C. H. VON HOHENSTEIN.

HYDROCARBON BURNER.

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1,152,674. Patented Sept. 7, 1915.

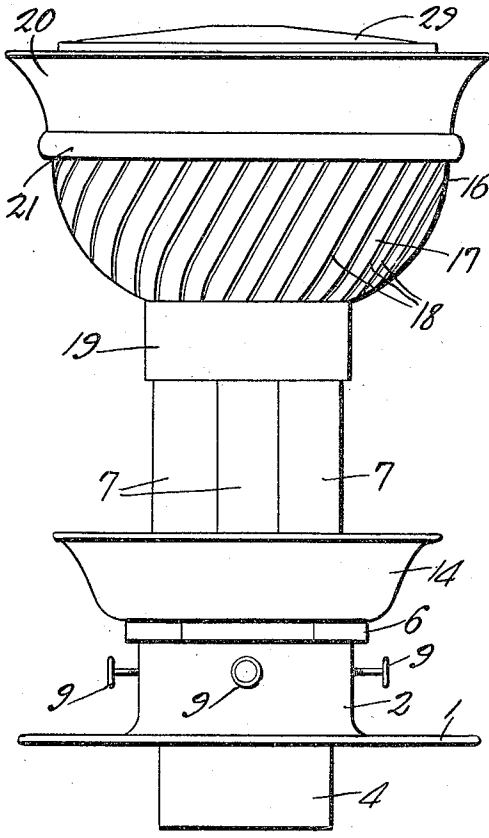


Fig. 1.

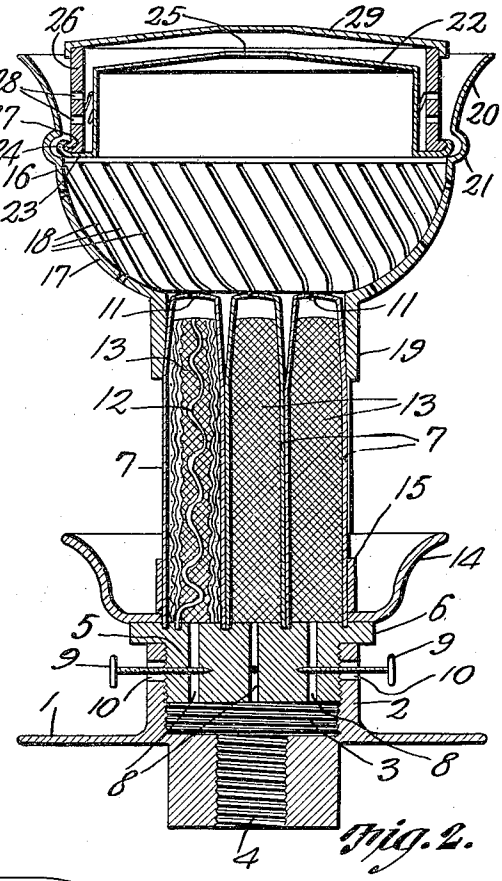


Fig. 2.

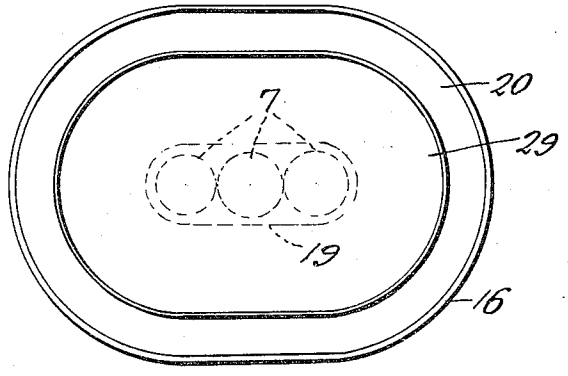


Fig. 3.

Witnesses

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HYDROCARBON-BURNER.

1,152,674. Specification of Letters Patent. Patented Sept. 7, 1915.

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To all whom it may concern:

Be it known that I, CHARLES H. VON HOHENSTEIN, a citizen of the United States, residing at San Antonio, in the county of Bexar and State of Texas, have invented a new and useful Hydrocarbon-Burner, of which the following is a specification.

The present invention appertains to liquid fuel or hydrocarbon burners, and aims to provide a hydrocarbon burner of novel and improved construction, whereby its utility is enhanced.

It is the object of the invention to provide a hydrocarbon burner embodying a unique assemblage of component parts, whereby the liquid fuel is properly strained and vaporized, whereby air is admixed with the gaseous fuel or vapor, and whereby the mixture of air and vapor is discharged in a unique manner to support the flames.

It is also within the scope of the invention to provide a burner having the characteristics above noted, but which at the same time is comparatively simple, compact and inexpensive in construction, as well as being efficient and practical in operation.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawing, wherein:—

Figure 1 is a side elevation of the improved burner. Fig. 2 is a longitudinal or vertical section thereof. Fig. 3 is a plan view of the device.

In carrying out the invention, there is provided a suitable base 1, having an upstanding socket member 2 providing a chamber 3 therein, and the base 1 is provided with a depending nipple 4 for the attachment of the liquid fuel supply pipe. The base 1 may be supported in any suitable manner, according to the use to which the burner is put, it being understood that the burner may be employed in ranges, cook stoves, and for kindred other purposes. A plug 5 is threaded or otherwise detachably engaged into the socket member 2, and is provided with an upper outstanding flange 6 seating upon the socket member 2.

