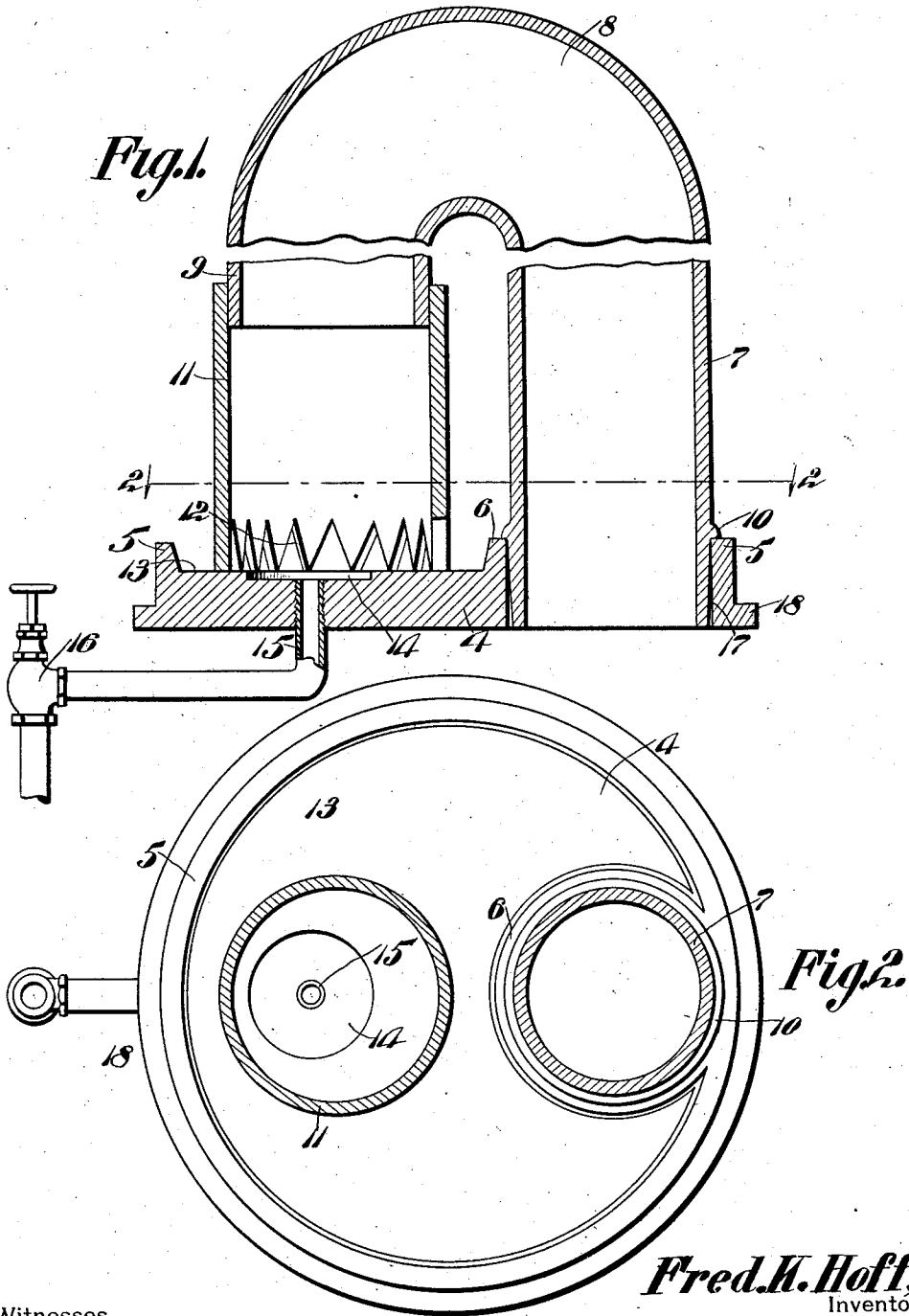


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LIQUID FUEL BURNER.  
APPLICATION FILED APR. 9, 1912.

1,047,633.

Patented Dec. 17, 1912.



Witnesses

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# UNITED STATES PATENT OFFICE.

FREDRIC K. HOFF, OF PLAINVILLE, KANSAS.

## LIQUID-FUEL BURNER.

1,047,633.

Specification of Letters Patent.

Patented Dec. 17, 1912.

Application filed April 9, 1912. Serial No. 689,488.

*To all whom it may concern:*

Be it known that I, FREDRIC K. HOFF, a citizen of the United States, residing at Plainville, in the county of Rooks and State of Kansas, have invented a new and useful Liquid-Fuel Burner, of which the following is a specification.

This invention relates to liquid fuel burners, and has for its primary object, the production of a simple and inexpensive device of this character, wherein the parts are reduced to a minimum, and which may be readily cleaned and repaired and which shall be efficient in use to provide a maximum heating effect with a minimum fuel consumption.

With the foregoing and other objects in view, this invention resides in the novel construction and combination of parts hereinafter set forth and claimed, reference being had to the accompanying drawings wherein the invention is illustrated, and in which—

Figure 1 is a vertical sectional view of the present burner. Fig. 2 is a section on the line 2—2 of Fig. 1.

