

CARBURETER.

975,635.

The technical drawing illustrates a carburetor system with three distinct views:

- No. 1**: A side elevation view of the carburetor assembly. It shows a vertical stack of fuel passages (41) leading from a float chamber (42) at the top. Each passage contains a needle valve (43) controlled by a common lever (44). The bottom of each passage has a jet (45). To the right, an air intake passage (38) leads from a pump (10) through a series of valves (13, 14, 16, 17, 18, 19) to a mixing chamber (46). A water supply line (20) also feeds into this chamber. A gas outlet (48) exits from the bottom.
- No. 2**: A top-down plan view of the float chamber (42), showing seven individual fuel passages (41) arranged horizontally. Each passage has its own needle valve (43) and jet (45).
- No. 3**: A bottom-up plan view of the carburetor body, showing the arrangement of the jets (45) and their corresponding needles (43) as seen from below.

Key components labeled include: PUMP, WATER, AIR, CARBURETOR, GAS, and various numbered parts (10-50) indicating specific mechanical features and connections throughout the system.

W. H. Wadsworth,

Joana M. Fallin

Walter H. Pottroast

By

Wm. H. Macy, Attorneys

# UNITED STATES PATENT OFFICE.

WALTER H. POTTHAST, OF MANNING, IOWA.

CARBURETER.

975,635.

Specification of Letters Patent. Patented Nov. 15, 1910.

Application filed November 17, 1909. Serial No. 528,524.

*To all whom it may concern:*

Be it known that I, WALTER H. POTTHAST, citizen of the United States, residing at Manning, in the county of Carroll and State of Iowa, have invented certain new and useful Improvements in Carbureters, of which the following is a specification.

This invention relates to gas producing apparatus and refers particularly to a system for carbureting air for illuminating or other purposes.

An object of this invention is to form a system whereby air may be charged with a hydrocarbon and conducted to a building for illuminating or heating purposes, and in which the carbureter and apparatus connected therewith may be positioned at a distance from the building.

The invention further designs an apparatus of this nature which is so formed and constructed that it may be applied separately to dwelling houses in rural districts where small independent systems of this nature are used.

The invention has for a still further object the provision of a system of this character which is composed of comparatively few operative parts and which is adapted for operation under the action of a weight, a spring motor, or the like, wherein small power is necessary for its operation, which may be economically maintained and which necessitates the consumption of but a small amount of fuel.

For a full understanding of the invention reference is to be had to the following description and accompanying drawings, in which:—

Figure 1 is a side elevation of the complete plant. Fig. 2 is a top plan view of the carbureter disclosed as having the top removed therefrom. Fig. 3 is a longitudinal vertical section through the carbureter. Fig. 4 is a perspective view of one of the frames employed in connection with the carbureter.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings by the same reference characters.

Referring to the drawings and particularly to Fig. 1 the numeral 10 designates a suitable air pump which is driven by means of a weight 11 which is carried upon one end of a cable 12, the opposite end of the cable being engaged about a drum 13 located upon

the pump shaft. The cable 12 is passed upwardly from the drum 13 and over a pulley 15 located a considerable distance above the ground in order to admit of a considerable movement of the weight 11. The drum 13 is loosely mounted upon the end of the shaft 14 and is provided at its inner end with a ratchet 16 for coöperation with a pawl 17 which is disposed upon the outer end of an arm 18. The arm 18 is rigidly secured to the shaft 14 and extends radially therefrom against the inner face of the ratchet 16 in order to cause the pawl 17 to engage in the teeth of the ratchet 16. The drum 13 is provided with a suitable crank-arm 19 by which the same is rotated to wind the cable 12 thereabout.

The air pipe 38 is led from the pump 10 to the improved carbureter. The carbureter comprises an elongated housing 41 having a plurality of spaced partitions 42 therein disposed in transverse and parallel relation forming sealed compartments. The air pipe 38 communicates with the housing 41 in one end of the compartment and at one end of the housing and empties into a porous receptacle 43. The receptacle 43, which is preferably of cylindrical form, is composed of fabric and held in shape by a suitable frame extending within the end compartment from the pipe 38. The frame may be of any suitable construction, but preferably formed of three spaced rings 45 supporting against the same a plurality of spaced rods 44. A feeder 46 depends from the receptacle 43 and also from each of the similar receptacles 47 described below and is in the form of a sheet or strip of fabric hanging longitudinally from the lower side of the receptacle into a quantity of gasoline, or other volatile substance carried in the bottom of the compartments. The adjacent partition 42 is provided with an opening at one end communicating with the first compartment and with a receptacle 47 at its opposite side. The receptacle 47 is longitudinally disposed within the second compartment and is of the form of the receptacle 43 with the exception that it is curved forwardly at its open end and engages against the partition 42 about the opening. Each of the partitions 42 carries a receptacle similar in form to the receptacle 47 which are arranged in each of the compartments. An outlet pipe 48 extends from the opposite end of the housing 41 and communicates with the last compart-

