W. H. TRANTER.

HYDROCARBON BURNER.

APPLICATION FILED OCT. 13, 1913.

1,136,848.

Patented Apr. 20, 1915.

2 SHEETS—SHEET 1.

Fig. 1

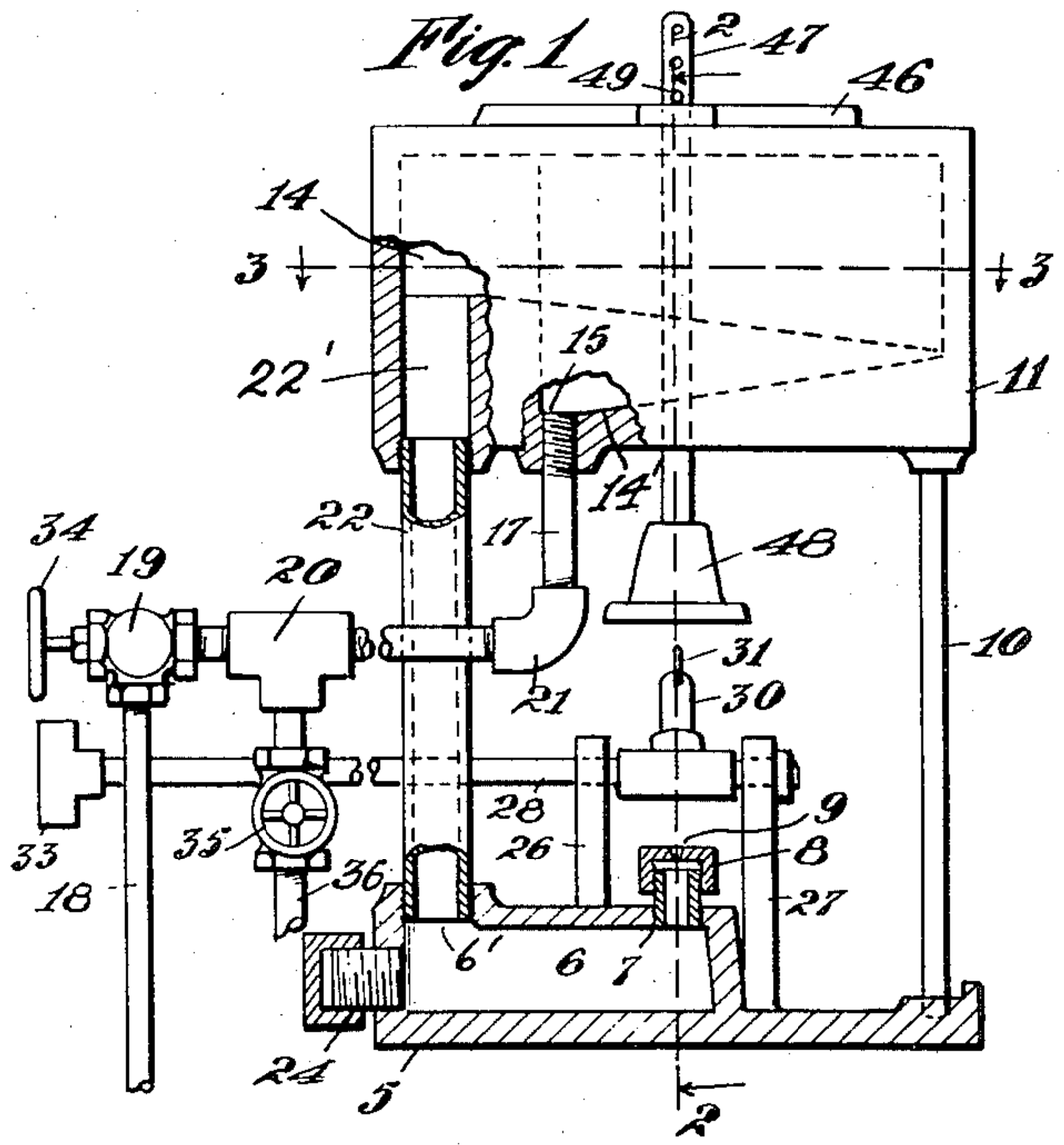


Fig. 2.

