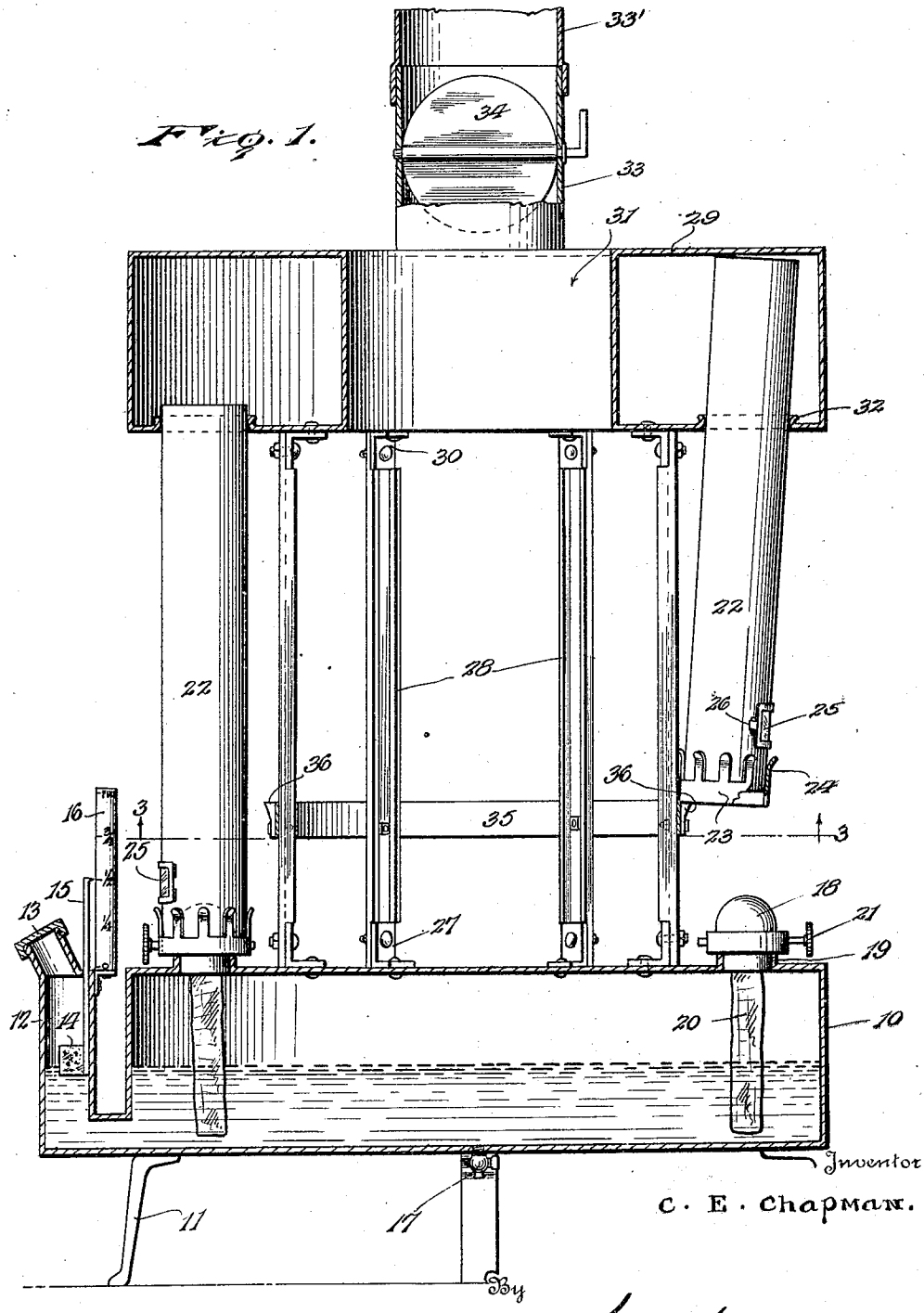
May 6 , 1924. 1,493,020

C. E. CHAPMAN

OIL HEATER

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Fig. 1.



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Fig. 2.