ment. The pipe 48 is provided with a check-valve 49 and a screen 50 to prevent back-firing in the carbureter.

In the operation of the plant the drum 13 is rotated by the crank-arm 19 to wind the cable 31 until the weight 11 is carried upwardly adjacent the pulley 15, the ratchet 16 being carried loosely beneath the pawl 17 and the shaft 14 being left in an inoperative position. The crank-arm 19 is now released and the weight draws upon the cable 12 to rotate the drum 13. The weight of the pawl is so disposed that this motion of the drum causes the pawl 17 to engage with the ratchet 16 and to carry the arm 18 therewith, thus rotating the shaft 14 and operating the pump 10.

As the air passes from the pump 10 into the pipe 38 it is conducted to the housing 41 and into the receptacle 43 in the end of the housing which is connected to the pipe 38. As the receptacle 43 is closed at its opposite end and is formed from a fabric, the air is permitted to pass through the walls of the receptacle into the compartment. As the feeder 46 is depended from the receptacle 43 into the liquid contained in the compartment, the liquid is fed upwardly by capillarity and is diffused throughout the fabric forming the receptacle. As the air passes through the walls of the receptacle it is thus charged with the hydrocarbon. From the first compartment the air is further passed into the second receptacle 47 through the adjacent partition 42 and is in like manner forced through the walls of the receptacle and further charged with the hydrocarbon which is fed to the walls of the receptacle through the feeder 46. The air thus passes consecutively through the receptacles 47 and the compartments until it reaches the last compartment when it is heavily charged with the hydrocarbon and passes off in the form of carbureted air through the pipe 48. As the pump 10 is continuously operated the air is passed under pressure through the carbureter and consequently is forced through the pipe 48 to the place where it is designed to be consumed. The check-valve 49 is adapted to close upon the decrease of pressure from the carbureter and thereby prevents the backward flow of the vapor into the carbureter. The screen 50 is employed for the purpose of preventing the passage of the flame into the carbureter whereby an explosion would take place.

It is thus observed that an economical and

safe gas producing plant is provided and that the operative parts of the same are so formed that large openings can be made therethrough to prevent the blocking of the system by the entrance of foreign substances into the respective receptacles with the water and hydrocarbon fluid.

Having thus described the invention what is claimed as new is:—

1. A carbureter including a source of air supply, a housing for receiving the air from said supply, a plurality of partitions located in spaced relation within said housing to form compartments therein, foraminous receptacles located within said compartments and terminated in said partitions, feeders depending from said receptacles in said housing to conduct a liquid to said receptacles, the air from said source of supply being passed consecutively to the receptacles and the compartments, and a gas pipe extending from the end of said housing and from one of the compartments.

2. A carbureter including a housing, a plurality of partitions located in said housing to form compartments therein, receptacles formed of textile material positioned in the compartments and terminating in said partitions to open into the adjacent compartment, an air supply connected to one end of said housing, an outlet pipe connected to the opposite end of said housing, and means disposed in the housing for feeding a volatile liquid to the said receptacles.

3. A carbureter including a housing having a plurality of compartments therein, an air inlet pipe communicating with the forward end of the housing and the foremost of the compartments, an outlet pipe communicating with the inner end of the housing and the last compartment, fabric receptacles arranged in the compartments, the receptacle located in the first compartment opening into the inlet pipe, spaced rings arranged within the receptacles to support the same, spaced rods carried across the rings for holding the same in position, and feeders depending from the receptacles and depending into the lower ends of the compartments, the compartments being adapted to contain a volatile substance.

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

WALTER H. POTTHAST. [L.S.]

Witnesses:

J. J. MILLER,  
P. H. JONES.