Aug. 4, 1931. P. SCHNEIDER 1,816,936

GAS GENERATOR FOR INTERNAL COMBUSTION ENGINES

Filed Aug. 6, 1928

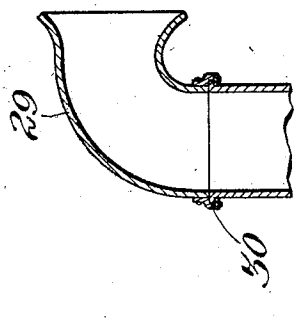


Fig. 2.

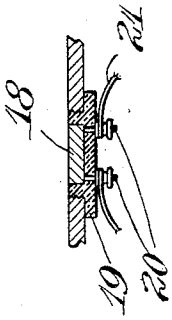


Fig. 3.

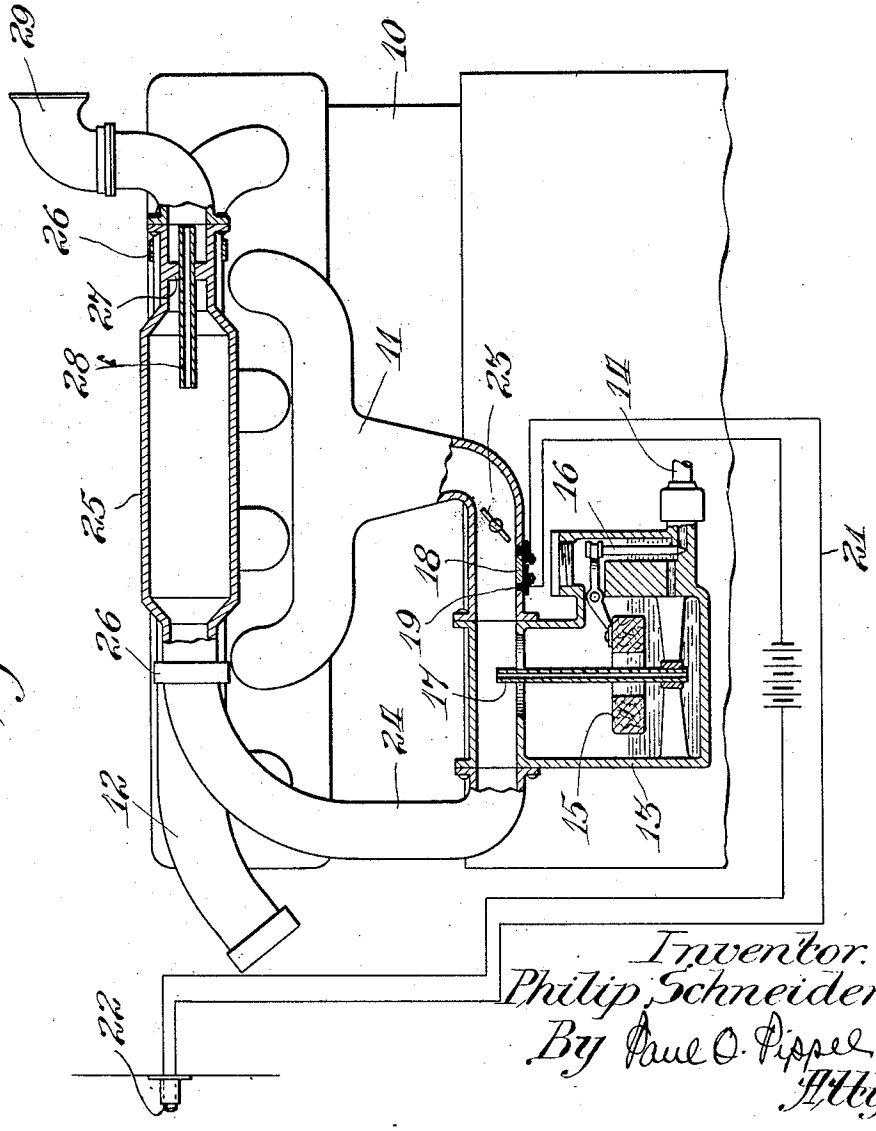


Fig. 1.

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UNITED STATES PATENT OFFICE

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GAS GENERATOR FOR INTERNAL COMBUSTION ENGINES

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The invention relates to a gas generator device adapted to be associated with a carburetor and intake manifold of an internal combustion gas engine.

It is highly desirable that the internal combustion engine at all times be provided with an ample and well gasified mixture which will readily ignite. It is still more desirable to charge the combustion chambers of the engine with an ample, well gasified mixture at the instant the carburetor throttle is opened as when starting, so that the engine will start easy. Further, it is advantageous to provide a heater for generating the gas in combination with a storage means therefor, to insure such ample supply of well gasified mixture as has been stated.

Accordingly, it is the general object of the invention to improve the operation of an internal combustion engine; to provide a gas generator to be associated with the carburetor; to provide a storage means to store an oversupply of generated gas to be available for instant use when the carbureter throttle is opened; to provide an atmosphere inlet for the storage means of novel construction; and, lastly generally to improve the operation of preparing a proper, easily ignitable gas for consumption by an internal combustion gas engine.

