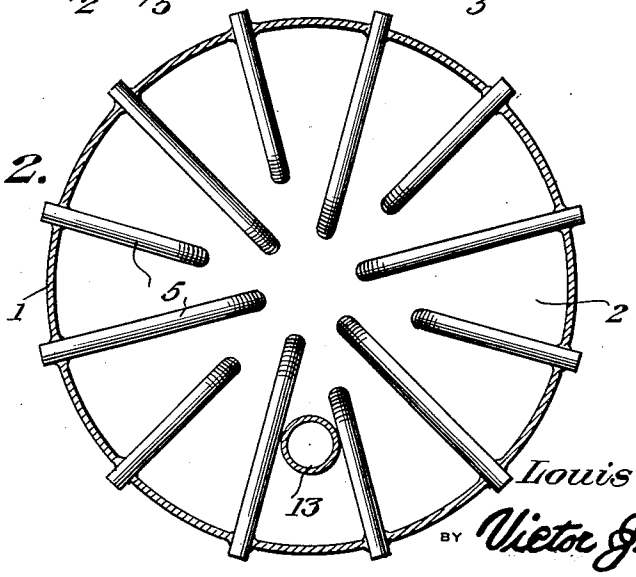


Fig. 2.



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Fig. 3.

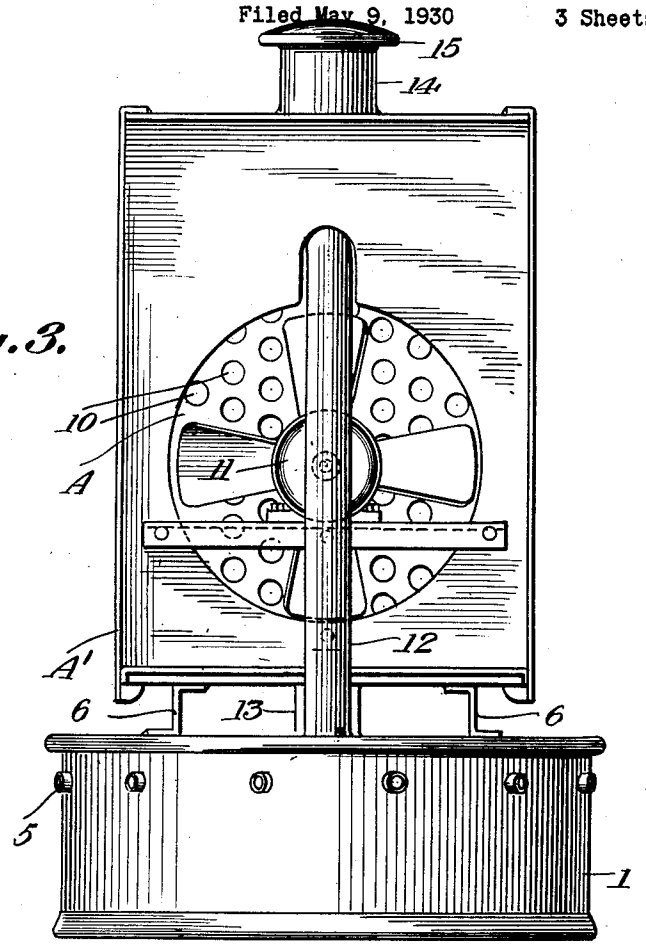
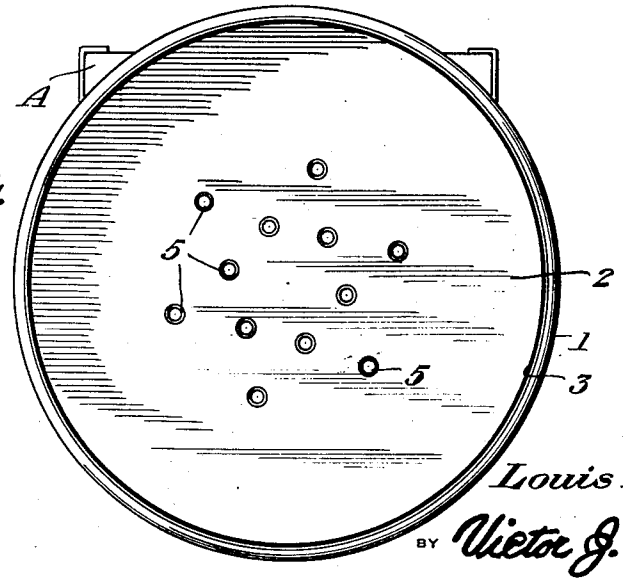


Fig. 4.



