

May 26, 1942.

A. GARBER

2,284,568

OIL BURNER STARTER

Filed Nov. 20, 1939

2 Sheets-Sheet 1

FIG. 1.

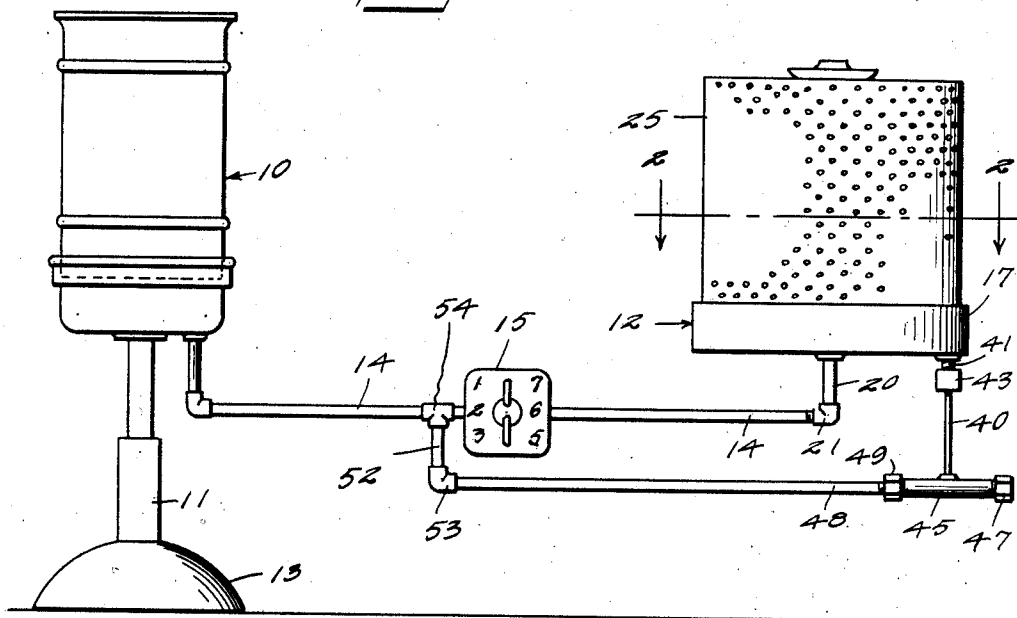
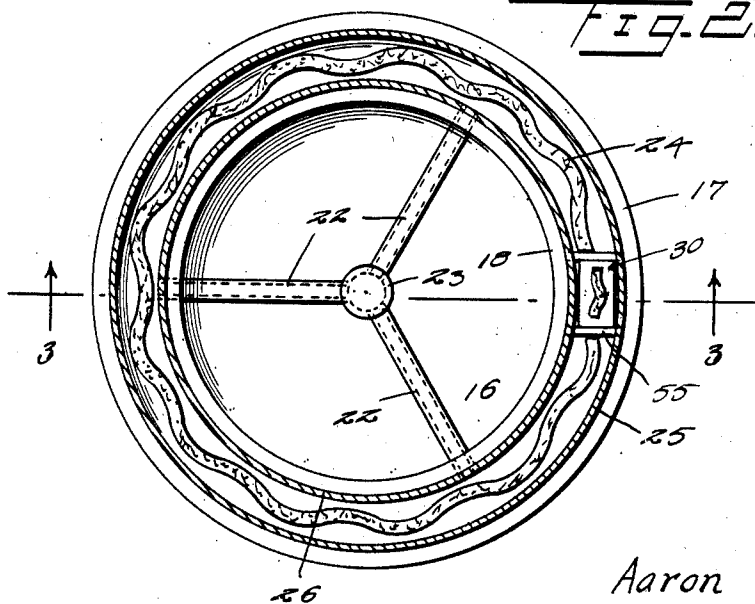


FIG. 2.



Inventor
Aaron Garber

By *Kimmel & Crowell*
Attorneys

May 26, 1942.

