

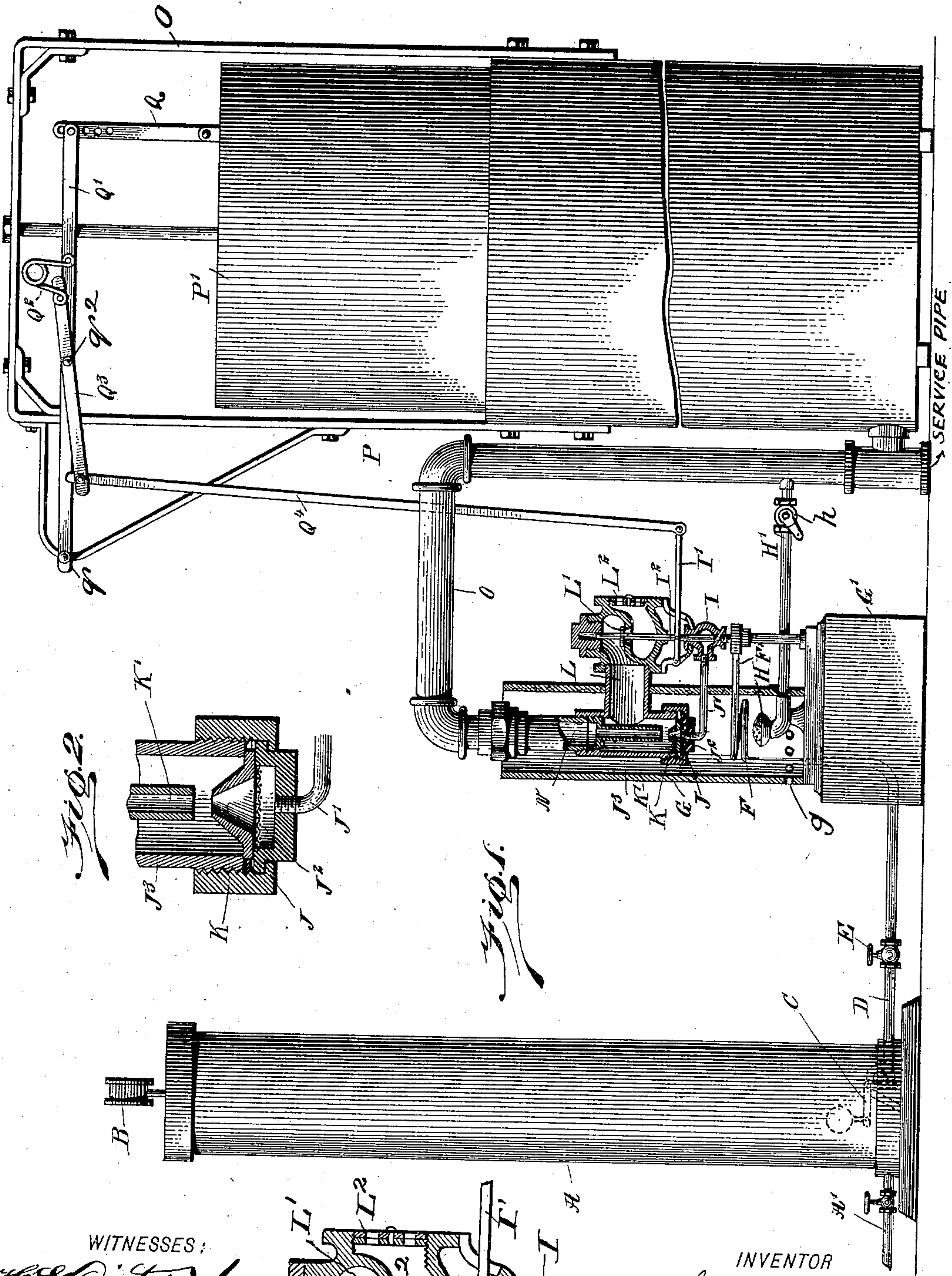
No. 662,349.

Patented Nov. 20, 1900.

