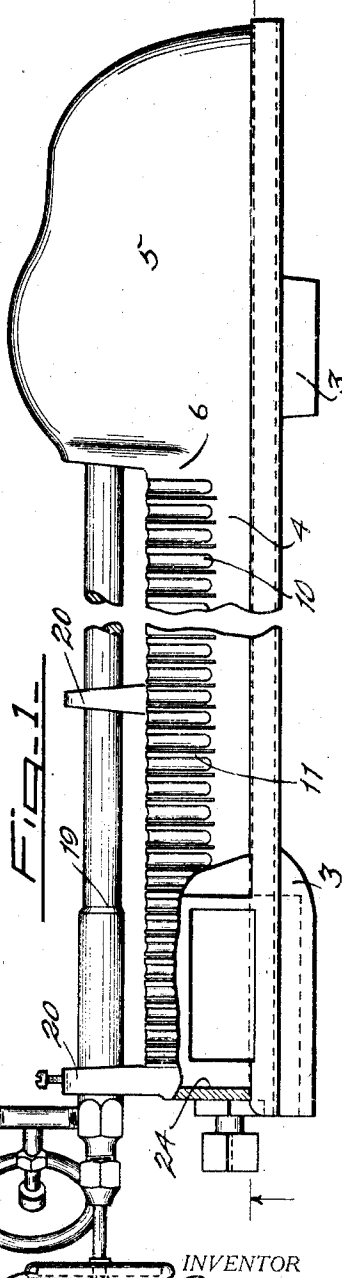
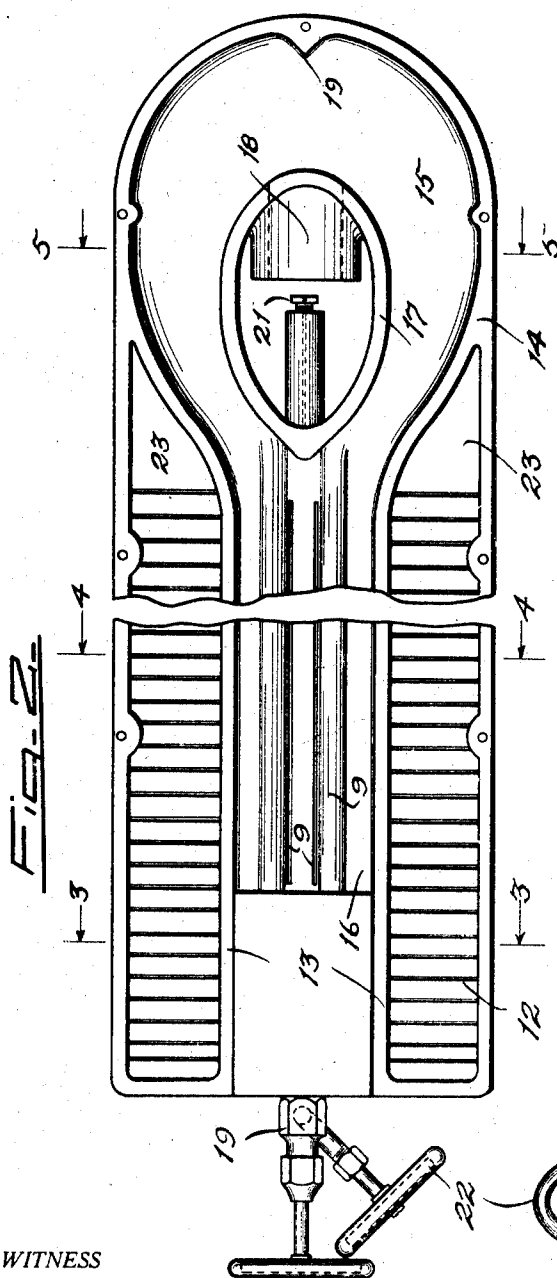


C. F. COLMAR.
 HYDROCARBON BURNER.
 APPLICATION FILED MAY 6, 1919. RENEWED NOV. 22, 1920.

1,365,816.

Patented Jan. 18, 1921.

