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E. D. PARROTT.

CARBURETER.

APPLICATION FILED APR. 15, 1903.

NO MODEL.

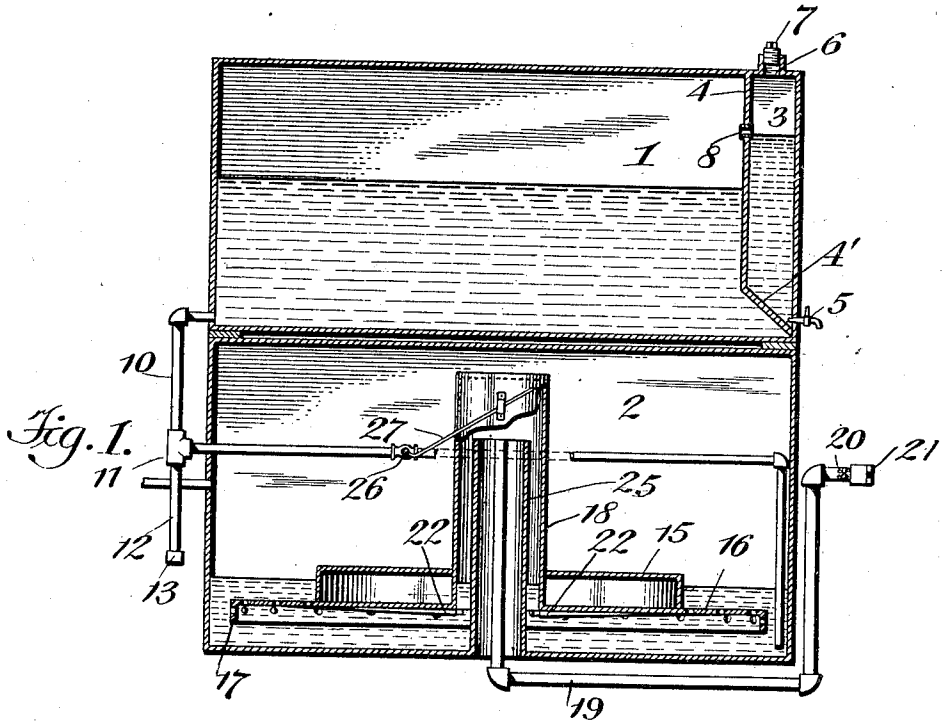


Fig. 1.

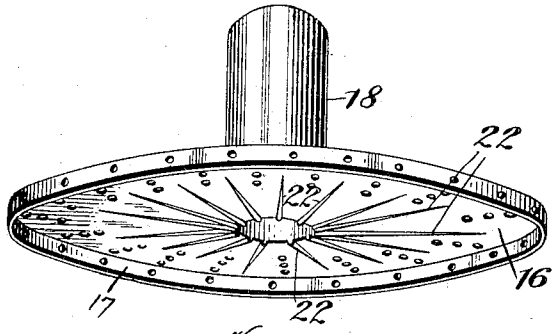


Fig. 2.

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No. 744,877. Patented November 24, 1903.

UNITED STATES PATENT OFFICE.

ELIJAH D. PARROTT, OF PORTLAND, OREGON.

CARBURETER.

SPECIFICATION forming part of Letters Patent No. 744,877, dated November 24, 1903.

Application filed April 15, 1903. Serial No. 152,783. (No model.)

To all whom it may concern:

Be it known that I, ELIJAH D. PARROTT, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented a new and useful Carbureter, of which the following is a specification.

This invention relates to certain improvements in devices for manufacturing illuminating and fuel gas from gasolene or similar hydrocarbon by passing air through the gasolene in such manner as to form a gas of uniform candle-power.

One of the objects of the invention is to provide a device in which the air to be carbureted is forced to travel for a considerable distance through the body of gasolene, and thus absorb a considerable quantity of the latter and form a gas of high candle-power, and in this connection a further object is to provide for the more even distribution of the current of air so that all portions of the latter will be subjected to the liquid, and thus avoid annoyance from the noise caused by the bubbling of the air as it passes in large quantities or streams through the liquid.

A still further object of the invention is to provide a construction of carbureter in which freezing and consequent failure of the apparatus from the reduction of temperature, due to evaporation of the gasolene, is entirely avoided.

A still further object of the invention is to provide a device of this character in which provision is made for separating the gasolene from any water which may be contained therein, the presence of water considerably lessening the effectiveness of carbureters as ordinarily arranged and constructed.

With these and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a sectional elevation of a carbureting apparatus constructed in accordance with the invention. Fig. 2 is a detail perspective view looking from the lower side of the perforated air-distributing disk in the carbureting-chamber.

Similar numerals of reference designate corresponding parts throughout both figures of the drawings.

1 indicates a tank or reservoir for the reception of the gasolene or other hydrocarbon, said tank being disposed at any convenient point, but for convenience being generally arranged immediately above the carbureting-chamber 2. At one side or end of the tank 1 is a filling-chamber 3, separated from the main tank by a partition 4, having an inclined lower portion 4′ in order to reduce the area at the lowest point of the chamber and to permit the withdrawal of the entire contents thereof through a discharge-cock 5. Immediately over the filling-chamber the tank is provided with a filling-opening 6, normally closed by a threaded plug or cap 7, and on the removal of the latter the gasolene may be poured into the filling-chamber and thence flow by gravity through an opening 8 into the tank proper. The filling operation should be accomplished slowly in order that any water which may be contained in the gasolene may separate therefrom by reason of its greater specific gravity and sink to the lower portion of the filling-chamber, to be thence withdrawn through the discharge-cock 5, as occasion may require.