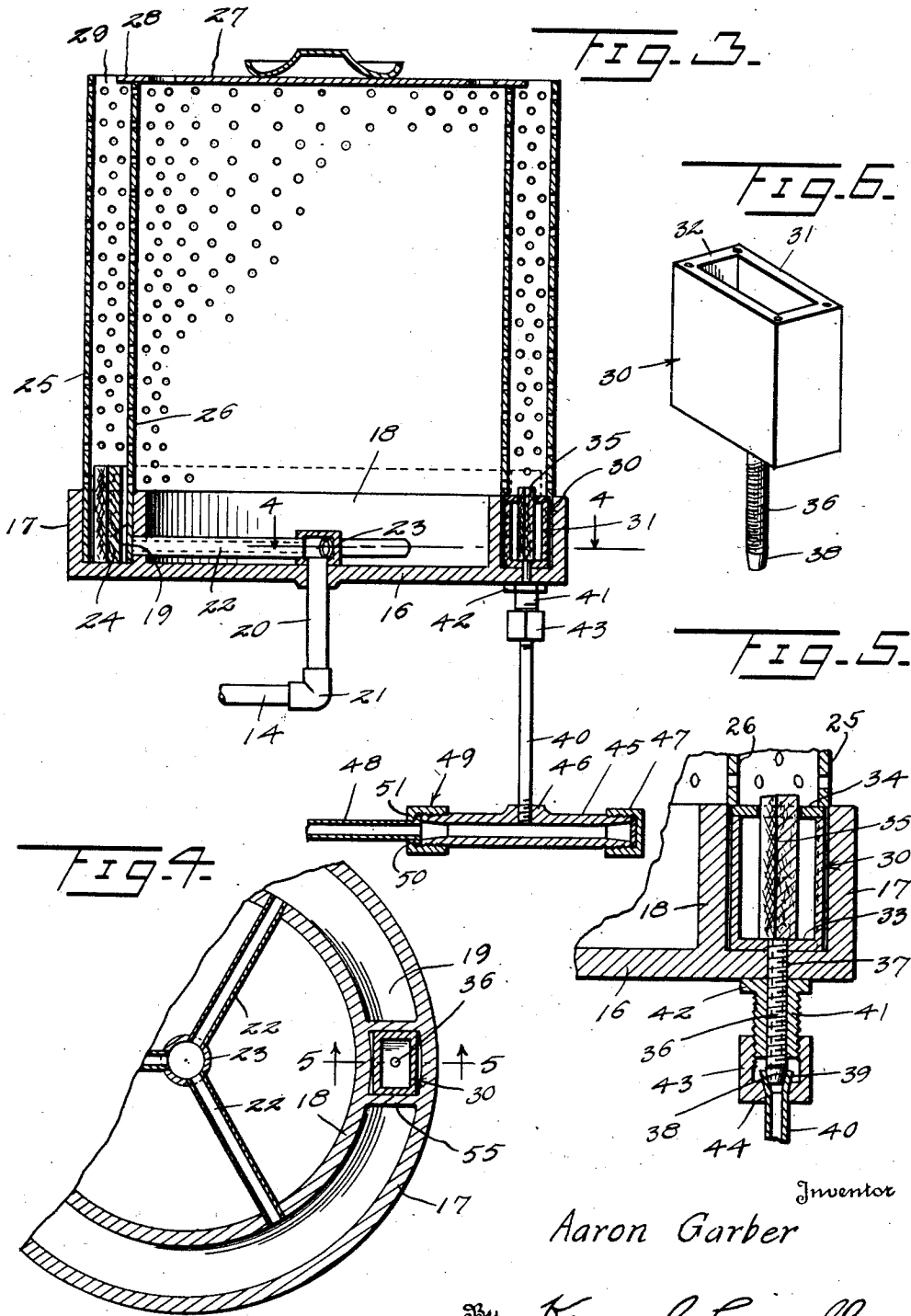
A. GARBER

2,284,568

OIL BURNER STARTER

Filed Nov. 20, 1939

2 Sheets-Sheet 2



Inventor

Aaron Garber

By

Kimmel & Crowell

Attorneys

UNITED STATES PATENT OFFICE

2,284,568

OIL BURNER STARTER

Aaron Garber, Brooklyn, N. Y., assignor of fifty per cent to Isidor Sokolov, Perth Amboy, N. J.