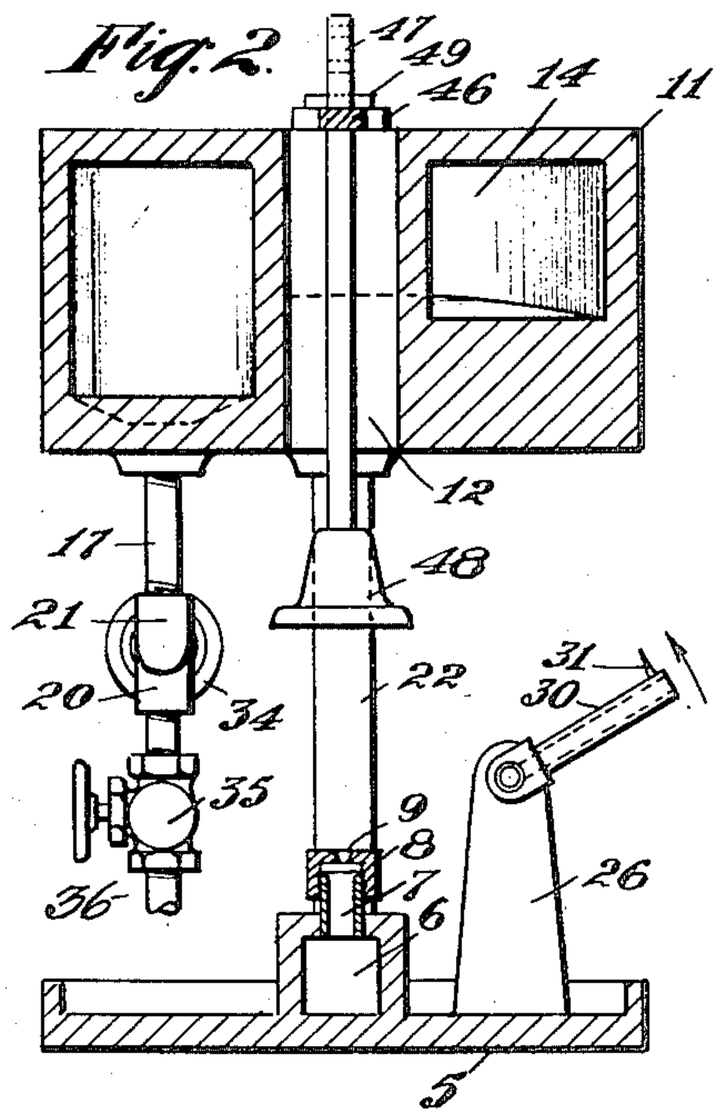


Fig. 3.

