

UNITED STATES PATENT OFFICE.

RICHARD V. LEE, OF CALISTOGA, CALIFORNIA.

HYDROCARBON-BURNER.

1,362,017.

Specification of Letters Patent.

Patented Dec. 14, 1920.

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To all whom it may concern:

Be it known that I, RICHARD V. LEE, a citizen of the United States, residing at Calistoga, in the county of Napa and State of California, have invented certain new and useful Improvements in Hydrocarbon Burners, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to hydro-carbon burners and has for its object to provide a device of this character having a fuel supply pipe in which is incorporated a vaporizing reservoir.

15 Another object is to provide a reservoir which receives the liquid fuel as it is discharged into the supply pipe and retains the same over the flame of the burner until vaporized.

20 Another object is to provide a novel burner including a tapering valve which maintains the opening of the valve in registration with the burner and the pipe supplying the fuel, and may be operated definitely without danger of disarranging the registration of the opening.

25 Another object is to provide an incased feed pipe which discharges liquid fuel directly into the reservoir of the supply pipe, and also serves as a preliminary heater.

30 With the above and other objects in view the invention consists in the improved construction and arrangement of parts to be hereinafter more particularly described and fully claimed, and illustrated in the accompanying drawings, in which:

35 Figure 1 is a side elevation and sectional view of an embodiment of my invention.

40 Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 3.

45 Referring to the drawings, 5 indicates a pipe bent adjacent its intermediate portion 6, upon itself to provide a supply pipe 7 and a burner pipe 8. The end of the supply pipe is provided with a cap 9 having an opening 10 in which a feed pipe 11 is mounted. This pipe extends inwardly into the supply pipe and includes at its outer end a regulating valve 12 which controls the liquid fuel from the source of supply.

55 Formed integrally with the interior surface of the power portion of the supply

pipe 7 is a wall 13 which extends upwardly in the pipe and terminates below the transverse center thereof. A similar wall 14 is formed in the supply pipe in spaced relation to the wall 13, the two walls coöperating with the supply pipe to form a reservoir into which the liquid fuel discharged by the feed pipe is received. The wall 13 is positioned near the receiving end of the supply pipe, while the wall 14 is positioned adjacent the bent portion 6 so that a reservoir is provided which extends nearly the entire length of the supply pipe. By this means the liquid fuel received is distributed over a relatively large surface so that vaporizing of the fuel is accomplished rapidly and the possibility of liquid fuel reaching the burner is eliminated.

The end 15 of the burner pipe 8 is closed, while penetrating the intermediate upper portion thereof is an opening 16 in which a burner 17 is mounted.

The burner comprises a body portion 18 and a threaded stem 19. An opening 20 is provided centrally of the burner and extends through the stem, this opening being the one through which the vaporized fuel passes. The stem 19 is intended to be disposed in the opening 16 while the body portion 18 projects above the burner pipe 8. Extending transversely of the body 18 is a tapering bore 21 adapted to receive a valve 22. This valve comprises an elongated stem providing an operating handle 23 and having its end 24 bent in angular relation to the handle portion. The end 24 is tapered as at 25 and has its extremity threaded. A plurality of openings 26 extend transversely of the tapered portion and each other, the openings being formed in various sizes. The tapering end 25 is mounted in the tapering bore 21 of the burner, a nut 27 being threaded on the end and a cotter pin 28 passes through the nut and end to hold the same in position. By this means the tapering valve is caused to maintain the proper position at all times and is capable of being oscillated to bring the desired openings in the tapered position 25 in registration with the opening 20 in the burner without danger of the valve disengaging itself from the burner.

I do not desire to limit myself to the particular construction of handle for operating the valve, as the valve may be operated in a number of ways such as extending the

handle portion 23 outwardly in alinement with the tapering end.

By the novel arrangement of the feed pipe 11 in view of the fact that it is engaged by the supply pipe 7, a preliminary heating operation is performed when the liquid fuel is admitted into the feed pipe, as considerable heat is circulating at all times around the feed pipe. The inner end 10 of the feed pipe rests on top of the wall 13 so that the liquid is discharged directly into the reservoir, the reservoir being the hottest portion of the burner as it is disposed directly over the flame and as it extends the 15 greater part of the length of the supply pipe 7 and engages the hot bottom surface of the reservoir, vaporizing thereof is quickly accomplished. The vapor passes over top of the wall 14 around the bent portion 6 20 into the burner pipe and through the burner where it is ignited. A flame spreader 28 surrounds the supply pipe 7 and is positioned directly over the flame so that the flame will come in contact therewith and 25 radiate.

From the foregoing it will be readily seen that this invention provides a novel form of hydro-carbon burner which does not require any special tanks or chambers in connection with the supply pipe in which to 30 vaporize the fuel, but incorporates a reservoir in the supply pipe by the provision of walls so that the liquid fuel is maintained directly over the flame and passage thereof 35 obstructed until vaporized. In addition to this novel form of valve including a plu-

rality of graduated openings is provided for releasing the vaporized fuel in the desired quantities.

What is claimed is:

1. In a hydro-carbon burner, a supply pipe, a feed pipe disposed in one end of said supply pipe in spaced relation to the walls of said pipe, walls disposed interiorly of said supply pipe in spaced relation to each other, said walls terminating adjacent the center of said pipe and forming a reservoir therein, a burner pipe communicating with the supply pipe, a burner projecting from said burner pipe adjacent the reservoir and a valve extending transversely of said burner and the flame opening thereof. 40 45 50

2. As an article of manufacture, a hydro-carbon burner comprising a supply pipe, walls disposed interiorly of said supply pipe in spaced relation to each other and the end portions of the pipe, the top of each wall being disposed adjacent the center of the pipe, a feed pipe disposed in one end of said supply pipe in spaced relation to the walls of said pipe, the inner end of said feed pipe extending over the top of one of said walls, said last mentioned wall and end of the supply pipe cooperating to provide a heat chamber for the feed pipe, a burner pipe communicating with the supply pipe, a burner in said pipe, and means for controlling said burner. 55 60 65

In testimony whereof I hereunto affix my signature.

RICHARD V. LEE.