Application November 20, 1939, Serial No. 395,393

2 Claims. (Cl. 158—99)

This invention relates to oil burners, and more particularly to an improved means for starting or lighting an oil burner.

An object of this invention is to provide in combination with an oil burner of the wick type, an improved means in association with the burner for lighting the main wick.

Another object of this invention is to provide, in an oil burner provided with an annular wick, a pilot light and mounting therefor which is adapted to be constantly lighted so as to facilitate the lighting of the main wick.

At the present time in the use of certain oil burners embodying a circular or cylindrical wick, it is the practice of users to leave the burner constantly lighted due to the difficulty at present encountered in properly lighting the burner. It is, therefore, a further object of this invention to provide a means whereby the main burner may be turned off and a supplemental burner be provided in a position where it will promptly light up the main wick or burner, thus saving a considerable amount of fuel which is, at present, used in maintaining the main burner lighted at all times.

A further object of this invention is to provide, in a burner of this type, a means for vaporizing the fuel used by the main burner, the vaporization being effected through the use of a pilot light positioned within the combustion zone of the main burner.

A still further object of this invention is to provide a pilot structure of this kind in the form of an attachment which may be mounted on the present structure of an oil burner so as to provide for instant lighting of the main burner by turning on the fuel valve leading to the main burner.

A further object of this invention is to provide a device of this kind which is exceedingly simple in construction so that it may be manufactured at a relatively small cost and may be mounted on the present structure of an oil burner without disturbing the present parts of the burner.

To the foregoing objects and to others which may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts as will be more specifically referred to and illustrated in the accompanying drawings wherein is shown an embodiment of this invention, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention, as claimed.

In the drawings:

Figure 1 is a detail side elevation of a burner connected to a fuel supply tank, the burner having an igniting element connected therewith which is constructed according to my invention;

Figure 2 is a sectional view taken on line 2—2 of Figure 1;

Figure 3 is a sectional view taken on line 3—3 of Figure 2;

Figure 4 is a fragmentary sectional view taken on the line 4—4 of Figure 3;

Figure 5 is an enlarged fragmentary sectional view taken on line 5—5 of Figure 4; and

Figure 6 is a perspective view of the pilot burner casing removed from the main burner.

Referring to the drawings the numeral 10 designates generally a fuel reservoir which is mounted on a standard 11 supported on a base 13. The oil burner structure, generally designated as 12, is connected by means of a fuel supply line 14 to the reservoir 10. The burner 12 is adapted to be mounted in a suitable casing or jacket and is adapted to be positioned beneath a cooking top or grate on which articles are adapted to be positioned. The pipe line 14 is provided with a valve member 15 which is adapted to control the quantity of fuel passing through the line 14 from the reservoir 10 to the burner 12.

The burner 12 comprises a base plate 16 provided with a pair of spaced coaxially arranged cylindrical walls 17 and 18 coacting with a part of said base plate to form a well 19. The latter is of U-shaped form in vertical section.

The supply line 14 includes a vertically disposed pipe 20 at its outer end and said pipe 20 is connected to the other portion of said line by an L-coupling 21. The pipe 20 extends up through the center of the base plate 16 to slightly above the latter. The upper end of the pipe 20 is surrounded in spaced relation by the wall 18. A plurality of radially disposed ducts 22 are arranged over the base plate 16 having the major portion of their length surrounded by the body of wall 18. The outer ends of the ducts 22 are mounted in the body of the wall 18 and open into the well 19. The inner ends of the ducts 22 are connected to and open into a cap-like apertured coupling member 23 mounted on the upper end of pipe 20. In this manner the fuel from the supply line 14 is discharged into the well 19 at circumferentially spaced apart points within the well 19. A wick 24 is mounted within the well 19 and the upper end of the wick 24 projects slightly above the upper ends of the cylindrical walls 17 and 18. An outer upstanding perforate

