

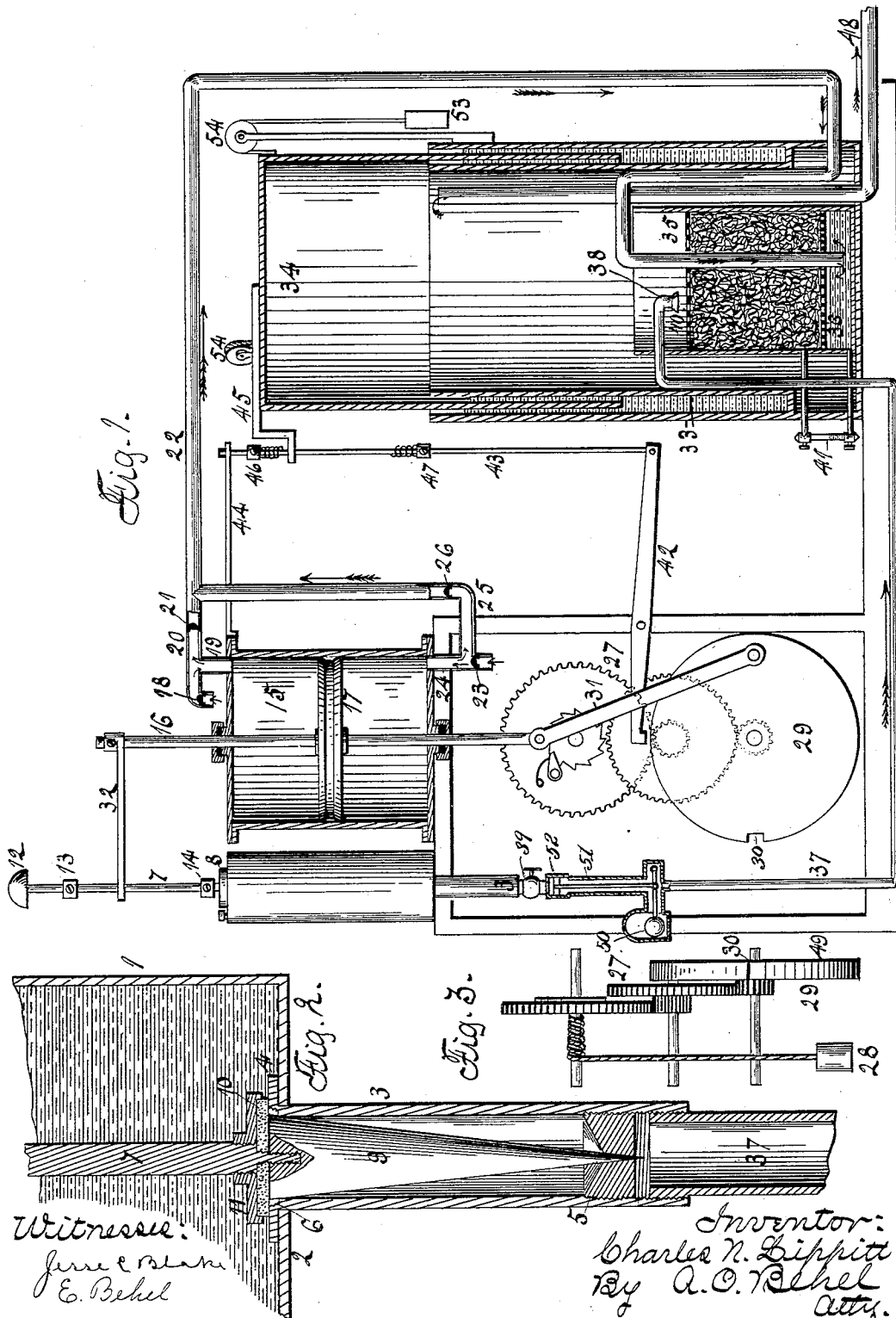
No. 620,595.

Patented Mar. 7, 1899.

C. N. LIPPITT.  
CARBURETER.

(Application filed July 17, 1897.)

(No Model.)



# UNITED STATES PATENT OFFICE.

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## CARBURETER.

SPECIFICATION forming part of Letters Patent No. 620,595, dated March 7, 1899.

Application filed July 17, 1897. Serial No. 645,013. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES N. LIPPITT, a citizen of the United States, residing at Beloit, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Carbureters, of which the following is a specification.

The object of this invention is to manufacture gas, in this instance from gasolene, the quantity manufactured corresponding to the demand, the apparatus being automatic in its operation.

In the accompanying drawings, Figure 1 is a partial elevation and vertical section of the apparatus for manufacturing gas. Fig. 2 is a vertical section of the lower end of the gasolene-reservoir. Fig. 3 is a side elevation of the motor.

In my construction of apparatus there are four essential elements—a gasolene-reservoir, an air-pump, a gas-holder, and a motor for operating the air-pump and the escape of gasolene from the reservoir.

The gasolene-reservoir 1 is of proper size to contain a suitable supply in proportion to the size of the plant. The bottom 2 of the reservoir has an opening through which is passed a tube 3, having a flange 4 secured to the bottom, its lower end being internally screw-threaded. A valve-seat 5 is located at the lower end of the tube, having a conical opening. Within the upper end of the tube is screw-threaded a valve-seat 6. A valve-stem 7 passes through a stuffing-box 8 in the upper end of the reservoir, and to its lower end is secured a needle-valve 9. An elastic packing 10 is located at the upper end of the needle-valve and is held in place by a cup-shaped receptacle 11, secured to the valve-stem, and when the valve-stem is dropped the valve at its point will rest in the seat 5, its upper end in the seat 6, and the packing 10 upon the upper end of the tube, thereby forming three valves and seats in order to make sure that the gasolene may not leak from the reservoir. The upper end of the valve-stem is provided with a weight 12 to assist in holding the valves to their seats. Two collars 13 and 14 are set-screwed to the valve-stem. An air-pump consisting of the cylinder 15, within which is located a piston-rod 16, to which is secured a double-acting piston 17. Air is admitted

into the upper section of the cylinder through the valve 18 and pipe 19 and is discharged through the pipe 20 and valve 21 into the main pipe 22, the valve 21 closing when air is admitted, and the valve 18 closes when the air is forced out. Air is admitted into the lower section of the cylinder through the valve 23 and pipe 24 and is discharged through the pipe 25 and valve 26 into the main pipe 22, the valve 26 closing when air is admitted, and the valve 23 closes when air is forced out.

