May 22, 1962 A. PALKO 3,035,633

OIL BURNER

Filed Sept. 14, 1959

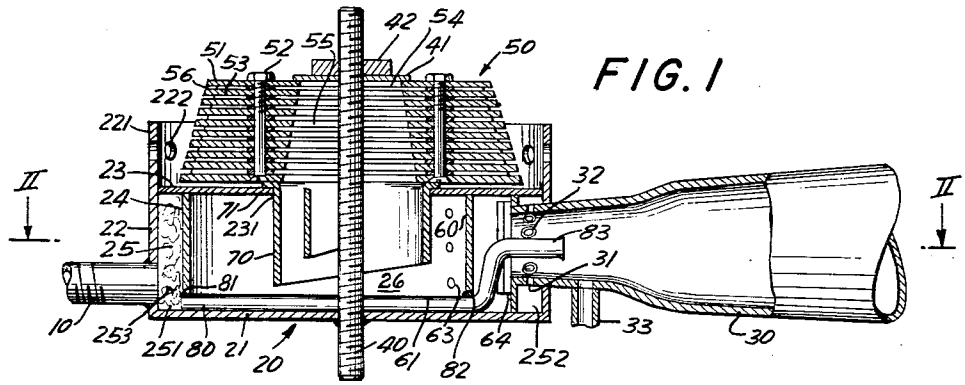

FIG. 1

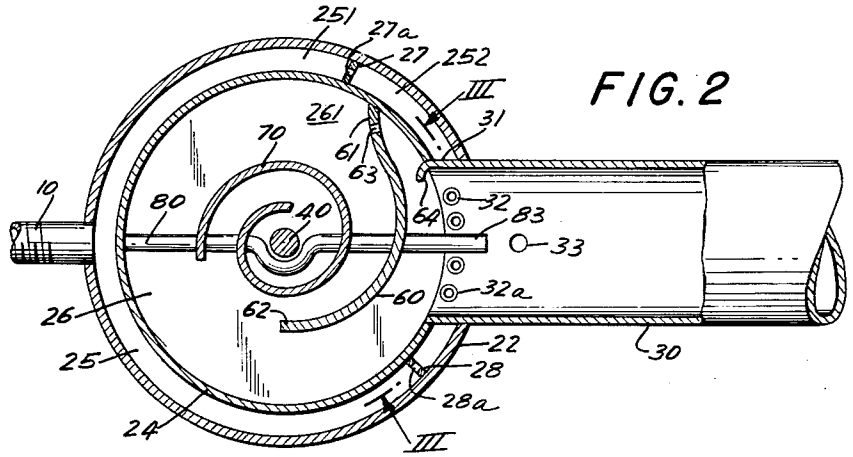

FIG. 2

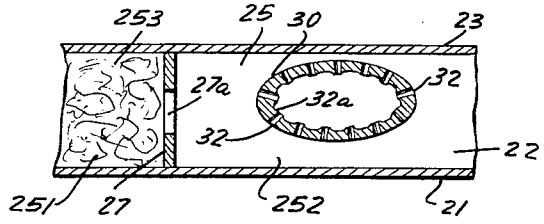

FIG. 3

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United States Patent Office 3,035,633 Patented May 22, 1962

3,035,633

OIL BURNER

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Filed Sept. 14, 1959, Ser. No. 839,623
20 Claims. (Cl. 158—68)

The present invention relates to an oil burner, and more particularly to an oil burner of the pan-type in which fuel oil is vaporized, mixed with air, and burned.

It is one object of the present invention to provide an oil burner which efficiently operates, and can be inexpensively manufactured.

Another object of the present invention is to provide an oil burner in which the fuel is reliably gasified and thoroughly and uniformly mixed with air to provide a blue flame in which the fuel is completely burned without the development of noxious gases.

Another object of the present invention is to provide a fuel burner which can be easily adjusted to varying fuel supply conditions to provide complete combustion of all the vaporized fuel.

