

C. L. VOIGT
CARBURETER.
APPLICATION FILED SEPT. 27, 1910.

1,002,791.

Patented Sept. 5, 1911.

2 SHEETS—SHEET 1.

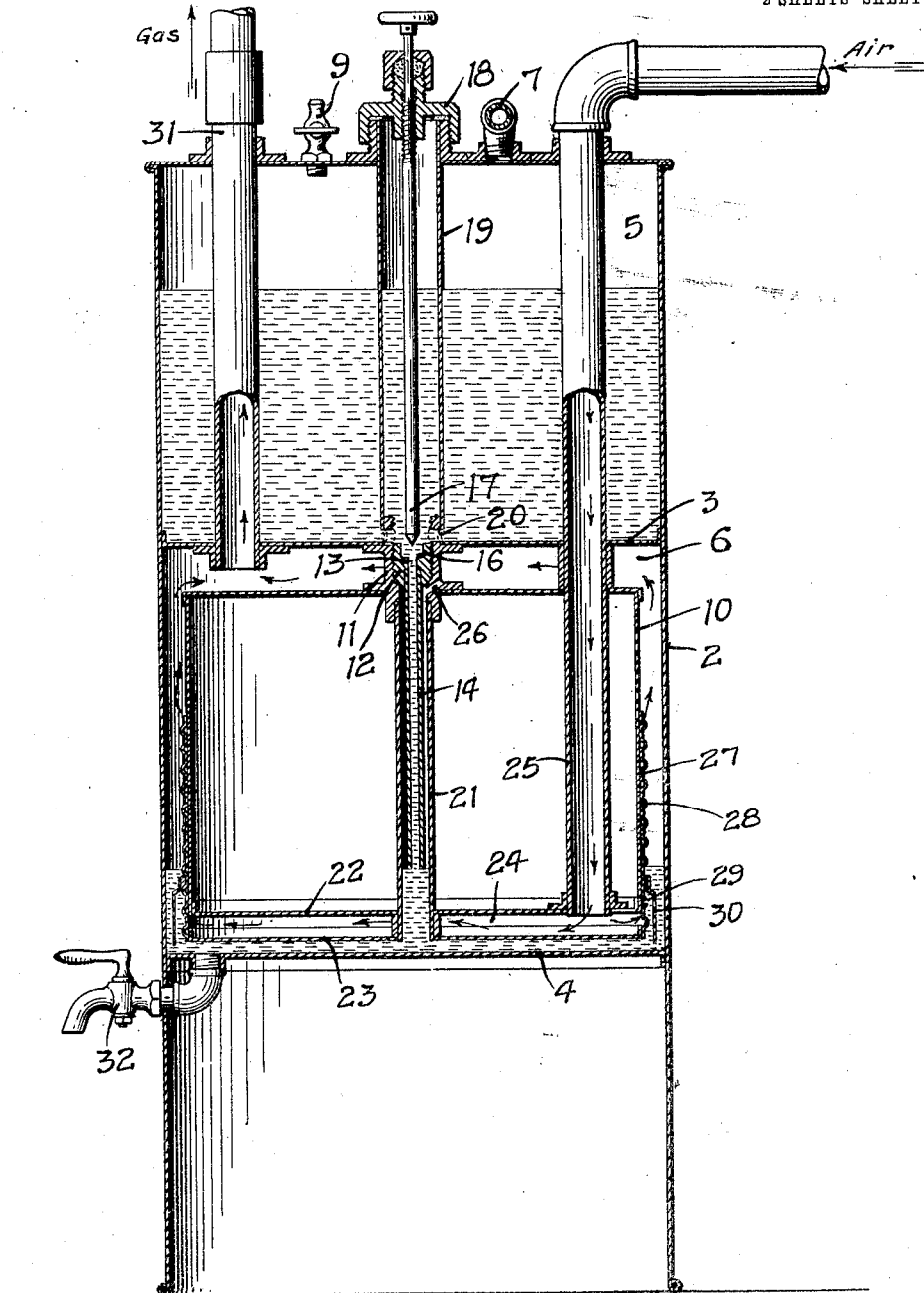


Fig. 1.

