April 8, 1924. 1,490,064

H. B. YOUNG

OIL BURNER

Filed Nov. 20. 1922

FIG. 1

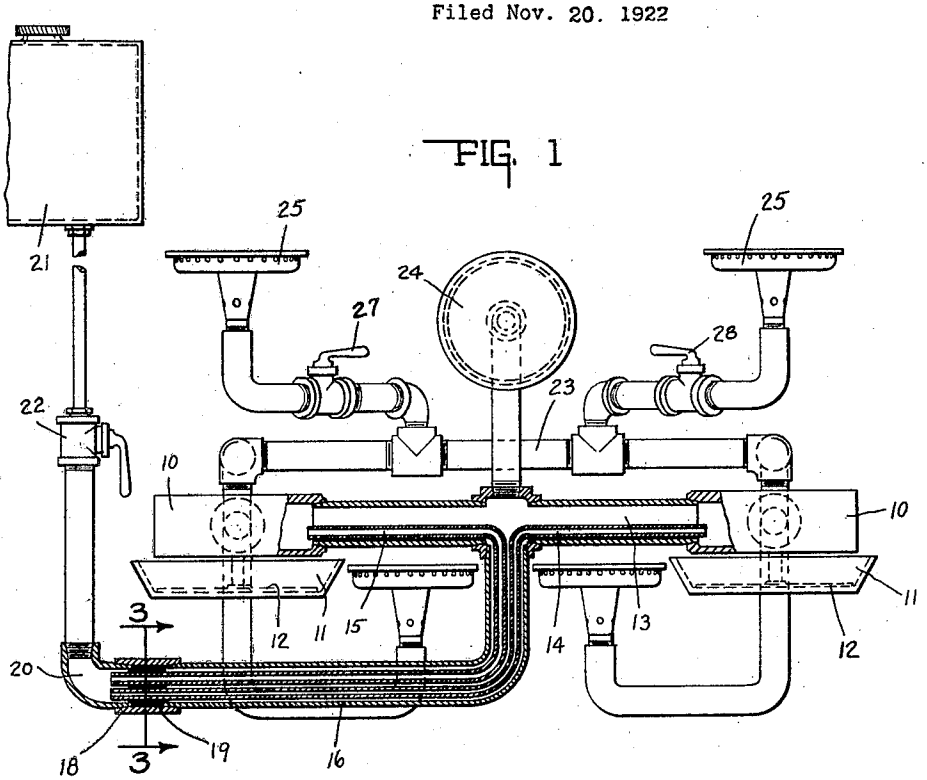


FIG. 2

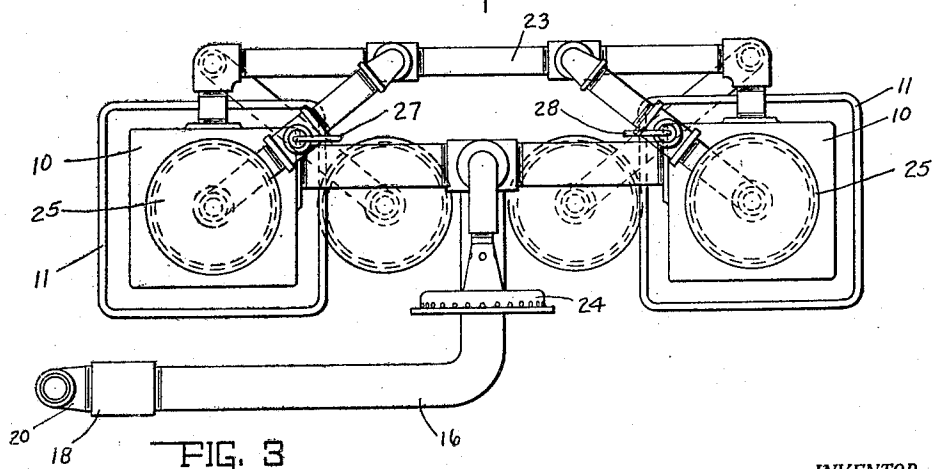
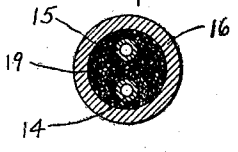


FIG. 3



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UNITED STATES PATENT OFFICE.

HARVEY B. YOUNG, OF INDIANAPOLIS, INDIANA.

OIL BURNER.

Application filed November 20, 1922. Serial No. 602,076.

To all whom it may concern:

Be it known that I, HARVEY B. YOUNG, a citizen of the United States, and a resident of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Oil Burner; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like numerals refer to like parts.

This invention relates to a hydrocarbon burner for burning gasoline, fuel oil and the like.

The principal object of the invention lies in the construction thereof and particularly the use of a plurality of generators having connecting passages for permitting the free circulation of the gases and securing equalization of pressure therein, thereby securing the absorption and removal of carbon. This closed and equalized generating surface eliminates or greatly minimizes the carbonization of the generators and particularly the burners, thereby increasing the efficiency thereof and preventing any appreciable amount of carbon deposits collecting or forming on the walls of the generators.

A further feature of the invention lies in the arrangement of the burners with respect to the fuel inlet pipes, still a further feature is wherein the pipes are preheated by hot gases passing downwardly into a surrounding casing.