With these objects in view, one embodiment of the present invention mainly comprises gasification chamber means to which fuel is supplied in liquid form so that it accumulates on the bottom of the chamber means and is gasified when the chamber means is heated; a distribution chamber communicating with a burner block in which passages are provided; and air inlet tube means having a perforated portion located in the gasification chamber means and opening into the distribution chamber whereby gasified fuel passes through the perforated portion into the air in the air inlet tube means. The gas and air mixture passes into the distribution chamber and is preferably guided therein by spiral-shaped baffle means to move in a spiral stream toward the center of the distribution chamber from where it passes into a central passage in the burner block, and then transversely in radial direction through other passages in the burner block. The baffle means may be turnable to properly position it in the third chamber.

The initial heating of the fuel in the first chamber means is produced by known additional heating means, and when sufficient gas mixture is produced, it is ignited at the burner block by known igniting means. During operation of the oil burner the heat developed by the burned gasified fuel is sufficient to heat the first chamber to such extent that all supplied liquid fuel is gasified. The operation is improved in accordance with the present invention by an annular wall extension of the chamber means surrounding a part of the burner block so as to be heated by the flame. In this manner, heat is transferred to the gasification chamber means to gasify liquid fuel supplied to the same.

According to a preferred embodiment of the present invention, the chamber means of the oil burner are provided in a structure which includes an inner and an outer wall, and top and bottom walls closing the annular walls and defining in the same an inner chamber corresponding to the above defined third chamber means, and an annular chamber which is divided by a pair of partitioning walls into the above defined first and second chambers. When fuel is supplied to one part of the annular chamber it accumulates on the bottom wall to a level not exceeding the height of openings in the partitioning walls, whereas gas created by heating the bottom wall passes through the partitioning walls into the other portion of the annular chamber, where a perforated portion of the air inlet tube is located so that the gas enters under pressure into the air inlet tube which communicates with the inner chamber within the inner annular wall.

Preferably, a stationary spiral baffle is secured to the inner wall, and another baffle of unsymmetrical shape is

turnably mounted in a center opening in the top wall so that the spiral stream of the gas air mixture can be further controlled by turning the additional baffle.

The novel features which are considered as characteristic for the invention are set forth in particular in the appended claims. The invention itself, however, both as to its construction and its method of operation, together with additional objects and advantages thereof, will be best understood from the following description of specific embodiments when read in connection with the accompanying drawings, in which:

FIG. 1 is a sectional view of an oil burner according to one embodiment of the present invention;

FIG. 2 is a cross-sectional view taken on line II—II in FIG. 1; and

FIG. 3 is a sectional view taken on line III—III in FIG. 2.

Referring now to the drawings, a fuel inlet pipe **10** is secured to a structure generally indicated by the reference numeral **20**. Structure **20** includes a bottom wall **21** of circular shape, an outer annular wall **22** projecting upwardly from bottom wall **21**, an intermediate top wall **23** beyond which an annular portion of wall **22** projects, and an inner annular wall **24** between the top and bottom walls.

An annular chamber **25**, and a central chamber **26** is formed between walls **21**, **22**, **23** and **24**.

The partitioning walls **27** and **28** having apertures **27***a*, **28***a*, are provided in the outer annular chamber **25**. Therefore, liquid fuel supplied through fuel inlet **10** into chamber **25** will accumulate only in the first chamber portion **251** of chamber **25** if the level of the fuel does not exceed the height of apertures **27***a* and **28***a*. However, when fuel in the first chamber portion **251** is gasified, the gas will pass through walls **27** and **28** and enter the second chamber portion **252** under pressure. Chamber **251** is at least partly filled with a wire mesh **253**, such as copper wool, serving as a screen.

An air inlet tube **30** is provided which is secured to walls **22** and **24** in a fluid-tight manner, for example, by welding, and opens into the inner chamber **26**. The portion **31** of the air inlet tube **30** passes through the annular chamber **25**, and more particularly through the chamber portion **252**. Portion **31** is perforated to form inner projection or burrs **32***a* with openings **32**. Consequently, air passing through inlet tube **30** will mix with gasified fuel passing under pressure from vapor chamber **252** through perforations **32** so that a fuel air mixture is formed which enters the inner chamber **26**. While normally no liquid fuel can enter vapor chamber **252**, nevertheless an overflow **33** is provided for removal of liquid fuel entering the air inlet tube **30**, which may occur when fuel is supplied continuously without heating the structure **20** as may occur when a person unfamiliar with this type of burner operates the device.