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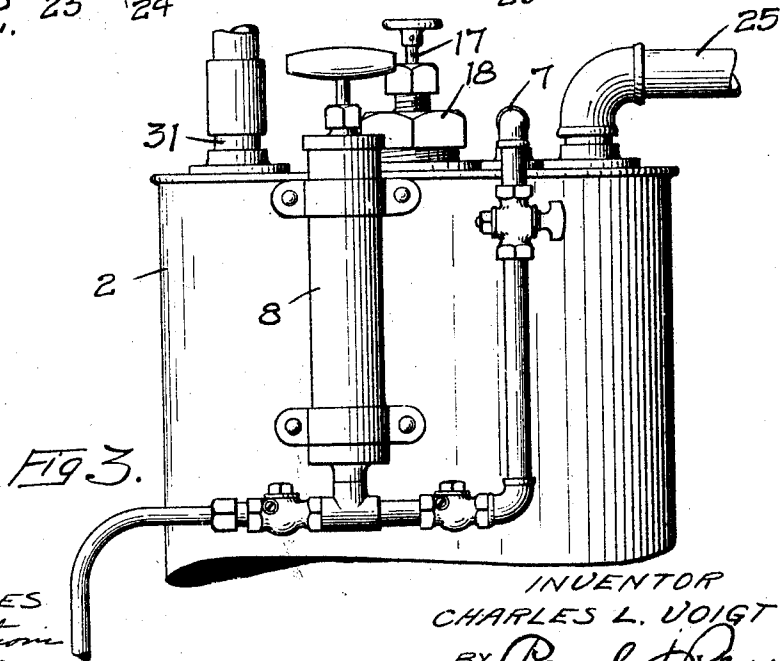
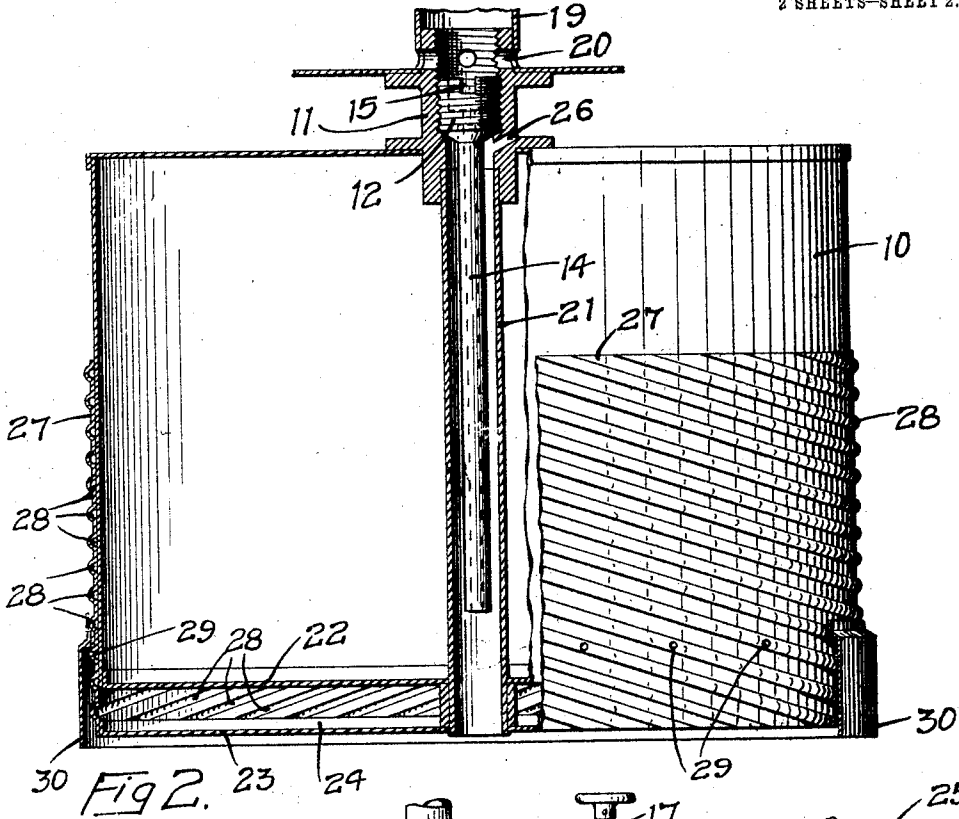
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UNITED STATES PATENT OFFICE.

