Oct. 3, 1939. L. V. FOGAS 2,174,626

GAS BURNER

Original Filed April 10, 1936

Fig. 1.

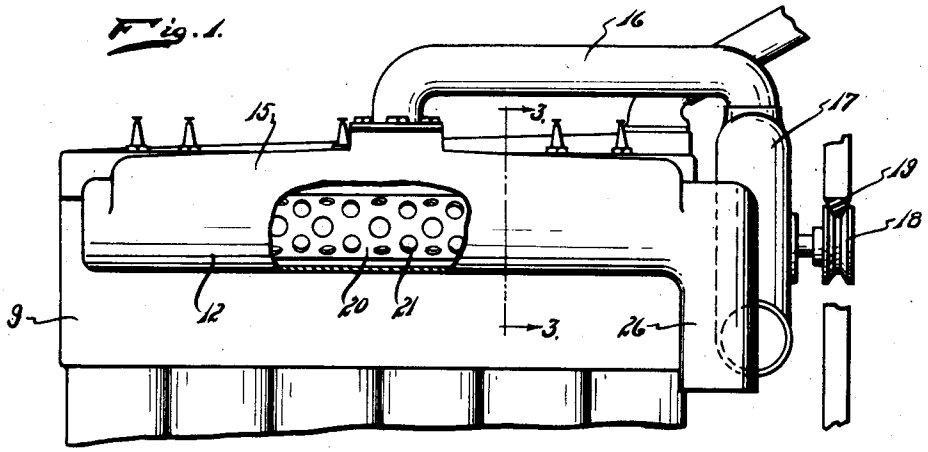


Fig. 2.

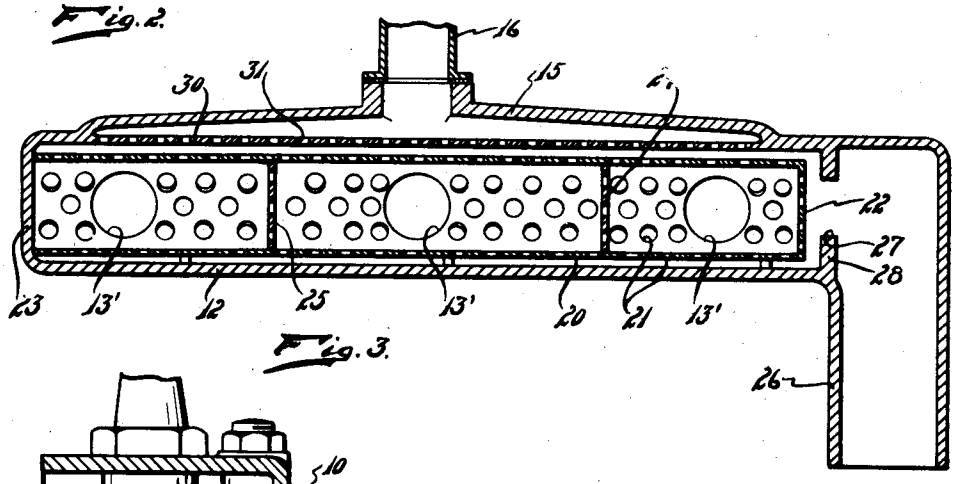
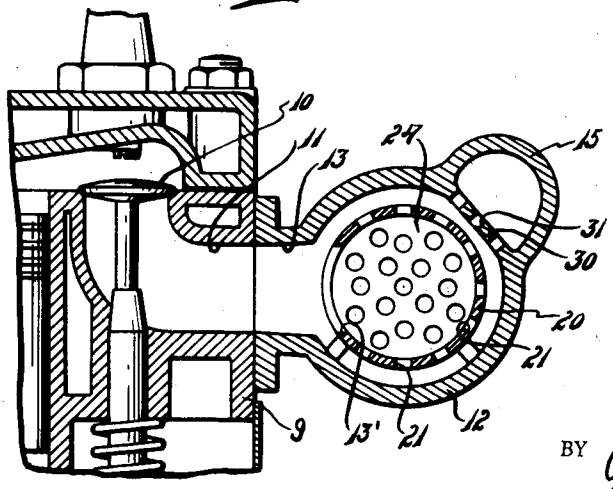


Fig. 3.



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2,174,626

GAS BURNER

Livius V. Fogas, Detroit, Mich., assignor of one-eighth to Friteof Anderson, one-eighth to Carl C. Johnson, and one-tenth to Gelio D. Seghi, all of Detroit, Mich.; Edward P. Echlin, administrator of the estate of said Livius V. Fogas, deceased

Application April 10, 1936, Serial No. 73,707
Renewed April 25, 1938

7 Claims. (Cl. 60—30)

My invention relates to a new and useful improvement in a gas burner adapted for use in completing the combustion of gases which are exhausted from internal combustion engines and has for its object the provision of a device of this class which will be simple in structure, economical of manufacture, durable, highly efficient in use and easily and quickly installed.

Another object of the invention is the provision of a mechanism mounted in the exhaust manifold and so arranged and constructed as to facilitate further combustion of the gases exhausted from an internal combustion engine.

Another object of the invention is the provision in a device of this class of a perforated member mounted in the exhaust manifold for the reception of exhaust gases and the provision of blast delivery means whereby sufficient air may be delivered into the presence of the exhaust gases to assist in combustion.

Other objects will appear hereinafter.

The invention consists in the combination and arrangement of parts hereinafter described and claimed.