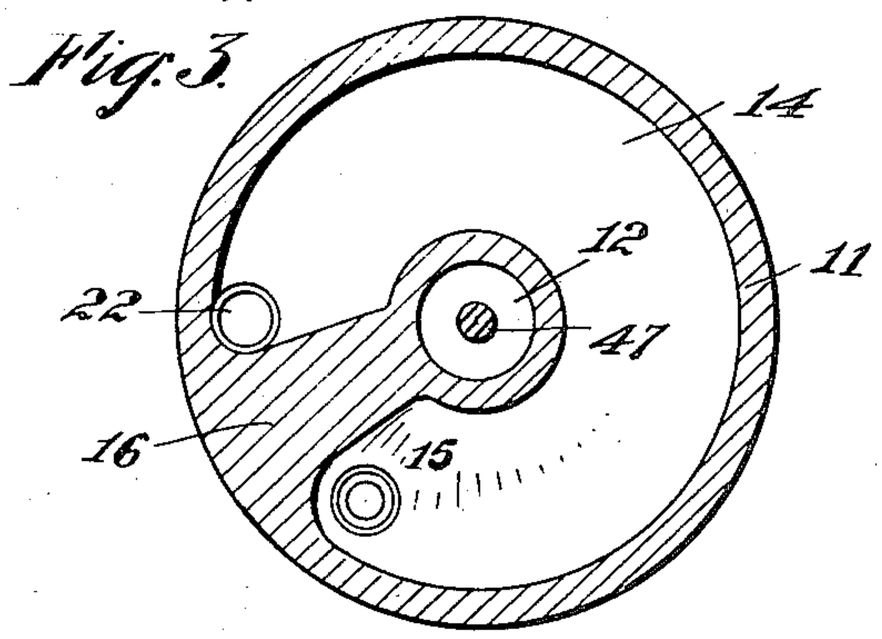
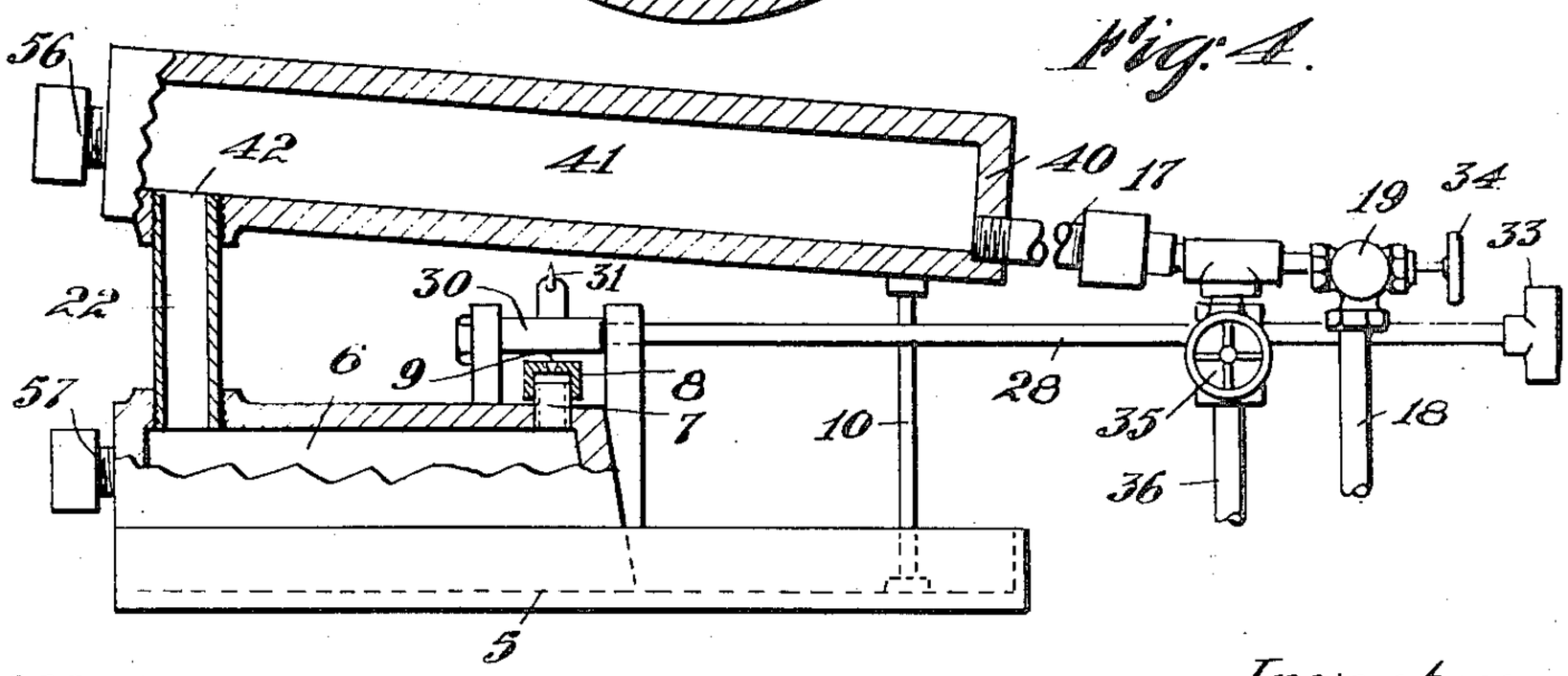


Fig. 4.



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2 SHEETS—SHEET 2.

