W. O. BIGGS.

HEATER.

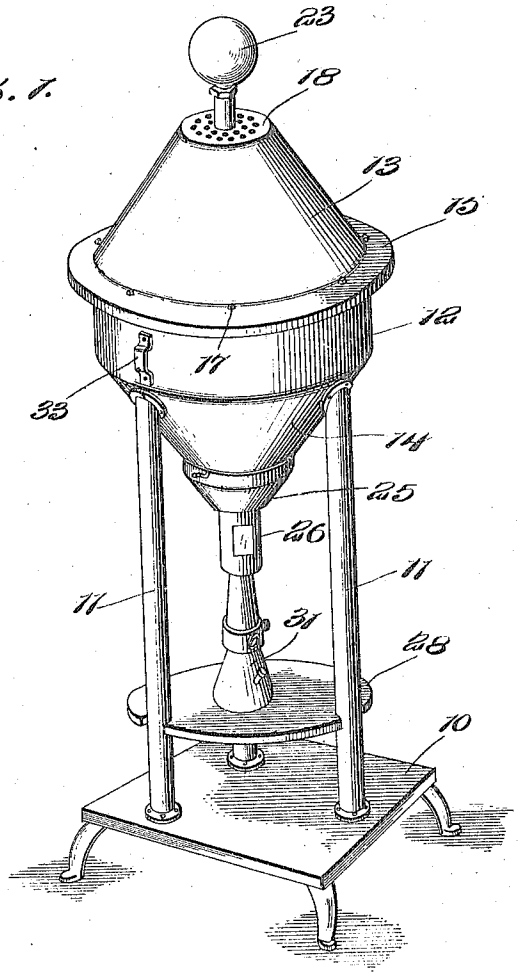
APPLICATION FILED OCT. 11, 1916.

1,255,503.

Patented Feb. 5, 1918.

2 SHEETS—SHEET 1.

Fig. 1.



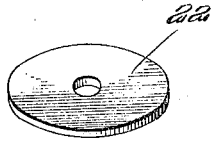


Fig. 5.

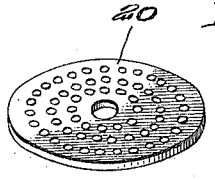


Fig. 4.

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2 SHEETS—SHEET 2.

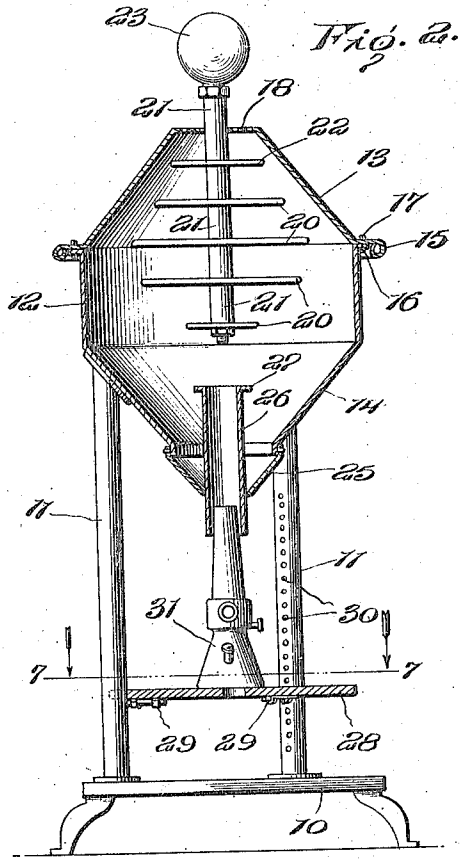


Fig. 2.

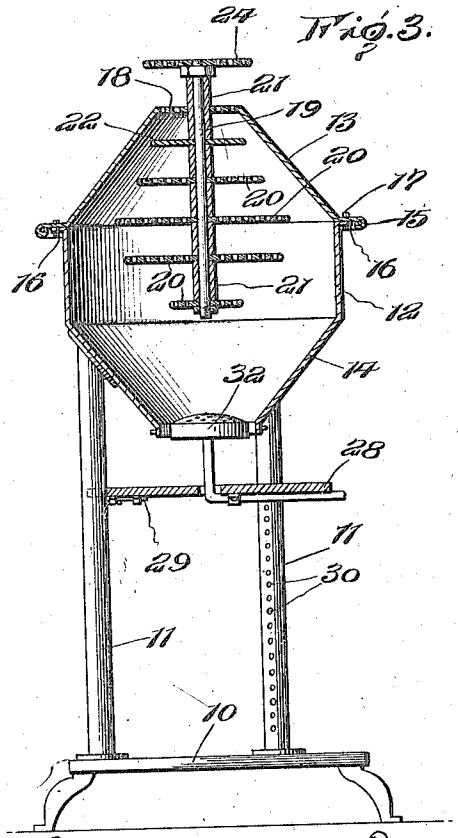


Fig. 3.

