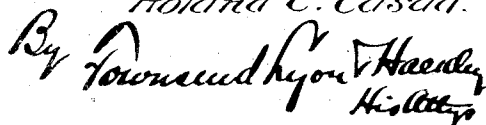


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UNITED STATES PATENT OFFICE.

ROLAND C. CASAD, OF LOS ANGELES, CALIFORNIA.

GAS-GENERATING OIL-BURNER.

1,038,290.

Specification of Letters Patent.

Patented Sept. 10, 1912.

Application filed July 12, 1909, Serial No. 507,244. Renewed February 7, 1912. Serial No. 676,033.

To all whom it may concern:

Be it known that I, ROLAND C. CASAD, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles, State of California, have invented a new and useful Gas-Generating Oil-Burner, of which the following is a specification.

The main object of the present invention is to provide a burner in which the oil is converted into gas by the action of a current of air passing over the oil and induced by a direct draft.

A further object of the invention is to provide a device for this purpose of extremely simple and cheap construction.

Another object of the invention is to provide a burner which can be readily cleaned.

Another object of the invention is to provide the burner with means for preventing dangerous accumulation or overflow of oil, in case the oil is turned on when not lighted or is being supplied faster than it is consumed.

In the accompanying drawings illustrating the invention: Figure 1 is a perspective of the burner. Fig. 2 is a vertical section thereof. Fig. 3 is a horizontal section on line x^3-x^3 in Fig. 2. Fig. 4 is a side elevation of the burner, showing the application of a deflecting cap plate therefor.

The base 1 which is adapted to fit within a fire pot, is formed with an oil cup 2, and with concentric annular air-deflecting flanges 3, 4.

Oil cup 2 is formed as a tubular enlargement or head on a standard 5, rising from base 1, said standard being tubular and connecting with an oil supply pipe 6 which screws into base 1 at the bottom of the standard. Said head is formed with a concavity or depression in its top, to serve as the oil cup and with a raised rim 2', said concavity being shallow and wide to provide large evaporating surface. The annular space 7 between flanges 3 and 4 extends to the space beneath base 1, so as to communicate therewith, and is open at the top, webs or bridges 9 extending across this space to connect the central and outer parts of the base. The inner flange 3 is of about the same diameter as the oil cup 2 and the chamber or cup within this flange 3 serves as a receptacle for overflow oil, a drain pipe 8 being provided therefor. The outer flange 4 extends up to about the level of the top of

the oil cup and a deflector ring 10 rests on top of flange 4, and extends toward the lip or rim of the oil cup, the inner edge of the rim being slightly above the rim of the oil cup, to form an annular air admission slot 11. Said ring 10 has an annular flange or head 12 to fit the flange 4 and hold the ring in proper position.

The operation is as follows: Oil is turned into cup 2 and is ignited. After natural draft has been started, air is continually drawn through passage 7 and through slot 11, said air issuing in a sheet or nearly horizontal jet directly over the surface of the oil in the oil cup, thereby causing evaporation of the oil, and simultaneously causing the vapor of the oil to be mixed with the air, forming a mixture which burns without smoke and produces a flame which is blue or white according to the amount of oil supplied. The air, in passing up through the passage 7 is heated by the walls of said passage, thereby expediting the evaporation, and producing more perfect combustion. It will be noted that the air passage 7 is direct, from the space below the base to the air outlet 11, thus obtaining the maximum velocity of the air jet. The head 2 formed on top of the tubular member 5 extending upwardly from the plate 1 extends outwardly from said member to substantially the same diameter as the flange 3, so that any solid material which collects in the oil cup 2' in said head can be scraped therefrom and passing through the annular slot 11 will fall into the space 7 outside of the flange 3, and will be discharged through the opening in the plate 1. The oil cup 2 being opened or exposed at the top and the deflecting ring 10 extending only far enough to deflect the air over the cup without extending over the cup itself, the cup is completely exposed for cleaning by scraping as above stated. The peripheral face of the head 2 is rounded on its lower corner as shown, so that any oil escaping over the said peripheral face by overflow from the oil cup will run down from the peripheral face on this rounded portion and will be led thereby to the underface of the head, wherefrom it will pass by dripping or by running down the outside of the tubular member 5 into the space within the flange 3 and will be carried away through the drainage pipe 8.

The base 1, flanges 3, 4, oil cup 2 and

standard 5 are preferably cast in one piece, so that there are only two pieces in the burner, namely, this casing and the ring 10.

If desired a deflecting cap plate may be provided as indicated at 15 in Fig. 4, said cap plate being of any suitable form and having legs or lugs 16 to rest on the deflecting ring 10, the function of said cap plate being to deflect the flame laterally and prevent too great concentration of heat at the point directly above the center of the burner.

What I claim is:—

1. A gas generating oil burner comprising a base provided with inner and outer flanges extending upwardly therefrom to form an air passage extending to the bottom of the base and open at its lower end, an oil cup extending within the outer flange and over the inner flange and provided with an oil supply connection, said oil cup having a raised rim, and a deflector-ring extending inwardly from the outer flange into proximity to the oil cup, forming an air inlet directly over the rim of the oil cup to project a sheet of air over the oil in the cup.

2. A gas generating oil burner comprising a base, provided with inner and outer flanges extending upwardly therefrom to form an air passage extending to the bottom of the base and open at its lower end, an oil cup extending over the inner flange and within the outer flange and having a raised rim, oil supply means for said oil cup, and a deflector-ring extending from the outer flange into proximity to the rim of the oil cup, forming an air inlet directly over the rim of the oil cup, to project a sheet of air directly over the oil in the cup.

3. A gas generating oil burner comprising a base, provided with inner and outer flanges extending upwardly therefrom to form an air passage extending to the bottom of the base and open at its lower end, an oil cup having a lower rounded corner extending over the inner flange and within the outer flange and having a raised rim, oil supply means for said oil cup, a deflector

extending from the outer flange into proximity to the rim of the oil cup, forming an air inlet directly over the rim of the oil cup, to project a sheet of air directly over the oil in the cup, and a drain connection communicating with the space within the inner flange.

4. A gas generating oil burner comprising a base, provided with inner and outer flanges extending upwardly therefrom to form an air passage extending to the bottom of the base and open at its lower end, an oil cup having a lower rounded corner extending over the inner flange and within the outer flange and having a raised rim, oil supply means for said oil cup, a deflector extending from the outer flange into proximity to the rim of the oil cup, forming an air inlet directly over the rim of the oil cup, to project a sheet of air directly over the oil in the cup, and a drain connection communicating with the space within the inner flange, said deflector being removably supported in the outer flange.

5. A gas generating oil burner comprising a base provided with inner and outer flanges extending upwardly therefrom to form an air passage extending to the bottom of the base and open at its lower end, an oil cup having a lower rounded corner extending within the outer flange and over the inner flange and provided with an oil supply connection, said oil cup having a raised rim, a deflector-ring extending from the outer flange into proximity to the oil cup, forming an air inlet directly over the rim of the oil cup to project a sheet of air over the oil in the cup, and a deflecting cap plate extending above the oil cup and a deflector-ring and separated therefrom for the purpose set forth.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 3rd day of July, 1909.

ROLAND C. CASAD.

In presence of—

ARTHUR P. KNIGHT,
FRANK L. A. GRAHAM.