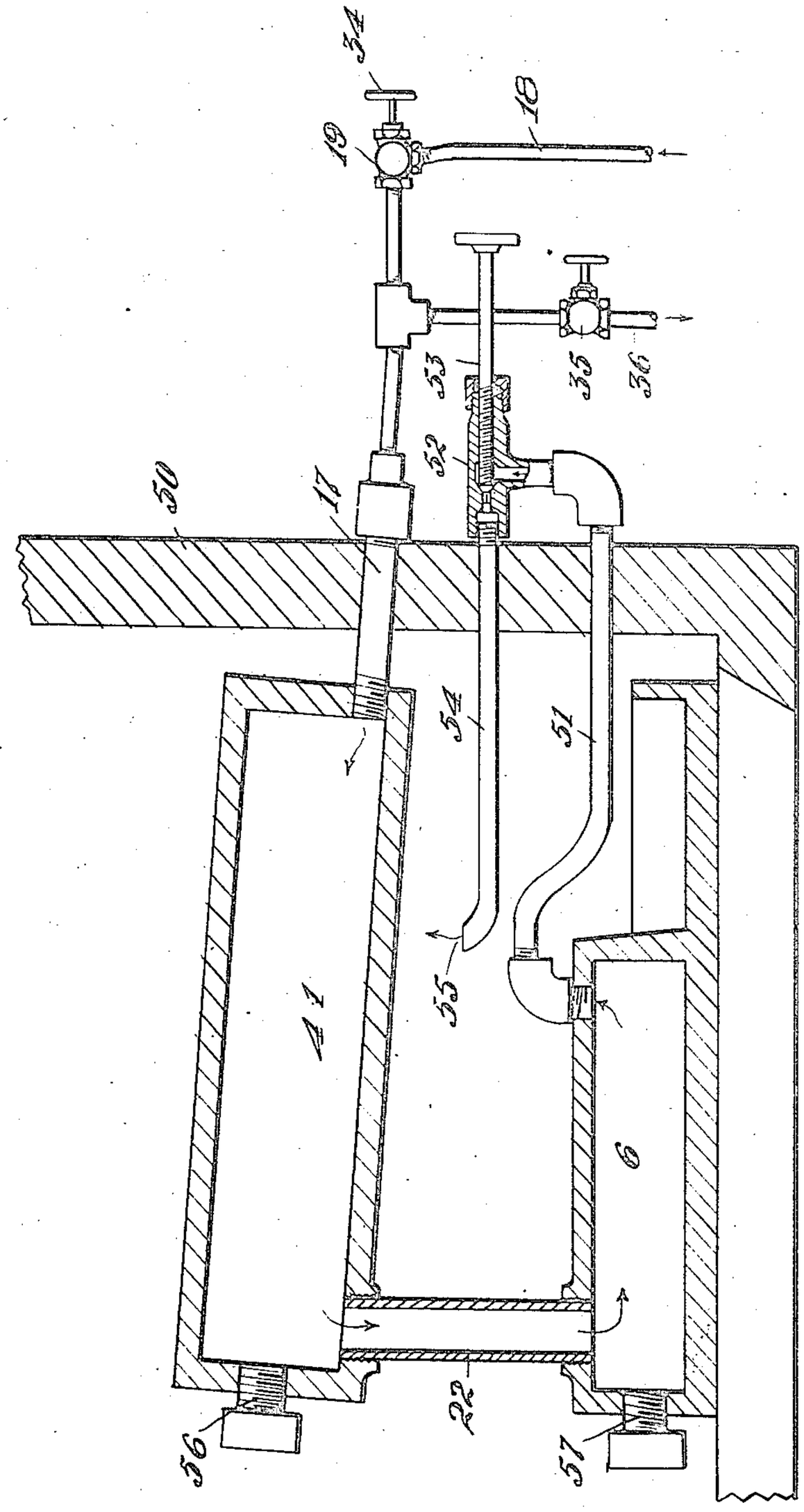


Fig. 2.

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UNITED STATES PATENT OFFICE.

WILLIAM H. TRANTER, OF LOS ANGELES, CALIFORNIA.