A threaded spindle **40** is secured to the bottom wall **21** and passes through the center of the inner chamber **26**. A burner block **50** is secured to structure **20** by a washer **41** and a nut **42** on spindle **40**. The burner block is composed of a plurality of superimposed but spaced circular discs **51** which are of gradually decreasing diameter. Threaded bolts **52** pass through suitable openings in discs **51**, and spacing means, such as radially extending wires **53**, are provided between adjacent discs so that spaces **56** are formed between the discs **51**. In this manner, a frusto-conical burner block is formed. Each of the discs **51** has a center opening **54**, and the diameters of the preferably circular openings **54** are gradually reduced, so that a tapered center passage **55** is formed in the burner block **50**. The center passage **55** is located directly opposite a center opening **231** in top wall **23**. In this manner, a gas-air mixture can pass

through opening 231 into the central passage 55 and from there in radial direction through the annular gaps 56 between adjacent discs 51. The gas mixture can be ignited at the outer surface of the frusto-conical burner block 50.

The upper portion 221 of the outer annular wall 22 extends beyond top wall 23 and has openings 222. Since annular portion 221 surrounds part of the burner block 50, it is heated by the flame and such heat is conveyed to the bottom wall 21 so that fuel supplied through fuel inlet 10 is properly gasified during the operation of the burner.

In accordance with the present invention, baffle means are provided in the inlet chamber 26 for guiding the gas-air mixture toward the central passage 55 of the burner block 50. A fixed spiral baffle 60 is secured to the inner annular wall 24 by its end portion 61, and has another end portion 62 which is spaced from the inner wall 24 so that a spiral passage is formed in the inlet chamber 26. The stream of the gas-air mixture will pass along the inner wall 24, and will be weakest in the region 261 of inner chamber 26. End portion 61 of baffle 60 is provided with perforations 63 located opposite a small baffle member 64 which is provided directly adjacent the opening of the air inlet tube 30. Therefore, the air will not pass into the corner between baffle end portion 61 and inner wall 24, but will be deflected to pass in clockwise direction in the spiral passage between wall 24 and spiral baffle 60. A certain suction will be exerted in the space defined by walls 61, 24 and baffle 64, so that an amount of gas-air mixture is drawn through openings 63 and the circulation in the area 261 of chamber 26 is improved.

An additional baffle member 70 is mounted in the center opening 231 of top wall 23 and is held there by a flange 71. Baffle member 70 is of spiral shape, but of gradually decreasing axial length, as can be best seen in FIG. 1. Consequently, when baffle member 70 is turned in opening 231 by a manual operation, the position of the longest part of the spiral shaped baffle member can be determined and it has been found that the best results are obtained when the longest portion of baffle member 70 is located in the area 261. The best position of the turnable baffle member 70 is found by trying out the position in which the flame of the burner is blue all around as desired for complete combustion. It will be understood that also the openings 63, and the baffle 64 are dimensioned to obtain the best possible combustion.

The baffle member 70 will further guide the stream of the gas-air mixture toward the center of the inner chamber 26, so that the gas-air mixture will pass through baffle member 70 into the central passage 55 of the burner block 50.

The device is operated as follows:

The structure 20, and particularly bottom wall 21 is heated in the manner described, for example, in my U.S. Patent 2,458,630. Liquid fuel is supplied through fuel inlet pipe 10 and accumulates on the bottom of the first chamber means 251 where it is gasified, so that gas passes through partitioning walls 27 and 28 into the second chamber means 252 from where it enters through openings 32 into the air stream passing through air inlet tube 30 into the inner distribution chamber 26. The stream of the gas-air mixture is guided first by baffle 60 and then by baffle 70 toward the center of the inner chamber 26 from where it passes into the central passage 55 of burner block 50, and from there through the annular gaps 56 between the discs 51 to be ignited by suitable known igniting means at the frusto-conical surface of the burner block 50. If the flame is not blue all around, the position of the baffle member 70 may be adjusted. When sufficient heat is developed by the flame on burner block 50, annular wall extension 221 will be heated so that the bottom wall 21 will become sufficiently hot to continuously gasify fuel supplied through inlet 10.