The full nature of this invention will be understood from the accompanying drawings and the following description and claims.

In the drawings Fig. 1 is a side elevation of the burner with parts broken away to show the same and other parts in section. Fig. 2 is a plan view thereof. Fig. 3 is a section taken on the line 3—3 of Fig. 1 and in the direction of the arrows.

In the drawings there is shown a pair of generators comprising the chambers 10, having mounted immediately beneath them the generator heating cups 11 provided with a sheet asbestos false bottom 12. The generators 10 are directly connected with each other by the passage 13 through which the fuel inlet pipes 14 and 15 are adapted to pass for discharging the liquid fuel directly into said generators. The fuel in the pipes 14 and 15 thus is preheated by the fuel in the passage 13. Connected with the passage 13 there is a casing 16 extending downwardly and away therefrom through which the pipes 14 and 15 also pass so that the heated gases circulating through the passage 13 will pass into said casing so as to preheat the fuel passing through the pipes 14 and 15. Near the end of the casing 16 there is a coupling 18 inclosing the asbestos packing 19 for preventing the fuel from entering said casing. Connected with the coupling there is a fuel line 20 connecting with the supply tank 21. In the fuel line there is positioned a supply valve 22 for regulating the feed of the fuel from the supply tank to the burners.

Liquid fuel is placed in the lighting cups 11 and absorbed by the asbestos bottoms 12 and is then ignited, the flame from the fuel being sufficient to heat the generators 10 and the fuel contained therein for generating gas in the usual and well known manner. The gas generated will circulate through the passage 13 and connecting pipe 23, which communicates with the sides of the respective generators. The generators 10, and pipes 13 and 23 form a closed generating circuit. If the pressure in one generator creates pressure in the other, or if more gas is drawn from one than the other, there will naturally be a tendency for the gas to flow to the lower pressure generator and also pass through the passage 13 and pipe 23, whereby circulation of gas will be created. The generators 10 being made of bronze or cast iron, preferably the former, the carbon formed therein will not cake upon the walls to any appreciable extent but will remain free to be suspended in the gas and carried off therewith by the current of gas set up through said generators by reason of the circulation above referred to. A portion of the gas circulating through the passage 13 will pass into and fill the casing 16 surrounding the inlet pipes 14 and 15. The carbon will become broken up in small particles, the better to be carried in suspension so as to be disposed of by passing out through the burner with the gas.

Connected directly with the passage 13 there is a central burner 24 so positioned that a portion of its flame will be directed against the walls of the generators 10 for heating the same after the gas begins to generate, the heat from which will also heat the passage 13 and inlet pipes 14 and

15 extending therethrough. Connected directly with the pipe 23 there are burners 25 and 26 which are controlled by the shut off valves 27 and 28 respectively, each of said burners being connected through said pipe to the generator so as to draw gas therefrom.

It will be noted from Figs. 1 and 2 that there is a closed generating circuit and preferably the burners are connected thereto in balanced relation with respect to each other or with respect to the generators or both.

The invention claimed is:

1. A hydrocarbon burner comprising a plurality of generators, means for preheating said generators, means for feeding liquid fuel thereto, passage means directly connecting said generators for forming a closed generating circuit permitting the gas to circulate freely therebetween, and a casing communicating with said passage means and surrounding said fuel feeding means into which the heated gases may pass for preheating said means.

2. A hydrocarbon burner comprising a plurality of generators, means for preheating said generators, means for feeding liquid fuel thereto, a plurality of passageways directly connecting said generators for forming a closed generating circuit permitting the free circulation of gas therebetween, and a casing surrounding said fuel feeding means and communicating with one of said passages into which the heated gases passing therethrough may pass for preheating the same, substantially as and for the purpose described.

3. A hydrocarbon burner comprising a plurality of generators, means for preheating said generators, means for feeding liquid fuel thereto, and a plurality of passageways directly connecting said generators for forming a closed generating circuit permitting the free circulation of gas therebetween, one of said connecting passageways enclosing said fuel feeding means for preheating the same.

4. A hydrocarbon burner comprising a plurality of generators, means for preheating said generators, means for feeding liquid fuel thereto, a plurality of passageways directly connecting said generators for forming a closed generating circuit permitting the free circulation of gas therebetween, one of said connecting passageways enclosing said fuel feeding means for preheating the same, and a plurality of burners each connected to said closed generating circuit in balanced relation with respect to said generators.

5. A hydrocarbon burner comprising a plurality of generators, means for preheating said generators, means for feeding liquid fuel thereto, and a plurality of passageways directly connecting said generators for forming a closed generating circuit permitting the free circulation of gas therebetween, one of said connecting passageways enclosing said fuel feeding means for preheating the same, and a burner connected to the closed generating circuit in balanced relation with respect to said generators.

6. A hydrocarbon burner comprising a plurality of generators, means for preheating said generators, means for feeding liquid fuel thereto, a plurality of passageways directly connecting said generators for forming a closed generating circuit permitting the free circulation of gas therebetween, one of said connecting passageways enclosing said fuel feeding means for preheating the same, a plurality of burners each connected to said closed generating circuit in balanced relation with respect to said generators, and a burner connected to the closed generating circuit in balanced relation with respect to said generators.

In witness whereof, I have hereunto affixed my signature.

HARVEY B. YOUNG.