The piston is operated by a motor, in this instance consisting of a train of gearing 27, driven by a weight 28 and rotating a crank-head 29, having a peripheral notch 30. A connecting-rod 31 has one end pivoted to the crank-head and its other end pivoted to the lower end of the piston-rod. As the crank-head is rotated it will impart a reciprocating movement to the piston-rod and piston connected thereto. The upward movement of the piston will suck air into the lower portion of the cylinder and force air out of the upper section, and during its downward movement the reverse will occur, thereby keeping a constant pressure of air in the main pipe 22. An arm 32 is connected to the piston-rod above the air-cylinder, and its free end having a sliding engagement with the valve-stem 7 and located between the collars 13 and 14. By properly adjusting the collars upon the valve-stem the reciprocation of the piston-rod will cause the arm to engage the collars, and in its upward movement the valve-stem and valve connected thereto will be raised and in its downward movement the lower collar will be engaged, forcing the needle-valve to its seat.

A gas-holder is provided, consisting of the double walls 33, within which is located a shell 34 and the space sealed with water. Within the holder is located a sponge-holder 35, having a perforated supplemental bottom 36, located some distance above the bottom proper, forming a gasolene-holder. To the lower end of the tube 1 of the gasolene-reservoir is secured a pipe 37, leading into the gas-holder, having its end turned down over the sponge-holder and provided with a sprinkler-head 38. A valve 39 is used to cut off the flow of gasolene. The main air-pipe 22 extends into the gas-holder and over into the sponge-holder, its end extending through the perfo-

rated bottom 36 into the space below it. As the piston in the air-cylinder is reciprocated air will be forced into the sponge-holder below the perforated supplemental bottom, and the raising of the needle-valve will allow gasoline to run into the pipe and be discharged by the sprinkler-head in the form of a spray onto the perforated plate 40 over the sponges in the sponge-holder, and the air under pressure will be forced upward through the sponges, converting the gasoline into a gas, which will accumulate in the gas-holder and raise the shell 34. If the gasoline as it sprays onto the sponges is not immediately converted into gas, it will be received in the space below the perforated partition. A glass gage 44, connected with the space below the perforated partition, will indicate the height of gasoline within the space.

In order that the apparatus may be automatic in its operation, I have formed a connection between the shell of the gas-holder and the motor, so that the shell may control the operation of the motor. This is accomplished by a lever 42, having a pivotal connection with a stationary support, one end turned down and fitted to engage the peripheral notch 30 in the crank-head, its other end supporting a rod 43, guided in an arm 44, extending from a stationary support. Also through the arm 45, extending from the shell of the gas-holder, two collars 46 and 47 are set-screwed to the rod, each supporting a spring. When the shell of the gas-holder has been raised by the quantity of gas within the holder, the arm 45 will come in contact with the spring of the collar 46, thereby moving the rod and moving the lever so that its turned-down end will rest upon the periphery of the crank-head, the spring preventing the breakage of the parts until the crank-head has rotated sufficiently to bring the notch under the end of the lever, when it will drop into the notch, stopping the motion of the motor, and consequently the manufacture of gas. When the consumption of gas has lowered the shell of this gas-holder sufficiently, the arm will come in contact with the spring of the collar 47 and will compress the spring of the collar, so that when sufficient force has been brought to bear upon the lever it will be moved and its downturned end will rise, thereby liberating the crank-head and allow the motor to run and manufacture more gas. This operation will be repeated automatically

as long as the motor is able to run. The needle-valve may be raised to a greater or less extent with each movement of the piston-rod to discharge more or less gasoline, according to the number of burners the plant is intended to supply.

The pipe 48 connects with the gas-holder, and through it the gas is supplied to the burners.

A valve arrangement to automatically cut off the supply of oil to the mixer is located in the pipe 37, consisting of a casing 49, within which is located a float 50, carrying a valve 51, having a seat 52. When the oil in the pipe 37 rises, it will raise the float, forcing the valve against its seat, thereby cutting off the supply, and the consumption of oil will allow the float to drop, admitting a supply of oil to the mixer.

The shell 34 of the gas-holder is counter-balanced by the weights 53, suspended by cables passing over pulleys 54 and connected to the shell.

I claim as my invention—

1. The combination of a generator, a supply-tank, a pipe connection between the tank and generator, a vertical valve-stem extending through the supply-tank, a series of valves, supported by the valve-stem and a series of valve-seats for the valves, both valves opening and closing together.
2. The combination of a generator, a supply-tank, a pipe connection between the tank and generator, a vertical valve-stem extending through the supply-tank, a flat valve and a conical valve supported by the stem, a flat-valve seat and conical-valve seat for the valves, both valves opening and closing together.
3. The combination of a generator having an open upper end, a gas-receiver surrounding the generator, absorbent material located within the generator, a sprinkler-head connected to a gasoline-supply pipe and adapted to spray gasoline on the top surface of the absorbent material, an air-supply pipe communicating with the space below the absorbent material and a gas-conducting pipe having its open end located in the gas-holder.

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Witnesses:

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