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Fig. 5.

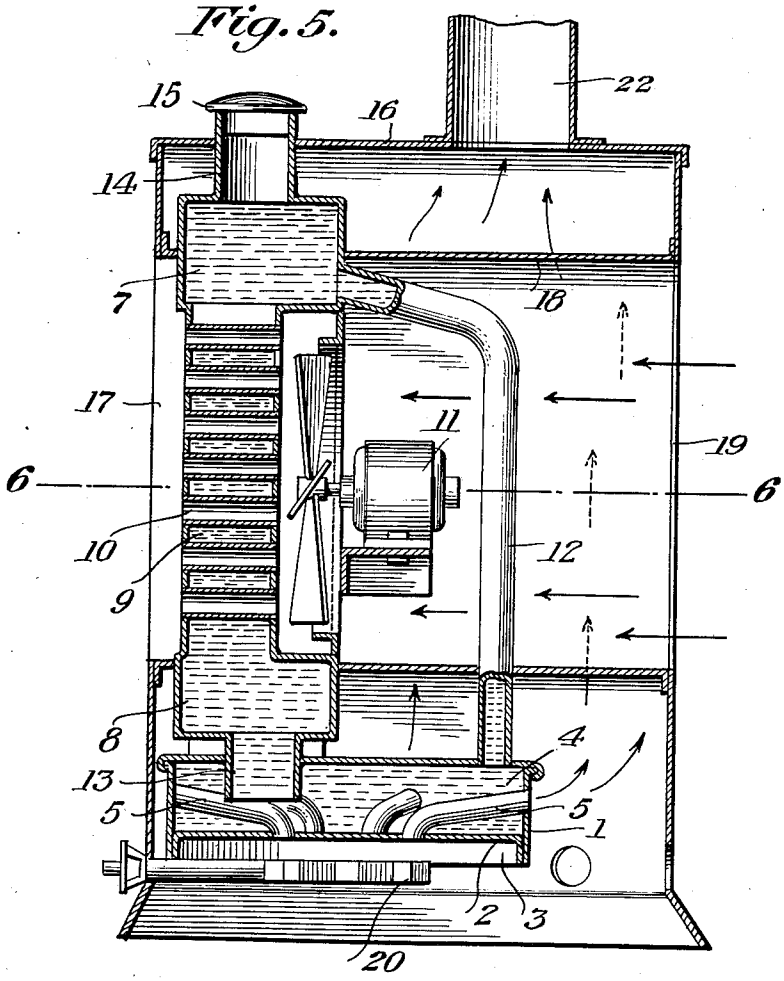
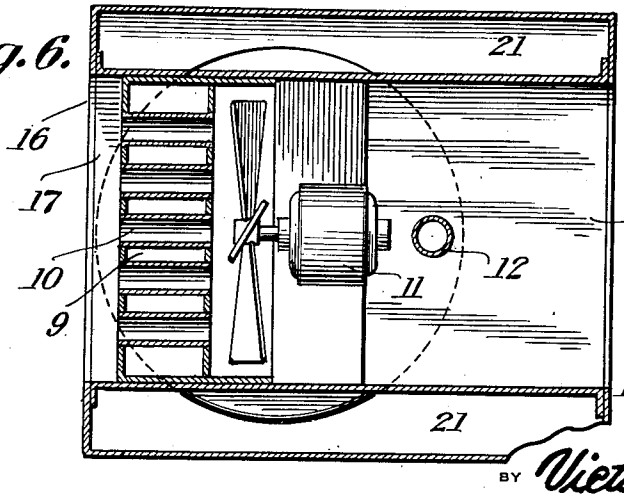


Fig. 6.



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Patented Oct. 25, 1932 1.884,634

UNITED STATES PATENT OFFICE

LOUIS EMANS, OF WILLMAR, MINNESOTA

PORTABLE HOT WATER HEATER

Application filed May 9, 1930. Serial No. 451,134.

This invention relates to a portable hot water heater, the general object of the invention being to provide means whereby a heater can be easily transported from one room or the like to another, with means whereby the heater will quickly heat the room or place in which it is located.

Another object of the invention is to provide means for circulating water through a radiator from a tank where the water is heated, with a fan for driving air through the radiator so that the air will be heated and distributed to the room or place where the device is located.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a vertical sectional view through the device.