The carbureting-tank 2 is of any suitable size and shape and is connected to the reservoir by a pipe 10, the discharge end of said pipe being arranged close to the bottom of the carbureting-tank, so that the entering gasolene may be thoroughly intermingled with any gasolene already in the carbureter. The pipe 10 has a coupling member 11, from which depends a short pipe-section 12, having a removable cap 13, which may be taken off should it be desired to withdraw the contents of the main reservoir or to remove an obstruction in the pipe, and this pipe-section also serves as an auxiliary reservoir for the accumulation of water.

In the carbureting-tank is a preferably circular float 15 in the form of a hollow cylinder, to the lower portion of which is secured an air-distributing disk 16, having at its outer

edge a depending flange 17. Through a central portion of the disk and float extends a vertical casing 18, open at the bottom and closed at the top and forming an air-passage to which air is supplied through an inlet-pipe 19, discharging at the upper portion of the casing 18. At the entrance end of the inlet-pipe are a number of perforations 20, extending, preferably, through the threaded end portion of the pipe, and on said threaded portion is arranged a cap 21, which may be turned to close or partly close any desired number or all of the perforations, and thus regulate the quantity of air admitted to the carbureter.

The lower portion of the distributing-disk 16 is provided with a large number of radiating-ribs 22, which are deeper at the inner than at the outer end and form a plurality of radiating-passages in order to divide the current of air into minute streams, and thus insure contact of all portions of the air with the gasolene, the air becoming thoroughly saturated, and at the same time there is less annoyance from the noise caused by the gurgling and bubbling of large bodies of air under the disk. The central portion of the disk beyond the casing 18 is solid, so that the air is compelled to travel for a considerable distance below the surface of the gasolene. The outer portion of the disk beyond the float is perforated to permit the saturated air to escape to the surface of the liquid and accumulate in the upper portion of the carbureting-tank, and in the event of the passage of air beyond the perforations its direct escape in large volume from the edge of the disk is prevented, owing to the flange 19, and said flange is provided with a number of small perforations in order to subdivide the current of air before allowing its passage to the surface of the liquid.

In devices of this class it has been found that rapid evaporation of the gasolene or its absorption by the air immediately around the air-inlet causes a rapid reduction in the temperature at this point, and in case of moisture in the air there will be an accumulation of frost on the inner wall of the air-pipe, resulting in the gradual choking of the air-supply pipe and partial or complete failure of the apparatus. To overcome this difficulty, the air-pipe is surrounded by a protecting-tube 25 in order to form an air-space between the air-tube and the liquid, and this tube serves effectively to prevent the choking of the air-supply pipe from the cause mentioned.

In the gasolene-inlet pipe 10 there is arranged a valve 26, and the stem of said valve is connected by an arm 27 to the vertically-movable casing 18, carried by the float, the arrangement being such that as the float descends, owing to the absorption of the gasolene in the tank, the valve will be opened to replenish the supply, and when the normal level has been reached the valve will be immediately closed. This arrangement is such as to automatically preserve a constant level of gasolene in the carbureting-tank.

Having thus described the invention, what is claimed is—

1. In an apparatus of the class described, a carbureting-tank, a float arranged within the same, an air-distributing disk carried by the float and extending beyond the outer edge of the same, said disk being perforated at a point beyond the air-entrance point and having on its lower surface a plurality of radially-arranged ribs for dividing and distributing the air.

2. In an apparatus of the class described, the combination with a carbureting-tank, of a float, a disk of greater diameter than the float and having an imperforate portion within the lines of the float, the outer portion of said disk being perforated and having a pendent perforated flange in its outer edge, and means for supplying air to the central portion of said disk.

3. In a device of the class described, a carbureting-tank, an air-inlet pipe, an air-distributing disk, a float of which the disk forms a part, a vertically-disposed hood or casing carried by the float and disk and covering the air-inlet pipe, said disk being provided with a plurality of radiating-ribs to divide and distribute the air during its passage through the hydrocarbon.

4. In an apparatus of the class described, an air-distributing disk having on its lower face a plurality of radiating-ribs of a gradually-decreasing depth toward the periphery of the disk, and means for supporting said disk in position below the surface of a body of hydrocarbon.

5. In a device of the class specified, the combination with an air-entrance pipe, of an air-distributing disk, means for supporting the same below the level of a body of hydrocarbon, a hood or casing covering the air-entrance pipe, and a secondary protecting-tube surrounding and spaced from the air-entrance pipe, substantially as specified.

6. In a device of the class specified, the combination with a carbureting-tank for containing a body of hydrocarbon, of an air-entrance pipe, a protecting-tube surrounding and spaced from the pipe, a ribbed air-distributing disk provided at its outer end with a depending perforated flange, a float of which the disk forms a part, and a hood or casing carried by the float and disk and covering the air-entrance pipe.

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