H. BURTON.
CARBURETER.

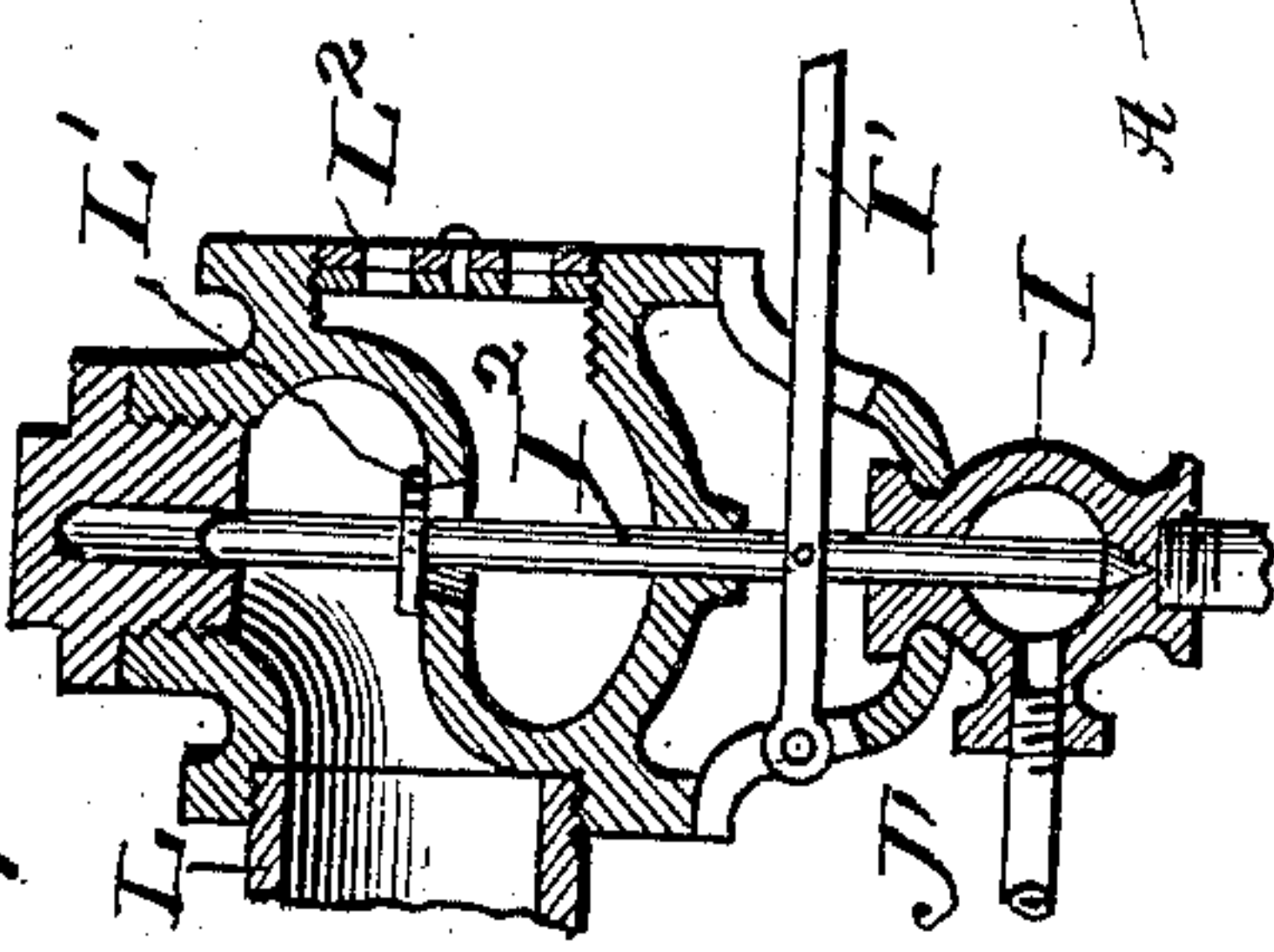
(Application filed Apr. 9, 1900.)

(No Model.)



WITNESSES:
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Fig. 3.



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UNITED STATES PATENT OFFICE.

HENRY BURTON, OF RUSSELLVILLE, INDIANA.

CARBURETER.

SPECIFICATION forming part of Letters Patent No. 662,349, dated November 20, 1900.