According to a further feature of the present invention, an additional fuel tube 80 is provided which ends in an opening 81 of the inner wall 24 and communicates with chamber 251. Fuel tube 80 passes through an opening 82 in baffle 60, and has an end portion 83 projecting into the air inlet tube 30. A small amount of fuel enters fuel tube 80, is gasified when bottom wall 21 is heated, and the gas passes through end portion 83 directly into the air inlet tube 30 where it is taken along by the stream of air to enter the inner chamber 26. In this manner, a small amount of gasified fuel is immediately available to form a gas-air mixture at the beginning of the operation.

It will be understood that each of the elements described above, or two or more together, may also find a useful application in other types of oil burners differing from the types described above.

While the invention has been illustrated and described as embodied in an oil burner provided with an annular gasification chamber surrounding an inner chamber to which a gas-air mixture is supplied, it is not intended to be limited to the details shown, since various modifications and structural changes may be made without departing in any way from the spirit of the present invention.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can by applying current knowledge readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitutes essential characteristics of the generic of specific aspects of this invention and, therefore, such adaptations should and are intended to be comprehended within the meaning and range of equivalence of the following claims.

What is claimed as new and desired to be secured by Letters Patent is:

1. A burner comprising, in combination, heat-conveying wall means defining a closed annular outer chamber, and an inner chamber surrounded by said outer chamber and having an opening on top, said wall means including an outer annular wall surrounding said opening; fuel inlet means for supplying a fuel to said outer chamber; air inlet means opening into said inner chamber and having a perforated portion located in said outer chamber so that fuel vapor developing in said outer chamber is drawn into said perforated portion and passes with air into said inner chamber and from there through said opening; and a frusto-conical burner block supported on said wall means and being at least partly surrounded by said annular wall, said frusto-conical burner block having a top face, a bottom face, and an annular lateral outer surface, said burner block being formed with a central recess extending from said bottom face into the same, and formed with a plurality of superimposed tiers of sets of radial passages extending from said center recess to said annular outer surface, said recess being located above said opening so that the vapor-air mixture passes into said recess and through said passages to said annular outer surface to be burned thereon whereby said annular wall is heated and conveys heat to said outer chamber for gasifying liquid fuel therein.

2. A burner as set forth in claim 1 wherein said annular outer surface of said burner block is frusto-conical and wider in the region of said bottom face.

3. An oil burner comprising in combination, heatable wall means defining an open inner chamber and a closed outer chamber, said wall means including an annular wall; fuel inlet means opening into said outer chamber; tubular air inlet means opening into said inner chamber and having a perforated portion located in said outer chamber so that fuel vapor passes from said outer chamber into said air inlet means and from there into said inner chamber; and a burner block supported on said wall means in the region of said inner chamber closing the same, said burner block having an annular outer surface at least partly surrounded by said annular wall, said burner block being formed with passages communicating with said inner chamber and opening on said annular outer surface so

that burning gas between said burner block and said annular wall heats the latter whereby said outer chamber is heated and fuel therein is gasified.

4. An oil burner comprising in combination, heatable wall means including a bottom wall, an outer annular wall and an inner annular wall, and defining an open inner chamber within said inner wall and an outer closed chamber between said inner and outer walls; fuel inlet means opening into said outer chamber; tubular air inlet means passing through said inner and outer walls opening into said inner chamber and having a perforated portion located in said outer chamber so that fuel vapor passes from said outer chamber into said air inlet means and from there into said inner chamber; and a burner block supported on said wall means in the region of said inner chamber closing the same, said burner block having an annular outer surface at least partly surrounded by said outer annular wall, said burner block being formed with passages communicating with said inner chamber and opening on said annular outer surface so that burning gas between said burner block and said outer annular wall heats the latter whereby said outer chamber is heated and fuel therein is gasified.