2 SHEETS—SHEET 1.



WITNESS
Wm. F. Green

INVENTOR
 BY *C. F. Colmar*
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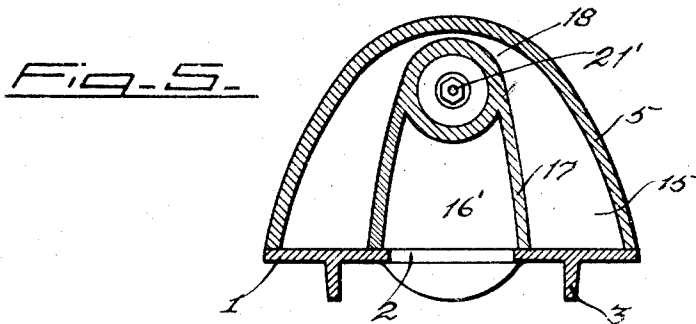
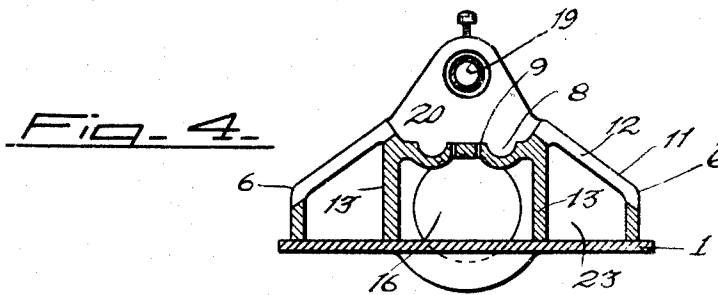
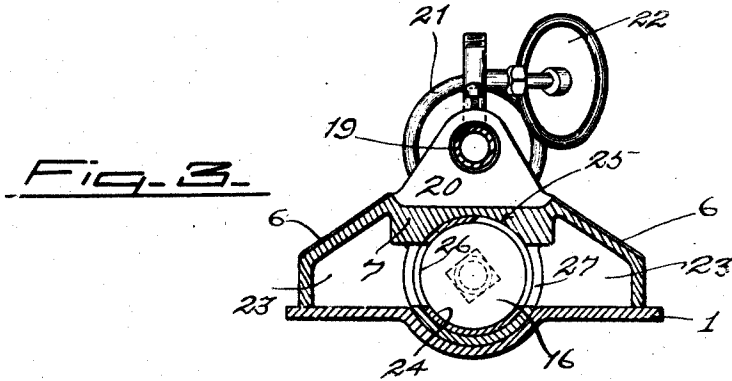
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2 SHEETS—SHEET 2.



WITNESS

Wm G Drew

INVENTOR

C. F. Colmar
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UNITED STATES PATENT OFFICE.

CLARENCE F. COLMAR, OF SAN FRANCISCO, CALIFORNIA.

HYDROCARBON-BURNER.

1,365,816.

Specification of Letters Patent.

Patented Jan. 18, 1921.

Application filed May 6, 1919, Serial No. 295,050. Renewed November 22, 1920. Serial No. 425,909.

To all whom it may concern:

Be it known that I, CLARENCE F. COLMAR, a citizen of the United States, residing at the city and county of San Francisco, and State of California, have invented certain new and useful Improvements in Hydrocarbon-Burners, of which the following is a specification.

In hydrocarbon burners or generators commonly in use, it is necessary in generating the gas from the hydrocarbon fuel at the time of starting the burner to saturate certain wick mechanisms which lie beneath the generator construction with fuel, then ignite the saturated wicks in order to generate sufficient heat to initially heat the generator to cause a combustion of the fuel therein; combustion once being obtained the flame in turn maintaining the generator at a temperature sufficient to continue combustion therein. Thus each time the burner is extinguished considerable trouble and delay is necessary in relighting the same.

My present invention relates to an improved construction whereby it is possible under certain conditions to maintain in a hydrocarbon burner a pilot flame beneath the generator without maintaining a flame in the main burner or burners, whereby the generator will be maintained at a sufficient temperature to cause combustion therein, and when it is desired to obtain a flame in the burner or burners, it is only required to increase the fuel volume and operate a valve causing an automatic ignition of the generated gas escaping from the main burner or burners.

