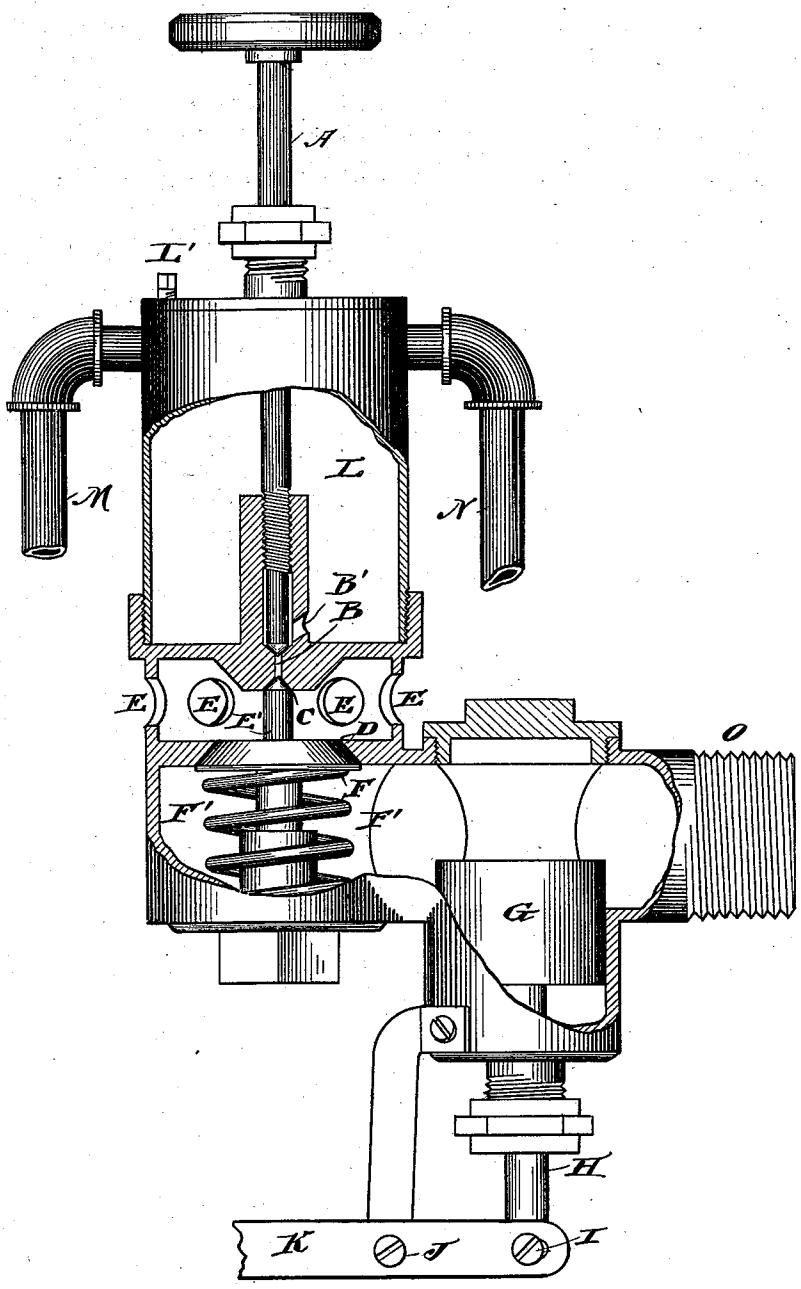
(No Model.)

C. SINTZ.

CARBURETOR.

No. 556,069. Patented Mar. 10, 1896.



Witnesses,
V. B. Mann,
Frederick F. Goodenow

Inventor;
Clark Sintz
By Offield, Towle & Linthicum
Atty's.

UNITED STATES PATENT OFFICE.

CLARK SINTZ, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR TO THE SINTZ GAS ENGINE COMPANY, OF SAME PLACE.

CARBURETOR.

SPECIFICATION forming part of Letters Patent No. 556,069, dated March 10, 1896.

Application filed January 15, 1895. Serial No. 534,978. (No model.)

To all whom it may concern:

Be it known that I, CLARK SINTZ, of Grand Rapids, Michigan, have invented certain new and useful Improvements in Gasoline-Gas Generators, of which the following is a specification.

This invention relates to a generator for gasoline gas, and is adapted for use in supplying a gas-engine with regulable quantities of gas of a uniform character. Thus my invention may be so connected with a gas-engine as to supply to the explosion-chamber a uniform quality or character of gas, but in regulable quantities, depending upon the speed at which it is desired to run such engine, and the valves which control the supply of air and gasoline to the mixing-chamber of the generator may be governed by the engine itself; and, further, the quantity of gas supplied may also be controlled by providing a suitable governor adapted to actuate the controlling-valve in the passage from the mixing-chamber of the generator to the explosion-chamber of the engine.

