No. 702,469. Patented June 17, 1902.

J. W. PARKIN.

CARBURETER FOR EXPLOSIVE ENGINES.

(Application filed Mar. 13, 1901.)

(No Model.)

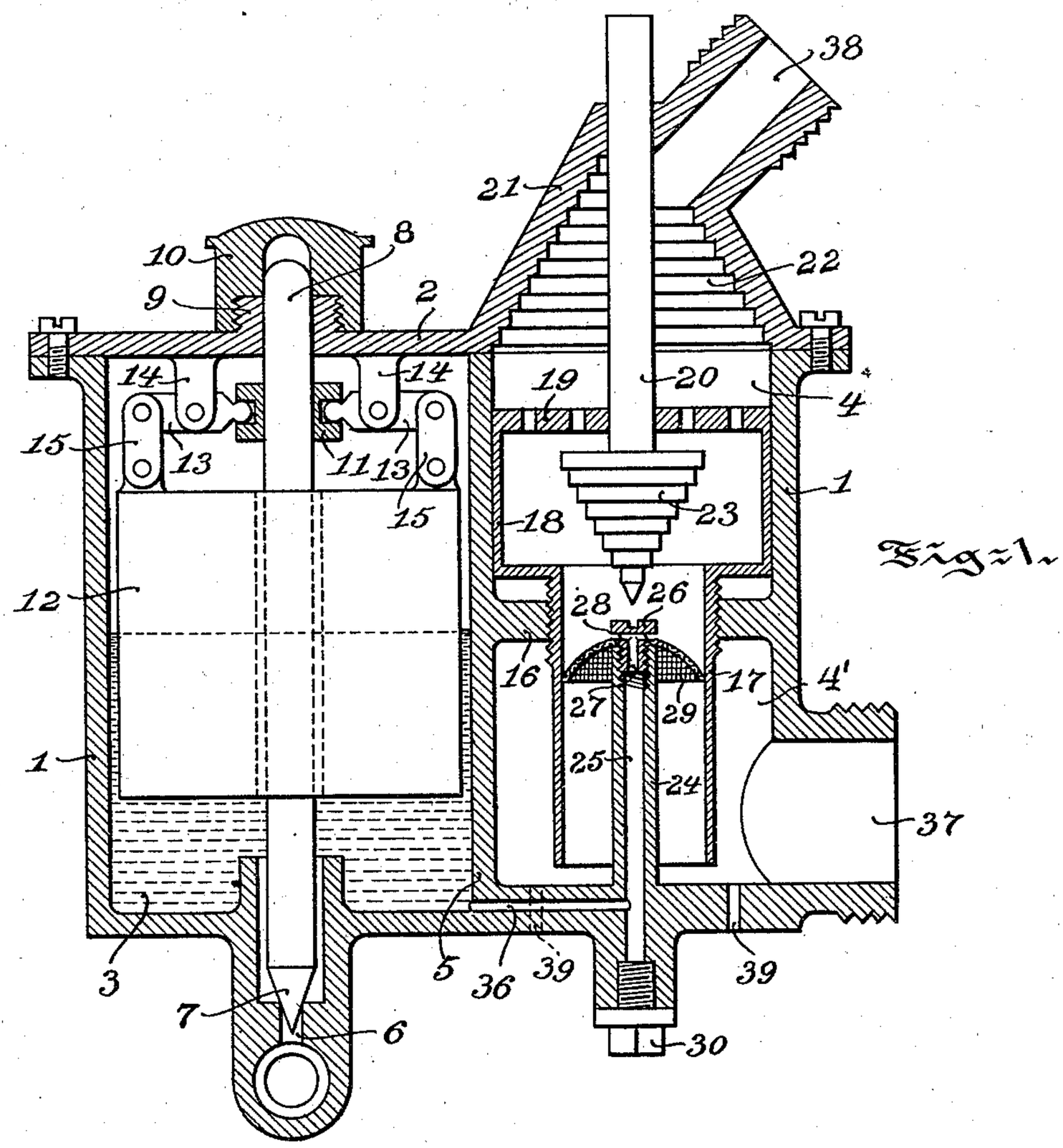

Fig. 1.

