

H. E. HARR.
PORTABLE WATER HEATER AND STERILIZER.
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1,007,099.

Patented Oct. 31, 1911.

Fig. 1.

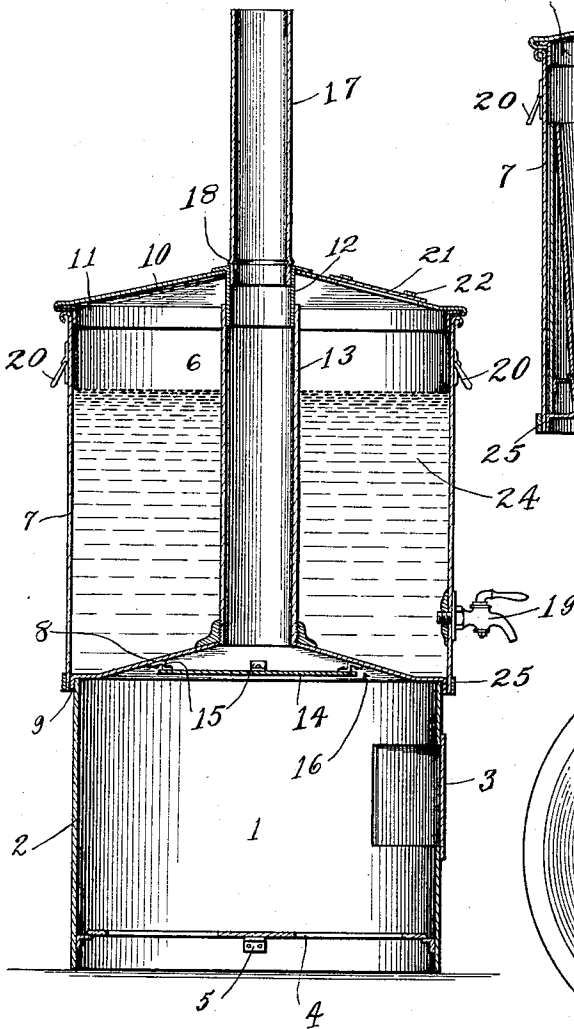


Fig. 2.

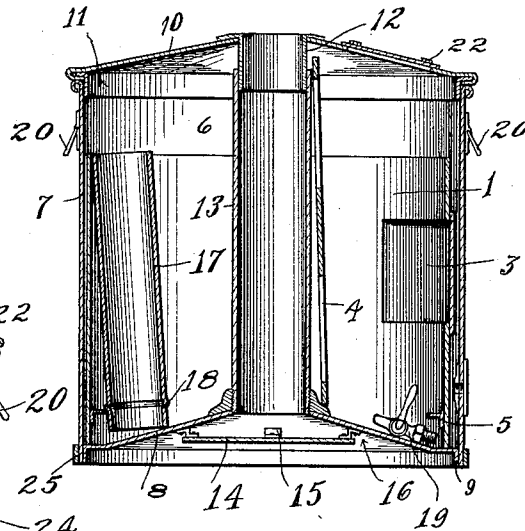
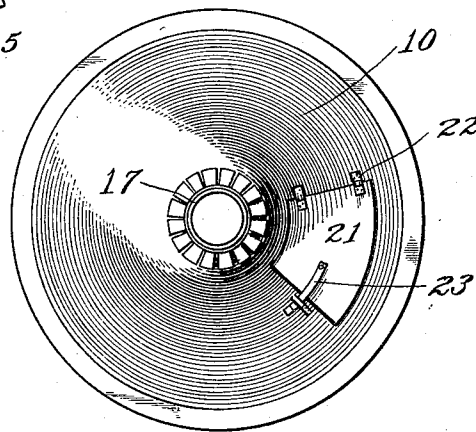


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

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PORTABLE WATER HEATER AND STERILIZER.

1,007,099.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HERMAN E. HARR, a citizen of the United States, residing at Longbeach, in the county of Los Angeles and State of California, have invented a new and useful Portable Water Heater and Sterilizer, of which the following is a specification.

My invention relates to improvements in water heaters and sterilizers of the type in which water is heated by direct application of heat to the walls of the chamber holding the water, and one of the main objects of my invention is to construct a water heater of the class described, so that the several sections or parts of the heater are detachably connected together, whereby certain of the smaller sections may be packed or nested within a larger section to facilitate handling and transportation.

Another object of my invention is to produce a device of the character described which may be utilized as a sterilizer.

Another object of the invention is to produce a device of the character described of simple and economical construction.

Other objects and advantages will appear hereinafter in the following description.

Referring to the drawings which are for illustrative purposes only: Figure 1 is a vertical sectional view through a water heater embodying my invention, showing the device set up as it is used during the operation of heating water. Fig. 2 is a vertical sectional view of my device showing the parts packed or nested, ready for transportation. Fig. 3 is a plan view of the device shown in Fig. 1.