HYDROCARBON-BURNER.

1,136,848. Specification of Letters Patent. Patented Apr. 20, 1915.

Application filed October 13, 1913. Serial No. 794,834.

To all whom it may concern:

Be it known that I, WILLIAM H. TRANTER, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles, State of California, have invented new and useful Improvements in Hydrocarbon-Burners, of which the following is a specification.

This invention relates to hydrocarbon burners, and the principal object is to provide a burner having means to drain any residuum that may form in the generating chamber.

It is also an object to provide a generating chamber placed in the path of the burning gases together with means for cleaning the burner nozzle while the same is in operation.

It is a further object to provide a hydrocarbon burner with an adjustable bell or deflector supported over the burner opening to deflect the flames therefrom as desired.

In the drawings accompanying this specification, Figure 1 is an elevation partly in section of the hydrocarbon burner. Fig. 2 is a section on the line 2—2 of Fig. 1, viewed in the direction indicated by the arrows. Fig. 3 is a cross section of the generator chamber on the line 3—3 of Fig. 1, viewed in the direction indicated by the arrow. Fig. 4 is a longitudinal vertical section with parts in elevation of a modification of the improved hydrocarbon burner. Fig. 5 is a modification in which a burner adapted to be regulated by a needle valve is shown.

Heretofore in the operation of hydrocarbon burners no provision has been made for the draining off of the residuum in the generating chamber and this has frequently resulted in the clogging of the latter making it necessary to close down the burner and withdraw the heavy residuum and carbonated material therefrom by exercise of considerable labor.

This invention overcomes the above difficulties by providing means for draining the residuum to a dependent portion of the generator and in a position to be agitated or withdrawn at any desired time without materially interrupting the use of the burner.

More specifically in the drawings, 5 designates a dish-shaped base plate forming a generating pan and having formed thereon a hollow chamber 6 having an opening therein within which is inserted a nipple 7 having a cap 8 secured thereon in which is bored an orifice 9 for the escape of the gases from the chamber 6 the nipple and cap constituting the burner nozzle.

Extending upwardly from the plate 5 and supported by suitable legs 10 is a generating chamber 11 preferably formed as a cylindrical flattened structure having a central opening 12 therethrough, the side, top and bottom walls inclosing a chamber 14 which is formed with an inclined bottom or floor 14′ extending from the point 15 upwardly and around the opposite side of a partition wall 16 which divides the chamber into one continuous or encircling inclosure around the central opening 12. In the extremities of this inclined floor are provided apertures, the lowest of which is adapted to receive the nipple 17 forming a connection to the oil supply 18 through a valve 19, a T 20 and other connections; an L 21 forms a part of a connection between the valve 19 and the nipple 17.

The higher portion of the floor is apertured in a direction parallel to the pipe 17 to provide a threaded bore 22′ for the pipe 22 which forms one of the supports for the generator and is connected with the aperture 6′ leading into the gas chamber 6. The gas chamber 6 is provided with an opening entering one wall which is closed by means of a plug 24 to permit of access being had to the interior of the chamber 6 for cleaning purposes. Extending from the plate 5 are the brackets 26 and 27 which are bored and adapted to form bearings for a pipe 28 preferably horizontally disposed in relation to the horizontal plate 5, this pipe carrying intermediate of the brackets a T fitting, in one opening of which is inserted a short length of pipe 30 having a pin 31 inserted therein and adapted to register with and penetrate the opening in the cap 8 to clean the same. The oppositely disposed end of the pipe 28 is provided with a T 33 which is open to the outside air, and in convenient relation to the valve handle 34 of the control valve 19 so that air admitted through the T 33 and carried through the pipe 28 may be delivered adjacent to the burner cap 8 through the pipe 30, which is open at its outer end for that purpose.

Connected with the T 20 and depending therebeneath is a valve 35 controlled with a suitable handle and adapted to control the drain pipe 36 from the generating chamber 11.

Across the opening 12 a cross bar 46 is located having an aperture therein through which is slidably mounted a rod 47 having formed on its lower end a bell 48, the rod

being provided with a plurality of openings through which the pin 49 may be inserted to adjust the relation of the bell to the flame issuing from the burner cap 8.

