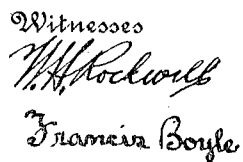


1,063,901.

Patented June 3, 1913.



Inventor

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ELWOOD C. ALLISON, OF BROOKLYN, NEW YORK.

GAS-ENGINE STARTER.

1,063,901.

Specification of Letters Patent.

Patented June 3, 1913.

Application filed August 2, 1912. Serial No. 712,957.

To all whom it may concern:

Be it known that I, ELWOOD CLARE ALLISON, a citizen of the United States, residing at Brooklyn, in the county of Kings, State of New York, have invented certain new and useful Improvements in Gas-Engine Starters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to gas engine starters and has for an object to provide an auxiliary fuel reservoir having a measuring chamber which communicates with an auxiliary carbureter which in turn communicates with an auxiliary compressed air reservoir, the carbureter being designed to feed a system of pipes which lead into respective cylinders of the engine, a single manual pressure upon a valve carried by the fuel reservoir and upon a second valve carried by the carbureter serving to inject a suitable charge into the cylinder which is ready to take the charge, the said charge being under compression and ready to be ignited by the igniting mechanism of the engine.

With the above objects in view the invention consists of certain novel details of construction and combination of parts hereinafter fully described and claimed, it being understood that various modifications may be made in the minor details of construction within the scope of the appended claims.

In the accompanying drawing forming part of this specification:—Figure 1 is a side elevation of the engine starter. Fig. 2 is a longitudinal sectional view through the device. Fig. 3 is a longitudinal sectional view taken on the line 4—4 Fig. 2. Fig. 4 is a cross sectional view taken on the line 3—3 Fig. 2.

Referring now to the drawing in which like characters of reference designate similar parts, 10 designates a multiple gas engine from each cylinder of which a pipe 11 leads, there being a check valve 12 in each pipe to prevent retrograde movement of the mixture in the pipe. The pipes communicate with a main feed pipe 13 which projects through the dash 14 of the automobile or like vehicle to which my improved engine starter may be applied.

The engine starter comprises a fuel reservoir 15 which is provided with a globular

measuring chamber 16 below the bottom, the measuring chamber having alined inlet and outlet ports 17 and 18 which are controlled by spaced valves 19 and 20 having a common stem 21 which projects through the top of the reservoir and is equipped with a button 22, a helical spring 23 being seated on the stem and being confined between the top of the reservoir and the button, and normally serving to hold the outlet valve 20 closed and the inlet valve 19 open. By depressing the stem down, the inlet valve may be closed and the outlet valve opened to allow the measured quantity of fuel to escape.

A carbureter is situated below and supports the fuel reservoir, the carbureter comprising a two pieced casing 24 which is substantially cylindrical in cross section and is provided with an outlet port 25, and in the opposite end with an air inlet port 26, there being a fuel inlet port 27 formed in the top midway between the outlet and air ports and through which the measuring chamber discharges its contents into the carbureter by gravity feed. The outlet port of the carbureter communicates with the common conductor pipe 13, and a check valve 28 is arranged in the outlet port to prevent retrograde movement of the mixture through the port. A splash cup 29 is disposed on the carbureter bottom to catch the discharge from the measuring chamber and splash the same back in order that the fuel may be finally divided to insure the proper mixing of the fuel with the incoming compressed air. A screen 30 is secured in the bore of the carbureter between the splash cup and outlet port.

A compressed air tank 31 is secured to the fuel reservoir by strap brackets 32 and 33, a conductor pipe 34 opening through the bottom of the air reservoir and communicating with the air intake port 26 of the carbureter. For letting a puff of compressed air into the carbureter simultaneously with the discharge of the fuel from the measuring chamber into the carbureter, I provide a plug valve 35 which is provided with a transverse port 36 adapted to register with the bore of the pipe, the port being normally held out of registration with the bore of the pipe by means of a helical spring 37 which exerts an outward pressure upon the plug. The plug is equipped with an external head or button 38 by means of which the

plug may be pressed against the tension of the spring to establish communication between the compressed air reservoir and carbureter.

- 5 The method of operation is as follows: The stem 21 is depressed simultaneously with the plug valve 35, a measured quantity of fuel entering the carbureter together with a puff of compressed air, and the mixture then being
10 injected under pressure through the outlet port of the carbureter and into the feed pipes 11, the mixtures under pressure then entering the cylinder ready to take the charge. The igniting mechanism of the engine
15 is now actuated to fire the compressed charge and start the engine.

What is claimed, is:—

1. A gas engine starter including a fuel reservoir, a measuring tank communicating
20 therewith, and having an outlet port, a carbureter communicating with said outlet port and having a mixture outlet port and an air intake port on opposite sides of said measuring tank outlet port, a compressed air reservoir
25 communicating with said air intake port, means for manually establishing communication between said measuring chamber and

said carbureter, and other means for manually establishing communication between said air reservoir and said carbureter.

2. A gas engine starter including a fuel reservoir, a measuring tank having an inlet port opening through the bottom of said reservoir and having an outlet port in vertical alinement with said inlet port, a carbureter communicating with said outlet
35 port, valves in said inlet and outlet ports, a common manually controlled stem connecting said valves and serving to hold one of said valves closed and the other of said
40 valves open, said carbureter having a mixture outlet port and an air intake port on opposite sides of said measuring chamber outlet port, a compressed air reservoir connected with said air intake port, and means
45 for manually controlling communication between said reservoir and said air intake port.

In testimony whereof, I affix my signature, in presence of two witnesses.

ELWOOD C. ALLISON.

Witnesses:

JOHN J. ROE.

FANNIE C. OVERTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."