A plurality of upstanding generating tubes 7 are engaged to and carried by the plug 5, any number of tubes 7 being employed, according to the capacity and size of the burner. The plug 5 is provided with a bore or duct 8 extending therethrough for each of the tubes 7, whereby the bores 8 establish communication between the chamber 3 and the lower ends of the tubes 7. Needle valves 9 are threadedly engaged into the plug 5 for controlling the flow of fuel upwardly through the bores 8 into the tubes 7, and the rim of the socket member 2 is provided with suitable apertures 10 for the passage of the needle valves 9 therethrough. The upper ends of the tubes 7 have restricted outlet apertures 11.

Mounted within each tube 7 is an upstanding spiral wire or element 12, which has its lower end engaged to the plug 5 to be supported thereby, and a sheet of wire mesh or reticulated material 13 is wound around each spiral wire 12 and fits snugly within the respective tube 7. The wound meshed wire or gauze sheets 13 serves to strain the fuel, and also assist in the generation of the vapor. The wires 12 act as heat conductors, to conduct the heat created by the flames downwardly into the fuel contained within the tubes 7, whereby the liquid fuel will be vaporized more readily.

A priming cup 14 surrounds the lower portions of the tubes 7 and seats upon the plug 5, the cup 14 having a central upstanding collar 15 surrounding the tubes 7 and providing an annular trough for receiving wood alcohol or other priming fuel, to start the generation of the vapor.

A discharge and mixing head 16 is carried by the upper ends of the tubes 7, said head 16 being of bowl shape, and having a concaved or dished portion 17 provided with an annular series of spiral or oblique air inlet slots 18, and the portion 17 has a central depending collar 19 embracing or surrounding the upper ends of the tubes 7, whereby the head 16 is detachably supported upon the tubes. The head 16 has a flared rim 20, which acts as a deflector, and the head 16 is provided with an annular outstanding corrugation 21 between the rim 20 and portion 17.

Disposed within the rim 20 of the head

16, is a hood 22 having a depending rim or apron which is provided at its lower edge with an outturned flange 23 and the edge of the flange 23 is beaded or bent, as at 24, to snap within the corrugation 21 of the head 16, for holding the hood 22 in place. The hood 22 has a central upper aperture or opening 25.

A collar 26 is seated upon the flange 23 between the rim of the hood 22 and the rim 20 of the head 16, and is provided with an annular series of outlet slots or apertures 28 directed toward the deflector 20 of the head 16. A removable cap 29 is engaged upon the upper edge of the collar 26 above the top of the hood 22. The collar 26 has a bead 27 engaging the bead 24.

In operation, the liquid fuel is supplied to the chamber 3 under pressure or by gravity, whereby it will flow upwardly into the tubes 7, and when the burner is started, the priming fuel within the priming cup 14 being ignited, will heat the generating tubes 7, to start the generation of the vapor. The vapor discharges upwardly through the apertures 11 in jets, and these jets draw air into the head 16 through the slots 18, and the air and vapor are admixed within the hood 22, and the mixture passes upwardly through the opening 25, and thence through the chamber between the hood 22 and the cap 29 and collar 26. The mixture is then discharged through the outlet slots or apertures 28, and the mixture is directed upwardly by the rim or deflector 20 of the head 16 to provide a flame of considerable intensity. After the device is started, the tubes 7 will be heated by the flames, and the generation of the vapor will be continued, it being noted that the wound sheets of gauze or meshed wire 13, and the spiral wires 12 being heated will materially assist in the vaporization of the fuel. The combustion of the gas emitted from the burner is practically perfect, and the burner is also practically smokeless and odorless in operation. The several parts may be readily separated for purpose of repair, replacement or cleaning, and the burner is of advantage for other reasons which will be obvious to those versed in the art.

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

1. In a hydrocarbon burner, a member having a bore extending therethrough, a tube having one end engaged to said member and communicating with said bore, the other end of the tube having a restricted vapor outlet, a spiral element within said tube and having one end engaged to said member, and a sheet of wire mesh wound upon said spiral element and fitting in said tube.

2. In a hydrocarbon burner, a base having an upstanding socket member and a fuel inlet, a plug engaged into said socket member and having bores extending therethrough, upstanding generating tubes carried by said plug and communicating with said bores, heat conducting elements within said tubes, the upper ends of the tubes having restricted outlet apertures, and a mixing and discharge head mounted upon the upper ends of said tubes and having air inlets.

3. In a hydrocarbon burner, a bowl-shaped head having a dished portion provided with air inlets, a central portion for receiving gaseous fuel, a flared rim forming a deflector, an annular corrugation between said deflector and dished portion, a hood arranged within said deflector and having a central opening and an outstanding flange at its edge, said flange having a bead engaged in said corrugation, a member seated on said flange and engaged to said bead, said member having a series of outlets directed toward the deflector, and a cap carried by said member over said hood.

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

CHARLES H. VON HOHENSTEIN.

Witnesses:
GLADYS LEE,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."