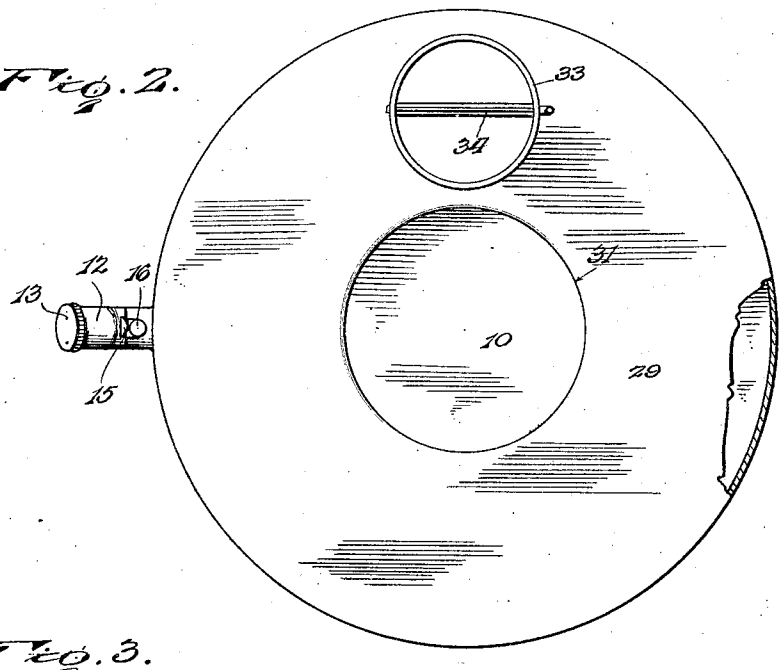
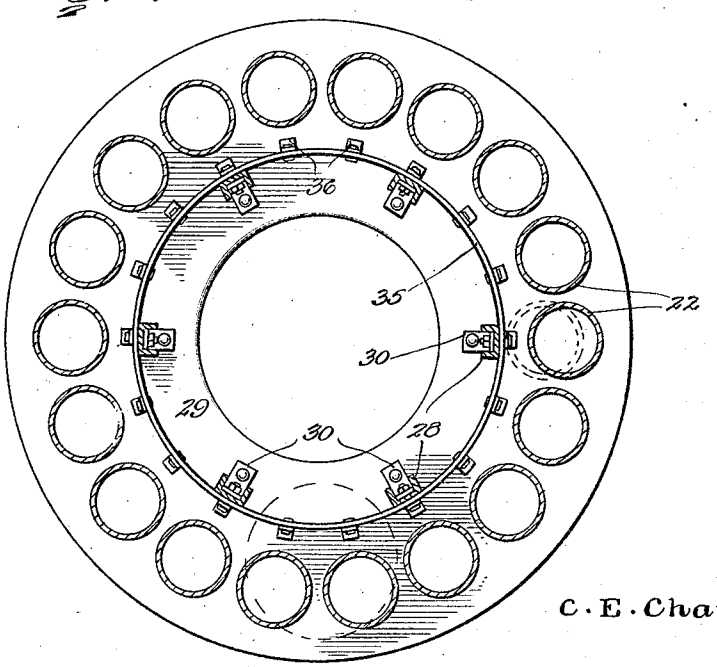


Fig. 3.



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Patented May 6, 1924. 1,493,020

UNITED STATES PATENT OFFICE.

CHARLES E. CHAPMAN, OF FORT EDWARD, NEW YORK, ASSIGNOR OF ONE-HALF TO JOSEPH GOODFELLOW, OF FORT EDWARD, NEW YORK.

OIL HEATER.

Application filed May 11, 1923. Serial No. 638,408.

To all whom it may concern:

Be it known that I, CHARLES E. CHAPMAN, citizen of the United States, residing at Fort Edward, in the county of Washington and State of New York, have invented certain new and useful Improvements in Oil Heaters, of which the following is a specification.

This invention relates to an improved oil heater and seeks, among other objects, to provide a simple and efficient device of this character wherein all obnoxious gases generated will be carried off and which will be otherwise free from the usual troubles of oil heaters.

The invention seeks, as a further object, to provide a heater incorporating a plurality of simple lamp wick burners and wherein economy will be increased by maintaining a chimney draft upon the burners to produce better combustion.