Briefly, these desirable objects are achieved in an internal combustion engine having an intake and exhaust manifold and a carbureter, by providing in or adjacent the carbureter, a heater contacted by the mixed vapor from the carbureter to generate the same into a hot gas. Such hot gas is directed to the intake manifold and to a storage receptacle, the latter having communication with the atmosphere. When the throttle is opened the gas is supplied to the engine from the storage receptacle along with the necessary preheated fresh air all as will later more fully appear.

In the accompanying sheet of drawings wherein the invention is shown:

Figure 1 is a general side elevational view of an internal combustion engine with the structure of this invention associated therewith, parts of the same being in section;

Figure 2 is a sectional detail view of the air supply member; and,

Figure 3 is a detail, sectional view of the heater.

An internal combustion engine is generally indicated at 10, the same having an intake manifold 11, an exhaust manifold 12, and a conventional carbureter 13.

The carbureter embodies the usual fuel supply pipe 14, float 15 controlling a fuel supply valve 16 and fuel vaporizer or spray nozzle 17 spraying a vapor of liquid particles into the intake manifold 11. Such vapor embodying liquid particles would be too raw to burn properly in the combustion chamber of the engine.

Accordingly a heater, preferably electric, in the form of a hot plate 18 is placed in the bottom of the intake manifold as close as possible to the spray nozzle 17 of the carbureter, said hot plate being carried in an insulated screw plug 19. Contacts 20 are shown in an electric circuit 21 controlled by a button or other type of switch control 22. Such electric circuit may be the usual ignition circuit of a motor vehicle as will be understood. A throttle valve 23 is provided as usual to control the supply of hot gas to the engine.

A pipe 24 leads from the intake manifold across the carbureter and communicates with a hot gas storage receptacle 25 secured by straps 26 to the exhaust manifold which keeps said receptacle hot. The end of the receptacle terminates in a stop wall 27 having therein a long, small bore, fresh air supply pipe 28 communicating with the atmosphere through an air supply horn 29 preferably arranged on a swivel joint 30 to permit the same to be turned and set to face in the direction of the air currents. The pipe 28 extends some distance into the receptacle so that it will heat the fresh air before it mixes with the hot gases stored in the said receptacle.

In operation, when starting the engine, the ignition is of course turned on at 22 causing the hot plate 18 to be heated, the

same in turn heating any vapor in the carbureter and generating therefrom a hot gas which moves up the intake manifold and also into the storage receptacle 25. However, while the throttle 23 is closed such gas goes to the receptacle. The moment the throttle is opened a supply of hot gas is ready for admission to the cylinders, said gas flooding the combustion chambers and readily igniting to cause easy starting. Thus, controlled by the engine demand, after starting, and whenever the throttle is opened, hot gas is always supplied to the engine, along with a supply of preheated fresh air through the pipe 28 and universally mounted horn 29. If the throttle is momentarily closed the supply of hot gas generated by the heater is stored in the hot receptacle 25 where the exhaust manifold functions to keep the receptacle heated.

From this disclosure it will now be seen that structure has been provided which achieves all of the desirable objects of the invention heretofore recited.

It is the intention to cover all such changes and modifications of the illustrated form of the invention as do not materially depart therefrom as is indicated in the appended claims.

What I claim is:

1. The combination with an internal combustion engine having a carbureter and intake manifold, of a heater for generating the carbureter mixture into a hot gas, a hot storage receptacle, means for passing said hot gas to the intake manifold, a pipe communicating with the atmosphere and extending into the hot receptacle, and a horn for directing air currents to the pipe.

2. The combination with an internal combustion engine having a carbureter, intake manifold and a conduit between the two, of a heater located in the conduit between the carbureter and manifold, a valve in the conduit between the heater and the intake manifold, an exhaust manifold, a pipe leading from the conduit, an enlarged storage receptacle connected to said pipe and carried adjacent the exhaust manifold to be kept hot thereby, and a restricted air supply pipe leading into the hot receptacle.

3. The combination with an internal combustion engine having a carbureter and an intake manifold, a conduit directly connecting the carbureter and manifold, of a heater disposed in said conduit for generating a hot gas from the carbureter mixture as it is in transit to the manifold, a storage reservoir for generated gases in direct communication with both the carbureter and the conduit leading from the carbureter to the manifold, and a control valve in said conduit between the heater and manifold.

4. The combination with an internal combustion engine having a carbureter and an intake manifold, a conduit directly connecting the carbureter and manifold, of a heater disposed in said conduit for generating a hot gas from the carbureter mixture as it is in transit to the manifold, a storage reservoir for generated gases in direct communication with both the carbureter and the conduit leading from the carbureter to the manifold, a control valve in said conduit between the heater and manifold, and means for supplying fresh air to the storage reservoir.

Chicago, Illinois, July 30, 1928.

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