CHARLES L. VOIGT, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR OF ONE-FOURTH TO JOHN L. FRITZ, ONE-FOURTH TO L. A. VOIGHT, AND ONE-FOURTH TO H. B. CORNISH, SR., ALL OF MINNEAPOLIS, MINNESOTA.

CARBURETER.

1,002,791.

Specification of Letters Patent.

Patented Sept. 5, 1911.

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To all whom it may concern:

Be it known that I, CHARLES L. VOIGT, of Minneapolis, Hennepin county, Minnesota, have invented certain new and useful Improvements in Carbureters, of which the following is a specification.

The object of my invention is to provide a carbureting machine by means of which air can be carbureted and the degree of richness of the mixture easily controlled.

A further object is to provide a carbureter of large capacity and one which will be compact in construction and may be easily and conveniently set up.

The invention consists generally in various constructions and combinations, all as hereinafter described and particularly pointed out in the claims.

In the accompanying drawings forming part of this specification, Figure 1 is a vertical, sectional view of a carbureter embodying my invention, Fig. 2 is a detail sectional view of the lower portion of the machine, illustrating the carbureting feature of the apparatus, Fig. 3 is an outside view, showing the arrangement of the pump by means of which the oil is introduced into the machine.

In the drawing, 2 represents the casing and 3 and 4 horizontal floors arranged within said casing at different elevations and forming, respectively, the bottoms of chambers 5 and 6. The chamber 5 is adapted to contain a limited supply of carbureting fluid, such as gasoline, which is introduced into the chamber through the pipe 7 and a pump 8. The valve 9 allows the air to be forced out of the chamber as the oil flows therein. The chamber 6 forms a gas reservoir and contains a drum 10, preferably cylindrical in form. This drum is supported by the floor 3 by means of a centrally arranged hub 11. The hub is interiorly threaded to receive a plug 12. A central orifice 13 is formed in the plug, communicating at its upper end with the chamber 5 and at its lower end with a tube 14 which is carried by the plug 12 and is vertically movable therewith. The plug 12 has a slot 15 in its upper end to receive an operating tool, and a seat 16 for a needle valve 17, which is mounted in a cap 18 on the top of the chamber 5. A pipe 19 depends from the

top of said chamber to the floor thereof and has holes 20 through which the oil may flow and seek its level within the pipe, enter the orifice in the plug 12 and flow down through the tube 14, the lower end of which is open to permit the oil to enter a pipe 21, which is concentric with the hub 11 and connected therewith at its upper end and at its lower end passes through a floor 22 and the lower head 23 of the drum 10 and communicates with the gas chamber 6 beneath the drum. The floor 22 and the drum head 23 are spaced apart to form an air chamber 24 which communicates with a pipe 25 through which air is introduced by a suitable means, (not shown), to the carbureting apparatus. A port 26 is provided in the wall of the hub 11 leading to the interior of the pipe 21 from the chamber 6.