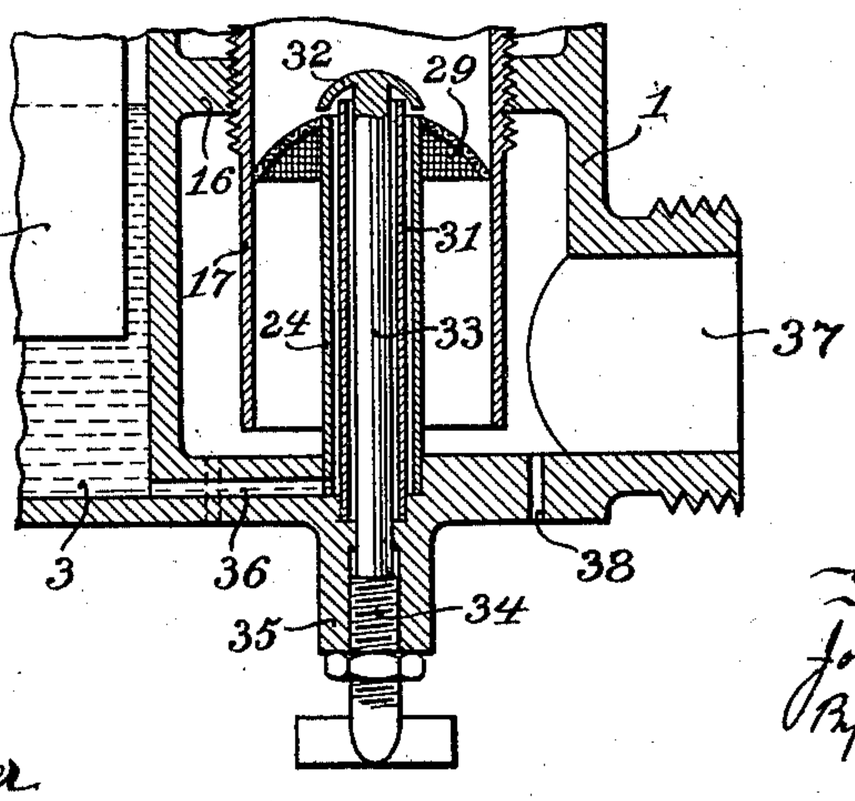

Fig. 2.

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UNITED STATES PATENT OFFICE.

JOSEPH W. PARKIN, OF OXFORD, PENNSYLVANIA.

CARBURETER FOR EXPLOSIVE-ENGINES.

SPECIFICATION forming part of Letters Patent No. 702,469, dated June 17, 1902.

Application filed March 13, 1901. Serial No. 50,919. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH W. PARKIN, a resident of Oxford, in the county of Chester and State of Pennsylvania, have invented certain new and useful Improvements in Carbureters, of which the following is a specification.

My invention relates to mechanism for vaporizing oil and mingling it with air to provide an explosive fluid for the operation of gas-engines. Its primary objects are to provide improved means for regulating the proportions of the constituents entering into the explosive mixture, to improve the means for vaporizing the oil, to secure an intimate combination of air with vaporized oil, and generally to secure simplicity, economy, and efficiency.

The characteristics and purposes of my invention will fully appear from the following description, taken in connection with the accompanying drawings, of which—

Figure 1 is a vertical sectional view in illustration of a carbureter made in accordance with my invention, and Fig. 2 is a vertical sectional view of a detail in illustration of a modification in the construction illustrated in Fig. 1.

As shown in the drawings, the casing 1, having the removable cover 2, provides an oil chamber or reservoir 3, and a carbureting-chamber 4, separated by the partition 5.

The reservoir 3 is provided with an oil-inlet passage 6, controlled by a valve 7, balanced to maintain the oil at a constant level. To control the action of the valve, its stem 8 is adapted to play in a sleeve 9, closed by a cap 10, and a collar 11, fixed on the stem, is connected with the float 12 by means of the levers 13, fulcrumed in the hangers 14 and the links 15.

The carbureting-chamber 4 is provided interiorily with a screw-threaded annulus 16, which engages the screw-threaded air-tube 17, communicating with the air-chamber 4′. The air-tube communicates with and depends from the movable mixing-chamber 18, which has a a perforated head or diaphragm 19, opening into the top of the carbureter-chamber 4, the tube and mixing-chamber being vertically adjustable, thereby regulating or wholly closing the air-inlet to the tube from the air-chamber. A rod 20 is fixed in the head 19 and extends upward through the conical dome 21 of the chamber 4, the interior of the dome being provided with a roughened or corrugated surface or baffle 22. An inverted cone 23, having a roughened or corrugated surface, depends from the rod 20 and provides a baffle in the chamber 18 above the tube 17.

A stem or nozzle 24, having a passage 25 therethrough, is provided at its outlet with a valve for controlling the flow of oil therefrom, as the screw 26, having the passages 27 and 28 therethrough, which is adapted when turned down to wholly close the outlet-passages and when turned up to open the same to the extent desired. A plug 30 provides means for obtaining ready access to the passage 25.

The stem 24 may be made of sufficient internal diameter to receive a tube 31, having its lower end fixed in the bottom of the casing and its upper end rising above the top of the stem, a passage for oil being provided between the stem and tube. A valve 32, fixed on the top of a rod 33, adjustable by means of the engagement of the screw 34 with the sleeve 35, serves to regulate the flow of oil through the nozzle thus formed, the outlet from which being adjustable by lowering or elevating the valve.

A perforated hood or diaphragm 29, suitably made of wire-gauze, is fixed in the tube 17 below the outlet from the nozzle 24, the hood being preferably fixed at the top of the nozzle and extending outward and downward, so as to meet the interior surface of the tube.