In the modification shown in Fig. 4 plate 5 and the other burner attachments are practically the same as shown in Figs. 1 to 3, the generator consisting of an elongated rectangularly formed structure supported in an inclined position in relation to the plate, the control pipe valve 19 with its connections entering the lower portion 40 of the generator 41 which is provided with similar connections at its upper end 42 to the chamber 6 and the burner cap 8, the other connections being arranged the same as shown in Figs. 1 to 3, there being the inlet air pipe 28 with its T 33 and the drain valve 35 connected to the discharge pipe 36.

In the modification shown in Fig. 5 a wall 50 is shown of the furnace within which the burner is supported, the control valve 19 and the drain valve 35 being located externally of the wall, the orifice in the gas chamber 6 is connected with a pipe 51 which extends outside of the wall 50 and is provided with a valve casing 52 having a needle valve 53 therein, a burner pipe 54 being connected to the valve. The burner pipe has an orifice at the end 55 placed under the generator 41 of the type shown in Fig. 4.

To provide for cleaning the various parts of the burner, openings are made therein, the generator being provided with a plug 56 and the gas chamber with a plug 57 which are disposed in such relation that the lower portions of the castings are readily reached for cleaning.

The operation of this burner will be readily understood from the description and drawings; the drain valve 35 being closed the liquid hydrocarbon is introduced through the pipe 18 and the valve 19 to the lower portion of the generator and heat temporarily applied thereto by a torch or from fluid ignited in the base member in the usual manner. There being sufficient gas generated in the generator pressure will be relieved through the aperture in the cap 8 and become ignited and distributed by the bell 48. Should the orifice in the burner become clogged the pin 31 may be inserted to open the same without shutting down the burner and when it is desired to close down or to withdraw the fluid from the generator for any reason, the valve 19 is closed, the frame extinguished, and the valve 35 opened when any fluid residue, as asphaltum, remaining in the generator and inhibiting the operation thereof may be carefully and completely withdrawn.

What I claim is:

1. A hydrocarbon burner, comprising a base member, a generating chamber arranged above the base member having an inclined floor therein, a hydrocarbon supply pipe connected to said chamber at the lowermost portion of the floor thereof, a valve for controlling the flow of hydrocarbon through said pipe, valve controlled means for draining the generating chamber arranged in the supply pipe between the controlling valve and the generating chamber, and a burner nozzle arranged beneath the generating chamber, the interior of said nozzle communicating with the generating chamber at the upper end of the inclined bottom thereof.

2. A hydrocarbon burner, comprising a base member, a generating chamber arranged above the base member having an inclined floor therein, a hydrocarbon supply pipe connected to said chamber at the lowermost portion of the floor thereof, a valve for controlling the flow of hydrocarbon through said pipe, valve controlled means for draining the generating chamber arranged in the supply pipe between the controlling valve and the generating chamber, a gas receiving chamber below the generator, a pipe connecting said gas receiving chamber opening into the generating chamber at the highest portion of the inclined bottom thereof, and a burner nozzle connected to said gas chamber having an opening directed upwardly beneath the generating chamber.

3. A hydrocarbon burner, comprising a base member, a generating chamber arranged above the base member having an inclined floor therein, a hydrocarbon supply pipe connected to said chamber at the lowermost portion of the floor thereof, a valve for controlling the flow of hydrocarbon through said pipe, valve controlled means for draining the generating chamber arranged in the supply pipe between the controlling valve and the generating chamber, a gas receiving chamber opening into the generating chamber at the highest portion of the inclined bottom thereof, a burner nozzle connected to said gas chamber having an opening directed upwardly beneath the generating chamber, a rockable air inlet pipe opening adjacent the burner nozzle, and means carried on said air inlet pipe adapted to enter the opening of the nozzle on rocking of said pipe.

In witness that I claim the foregoing I have hereunto subscribed my name this 1st day of October 1913.

W. H. TRANTER.

Witnesses:
EDMUND A. STRAUSE,
CHAS. B. DODDER.