Referring in details to the drawings, wherein similar reference characters denote corresponding parts, the numeral 4 designates a base, which is circular in contour and is constructed of any suitable metal or other material, and which has an annular flange 18 around the periphery thereof and an annular upstanding flange 5 extending around the periphery thereof. This base 4 is adapted to seat within a suitable casing (not shown), and the flange 5 forms a pan 13. An opening 17 is provided in the base 4 at one side thereof adjacent the flange 5, which opening is preferably tapered, and a flange 6 projects upwardly from the base 4 around the said opening and merges into the flange 5, as is clearly shown in Fig. 2. Diametrically opposite the opening 17 the base 4 is provided with a shallow recess 14, and a fuel supply pipe 15 enters the bottom of the base below the recess 14 and extends to the said recess for supplying coal oil or other liquid fuel thereto. This fuel supply pipe 15 is connected to a suitable tank (not shown) in order to supply the liquid fuel to the recess 14 by pressure or by gravitation, the pipe 15 being provided with a valve 16 for controlling the passage of fuel there-through. The recess 14 forms a depression in the bottom of the pan which has been designated by the numeral 13, and when the

recess 14 becomes filled with liquid fuel, the liquid fuel will run over onto the surface of the base 4 or into the pan 13. An up-draft air supply pipe 7 is mounted on the base and communicates through the opening 17, the said pipe having a collar 10 seating on the flange 6 and having the lower end thereof tapered and passing through the opening 17. The upper end of this pipe 7 is bent as indicated by the numeral 8 and is directed downwardly as designated by the numeral 9 to overhang the recess 14. The upper end 9 of the said pipe 7 which is directed downwardly over the recess 14 is arranged eccentric relative to the recess 14, the axis of the end 9 of the pipe being disposed inwardly from the axis of the recess 14. A sleeve 11 telescopes with the end 9 of the air supply pipe and has its lower end serrated, as designated by the numeral 12, in order to provide a plurality of lateral ports or discharge outlets at its lower end. This sleeve 11 is slidably engaged to the end of the air supply pipe and normally seats on the base 4 around the recess 14.

In operation, the valve 16 is open in order to permit the liquid fuel to flow into the recess 14, which in becoming filled will cause the liquid fuel to overflow onto the surface of the base 4 or into the pan proper, and the fuel may then be ignited, this being facilitated by sliding the sleeve 11 upward in order to expose the recess 14. The air ascends into the pipe 7 and is directed downwardly over the recess 14 to supply a current of air downwardly on the point of fuel supply, and the air is then directed radially or laterally through the serrations 12 toward the sides of casing (not shown). The air in passing through the pipe 7 and the sleeve 11 becomes heated and in striking or contacting with the liquid fuel in the recess 14 and on the base, will cause the liquid fuel to become evaporized and commingle with the air to be discharged through the outlet ports in order to support the combustion of the fuel. In this manner the heated air vaporizes the fuel and the flames are directed radially or laterally toward the sides of the casing in order to produce a maximum heating effect, and which will require but a minimum fuel consumption.

This burner as will be seen is simple in its construction and consists of but few parts, which may be readily detached in order to permit the burner to be conveniently

cleaned or repaired, and which also reduces the cost of manufacture of the burner.

This burner may be constructed in various sizes and styles to adapt it for various uses, and may be otherwise altered in its details within the scope of the appended claims without departing from the spirit of the invention.

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

1. In a liquid fuel burner, a base, means for supplying liquid fuel at a point on the base, an updraft pipe mounted on the base and having its upper end overhanging said point of fuel supply, and a sleeve telescoping with the latter end of the said pipe and having its lower end provided with lateral ports and seatable on the base around the said point of fuel supply.

2. In a liquid fuel burner, a base, a fuel supply pipe entering the bottom of the base for supplying liquid fuel at a point on the base, an air supply pipe having one end overhanging the said point, and a sleeve telescoping with the said end and seatable on the base over the point of fuel supply and having lateral ports at its lower end.

3. In a liquid fuel burner, a base having a recess therein, means for supplying liquid fuel to the recess, and a tubular member seating on the base around the said recess for supplying a current of air toward said point and having lateral ports at its lower end.

4. In a liquid fuel burner, a base, having an opening therethrough and a shallow recess therein, a fuel supply pipe entering the bottom of the base and extending to the said recess for supplying fuel thereto, an updraft pipe mounted on the base and com-

municating through the said opening and having its upper end directed downwardly over the said recess, and a sleeve telescoping with the latter end of the said pipe and having its lower end serrated and seatable on the base around the said recess.

5. In a liquid fuel burner, a circular base having an annular flange around its periphery, said base having an opening therethrough at one side thereof adjacent the said flange, and a flange projecting upwardly from the base around the said opening and merging into the former flange, said base having a shallow recess diametrically opposite the said opening; a fuel supply pipe entering the bottom of the base and extending to the said recess for supplying fuel thereto; an up-draft air supply pipe having its lower end passing through the said opening, said air supply pipe having a collar seating on the latter flange and having its upper end bent to over-hang the said recess; and a sleeve telescoping with the latter end of the said pipe and having its lower end provided with ports and seatable on the base around the recess.

6. In a liquid fuel burner, a base, means for supplying liquid fuel at a point on the base, and a tubular air supplying member seatable on the base around the point of fuel supply and having lateral ports at its lower end.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

FREDRIC K. HOFF.

Witnesses:

JOSEPH HANNEHAN,  
C. E. WESTHUSIN.