By my improved construction I obviate the necessity of priming the burner at each time the same is fired and in doing this the time necessary to raise the temperature of the generator to the point of combustion is not required, as said generator is normally maintained at a combustion temperature by the pilot flame maintained preferably beneath the same. A further object of my invention is to provide a construction of this pilot type wherein the main burners may be connected with the pilot burner when the device is in use, whereby a maximum of heat with a minimum of fuel is obtained, and to provide in such a construction a controllable valve for separating or interrupting the communication between the pilot channel and the burner channels when it is de-

sired to maintain only a pilot or small flame of the generated gas beneath the generator.

With the above mentioned and other objects in view, the invention consists in the novel construction and combination of parts hereinafter described, illustrated in the accompanying drawings and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

To more fully comprehend the invention, reference is directed to the accompanying drawings, wherein—

Figure 1 is a view in side elevation of the preferred embodiment of my invention, with one side wall thereof broken away illustrating a conventional form of controlling valve capable of operation to control the connection of the pilot and burner passages.

Fig. 2 is a view in bottom plan of the preferred embodiment of my construction removed from its base and disclosing more particularly the various channels therein.

Fig. 3 is a transverse sectional view taken on line 3—3 of Fig. 2, viewed in the direction of the arrows and disclosing the channel controlling valve in opened position.

Fig. 4 is a transverse sectional view taken on line 4—4 of Fig. 2, viewed in the direction of the arrows, disclosing more fully the pilot and burner channels and also the formation of the openings or slots within the burner wall.

Fig. 5 is a transverse sectional view taken on line 5—5 of Fig. 2, viewed in the direction of the arrows, disclosing more particularly the air inlet and the generator tip end.

Referring more particularly to the drawings, wherein like characters of reference designate corresponding parts, the numeral 1 indicates an elongated base of any suitable construction and configuration, the same being preferably provided adjacent one end with an air inlet opening 2 and, if desirable, the base may be provided with legs or rests 3.

Resting on the base 1 is a suitable body member 4 of any suitable material and united to the base at its edges in any suitable manner, said body member in plan be-

ing substantially the same shape as the base and provided at one end with a hollow gasifying dome 5, the remainder of said body being formed with inclined main burner walls 6 connected by a relatively flat transverse wall 7 formed in its upper surface with the longitudinally disposed wick receiving depressions 8 positioned preferably one on either side of the longitudinally disposed pilot burner slots or openings 9. The inclined walls 6 are provided with suitable corrugations 10 extending transversely of the walls and the raised portions 11 of which are slotted, as at 12, for their full depth providing the main burner slots or openings. By providing the corrugations in the inclined walls and slotting the raised portions thereof, I provide burner openings which may be readily cleaned should the same become clogged, and in cleaning said slots a saw blade or other suitable implement may be inserted therein and moved longitudinally thereof whereby all material which may lodge in the slots is readily removed therefrom.

The interior of the body 4 in rear of the closure 5 is divided into a plurality of longitudinal channels by the interior dividing walls 13 extending longitudinally of the body and of a width to contact at their lower edge with the surface of the base 1, as in Figs. 4 and 5 of the drawings. Said walls 13, adjacent the dome 5, join the main side walls 14 of said dome, thus providing within the dome a channel 15 which communicates with the central or pilot channel 16 within the body 4. Formed in the center of the dome 5 is an air passage or inlet 16' separated from the channel 15 by the wall member 17 which extends to a point surrounding the opening 2 in the base plate 1, said wall being provided with an air inlet opening or mixing chamber opening 18, the said walls of which are preferably parallel with the side walls of the body 4, and the generated gases intermixed with air which pass through said mixing chamber are forced preferably against the directing edge or V-shaped projection 19 within the passage 15, causing said gases to pass on either side of the opening 16' and into the pilot channel 16.

Any suitable form of generator for supplying hydrocarbon fuel to the burners may be employed, the same being illustrated in the form of a tubular member 19 disposed longitudinally above the pilot openings 9 and supported by suitable brackets 20, the discharge end or nozzle tip 21' thereof terminating adjacent and preferably centrally of the inlet end of the mixing chamber 18, whereby the gases passing therefrom under pressure will be forced into the mixing chamber and in their passage therethrough intermingle with air which is admitted

through the passage 16'. The fuel fed into the generator 19 under pressure from any suitable source is controlled by a suitable valve 21 operating at the generator outlet and the fuel stream admitted into the generator to be controlled by the valve 21 is in turn regulated by the valve 22 before it enters the generator.