5. An oil burner comprising in combination, heatable wall means including a top wall having a center opening, a bottom wall, an outer wall and an inner annular wall, and defining an inner chamber within said inner wall and an outer chamber between said inner and outer walls; fuel inlet means opening into said outer chamber; tubular air inlet means passing through said inner and outer walls, opening into said inner chamber and having a perforated portion located in said outer chamber so that fuel vapor passes from said air inlet means and from there into said inner chamber; and spiral-shaped baffle means in said inner chamber defining in the same a spiral-shaped duct for guiding fuel vapor toward the center of said inner chamber and to said center opening.

6. An oil burner comprising in combination, heatable wall means including a bottom wall, an outer annular wall and an inner annular wall, and defining an open inner chamber within said inner wall and an outer closed chamber between said inner and outer walls; fuel inlet opening into said outer chamber; tubular air inlet means passing through said inner and outer walls opening into said inner chamber and having a portion located in said outer chamber above said bottom wall and having inwardly projecting nozzle-like projections formed with perforations so that gasified fuel under pressure passes from said outer chamber through said perforations into said air inlet means and from there into said inner chamber to form a fuel-air mixture; spiral-shaped baffle means turnably mounted in said inner chamber defining in the same a spiral-shaped duct for guiding fuel vapor toward the center of said inner chamber; and a burner block supported on said wall means in the region of said inner chamber closing the same, said burner block having an annular outer surface at least partly surrounded by said outer annular wall, said burner block being formed with passages communicating with the center of said inner chamber and opening on said annular outer surface so that burning gas between said burner block and said outer annular wall heats the latter whereby said outer chamber is heated and fuel therein is gasified.

7. An oil burner comprising in combination, heatable wall means including a bottom wall, an outer annular wall and an inner annular wall, and defining an inner chamber within said inner wall and a closed outer chamber between said inner and outer walls; partitioning walls in said outer chamber defining in said outer chamber a fuel chamber portion and a vapor chamber portion communicating with said fuel chamber portion; fuel inlet means opening into said fuel chamber portion of said outer chamber; tubular air inlet means passing through said inner and outer walls opening into said inner chamber and having a perforated portion located in said vapor chamber portion so that fuel vapor passes from said outer chamber into said air inlet means and from there into said inner chamber; and a burner block supported on said wall means in the region of said inner chamber closing the same, said burner block having an annular outer surface at least partly surrounded by said outer annular wall, said burner block being formed with passages communicating with said inner chamber and opening on said annular outer surface so that burning gas between said burner block and said outer annular wall heats the latter whereby said outer chamber is heated and fuel therein is gasified.

8. An oil burner comprising in combination, heatable wall means including a bottom wall, an outer annular wall and an inner annular wall, and defining an inner chamber within said inner wall and a closed outer chamber between said inner and outer walls; partitioning walls in said outer chamber having apertures spaced from said bottom wall and defining in said outer chamber a fuel chamber portion and a vapor chamber portion communicating with said fuel chamber portion; fuel inlet means opening into said fuel chamber portion of said outer chamber; tubular air inlet means passing through said inner and outer walls, opening into said inner chamber and having a perforated portion located in said vapor chamber portion; a spiral baffle in said inner chamber having one end portion secured to the inner surface of said inner wall on one side of said air inlet means and having the other end portion thereof located on the other side of said air inlet means spaced from said inner wall so that fuel vapor passes from said outer chamber into said air inlet means and from there into said inner chamber to be guided by said spiral baffle in a spiral stream; and a burner block supported on said wall means in the region of said inner chamber and formed with passages communicating with said inner chamber.