My invention consists, broadly stated, in the generator as a new apparatus, and more specifically in features of the construction and in the combination of parts thereof, as hereinafter described and particularly pointed out in the claims.

The accompanying drawing is an elevation, partly in section, through the reservoir, the valve-seats, mixing-chamber, and the outlet-passage and the valve-casing connected therewith.

Shortly stated, the generator comprises a reservoir for gasoline having a port or passage, a needle-valve for controlling the entrance to said port or passage, an air-chamber in communication with the external atmosphere, and a mixing-chamber, in passing through which the gasoline and air are commingled, an outlet pipe or passage controlled by a check-valve having a prolongation of its stem also controlling the gasoline-port, and a regulating-valve interposed in the outlet pipe or passage for controlling the quantity of gas passing to the gas-consuming device. These parts, with a supply and an overflow pipe and the mechanism for operating the needle-valve and regulating-valve, constitute the mechanical features of the apparatus.

In the drawing, A represents the stem of a needle-valve which passes through the top plate of a reservoir L, having an internally-threaded boss extending upwardly from its bottom plate and with which the valve-stem engages by mating threads. B represents the port or passage through the bottom plate, and B′ an open port through the threaded boss. The valve-port is preferably constructed on an angle of forty-five degrees, and the quantity of gasoline passing to the port may be accurately adjusted by the manipulation of the threaded stem. The exit end of the port B is controlled by a valve C, which is formed by the prolongation of the stem of check-valve D, which is fitted into the upper wall of mixing-chamber F′. An intermediate annular section, forming an air-chamber E′, is perforated, as at E, for the admission of air. A spring F normally holds the valve D to its seat, thus closing communication between the chamber E′ and the chamber F′.

G represents a regulating-valve which is adapted to be projected to any extent desired into the orifice of escape-pipe O, and said regulating-valve has a valve-stem H, to which is pivoted, at I, a lever K, pivoted at J to a supporting-bracket, and adapted to be controlled manually or automatically by a governor applied thereto.

The reservoir may be filled in the first instance by the removal of the filling-plug L′. A supply-pipe M communicates with the top of the reservoir, and through said pipe a supply of gasoline is maintained in the reservoir during action. An overflow N communicates also with the top of the reservoir and is conducted back preferably to the supply.

Let it be supposed that the pipe O is in communication with the explosion-chamber of a gas-engine, the outward movement of whose piston will tend to produce a vacuum in said pipe, thus drawing valve D from its seat and simultaneously unseating the valve C. The gasoline feeds down around the point of the needle-valve, and the supply of air is drawn in through the apertures E. The air and gasoline mix as they flow down over the

valve D into the chamber F′, and when the partial vacuum in the pipe is destroyed the spring F returns the valves D and C to their respective seats, closing the gasoline-port. These actuations of the valve are preferably regular and each actuation of equal duration, thus supplying predetermined quantities of gasoline and air and in definite proportions, while the quantity of the gas produced by the admixture of the gasoline and air and supplied through passage O may be regulated either manually or automatically by the regulating-valve G. Thus if it be desired to furnish explosive charges in very rapid succession—as, for example, with a high-speed engine—the regulating-valve G will be set so as to supply the proper quantity of the gas. If it be desired to run slower, the same quality of the explosive mixture will be furnished, but in less quantity.

I claim—

1. A generator for gasoline gas, comprising in combination a reservoir having a port or passage, a valve for regulating the quantity of gasoline passing to said port, a mixing-chamber having an air-inlet and an outlet, a valve normally closing said outlet and a valve-stem having a prolongation adapted to close the port of the reservoir simultaneous with the closing of the outlet, substantially as described.

2. A generator for gasoline gas, comprising in combination a reservoir having a port or passage in its bottom, an inlet-valve for controlling the entrance to said port or passage, a mixing-chamber and an air-chamber between the mixing-chamber and the reservoir, a spring-sustained valve normally closing the inlet to the mixing-chamber, said valve having its stem prolonged and adapted to close the liquid port or passage, a delivery pipe or passage leading from the mixing-chamber and a valve interposed in said pipe or passage and adapted by its movement to regulate the quantity of gas delivered through the outlet, substantially as described.

CLARK SINTZ.

Witnesses:
C. C. LINTHICUM,
N. M. BOND.