Application filed April 9, 1900. Serial No. 12,089. (No model.)

To all whom it may concern:

Be it known that I, HENRY BURTON, a citizen of the United States, and a resident of Russellville, in the county of Putnam and State of Indiana, have invented a new and Improved Gas-Making Machine, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved gas-making machine which is simple and durable in construction, automatic in operation, and arranged to generate gas for illuminating or other purposes from gasolene or like liquid and to force the gas under sufficient pressure through an ordinary system of gas-piping to burners and the like.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of the improvement with parts in elevation. Fig. 2 is an enlarged sectional side elevation of the expansion-chamber, and Fig. 3 is an enlarged sectional elevation of the needle and regulating valves.

The improved gas-making machine is provided with a pressure-chamber A, adapted to contain gasolene or similar liquid and air under pressure pumped or otherwise passed by an inlet-pipe A' into said chamber A to hold the gasolene under pressure—say seventy-five pounds—the pressure being indicated on a suitable pressure-gage B. The gasolene is pumped into said chamber A by a suitable pump. (Not shown.)

In the lower end of the pressure-chamber A is arranged a float-valve C, adapted to open and close the inner end of a pipe D, leading from the pressure-chamber and provided on the outside thereof with a valve E. The pipe D is formed into or connects with a coil F, arranged within a shell G of asbestos and set on a suitable foundation G', the upper end of the shell being open to the atmosphere and provided at its lower end with openings g. The coil F is located directly over a burner H for heating said coil and the liquid pass-

ing through the same, so as to vaporize the liquid as it flows through the coil, the burner being supplied with air through the openings g in the shell G. The end F' of the coil F connects with a needle-valve I, from which leads a pipe J' to an expansion-chamber J, containing a fine screen J², through which pass the vapors to a nozzle K, forming part of an injector located in the casing J³, which supports the expansion-chamber J at its lower end. The nozzle K is below the lower end of the injector-pipe K', so that the vapors leaving the nozzle K and passing into the pipe K' draw air into the latter from the air-supply pipe L, opening into the chamber J³ and containing at its outer end a regulating-valve L' for regulating the supply of air to the injector. The pipe K' carries the vapor and air into a mixing-chamber N, with or without mixing devices to mix the vapors and air, to form a powerful gas conducted from the upper end of the mixing-chamber N by a pipe O to the gasometer P.

The burner H is preferably connected by a pipe H' with the pipe O, so that gas can pass from the pipe O to the burner to supply the latter with the necessary fuel, and the pipe H is provided with a valve h for regulating the supply of gas to the burner. The screen J² serves to prevent the nozzle K from becoming choked by non-vaporized matter carried along by the vapors, such non-vaporized matter, however, soon becoming vaporized, owing to the heat from the burner H, and rising in the shell G and surrounding and heating the chamber J and its contents.

The bell P' of the gasometer P controls the needle-valve F and the regulating-valve L', and for this purpose the bell P' is connected by a link Q with a lever Q', pivoted at q to the frame O, secured to the body of the gasometer and projecting above the bell. To the lever Q' is pivoted at q² the lever Q³, which has one end connected by the spring Q² with the said lever Q' and its other end connected by a link Q⁴ with a lever I', pivotally connected with the stem I² of the needle-valve I, said stem I² also carrying the adjusting-valve L' for the air-pipe L.

By the above-described lever mechanism the needle-valve F and the regulating-valve L' will be closed when the gasometer-bell

risers and opened when it descends, and when the said valves are moved into a closed position the vapor will be cut off from the chamber G and the gas prevented from coming back from the gasometer. By this lever mechanism also the opening and closing of the said valves will be instantaneous, and the valves will be either held wide open or entirely closed, thus insuring a uniform mixture of air and vapor. The outer end of the air-supply pipe L is preferably provided with a damper L² under the control of the operator to regulate the amount of air required for forming a powerful gas with the vapors in the mixing-chamber.

In order to start a new machine or one in which the gasometer is empty, it is necessary to heat the coil by some suitable means. For this purpose I preferably use an absorbent material placed around the burner and saturated with alcohol or the like; but any other means may be employed, such as a lamp or torch. The coil F having been thus heated, the valve E in the pipe D, leading to the chamber A, is opened, when the gas will be generated and pass into the gasometer, from whence it flows through pipe H' to the burners H, which is now lighted, and the generation of gas continued. Thereafter or as long as there is any gas in the gasometer it will only be necessary to light the burner to start the machine.