Another object of the invention is to provide a heater wherein the burners may be readily cleaned or removed.

The invention seeks, as a still further object, to provide a heater incorporating an annular gas collecting drum and wherein a draft for the heated currents will be maintained through the center opening of the drum to thus effect the heating of a maximum volume of air for a given drum surface.

And the invention seeks, as a still further object, to provide a heater which may be readily taken apart and compactly arranged for storage or transportation.

Other and incidental objects will appear hereinafter.

In the drawings:

Figure 1 is a vertical sectional view through my improved heater.

Figure 2 is a top plan view of the device, and

Figure 3 is a horizontal sectional view on the line 3—3 of Figure 1, looking in the direction of the arrows.

In carrying the invention into effect, I employ a flat cylindrical oil supply drum 10 to which are detachably secured legs 11 and upstanding at one side of the drum is a filler pipe 12 normally closed by a cap 13. Arranged within the pipe is a float 14 from which extends a float rod 15 and appropriately secured to the upper end of the pipe is a gauge 16 for determining the level of fuel in the drum as indicated by the float. Threaded through the bottom wall of the drum is a drain cock 17 which, as occasion may demand, may be opened for draining any water of condensation or sediment from the drum. Mounted upon the top wall of the drum near the periphery thereof is an annular series of spaced burners 18 removably fitting in flanged burner openings 19 frictionally coacting with the flanges of said openings. The burners carry wicks 20 which extend downwardly into the drum and journaled upon the burners are manually operable wick raisers 21 rotatable for adjusting the wicks. Associated with the burners are cylindrical chimneys 22 and detachably engaged with the lower ends of the chimneys are base rings 23 having spring fingers 24 frictionally coacting with the chimneys. The base rings are adapted to removably fit over the burners 18 and rest thereon and are notched to accommodate the shafts of the wick raisers. Hinged upon the chimneys at their outer sides are windowed doors 25 arranged near the lower ends of the chimneys and normally held closed by suitable catches 26. The windows of said doors may be of mica.

Secured to the top wall of the drum 10 within the ring of burners is an annular series of angle plates 27 and detachably bolted at their lower ends to said plates are supports 28. Mounted on said supports in spaced parallel relation to the drum 10 is a flat annular gas collecting drum 29 to the bottom wall of which are secured angle plates 30 detachably bolted to the upper ends of the supports. The gas collecting drum is provided with a central draft opening 31 for heated air currents and, as will now be observed, the bottom wall of said drum is formed with flanged openings 32 slidably receiving the upper ends of the chimneys therethrough, the chimneys being thus braced and supported by the gas collecting drum to extend vertically from the burners in parallel relation. Upstanding from the drum 29 at one side thereof is a pipe 33 to which may be attached a pipe 33′ for connecting the gas collecting drum with a chimney, and mounted in the pipe 33 is a manually operable damper 34 controlling the draft through said pipe. Surrounding the supports 28 is a rest ring 35 detachably

bolted to the supports and mounted on said ring is a plurality of rests 36, one for each of the chimneys 22.

The doors 25 are provided upon the chimneys in order that, by opening said doors, the burners 18 may be lighted. Furthermore, the doors will provide a convenient means whereby the height of the flame of the respective burners may be readily observed. However, should it become necessary to remove or clean the burners, the chimneys are, as illustrated at the right of Figure 1, elevated, when the base rings of the chimneys may be engaged with the rests 36 for supporting the chimneys in elevated position out of the way. Free access to the burners may then, of course, be had. In operating the heater, either a few or all of the burners may be lighted, as may be found necessary to generate the desired amount of heat, it being possible in this way, to regulate the capacity of the heater without adjusting any of the burner wicks. When the burners are lighted, the products of combustion therefrom will, of course, rise through the chimneys 22 into the gas collecting drum 29 to pass out through the pipe 33 and pipe 34 into the chimney, the chimney draft upon all of the burners being controlled by means of the damper 35. Thus, all obnoxious gases generated by combustion at the burners will be carried off through the chimney while the drum 29 will be heated as will also the chimneys 22 throughout their length. Heated currents will thus be caused to circulate around the gas collecting drum and upwardly through the draft opening 31 of said drum. These rising currents will tend to draw in cold air from adjacent the lower ends of the chimneys to flow upwardly around and between the chimneys to be heated thereby and finally drawn upwardly through the draft opening 31 to be further heated by the drum. A circulation of air currents will thus be maintained around and between the chimneys and upwardly through the drum, so that a maximum volume of air will be brought into contact with the heated surfaces of the device with a corresponding marked efficiency of the heater.