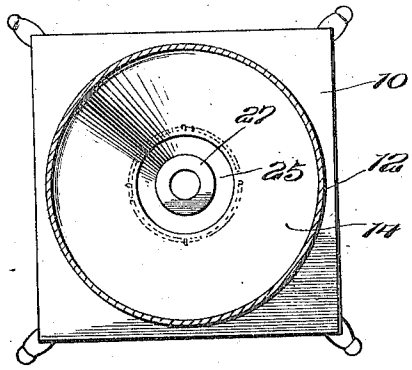


Fig. 6.

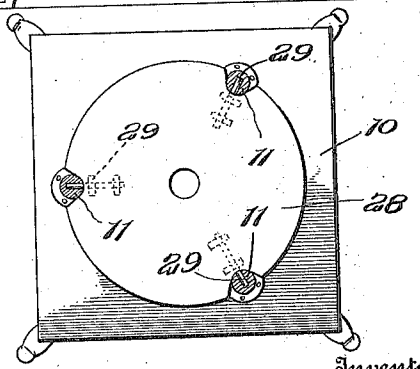


Fig. 7.

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UNITED STATES PATENT OFFICE.

WILLIAM O. BIGGS, OF DETROIT, MICHIGAN.

HEATER.

1,255,503. Specification of Letters Patent. Patented Feb. 5, 1918.

Application filed October 11, 1916. Serial No. 125,055.

To all whom it may concern:

Be it known that I, WILLIAM O. BIGGS, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Heaters, of which the following is a specification.

This invention relates to an improved heater and has as its primary object to provide a device of this character which will be portable and particularly adapted for household uses.

The invention has as a further object to provide a heater of such construction that either an oil or gas burner may be employed in connection therewith and wherein a shelf will be provided for supporting the burner with the shelf adjustable with respect to the heating drum to accommodate the different types of burners.

And the invention has as a still further object to provide a heater of this character having a plurality of baffle plates so arranged within the heating drum that the heat rising within the drum will be intensified by flowing over the said plates and wherein the said plates may, when desired, be removed.

Other and incidental objects will appear as the description proceeds and in the drawings wherein similar reference characters designate corresponding parts throughout the several views:

Figure 1 is a perspective view of my improved heater,

Fig. 2 is a sectional view more particularly showing the construction of the heating drum as well as the adjustable mounting of the burner supporting shelf,

Fig. 3 is a similar view showing the mounting of the baffle plates within the heating drum of the device and also illustrating the use of a gas burner in connection with the heater,

Fig. 4 is a detail perspective view of one of the baffle plates,

Fig. 5 is a similar view of the spreader employed to coöperate with the said plates,

Fig. 6 is a sectional view particularly showing the arrangement of the flue leading from the burner into the heating drum, and

Fig. 7 is a sectional view showing the adjustable connection between the burner supporting shelf and the posts or standards for the heating drum.

In carrying out the invention, the device is formed with a suitable base 10 to which is connected a plurality of supporting legs. Rising from the base are a plurality of posts 11 arranged in triangular relation and receiving at their upper ends, a heating drum 12. The drum 12 may be formed of sheet metal or other approved material and is preferably of cylindrical formation with conical upper and lower terminals or ends 13 and 14 respectively. The upper terminal 13 of the drum is, at its inner extremity, provided with a radial flange 15 preferably terminating in a suitable ornamental roll and this flange is arranged to seat upon a similar flange 16 carried by the body of the drum, as best shown in Figs. 2 and 3 of the drawings. Detachably connecting the said flanges are a plurality of bolts or other suitable fastening devices 17. The upper end of the drum is thus detachably connected to the drum body, and, at the smaller terminal thereof, is provided with a perforated end wall 18.

Fitted through the end wall 18 of the upper terminal of the drum to extend axially within the said drum is a hanger including a rod 19 upon which is mounted a plurality of perforated baffle plates 20. These plates are, as shown in detail in Fig. 4 of the drawings, preferably in the nature of metallic disks and are supported in vertical spaced relation upon the rod by spacer sleeves 21 surrounding the rod. Adjacent the upper end of the drum, the rod 19 is also equipped with a spreader 22, this spreader being, as shown in detail in Fig. 5 of the drawings, formed by an imperforate metallic disk. Screw threaded upon the extremities of the rod 19 are suitable nuts for holding the disks 20, the sleeves 21 and the spreader 22 in position upon the rod with the uppermost sleeve 21 frictionally engaging the wall 18 of the upper end of the drum for supporting the hanger upon the drum. In this connection, attention is directed to the fact that the disks carried by the said hanger gradually increase in diameter from the lowermost disk to the central disk and then gradually decrease in diameter to the baffle plate 22. The rod 19, at its upper end, is normally provided with a suitable ornamental ball 23 but should it be desired to employ a vessel in connection with the heater, a warming plate 24 is provided, as illustrated in Fig. 3 of the drawings, the ball 23 being displaced and the plate 24 being screw threaded

upon the upper end of the rod 19 to receive the vessel.