9. An oil burner comprising in combination, heatable wall means including a bottom wall, an outer annular wall and an inner annular wall, and defining an inner chamber within said inner wall and a closed outer chamber between said inner and outer walls; fuel inlet means opening into said outer chamber; tubular air inlet means passing through said inner and outer walls, opening into said inner chamber and having a perforated portion located in said outer chamber; a spiral baffle in said inner chamber having one end portion secured to the inner surface of said inner wall on one side of said air inlet means and having the other end portion thereof located on the other side of said air inlet means spaced from said inner wall; a small baffle projecting from said inner wall into said inner chamber and being located on said one side of said air inlet means between the same and said secured end portion of said spiral baffle, said secured end portion being formed with apertures opposite said small baffle so that fuel vapor passes from said outer chamber into said air inlet means and from there into said inner chamber to be guided by said spiral baffle in a spiral stream, and a burner block supported on said wall means in the region of said inner chamber and formed with passages communicating with said inner chamber.

10. An oil burner comprising in combination, heatable wall means including a top wall having a center opening, a bottom wall, an outer annular wall and an inner annular wall, and defining an inner chamber within said inner wall and an outer chamber between said inner and outer walls; a deflector member located in said center opening of said top wall and having a baffle portion projecting into said inner chamber, said baffle portion being curved and being obliquely cut off to be longer on one side than on the other side, said deflector member being turnable in said center opening for manual adjustment; fuel inlet means opening into said outer chamber; tubular air inlet means passing through said inner and outer walls opening into said inner chamber and having a perforated portion located in said outer chamber so

that fuel vapor passes from said air inlet means and from there into said inner chamber; and a burner block supported on said wall means in the region of said inner chamber and formed with a central passage communicating through said center opening in said top wall with said inner chamber, and having transverse passages communicating with said center passage.

11. An oil burner comprising, in combination, heatable wall means including a bottom wall, an outer annular wall and an inner annular wall, and defining an open inner chamber within said inner wall and an outer closed chamber between said inner and outer walls; fuel inlet means opening into said outer chamber; tubular air inlet means passing through said inner and outer walls, opening into said inner chamber, and having a perforated portion located in said outer chamber so that fuel vapor passes from said outer chamber into said air inlet means and from there into said inner chamber; and a burner block supported on said wall means in the region of said inner chamber, said burner block including a plurality of spaced circular discs of gradually decreasing diameter so as to have a frusto-conical outer surface, said discs having central openings of gradually decreasing diameter forming a central upwardly tapering passage in said burner block communicating with said inner chamber and with the spaces between said discs, said burner block including means for closing the upper end of said passage, the outer frusto-conical surface of said burner block being partly surrounded by said outer annular wall so that the same is heated and heats said outer chamber to gasify the fuel therein.

12. An oil burner comprising in combination, heatable wall means defining an inner chamber and a closed outer chamber; fuel inlet means opening into said outer chamber; tubular air inlet means opening into said inner chamber and having a portion located outside of said wall means and a perforated portion located in said outer chamber so that fuel vapor passes from said outer chamber into said air inlet means and from there into said inner chamber; spiral-shaped baffle means in said inner chamber forming a spiral-shaped duct therein leading from said air inlet means to the center of said inner chamber; and a burner block supported on said wall means in the region of said inner chamber and formed with passages communicating with the center of said inner chamber.

13. An oil burner comprising in combination, heatable wall means including a bottom wall, an outer annular wall projecting from said bottom wall, an inner annular wall projecting from said bottom wall, a top wall extending from the inner surface of said outer wall and defining with said inner and outer walls an annular outer chamber and an inner chamber, said top wall being perforated, said outer wall having an upper annular portion projecting beyond and above said top wall and being formed with openings; a pair of radial partitioning walls located in said outer chamber between said outer and inner walls and on said bottom wall and having apertures spaced from said bottom wall; a fuel inlet pipe opening into said outer chamber between one pair of sides of said partitioning walls so that fuel supplied through said inlet pipe accumulates on said bottom wall between said sides of said partitioning walls while vapor passes through said apertures in said partitioning walls; an air inlet tube means having a portion formed with a plurality of perforations and located between said outer and inner walls in said outer chamber between the other sides of said partitioning walls, said air inlet tube means opening into said inner chamber so that fuel vapor passing through said apertures in said partitioning walls passes from said outer chamber into said air inlet tube means and from there into said inner chamber; and a burner block supported on said wall means and being located within said upper annular portion of said outer wall, said burner block having passages communicating with said inner chamber through said perforated top wall and connecting said inner chamber with the outer surface of said burner block so that said upper annular wall portion and said outer chamber are heated to gasify fuel.