By means of the foregoing described apparatus oil and air are introduced and maintained within the machine, and I will now describe the device by means of which the desired mixture or intermingling is obtained for the purpose of carbureting the air. 27 is a band inclosing the lower portion of the drum 10 and forming the side walls of the air chamber 24. This band has a series of shallow grooves 28 therein, formed by a series of oblique or helical ribs on the outer surface of the band. Each of these ribs has holes 29 therein, forming communicating passages between the chamber 6 and the groove through which the air flows from the chamber 24. These holes are below the normal level of the oil in the chamber 6 and the air, flowing through the grooves around the drum and meeting the oil as it passes through the holes, will be thoroughly carbureted by the time it is delivered to the upper portion of the chamber 6 through the exit of the upper end of the grooves. The flange 30 around the lower portion of the drum 10 prevents the air currents from rushing out through the holes 29 into the body of the oil. After being discharged from the upper ends of the grooves, the gas may flow around in the chamber 6 and finally pass off through the pipe 31 to the service pipe of the system. The height of the oil in the pipe 21 and the number of the perforated ribs utilized in the carbureting operation will depend upon the length of the

tube 14, which may be removed with the plug 11 and cut off, or a longer one substituted, whenever it is desired to change the level of the oil in the chamber 6. The level of the oil and the number of ribs employed in the carbureting operation will regulate the degree of richness of the mixture. A draw-off or drain faucet 32 is provided by means of which the contents of the chamber 6 may be discharged.

In the operation of the machine, the chamber 5 will be filled with gasoline from a suitable supply, and the needle valve 17 being opened, the oil will flow down through the tube 14 to the bottom of the chamber 6, between it and the head 23. As the oil is lowered in the chamber 5, a vacuum will be formed above it and when the oil in the bottom of the chamber 6 rises to the level of the lower end of the tube 14 a further flow of the oil will cease and as fast as the oil is drawn from the bottom of the chamber 6 by the carburetion of the air, a fresh supply will flow down from the chamber 5 to maintain the desired level.

I claim as my invention:—

1. A carbureter comprising a casing, a drum within said casing and spaced from the side walls thereof, a band inclosing said drum and having a series of obliquely arranged ribs in its outer surface forming shallow grooves between said band and drum and extending around said drum, means for introducing air into the lower ends of said grooves, said ribs having perforations therein communicating with said grooves and with the space between said band and the wall of said casing, and means for supplying oil to the space between said band and casing.

2. A carbureter comprising a casing, a drum therein spaced from the walls of said casing, a series of hollow ribs extending helically on the outer surface of said drum forming shallow grooves which are open at their lower ends and extend around the drum and toward the upper portion thereof, said ribs having perforations therein leading to said grooves, means for supplying air

to said grooves, and means for supplying oil to the space between said drum and casing.

3. A carbureter comprising a casing having an oil tank in its upper portion and a gas chamber in its lower portion, means for admitting oil from said oil chamber to said gas chamber and regulating the level therein, a band adapted to be partially submerged in the oil in said gas chamber and having a series of exteriorly formed ribs and perforations therein communicating with said gas chamber, said ribs forming a corresponding number of grooves on the opposite side of said plate, means forming an inner wall for said grooves, the upper ends of said grooves being open to said chamber, and means for directing air into the lower portions of said grooves and causing it to flow upwardly therein past said perforations, said perforations being normally below the level of the oil in said gas chamber.

4. A carbureter comprising a casing, a drum therein spaced from the wall of said casing and having an air chamber in its lower portion, the space between said drum and casing being adapted to contain a series of ribs inclosing the lower portion of said drum, some of said ribs being submerged within the oil in said casing, said ribs forming a corresponding number of grooves extending around said drum and helically thereon, said grooves being open at their upper and lower ends and said ribs having perforations through which the oil may flow into said grooves, said air chamber in the lower portion of said drum communicating with the lower ends of said grooves and through which the air is directed past said perforations, the degree of richness of the air being regulated by the level of the liquid in said casing and the number of perforations exposed thereto, and means for regulating the level of the oil in said casing.

In witness whereof, I have hereunto set my hand this 16th day of September 1910.

CHARLES L. VOIGT.

Witnesses:

RICHARD PAUL,
GENEVIEVE E. SORENSON