1 designates a fire box formed of a tubular shell or member 2 of sheet metal or other suitable material and provided with a door 3, and a circular grate 4 supported on lugs 5 within the tubular shell 2. Supported on the open upper end of the fire box is a water chamber or sterilizing chamber 6, formed of a tubular shell or member 7 of larger diameter than the shell 2 of the fire box and provided with a bottom plate 8 having an upwardly dished central portion and a downwardly depending flange 9 which is secured in any suitable manner within the lower end of the tubular shell 7, and extends downwardly over the upper edge of the fire box so as to prevent lateral displacement of the water chamber from the fire box. The water chamber 6 is provided with a cover plate 10

which extends over the upper edge of the tubular shell 7 and is provided with a flange 11 which extends within the upper end of the tubular shell 7. The cover plate 10 is also provided with a section of pipe 12 which extends downwardly therefrom into a pipe or flue 13 having its lower end screwed into the bottom plate 8 of the water chamber and being in open communication with the fire box 1. Below the flue or pipe 13 within the fire box 1, is a circular plate 14 supported on the under side of the dished portion of the bottom plate 8 of the water chamber by suitable lugs 15. The plate 14 is spaced apart from the bottom 8 of the water chamber a sufficient distance to form a circular passage 16 for the products of combustion and heat from the fire box, thereby causing the products of combustion and heat to come into direct contact with the bottom 8 of the water chamber and prevent the heat and products of combustion from going directly up the flue or pipe 13. A stack 17 having its lower end extending within the section of pipe 12 on the cover 10 is provided for the purpose of carrying above the device, the products of combustion. The stack 17 is provided with a circular crimping or flange 18 to prevent the stack slipping down into the section of pipe 12. The water chamber is provided with a cock 19 for drawing off the water and is also provided with handles 20 for the purpose of facilitating the handling of the device, either in removing the water chamber from the fire box, or when the device is packed for transportation as hereinafter described. The water chamber 6 is also provided with a door 21 hinged at 22 to the lid 10, and provided with a suitable latch 23. A band 25 is placed around the lower edge of the shell 7 for the purpose of stiffening the lower edge of the shell 7. The dished portion of the bottom plate permits the plate 14 to be placed a sufficient distance above the lower edge of the shell 7 to insure the plate 14 being protected during shipment.

The device as shown in Fig. 1 is supplied with fuel, wood, coal or any suitable material, through the door 3 of the fire box 1, and the water chamber supplied with water indicated at 24, through the door 21. The water after becoming heated, may be used for any desired purpose by drawing off the same through the cock 19, or when the device is used as a sterilizer, the articles to be

sterilized are placed in the water in the chamber 6 through the door 21 in the top of the water chamber.

When it is desired to transport the device, the water is drawn off from the water chamber and the water chamber lifted from the fire box, the stack 17 removed from the lid 10, the grate bars 4 removed from the fire box and the cock 19 unscrewed from the casing 7 of the water chamber, after which the shell 2 forming the walls of the fire box 1 may be placed within the water chamber 6, as may also, the grate bars 4, the stack 17 and the cock 19, as shown in Fig. 2 in which form they may be readily transported and set up for use by assembling the parts into the position shown in Fig. 1.

What I claim is:

1. A collapsible water heater comprising a lower tubular member and an upper tubular member of greater dimensions removably seated on said lower tubular member, removable grate bars and a door in the lower tubular member, a bottom plate in the upper tubular member having an opening therein, a flue secured to said bottom plate over said opening and extending upwardly to a point near the top of said upper tubular member, a removable cover plate on the upper tubular member having a central opening therein, said cover plate having an opening at one side of said central opening, a door for said last named opening, a pipe secured to said cover plate extending downwardly therefrom and entering said flue, a removable stack on said cover plate extending downwardly into said pipe, and removable means near the lower portion of the upper tubular member to drain the contents thereof, said lower tubular member being adapted to receive said stack and grate bars and to nest within said upper tubular member.

2. A collapsible water heater comprising upper and lower tubular members, a bottom plate in said upper tubular member seated on the upper end of the lower tubular member, a flange on said bottom plate extending downwardly over the upper end of said lower tubular member, a flue in the upper tubular member, a plate secured to the under side of said bottom plate below said flue and spaced apart from said bottom plate, a cover plate on the upper tubular member, a pipe on said cover plate extending downwardly into the flue, and a stack in the upper end of said pipe, extending upwardly therefrom.

3. A collapsible water heater comprising an upper tubular member and a lower tubular member of smaller diameter than the upper tubular member, grate bars in said lower member and a door in the side thereof, a bottom plate in said upper tubular member having an upwardly dished central portion, said bottom plate being seated on the upper end of the lower tubular member, the lower end of said upper tubular member extending downwardly over the upper end of the lower tubular member, a flue in the upper tubular member, a plate secured to the underside of the dished portion of the bottom plate and spaced apart therefrom, a cover plate having a door therein on the upper tubular member, a pipe on said cover plate extending down into said flue, and a removable stack in the upper end of said pipe extending upwardly therefrom.

In testimony whereof, I have hereunto set my hand at Los Angeles Cal. this 7 day of November, 1910.

HERMAN E. HARR.

In presence of—

GEORGE T. HACKLEY,
F. A. CRANDALL.