14. An oil burner comprising in combination, heatable wall means including a bottom wall, an outer annular wall projecting from said bottom wall, an inner annular wall projecting from said bottom wall, a top wall extending from the inner surface of said outer wall and defining with said inner and outer walls an annular outer chamber and an inner chamber, said top wall being perforated, said outer wall having an upper portion projecting beyond and above said top wall and being formed with openings; a pair of radial partitioning walls located in said outer chamber between said outer and inner walls and on said bottom wall and having aperatures spaced from said bottom wall; a fuel inlet pipe opening into said outer chamber between one pair of sides of said partitioning walls so that fuel supplied through said inlet pipe accumulates on said bottom wall between said sides of said partitioning walls while vapor passes through said apertures in said partitioning walls; an air inlet tube means having a portion formed with a plurality of perforations and located between said outer and inner walls in said outer chamber between the other sides of said partitioning walls, said air inlet tube means opening into said inner chamber so that fuel vapor passing through said apertures in said partitioning walls passes from said outer chamber into said air inlet tube means and from there into said inner chamber; a spiral baffle located in said inner chamber and extending from said inner wall past said air inlet tube means to guide an air vapor mixture in a spiral stream in said inner chamber, said spiral baffle abutting said top and bottom walls; and a burner block supported on said wall means and being located within said upper portion of said outer wall, said burner block having passages communicating with said inner chamber through said perforated top wall and connecting said inner chamber with the outer surface of said burner block.

15. An oil burner comprising in combination, heatable wall means including a bottom wall, an outer annular wall projecting from said bottom wall, an inner annular wall projecting from said bottom wall, a top wall extending from the inner surface of said outer wall and defining with said inner and outer walls an annular outer chamber and an inner chamber, said top wall having a central opening, said outer wall having an upper portion projecting beyond and above said top wall and being formed with openings; a pair of radial partitioning walls located in said outer chamber between said outer and inner walls and on said bottom wall and having apertures spaced from said bottom wall; a fuel inlet pipe opening into said outer chamber between one pair of sides of said partitioning walls so that fuel supplied through said inlet pipe accumulates on said bottom wall between said sides of said partitioning walls while vapor passes through said apertures in said partitioning walls; an air inlet tube means having a portion formed with a plurality of perforations and located between said outer and inner walls in said outer chamber between the other sides of said partitioning walls, said air inlet means opening into said inner chamber so that fuel vapor passing through said apertures in said partitioning walls passes from said outer chamber into said air inlet tube means and from there into said inner chamber; a burner block supported on said wall means and being located within said upper portion of said outer wall, said burner block having passages communicating with said inner chamber through said central opening in said top wall and connecting said inner chamber with the outer surface of said burner block; and a spiral-shaped baffle member turnably mounted in said central opening of said top wall so as to form in said inner chamber a spiral-shaped passage for guiding the air vapor mixture to the center of said inner chamber.

16. An oil burner comprising in combination, heatable wall means including a bottom wall, an outer annular

wall projecting from said bottom wall, an inner annular wall projecting from said bottom wall, a top wall extending from the inner surface of said outer wall and defining with said inner and outer walls an annular outer chamber and an inner chamber, said top wall having a central opening, said outer wall having an upper portion projecting beyond and above said top wall and being formed with openings; a pair of radial partitioning walls located in said outer chamber between said outer and inner walls and contacting said bottom wall and defining apertures spaced from said bottom wall; a fuel inlet pipe opening into said outer chamber between one pair of sides of said partitioning walls so that fuel supplied through said inlet pipe accumulates on said bottom wall between said sides of said partitioning walls while vapor passes through said apertures in said partitioning walls; an air inlet tube means having a portion formed with a plurality of perforations and located between said outer and inner walls in said outer chamber between the other sides of said partitioning walls, said air inlet tube means opening into said inner chamber so that fuel vapor passing through said perforations in said air inlet tube means passes from said outer chamber into said air inlet tube means and from there into said inner chamber; a spiral baffle located in said inner chamber and extending from said inner wall past said air inlet tube means to guide an air vapor mixture in a spiral stream in said inner chamber, said spiral baffle abutting said top and bottom walls; a burner block supported on said wall means and being located within said upper portion of said outer wall, said burner block having passages communicating with said inner chamber through said central opening in said top wall and connecting said inner chamber with the outer surface of said burner block; and a spiral-shaped baffle member turnably mounted in said central opening of said top wall so as to form in said inner chamber and with said spiral baffle a spiral-shaped passage for guiding the air vapor mixture to the center of said inner chamber.