Figure 2 is a section on line 2—2 of Figure 1.

Figure 3 is a rear view of the device.

Figure 4 is a bottom plan view thereof.

Figure 5 is a vertical sectional view showing the device placed in a housing.

Figure 6 is a section on line 6—6 of Figure 5.

In these drawings, the numeral 1 indicates a circular casing which has its bottom 2 spaced from the lower end of the casing so as to provide a heat receiving chamber 3 below the bottom and a water chamber 4 above the bottom. Tubes 5 have their ends passing through the bottom 2, the tubes being curved and passing through the sides of the chamber 4 so that heated air from a burner or the like on which the casing is placed will pass through the tubes and thus heat the water in the chamber 4.

A casing A is supported in spaced relation from the casing 1 by the members 6, this casing A being made in the form of a radiator, with the upper receiving chamber 7, the lower chamber 8 and the intermediate chamber 9 which connects the chambers 7 and 8 together. Horizontal tubes 10 pass through the chamber 9 with their ends opening out through the front and rear walls of the chamber so that the water passing from the chamber 7 will flow around the tubes to reach the chamber 8.

A motor driven fan 11 is arranged in an extension A′ at the rear of the casing A so that this fan will force air through the tubes and thus the air will be heated by the water passing through the device. A tube 12 has its lower end connected with the top of the chamber 4 at the rear thereof and its upper end is connected with a chamber 7. A tube 13 connects the chamber 8 with the chamber 4, the tube extending to a point adjacent the bottom of the chamber 4 so that the cooled water, after passing through the radiator, will enter the chamber 4 adjacent the bottom thereof and then flow between the tubes 5 to the rear of the chamber 4 so that the water will be heated and thus rise in the tube 12 and reach the chamber 7, from which the water will flow between the tubes 10 back to the chamber 8. The chamber 7 is formed with a filling spout 14 which is covered by a cap 15.

Figures 5 and 6 show the device enclosed in a housing 16 which is formed with an opening 17 in its front to expose the front part of the radiator, with partitions 18 in the rear of the housing for causing air passing through a hole in the rear wall of the housing to be drawn by the fan through the passage formed by the partitions 18 and then forced through the tubes by the fan. The products

of combustion from the burner 20 placed under the device will flow through the passages 21 formed by the partitions 18 and escaping through the chimney 22 attached to the top of the housing. This housing is used when a gas burner or the like is used for heating the water in the chamber 4 so that the fumes from the burner will not enter the room. When other types of heating means are used which do not give off fumes, it is not necessary to use the housing. It will, of course, be understood that electric heating means may be used to heat the water in the chamber 4 and in this case, the tubes 5 would not be used.

From the foregoing it will be seen that I have provided a portable heater for hot water which can be easily transported from one place to another and in which the heat from the water is used to heat air forced through the device by a fan so that the heated air is distributed to all parts of a room. This device requires very little fuel to heat the same and is so compact that it can be placed over a single gas burner. The upkeep is small as the only wearing part is the motor. The working parts are easily accessible so that they can be readily repaired or cleaned.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What I claim is:—

1. A water heater of the kind described comprising a casing having a bottom inset from its lowermost edge to provide a heat receiving chamber below the same and also a water chamber above, a plurality of heat circulating tubes opening through the bottom, a water radiator carried by the casing and communicating with said water chamber therein at its bottom and top portions, and a fan carried by the radiator rearwardly thereof to confront the same.

2. A water heater of the kind described comprising a casing having a bottom inset from its lowermost edge to provide a heat receiving chamber below the same and also a water chamber above, a plurality of heat circulating tubes opening through the bottom, a water radiator carried by the casing and communicating with said water chamber therein at its bottom and top portions, a fan carried by the radiator rearwardly thereof to confront the same, and a circulating tube leading from the top of the radiator to the said water chamber in the casing.

3. A water heater of the kind described comprising a casing having a bottom inset from its lowermost edge to provide a heat receiving chamber below the same and also a water chamber above, a plurality of heat circulating tubes opening through the bottom, a water radiator carried by the casing and communicating with said water chamber therein at its bottom and top portions, a fan carried by the radiator rearwardly thereof to confront the same, and a circulating tube leading from the top of the radiator to the said water chamber in the casing, said radiator being provided with a vented core centrally thereof and confronting the fan.

In testimony whereof I affix my signature.

LOUIS EMANS.