The lower terminal 14 of the drum is open at its smaller extremity and is provided with a depending flange to which is suitably attached, as by a bayonet slot connection as illustrated in the drawings, a conical cap 25. Slidably adjustable through the smaller end of this cap is a flue 26 provided at its inner end with a flange 27 for holding the flue against outward displacement with the flue normally extending axially within the drum.

Mounted between the posts 11 below the drum 12, is a burner supporting shelf 28 notched out at proper points to slidably receive the said posts and provided, upon the lower side thereof, with suitable sliding bolts 29, with one of the said bolts arranged opposite each of the legs 11. As will now be observed, the said legs are each provided with a series of vertically spaced openings 30 and the bolts 29 are operable to engage the openings in the several legs for adjustably supporting the shelf 28 with respect to the drum. Any suitable type of burner may be arranged upon the shelf and in Figs. 1 and 2 of the drawings, I have shown a conventional type of oil burner 31 mounted upon the shelf with the chimney of the said burner received within the flue 26 while in Fig. 3, I have illustrated the shelf as equipped with a conventional type of gas burner 32 with the cap 25 of the drum removed and the shelf adjusted to dispose the said burner in the lower end of the drum. The advantage in adjustably mounting the shelf 28 thus becomes apparent since it will be seen that the shelf may thus be positioned for properly supporting either an oil or gas burner with respect to the drum. When an oil burner is employed as illustrated in Figs. 1 and 2, heat from the said burner will rise through the flue 26 to be discharged against the lowermost baffle plates 20. Upon flowing over and through the perforations in these lowermost plates, the heated currents will be intensified and will be directed thereby outwardly toward the sides of the heater until the said currents strike the largest centrally disposed plate. The converging walls of the upper terminal 13 of the drum will then tend to direct the said heated currents inwardly against the uppermost baffle plates to pass therethrough and be further intensified until the said currents strike the spreader 22 to be again deflected against the sides of the drum whence the said currents may issue through the upper end wall 18 or discharge terminal of the drum. The sides of the drum will thus be effectually heated while, at the same time, the heated currents in passing through the drum will be materially intensified to consequently enhance the efficiency of the heater. Should it become necessary to displace the baffle plates, the upper terminal 13 of the drum may be readily disconnected for this purpose.

As will now be observed upon particular reference to Fig. 2 of the drawings, the burner 31 may be removed from the shelf 28 by simply sliding the flue 26 upwardly within the drum to clear the chimney of the said burner. This provides a convenient arrangement whereby the burner may be easily displaced without the necessity of adjusting the shelf 28 so that upon the initial adjustment of the shelf, the flue 26 may be operated to clear the burner. In any instance where a gas burner is employed, as illustrated in Fig. 3, the flue 26 will not be needed, and the cap 25 is consequently removed for directly receiving the said gas burner into the lower end of the drum.

It will therefore be seen that I provide a very simple and efficient construction for the purpose set forth and a device particularly adapted for household use. Accordingly, the drum is preferably provided with one or more suitable handles 33 whereby the heater may be easily moved from place to place.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A device of the character described including a base, a heating drum carried by the base and adapted for circulation of heated currents therethrough with the said drum formed with a conical lower terminal, a cap closing the lower terminal of the drum at its smaller end, a flue adjustable longitudinally through the cap with the cap removable for displacing the said flue, and a burner shelf mounted to support a burner to coöperate with the flue for directing heated currents from the burner through the drum.

2. In a device of the character described, the combination with a heating drum contracted at its extremities and open at its ends, and a burner mounted at the lower end of the drum, of a plurality of superposed baffle plates supported within the drum and respectively decreasing in area toward the contracted extremities of the drum, whereby heated air currents entering the lower end of the drum will be directed by the said plates in a circuitous path through the drum to be restricted at the upper extremity of the drum and discharged at the upper end thereof.

3. In a device of the character described, the combination with a heating drum formed with conical extremities and open at its ends, and a burner mounted at the lower end of the drum, of a hanger projecting axially into the drum from the upper extremity thereof, and a plurality of flat disks mounted upon the hanger in super-

posed relation with the hanger extending axially through the said disks and with the disks providing baffle plates within the drum, the said disks being of graduated diameter decreasing from the central disk in the direction of the lower conical extremity of the drum and decreasing in diameter from the central disk in the direction of the upper conical extremity of the drum whereby heated air currents entering the lower end of the drum will be directed by the said plates in a circuitous path through the drum to be restricted at the upper extremity of the drum and discharged at the upper end thereof.

4. A device of the character described including a heating drum contracted at its upper extremity and open at the ends thereof, a burner mounted adjacent the lower end of the drum, and a plurality of baffle plates of graduated area arranged within the drum with certain of the said plates disposed within the contracted extremity thereof for directing heated currents from the burner in a circuitous path within the drum to be restricted within the upper extremity thereof by the contracted portion of the drum and directed out at its upper end.

In testimony whereof I affix my signature.

WILLIAM O BIGGS. [L. S.]