17. An oil burner comprising in combination, heatable wall means including a bottom wall, an outer annular wall and an inner annular wall, and defining an inner chamber within said inner wall and a closed outer chamber between said inner and outer walls; fuel inlet means opening into said outer chamber; tubular air inlet means passing through said inner and outer walls opening into said inner chamber and having a perforated portion located in said outer chamber; a fuel pipe partly located in said inner chamber and having one end opening into said outer chamber in the region of said fuel inlet means and having another end portion passing through said outer chamber, said other end portion of said fuel pipe extending into said air inlet means and opening into the same so that fuel vapor passes from said outer chamber into said air inlet means and from there into said inner chamber; and a burner block supported on said wall means in the region of said inner chamber and formed with passages communicating with said inner chamber.

18. In an oil burner, in combination, a plurality of walls forming adjacent first, second and third chamber means and including an upwardly projecting wall means extending along an annular line, said second chamber means communicating with the upper portion of said first chamber means, said first and second communicating chamber means being closed to the outside, said third chamber means having an outlet located within said upwardly projecting wall means; a fuel inlet pipe opening into said first chamber means so that fuel accumulates in the lower portion of said first chamber means, rises to the upper portion of the same, when gasified, and passes into said second chamber means; air inlet tube means having a perforated portion located in said second chamber means and opening into said third chamber means whereby gasified fuel passes through said perforated portion into said third chamber means with air introduced through said air inlet tube means; and a burner block located within said wall means and closing said outlet, said burner block having passages communicating with said outlet of said third chamber means to receive a fuel-air mixture, and opening within and opposite said wall means so that the same is heated and heats said first chamber means.

19. In an oil burner, in combination, a plurality of walls forming adjacent first, second and third chamber means, said second chamber means communicating with the upper portion of said first chamber means, said first and second communicating chamber means being closed to the outside, said third chamber means having an outlet at the center thereof; a fuel inlet pipe opening into said first chamber means so that fuel accumulates in the lower portion of said first chamber means, rises to the upper portion of the same, when gasified, and passes into said second chamber means; air inlet tube means having a perforated portion located in said second chamber means and opening into said third chamber means whereby gasified fuel passes through said perforated portion into said third chamber means with air introduced through said air inlet tube means; spiral-shaped baffle means in said third chamber for guiding the fuel-air mixture towards the center of said third chamber; and a burner block closing said outlet of said second chamber means and having passages communicating with the center of said third chamber means to receive a fuel-air mixture.

20. In an oil burner, in combination, a plurality of walls forming adjacent first, second and third chamber means and including an upwardly projecting annular perforated wall means, said second chamber means communicating with the upper portion of said first chamber means, said first and second communicating chamber means being closed to the outside, said third chamber means having an outlet located within said upwardly projecting annular perforated wall means; a fuel inlet pipe opening into said first chamber means so that fuel accumulates in the lower portion of said first chamber means, rises to the upper portion of the same, when gasified, and passes into said second chamber means; air inlet tube means having a perforated portion located in said second chamber means and opening into said third chamber means whereby gasified fuel passes through said perforated portion into said third chamber means with air introduced through said air inlet tube means; a burner block located within said annular wall means and closing said outlet, said burner block having passages communicating with said outlet of said third chamber means to receive a fuel-air mixture and opening within and opposite said annular wall means so that the same is heated and heats said first chamber means, said annular perforated wall means surrounding at least a portion of said burner block.

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