The invention will be best understood by a reference to the accompanying drawing which forms a part of this specification, and in which,

Fig. 1 is a side elevational view of the invention with a part broken away showing it mounted on the engine.

Fig. 2 is a longitudinal, vertical, sectional view of the invention.

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

In the drawing I have illustrated the invention used with an internal combustion engine 9 having an exhaust control valve 10 to control the flow of the exhaust gases to the exhaust port 11. A number of these valves are, of course, provided on the multi-cylinder engines but sufficient is illustrated to indicate the nature of the invention. A manifold 12 is mounted on the side of the engine block 9 and has openings 13 communicating with the exhaust ports 11. Extending lengthwise of the manifold is a hood-forming portion 15 which communicates with the manifold and also communicates with a conduit 16 adapted to deliver air from the blower 17 which is operated by means of the pulley 18 and the belt 19. The communication of the hood-forming portion 15 with the interior of the manifold is through the openings 31 formed in the wall 30. Positioned in the exhaust manifold is a cylinder 20 having perforations 21 formed therein and closed at one end with the perforated end wall 22. The opposite end abuts against the end wall 23 of the manifold 12. This perforated cylinder 20 is provided with the openings 13' positioned opposite the inlet openings 13 of the intake manifold 12, so that the exhaust gas will flow into the perforated cylinder 20. The air delivered from the blower will also enter the perforated cylinder 20 through the perforations 21 and mingle with the gases. Perforated partitions 24 and 25 are mounted in the cylinder 20. An outlet pipe 26 communicates through the opening 27 formed in the end wall 28 of the manifold 12.

The construction is such that as the hot and burning exhaust gases are passed into the cylinder 20 the air delivered thereto will be delivered in such volume as to further assist combustion and thus effect a complete combustion of the gases. In this way the obnoxious odors which are frequently imbued from internal combustion engines may be eliminated and the noiseless operation of the engine effected free from odors.

While I have illustrated and described the preferred form of construction, I do not wish to limit myself to the precise details of structure shown, but desire to avail myself of such variations and modifications as may appear within the scope of the appended claims.

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

1. In combination with an internal combustion engine, an exhaust manifold; a perforated cylindrical member mounted in said manifold, one end thereof engaging against the end of said manifold; a perforated wall closing the opposite end of said cylindrical member, said cylindrical member communicating with the exhaust ports of said internal combustion engine; perforated partitions in said cylinder; a hood on said manifold, a portion of said manifold beneath said hood being perforated; and blast delivery means for delivering air into said hood under pressure.

2. In combination with an internal combustion engine, an exhaust manifold; a perforated cylindrical member mounted in said manifold, one end thereof engaging against the end of said manifold; a perforated wall closing the opposite end of said cylindrical member, said cylindrical member communicating with the exhaust ports of said internal combustion engine; perforated partitions in said cylinder; a hood on said manifold, a portion of said manifold beneath said hood being perforated; blast delivery means for delivering air into said hood under pressure; and an outlet pipe communicating with said mani-

fold, adjacent the perforated end of said cylinder.

3. A device of the class described, adapted for use with an internal combustion engine having exhaust ports, comprising: an exhaust manifold communicating with said ports; a perforated cylinder mounted in said manifold concentrically thereof, the periphery of said cylinder being spaced from the inner surface of said manifold and one end of said cylinder engaging the inner end of said manifold, said end wall of said manifold forming a closure for said end of said cylinder; a perforated wall closing the opposite end of said cylinder, said cylinder at each of said exhaust ports having a large opening formed therein; and means for delivering air under pressure into said manifold.

4. In combination with an internal combustion engine having exhaust ports, an exhaust manifold positioned over and communicating with said exhaust ports; a perforated cylinder positioned in said manifold, the periphery of said cylinder being spaced from the inner surface of said manifold; a hood on said manifold, said manifold being perforated beneath said hood; means for delivering air under pressure into said hood; and an outlet pipe communicating with said manifold, adjacent one end of said cylinder.

5. In combination with an internal combustion engine having exhaust ports, an exhaust manifold positioned over and communicating with said exhaust ports; a perforated cylinder positioned within said manifold concentrically thereof and having its periphery spaced from the inner surface thereof; an end wall on said manifold having an opening formed therein, said cylinder terminating at one end, adjacent said end wall; a perforated closure for said end of said cylinder; an outlet pipe communicating with said manifold through the opening in said end wall of said manifold; a hood on said manifold, said manifold being perforated beneath said hood; and blast producing means for delivering air under pressure into said hood.

6. In combination with an internal combustion engine having an engine block and exhaust ports opening therethrough, an exhaust manifold mounted on said block and positioned over and communicating with said exhaust ports; a perforated cylinder positioned within said manifold and having its periphery spaced from the inner surface thereof; an outlet pipe communicating with said manifold adjacent one end thereof; a hood on said manifold, said manifold having an opening formed therein communicating with said hood; and blast producing means for delivering air under pressure into said hood.

7. In combination with an internal combustion engine having an engine block and provided with exhaust ports therein, an exhaust manifold mounted on said block positioned over and communicating with said exhaust ports; a perforated cylinder positioned within said manifold and having its periphery spaced from the inner surface thereof; a hood on said manifold there being a plurality of openings formed in said manifold communicating with said hood; means for delivering air under pressure to said hood; and an outlet pipe communicating with said manifold adjacent one end thereof.

LIVIUS V. FOGAS.