shell 25, of substantially cylindrical construction, is mounted interiorly of the outer wall 17, and an inner upstanding perforate shell 26 engages against the inner surface of the inner wall 18 and is positioned in spaced relation to the outer shell 25. The shell 26 is of less height than the shell 25. The said shells have aligned parts of their portions cutout to provide a clearance for a purpose to be referred to. The cutouts open at the bottom edges of the shells. The said bottom edges are seated on the base plate 16. The shells are coaxially arranged. The wick 24 is positioned between the two shells 25 and 26. An apertured top plate 27 is secured to the upper end of the inner wall 26 and is provided with a projecting portion 28 which projects outwardly in the direction towards the outer shell 25. The outer edge of the projection portion 28 terminates in inwardly spaced relation to the outer shell 25 so that a space 29 is formed through which the flame or heat is adapted to pass.

At the present time in the use of the burner structure hereinbefore described, the lighting of the wick 24 is difficult or inconvenient and for this reason it is the general practice of users of this type of burner to leave the wick 24 constantly lighted. This will, of course, consume a considerable amount of fuel and in order, therefore to provide a means whereby the main wick 24 may be turned off I have provided a pilot structure which is adapted to be mounted within the well 19. A casing or supplemental well 30 is mounted within the well 19 being of a width and height to readily engage between the two walls 17 and 18. This supplemental or pilot well 30 is formed of side walls 31, end walls 32 and a bottom wall 33. If desired, a top wall 34 may be mounted on the upper ends of the side and end walls 31 and 32 respectively and a pilot wick 35 is adapted to be positioned within the interior of the pilot well 30 and project slightly above the top of the top wall 34. The pilot well 30 is provided with a threaded tube 36 which is secured to the bottom wall 33 and this tube 36 is adapted to project downwardly through an opening 37 provided in the base 16. The lower end of the pipe 26 terminates in a tapered portion 38 which is adapted to project within the flared portion 39 of a pilot supply pipe 40. A nut 41, provided with a head 42, is threaded onto the pipe 36 and the head or flange 42 thereof is adapted to abut against the bottom of the base plate 16 so as to tightly secure the pilot reservoir 30 within the well 19. A coupling member or cap 43 provided with a central opening 44 engages about the pipe 40 and is threaded onto the nut or clamping member 41 and serves as a means for tightly holding or coupling the flared portion 39 of the pipe 40 onto the tapered end 38 of the pipe 36. In this manner a pipe connection will be formed between the pipe 36 and the pilot supply pipe 40.

The lower end of the pipe 40 is connected to a short length of pipe 45 provided with a boss 46. The pipe 40 is threaded into the boss 46. The pipe 45 is provided at one end thereof with a cap 47 closing the end of the pipe 45 and the other end of the pipe 45 is connected to a supply pipe 48 by means of a coupling member 49. The coupling member 49 is constructed in the form of a cap which is threaded onto the opposite end of the pipe 45 and the pipe 48 is provided with a flanged portion 50 engaging between the head 51 of the cap 49 and the adjacent end of the pipe 45. The pipe 48, as shown in Figure 1,

is connected to the main supply pipe 14, between the valve 15 and the reservoir 10 by means of a nipple 52 which is connected at one end to an L 53 mounted on the pipe 48. The opposite end of the nipple 52 is connected to a T-connection 54 which is interposed in the pipe 14 between the valve 15 and the reservoir 10.

Preferably the pilot reservoir 30 is mounted between the pair of parallel walls 55 which are formed integral with the outer and inner walls 17 and 18 of the well 19 so that the fuel entering the well 19 will not leak out through the opening 37 formed in the bottom 16 and through which the pipe 36 of the pilot reservoir 30 extends. As shown in Figure 2, the wick 24 is split at the point where the walls 55 project between the walls 17 and 18 and the flame from the pilot wick 35 is adapted to rise upwardly between the two perforated shells 25 and 26. The cut-outs in the lower portion of said shells provide clearances for the walls 55 and the pilot reservoir 30 when the shells are extended into the well 19 and are seated on the base plate 16. The wick 35 is of sufficient size so that the heat generated by the lighting of the wick 35 will be sufficient to vaporize the fuel contained in the wick 24.