Attention is now directed to the fact that by detaching the drum 29 from the supports 28, the chimneys 22 may be independently removed when, by detaching the supports from the drum 10, the entire device may be compactly arranged for storage or shipment.

Having thus described the invention, what is claimed as new is:

1. In an oil heater, the combination of vertically spaced drums providing a lower oil drum and an upper gas drum closed to the atmosphere and provided with a flue, a burner mounted upon the top wall of the oil drum, the bottom wall of the gas drum being provided with an opening, and a chimney normally cooperating with the burner and slidably but snugly fitting through said opening to discharge into the gas drum, the chimney being movable upwardly into the gas drum for exposing the burner.

2. In an oil heater, the combination of vertically spaced drums one forming a lower oil drum and the other an upper gas drum closed to the atmosphere and provided with a flue, a ring of spaced burners mounted upon the top wall of the oil drum, the bottom wall of the gas drum being provided with a ring of spaced openings, chimneys normally cooperating with the burners and slidably but snugly fitting through said openings to discharge into the gas drum, the chimneys being movable upwardly into the gas drum for exposing the burners, and supporting means for the gas drum extending between the oil drum and gas drum within the ring defined by said burners whereby unobstructed access may be had to the burners when the chimneys are elevated.

3. In an oil heater, the combination of vertically spaced drums one forming a lower oil drum and the other an upper gas drum closed to the atmosphere and provided with a flue, a ring of spaced burners mounted upon the top wall of the oil drum, the bottom wall of the gas drum being provided with a ring of spaced openings, chimneys normally cooperating with the burners and slidably but snugly fitting through said openings to discharge into the gas drum, the chimneys being movable upwardly into the gas drum for exposing the burners, supporting means for the gas drum extending between the oil drum and gas drum within the ring defined by said burners whereby unobstructed access may be had to the burners when the chimneys are elevated, and a plurality of rests upon said supporting means, one for each of the chimneys and disposed for engagement by the lower end edges of the chimneys for sustaining the chimneys in elevated position.

4. In an oil heater, the combination of vertically spaced drums one forming a lower oil drum and the other an upper gas drum closed to the atmosphere and provided with a flue, a ring of spaced burners mounted upon the top wall of the oil drum, the bottom wall of the gas drum being provided with a ring of spaced openings, chimneys normally cooperating with the burners and slidably but snugly fitting through said openings to discharge into the gas drum, the chimneys being movable upwardly into the gas drum for exposing the burners, a plurality of supporting bars extending between the drums supporting the gas drum and disposed within the ring defined by said burners whereby unobstructed access may be had to the burners when the chimneys are ele-

vated, means detachably connecting the bars at their lower ends to the top wall of the oil drum, and means detachably connecting the bars at their upper ends to the bottom wall of the gas drum.

5. In an oil heater, the combination of vertically spaced drums one forming a lower oil drum and the other an upper gas drum closed to the atmosphere and provided with a flue, a ring of spaced burners mounted upon the top wall of the oil drum, the bottom wall of the gas drum being provided with a ring of spaced openings, chimneys normally cooperating with the burners and slidably but snugly fitting through said openings to discharge into the gas drum, the chimneys being movable upwardly into the gas drum for exposing the burners, a plurality of supporting bars extending between the drums supporting the gas drum and disposed within the ring defined by said burners whereby unobstructed access may be had to the burners when the chimneys are elevated, means detachably connecting the bars at their lower ends to the top wall of the oil drum, means detachably connecting the bars at their upper ends to the bottom wall of the gas drum, an annulus encircling said bars and secured thereto, and rests carried by said annulus and disposed for engagement by the lower end edges of the chimneys for sustaining the chimneys when elevated.

In testimony whereof I affix my signature.

CHARLES E. CHAPMAN. [L. S.]