A passage 36 conveys oil from the reservoir 3 to the nozzle 24, and a passage 37 supplies air to the chamber 4′. A passage 38 conveys the explosive mixture to the engine, and the passages 39 carry off any deposition in the bottom of the carbureter.

In operation a constant head of oil is maintained in the reservoir 3 through the action of the valve 7 and the float 12 connected therewith, thus maintaining in the nozzle 24 through the communicating passage 36 a column of oil having a constant level at the nozzle-outlet, which is regulated to permit the desired flow therethrough into the top of the tube 17 and upon the hood or diaphragm 29.

The tube 17 having been adjusted as required for regulating the flow of air therethrough from the chamber 4′, the adjustment of the position of the mixing-chamber 18 and the baffle 23 with reference to the nozzle being effected therewith, the requisite proportion of air flows through the tube 17 and the diaphragm 29, vaporizing and mingling with the oil which has passed from the nozzle 24. The oil flowing from the nozzle or that which is deposited upon the diaphragm 29 is caught up by the air thus distributed and carried therewith into the mixing-chamber 18 and against the baffle 23, thence passing through the diaphragm 19 into the dome 21, against the baffling-surface 22, and thence through the outlet-passage 38. By making the perforated diaphragm 29 of wire-gauze having a close mesh the oil is distributed over the surface of the wire and by capillarity prevented from falling therefrom, while the numerous small meshes distribute the air, so that it takes up and mingles with the oil in the most advantageous manner.

Having described my invention, I claim—

1. In a carbureter, an air-chamber, a substantially cylindrical air-tube having an inlet in said chamber, an oil-nozzle having an outlet in said tube, and an inclined wire-gauze diaphragm in said tube supported by said nozzle between the air-inlet and oil-outlet, substantially as specified.

2. In a carbureter, an air-chamber, an air-tube having an inlet in said chamber, said tube being adjustable to regulate the admission of air from said chamber thereto, an oil-nozzle having an adjustable outlet within said tube, and an inclined diaphragm having capillary meshes in said tube between the air-inlet and oil-outlet, substantially as specified.

3. In a carbureter, an air-chamber, a movable mixing-chamber having a substantially cylindrical air-tube depending therefrom and opening into said air-chamber, said mixing-chamber having a perforated head fixed therein, in combination with an oil-nozzle having an outlet within said tube, and a perforated diaphragm in said tube between the air-inlet and oil-outlet, substantially as specified.

4. In a carbureter, an air-chamber, a movable mixing-chamber having a substantially cylindrical air-tube depending therefrom and opening into said air-chamber, said mixing-chamber having a perforated head fixed therein, an inverted conical baffle in said mixing-chamber, in combination with an oil-nozzle having an outlet within said tube, and a perforated diaphragm in said tube between the air-inlet and oil-outlet, substantially as specified.

5. In a carbureter, an air-chamber, a carbureting-chamber, a movable mixing-chamber in said carbureting-chamber and having an air-tube depending therefrom into said air-chamber, said mixing-chamber having a perforated head fixed therein, an inverted conical baffle in said mixing-chamber, in combination with an oil-nozzle having an adjustable outlet within said tube, and a wire-gauze diaphragm in said tube between the air-inlet and oil-outlet, said diaphragm being supported by said nozzle and inclined downwardly therefrom, substantially as specified.

6. In a carbureter, an air-chamber, a carbureting-chamber having a corrugated conical dome or outlet, a movable mixing-chamber in said carbureting-chamber and having an air-tube depending therefrom into said air-chamber, said mixing-chamber having a perforated head fixed therein, in combination with an oil-nozzle having an adjustable outlet within said tube, and a wire-gauze diaphragm in said tube between the air-inlet and oil-outlet, said diaphragm being supported by said nozzle and inclined downwardly therefrom, substantially as specified.

7. In a carbureter, an air-chamber, an air-tube having an inlet-opening in said chamber, an oil-nozzle having an outlet in said tube, a valve for controlling the outlet from said nozzle, an adjustable rod for regulating said valve and outlet, a tube surrounding said rod within said nozzle, said tube having its lower end fixed in the bottom of said air-chamber and its upper end rising above the top of said nozzle, and a diaphragm in said air-tube between the air-inlet and oil-outlet, substantially as specified.

8. In a carbureter, a casing containing an oil-reservoir and a carbureting-chamber, an oil-nozzle leading from said reservoir to said carbureting-chamber, said reservoir being provided with a float and a valve controlled thereby for regulating the pressure of oil delivered through said nozzle, a movable mixing-chamber in said carbureting-chamber, an air-tube depending from said mixing-chamber, an air-chamber communicating with said air-tube, and a wire-gauze diaphragm in said air-tube, said diaphragm being supported by said nozzle and inclined downwardly therefrom, substantially as specified.

In testimony whereof I have hereunto set my hand, this 11th day of March, 1901, in the presence of the subscribing witnesses.

JOSEPH W. PARKIN.

Witnesses:
WILLIAM R. DARRAH,
JOHN THIEL.