When it is desired to extinguish the flame in the main burners 12 during such time as the flame thereof is not required, I prefer not to entirely shut off the fuel passing from the nozzle 21', which would permit the generator to become cool but I prefer to maintain a pilot flame beneath said generator which maintains the generator heated at all times, and only requires that a suitable controlling means be operated to connect the channel 16 with the main burner channels 23, illustrated one on either side thereof.

Any suitable means may be employed for interrupting the passage of the generated gas from the channel 16 to the channels 23, and in carrying out this idea I employ a conventional turn plug valve 24 rotatably mounted in a suitable seat 25 formed in the outer end of the passage or channel 16, the side walls of said valve being provided with ports 26 which are adapted to register with suitable ports 27 in the walls 13 when it is desired to connect the channel 16 and channels 23.

When it is desired to interrupt the gas flow from said channel 16 and channels 23, the valve 24 is rotated to position the solid wall portions thereof opposite the ports 27 in the walls 13, at which time the flame in the main burners will be extinguished and a pilot flame will be maintained beneath the generator 19.

It will be obvious that when the valve 24 is operated to close the ports 27, the valve 21 in the generator 19 will be operated to reduce the gas volume passing from the tip 21' thereof, as very little gas is required to maintain the pilot flame lighted beneath the generator.

When it is desired to relight the main burners, it is only required that the valve 24 be operated to connect the channels 23 with the channels 26, and that the valve 21 of the generator 19 be opened to admit sufficient gas to pass from the tip 21 to maintain the required flame in the main burners 6.

It will be apparent that by the provision of a channel beneath the generator which is capable of being cut off from or connected with the main burners that a pilot flame may be at all times employed beneath the generator at a very little cost, and that the main burners may be readily lighted when said controlling means is operated to connect the pilot channel with the main burner channels.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:—

1. A hydrocarbon fuel burner comprising
5 a body in the form of an integral casting formed on its interior with dividing walls providing with said body a pilot burner channel and a pair of main burner channels positioned one on either side thereof and each main burner channel being provided
10 with burner openings and said pilot burner channel provided with pilot burner openings, a passage between the pilot burner and said main burner channels, means for controlling said passage, and a valve controlled
15 generator without the field of said main burner openings and overlying said pilot burner channel openings and communicating at its discharge end with the interior of
20 said pilot burner channel at the end thereof removed from the said controlled passage.

2. A hydrocarbon fuel burner comprising a single casting having formed on the interior thereof an elongated pilot burner
25 channel and a pair of elongated main burner channels positioned one on either side thereof, each of said channels being provided in its upper wall surface with burner openings and connected at one end by a controllable
30 opening, a valve for controlling said opening, and a generator overlying said pilot burner channel communicating at its discharge end with the interior thereof at a point removed from said valve controlled
35 passage.

3. A hydrocarbon fuel burner comprising a single casting formed on the interior thereof with an elongated pilot burner channel and a main burner channel, each provided
40 in its upper wall surface with burner open-

ings, said main burner channel connected at one end with one end of said pilot burner channel, a generator overlying the said pilot burner channel arranged at one side of said generator and communicating at its discharge end with said pilot burner channel
15 at a point removed from its connection with said main burner channel, whereby the generated gas is caused to pass beneath said generator prior to entering said main burner
50 channel, and a valve for controlling the connection between said channels.

4. A hydrocarbon fuel burner, comprising an elongated body having on its interior a centrally disposed elongated pilot burner
55 channel and a pair of elongated main burner channels disposed parallel therewith and positioned one on either side thereof, said channels each provided with burner openings and said main burner channels being connected at corresponding ends with one end
60 of said pilot burner channel, a valve for controlling the connection between said pilot and main burner channels, said pilot burner channel being provided at its end opposite
65 said valve with a walled opening affording an air inlet port, a mixing chamber within the wall of said opening and arranged with its walls parallel to the walls of said channel, and a generator overlying said pilot
70 burner channel with its discharge end terminating adjacent the receiving end of said mixing chamber.

In testimony whereof I have signed my name to this specification in the presence of
75 two subscribing witnesses.

CLARENCE F. COLMAR.

Witnesses:

HARRY A. TOTTEN,
D. B. RICHARDS.