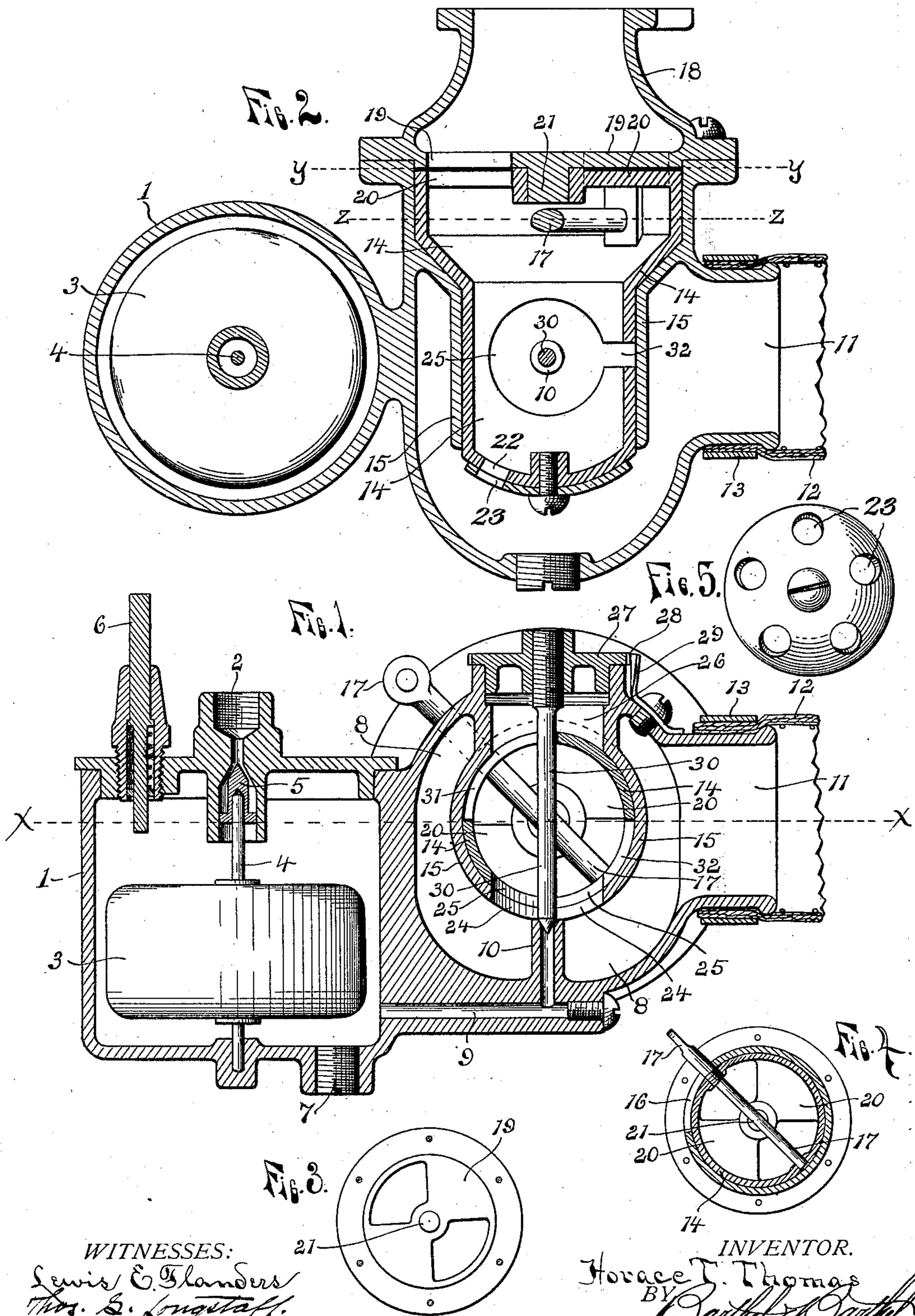


No. 889,558.

PATENTED JUNE 2, 1908.

H. T. THOMAS.
CARBURETER.

APPLICATION FILED NOV. 13, 1905.



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CARBURETER.

No. 889,558.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HORACE T. THOMAS, a citizen of the United States of America, residing at Lansing, in the county of Ingham and State of Michigan, have invented certain new and useful Improvements in Carbureters, of which the following is a specification, reference being had therein to the accompanying drawings.

The improved carbureter forming the subject matter of this invention is of the type operating with a constant level of liquid hydrocarbon and the improvement has special reference to the improved means for feeding and vaporizing the hydro-carbon and for regulating the admission of the gas to the engine, all as more fully hereinafter described and shown in the accompanying drawings, in which

Figure 1, is a vertical central section of the apparatus; Fig. 2, is a horizontal section on line $x-x$ Fig. 1, and Figs. 3 and 4 are vertical sections on a reduced scale on lines $y-y$ and $z-z$ respectively of Fig. 2. Fig. 5 is an elevation of the inner end of the hollow valve forming the mixing chamber.

Referring to the drawings 1 indicates the float chamber and 2 an inlet connection into the float chamber through which it communicates with the hydro-carbon supply tank (not shown).

3 is the float in the float chamber.

4 is a stem guiding the float in the float chamber.

5 is the float valve carried on the upper end of the stem and controlling the admission of the hydro-carbon into the float chamber to maintain the same at a constant level.

6 is a plunger guided in bearings in the top of the tank and adapted to positively depress the float when it is desired to fill the float chamber with fluid above the normal level.

7 is a waste opening in the bottom of the float chamber closed by a removable plug.