From the foregoing it is evident that when the machine is in operation the vapors leaving the pipe J' are under a heavy pressure to maintain a desired pressure in the system of gas-piping deriving its supply of gas from the gasometer P. It is also evident that the machine is very simple and durable in construction, completely automatic in operation, and requires no attention on the part of the operator after the pressure-chamber A is filled with gasolene and charged with the desired amount of compressed air to hold the gasolene under pressure.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A gas-machine comprising a coil through which the liquid to be vaporized flows, a burner below the coil for vaporizing the liquid flowing through the coil, an expansion-chamber, a connection between the coil and expansion-chamber, a valve in said connection, a casing above the expansion-chamber, an injector-pipe in the casing, a nozzle in the casing below the injector-pipe, an air-supply pipe extending laterally from the casing, a valve in said air-pipe, a gasometer, and a lever mechanism for operating the said valves from the gasometer-bell, substantially as described.

2. A gas-machine, comprising a coil through which the liquid to be vaporized passes, a burner below the coil, an expansion-chamber having a screen in its top, a connection between the coil and expansion-chamber, a valve in the connection, a casing connected with the

expansion-chamber, an injector-pipe in the casing, a nozzle in the casing below the injector-pipe, an air-supply pipe leading into the casing, a valve in the air-pipe, a shell open at the top and inclosing the coil, burner, expansion-chamber and casing, a gasometer, and a lever mechanism for operating the valves from the gasometer-bell, substantially as described.

3. A gas-machine, comprising a pressure-chamber for containing the liquid to be vaporized under pressure, a coil, a valved connection between the coil and chamber, a burner below the coil, an expansion-chamber, a connection between the coil and expansion-chamber, a casing connected with the expansion-chamber, an injector-pipe in the casing, a nozzle below the injector-pipe, an air-supply pipe, a valve in the air-pipe, a shell open at the top, and inclosing the burner, coil, expansion-chamber, and casing, a gasometer, and a lever mechanism for operating the said valves from the gasometer-bell, substantially as described.

4. In a gas-machine, the combination of a coil through which the liquid to be vaporized flows, a burner below the coil, an expansion-chamber, a connection between the coil and expansion-chamber, a valve in said connection, a casing secured to the expansion-chamber, an injector-pipe in the casing, a nozzle at the top of the expansion-chamber and discharging into the injector-pipe, an air-supply pipe leading into the case and provided with a damper, a valve in the air-pipe, a mixing-chamber connected with the said casing, and a shell open at the top and inclosing the burner, coil, expansion-chamber, casing, and mixing-chamber, substantially as described.

5. In a gas-machine, the combination with a vaporizer, a chamber, valves for controlling the admission of vapor and air to said chamber, and a gasometer, of a pivoted lever having a link connection with the gasometer-bell, a second lever carried by the first lever and having a spring connection with said lever, and a connection between the said second lever and the valves, substantially as described.

6. In a gas-machine, the combination with a vaporizer, a chamber, valves for controlling the admission of air and vapor to said chamber, and a gasometer, of a lever pivoted at one end, and having its other end connected by a link with the gasometer-bell, a second lever pivoted between its ends to the first lever, a spring connecting one end of the second lever with the first lever, and a connection between the other end of the second lever and the valves, substantially as described.

7. In a gas-machine, the combination with a vaporizer, a chamber, valves for controlling the admission of air and vapor to the mixing-chamber, and a gasometer, of a lever connected with the valve-stems of said valves, a lever pivoted at one end above the gasometer and having its other end connected by a link with the gasometer-bell, a second lever piv-

oted between its ends to the lever connected
with the gasometer-bell, a spring connecting
one end of the second lever with the lever to
which it is pivoted, and a link connecting the
5 other end of the second lever with the lever
connected with the valve-stems, substantially
as described.

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

HENRY BURTON.

Witnesses:

WILLIAM H. MAHAN,
N. F. SCRIBNER.