In the use and operation of this burner and pilot attachment the burner 12 is connected to the supply reservoir 10 by the pipe 14 with the valve 15 interposed in the pipe 14. The pipe 48 is connected to the pipe 14 at a point between the valve 15 and the reservoir 10 so that the operation of the valve 15 will not affect the flow of fuel through the pipe 48 to the pilot reservoir 30. The wick 35 is initially lighted by removing the outer shell 25 and then replacing the shell 25. When it is desired to operate the main burner wick 24 it is only necessary to turn on the main valve 15 to the desired degree so as to permit the fuel to flow from the reservoir 10 through the pipe 14, ducts 22 and into the well 19 where the fuel will soak into the wick 24. As soon as the fuel contacts with the wick 24 the wick 24 will light up due to the fact that the flame from the pilot wick 35 will cause sufficient heat to be generated between the two shells 25 and 26 to effect substantially immediate lighting of the wick 24. Where desired the pilot reservoir 30 may be used in the form of an attachment to be mounted in the present structure of an oil burner, but when this is done the walls 55 will be dispensed with.

The use of the burner starter or pilot structure hereinbefore described will effect a very considerable saving in the amount of fuel which is at present wasted by maintaining the burner 12 constantly lighted due to the difficulty of initially lighting the burner.

What I claim is:

1. In an oil burner, a horizontally disposed circular base plate having an axially arranged opening, uniformly spaced inner and outer upstanding coaxially arranged annular members integral at their bottoms with the upper face of said plate, a pair of spaced parallel upstanding elements arranged between and integral with portions of the inner faces of said members, opposed portions of said members coacting with a part of said base and the said elements to provide a well of U-shaped cross section for the reception of a wick of a height greater than the depth of the well, said well being formed of a pair of side walls, a pair of end walls and a bottom wall, the other opposed portions of said mem-

bers coacting with said elements and another part of said base to provide a chamber arranged between the end walls of the well for receiving a pilot means, the said base being formed eccentrically thereof with an opening communicating with said chamber, spaced upstanding coaxially arranged outer and inner perforated shells having opposed portions of their lower parts cut-out, the remaining portions of the lower parts of said shells being seated on portions of the bottom wall of said well, bearing against portions of the inner surfaces of said members, against a side face of said elements and upon the pilot means in said chamber, said cutouts forming a clearance for said elements, an oil supply line extending upwardly through said axial opening having its upper end surrounded in spaced relation by said inner member, radially disposed ducts positioned above said base having their outer ends arranged in the body of said inner member and opening into said well, a hollow cap on the upper end of said supply line formed with spaced apertures, said ducts having their inner ends connected to the walls of the apertures in and communicating with said cap, and an oil supply means for the pilot means extending from said supply line and up through said eccentric opening into said chamber.

2. In an oil burner, a horizontally disposed circular base plate having an axially arranged opening, uniformly spaced inner and outer upstanding coaxially arranged annular members integral at their bottoms with the upper face of

said plate, a pair of spaced parallel upstanding elements arranged between and integral with portions of the inner faces of said members, opposed portions of said members coacting with a part of said base and the said elements to provide a well of U-shaped cross section for the reception of a wick of a height greater than the depth of the well, said well being formed of a pair of side walls, a pair of end walls and a bottom wall, the other opposed portions of said members coacting with said elements and another part of said base to provide a chamber arranged between the end walls of the well for receiving a pilot means, the said base being formed eccentrically thereof with an opening communicating with said chamber, spaced upstanding coaxially arranged outer and inner perforated shells having opposed portions of their lower parts cutout, the remaining portions of the lower parts of said shells being seated on portions of the bottom wall of the well, bearing against portions of the inner surfaces of said members, against a side face of said elements and upon the pilot means in said chamber, said cutouts forming a clearance for said elements, an oil supply means extended upwardly through said axial opening to above said base, supported by inner member and opening into said well, and an oil supply means leading from the said other supply means and extended upwardly through said eccentric opening into said chamber.

AARON GARBER.