8 is an air chamber formed in the casing adjacent to the float chamber.

9 is a lateral passage leading from the bottom of the float chamber and closed at its further end by a screw plug for cleaning the passage. 10 is a spraying nozzle leading upwardly from said passage into the air chamber to a height approximately with the normal level of the fluid in the float chamber and

terminating in a conically enlarged valve seat.

11 is the inlet into the air chamber.

12 is a suitable air filter adapted to keep out the dust from entering the air chamber.

13 is a band securing the air filter to the inlet opening.

14 is a hollow multi-ported valve in the air chamber forming a mixing chamber.

15 is an interior flange forming the seat of the multi-ported valve.

17 is a handle passing through the valve and through a slot 16 in the casing and forming the means for rotatably adjusting the valve.

18 is a hollow arm secured to the casing and forming the means of attaching the carbureter in position.

19 is a ported diaphragm in the arm 18.

20 is a correspondingly ported diaphragm forming in connection with the diaphragm 19 a register or valve for regulating the admission of the gas from the mixing chamber into the engine.

21 is a pivot formed on diaphragm 19.

22 is a ported diaphragm forming the inner end wall of the mixing chamber.

23 is a regulating disk pivotally secured upon the diaphragm 22 and forming in connection therewith a register or valve for regulating the admission of air into the mixing chamber.

24 is a port in the valve seat 15 above and concentric with the spraying nozzle.

25 is a corresponding port in the valve 14.

26 is an opening in the top of the casing in axial line with the spraying nozzle.

27 is a screw cap in said opening and provided with a notched rim 28.

29 is a spring dog adapted to engage with the notched rim to hold the screw cap in its adjusted position against accidental rotation.

30 is a pin valve secured to the cap in axial line with the spraying nozzle, and controlling the discharge from said nozzle, whereby the same will be produced in the form of a spray and in amounts which can be regulated by the rotary adjustment of the screw cap.

31 and 32 are slots or openings in the valve 14 to prevent the pin valve from interfering with the adjustment of the valve between the open and closed positions thereof.

The parts being arranged and constructed

as shown and described, the operation is as follows: The gasolene being maintained by the float normally at a constant level rises in the spray nozzle approximately to the height of its discharge opening. The working of the engine creating a suction in the usual manner the effect of which is to draw air into the mixing chamber the air will simultaneously draw in a charge of gasolene from the spray nozzle. Owing to the action of the pin valve 30, the gasolene will escape from the nozzle 10 in the form of a fine spray and both the air and the gasolene being thus brought into intimate contact are carried into the mixing chamber together. The valve 14 by means of its port 25 controls the opening around the spray nozzle which leads into the mixing chamber and by means of the port or ports in the diaphragm 20 controls the size of opening through which the mixture has to pass from the mixing chamber to the motor and the operator by means of the lever 17 (which has suitable operating connection in reach of the operator) can by adjusting the valve thus vary the charges of air and hydrocarbon and thereby control the operation of the engine in a very satisfactory manner. The ports in the end wall 22 of the valve admit a certain amount of air into the mixing chamber irrespective of the position of the valve 14 and this air being admitted over and through the mixture after it is formed insures a perfect vaporization of the hydrocarbon and these ports which remain constantly open can be regulated as to size of opening by means of the regulating disk 23. The adjustment of the screw-cap 27 regulates the amount of gasolene that will be sprayed from the nozzle as will be readily understood. Having thus fully described my invention, what I claim is:—

1. The combination with a casing of an air and a constant level float chamber formed therein, a hollow valve projecting within the air chamber and provided in its inner end with an air inlet port in constant open communication therewith and in its outer end with a discharge port communicating with an outlet from the casing under control of the valve, a seat for the valve provided with an opening, a hydrocarbon supply nozzle concentrically arranged in said opening, and means for rotatorily adjusting the valve, said valve forming the mixing chamber and provided with an opening adapted to be reg-

istered with the opening in the seat of the valve.

2. The combination with a casing forming an air and a float chamber, of a hollow valve projecting within the air chamber and provided in its inner end with an air inlet port and in its outer end with a discharge port, a seat for the valve provided with a circular opening, a spraying nozzle extending concentrically into said opening and supplying the hydrocarbon, and a corresponding port in the valve adapted to register with said opening, said valve forming the mixing chamber and provided with means for rotatorily adjusting it.

3. The combination with a casing forming an air and a constant level float chamber, the air chamber being provided with lateral inlet and outlet arms, a mixing chamber rotatorily adjustably seated in the outlet arm and projecting inwardly into the air chamber, the casing being provided with inwardly projecting walls forming a seat for the mixing chamber within the air chamber, a spraying nozzle projecting upwardly in the air chamber against the underside of said seat, there being an opening in said seat concentric with the nozzle and a corresponding opening in the mixing chamber adapted to register therewith, and a discharge outlet in the outer end of the mixing chamber.

4. The combination with a casing forming an air and a constant level float chamber, the air chamber being provided with lateral inlet and outlet arms at right angles to each other, a cylindrical mixing chamber rotatorily adjustably seated in the outlet arm and projecting inwardly into the air chamber, the casing being provided with inwardly projecting walls forming a seat therefor within the air chamber, a spraying nozzle at the bottom of the air chamber and projecting upwardly against the underside of said seat, there being a circular opening in said seat concentric with the spraying nozzle and a corresponding opening in the mixing chamber, a discharge port in the outer end of the mixing chamber and air inlet ports in the inner end of said chamber.

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

HORACE T. THOMAS.

Witnesses:

E. T. PEER,
GRETA LAYCOX.