C. M. STROUD.

CARBURETER.

APPLICATION FILED JAN. 17, 1910.

1,044,594.

Patented Nov. 19, 1912.

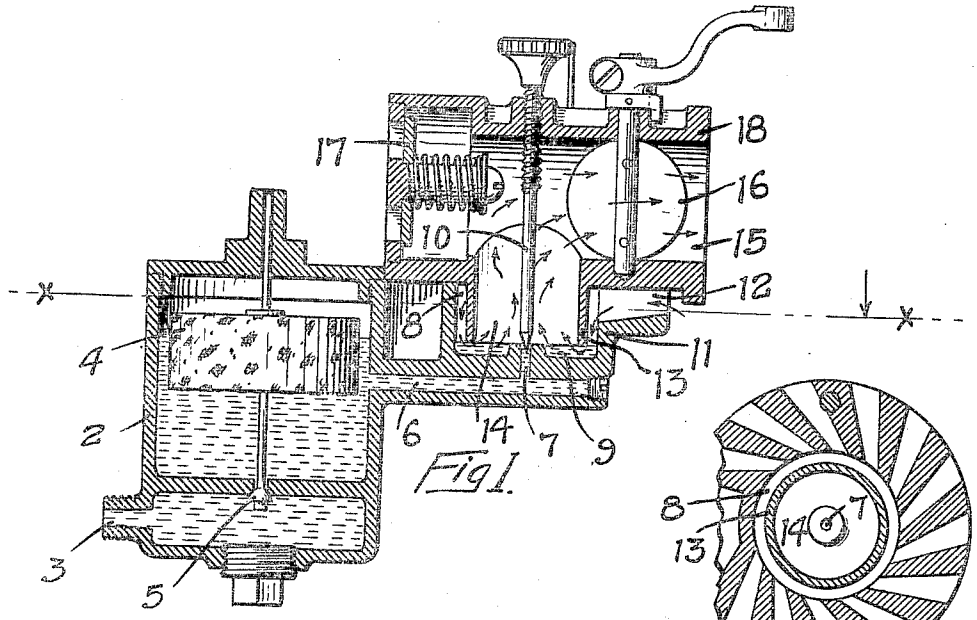

Fig 1.

Fig 4.

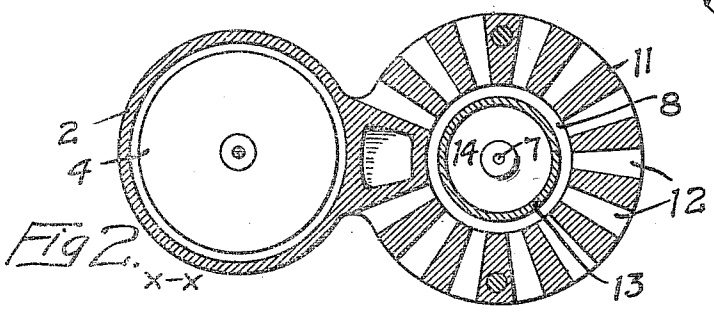

Fig 2.

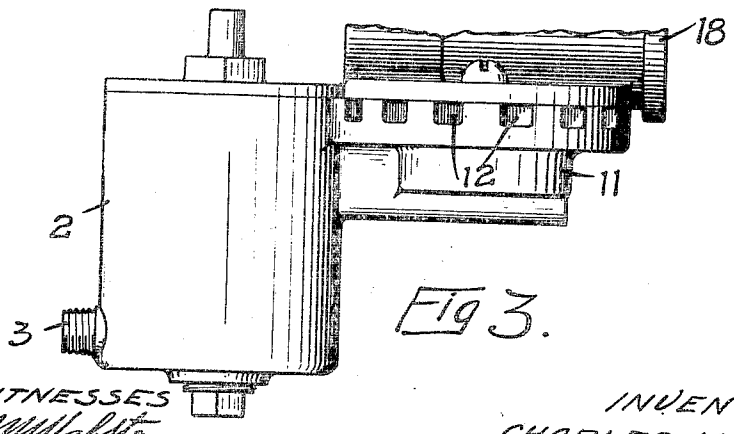

Fig 3.

WITNESSES

INVENTOR

CHARLES M. STROUD

BY Paul & Paul

ATTORNEYS

UNITED STATES PATENT OFFICE.

CHARLES M. STROUD, OF MINNEAPOLIS, MINNESOTA.

CARBURETER.

1,044,594. Specification of Letters Patent. Patented Nov. 19, 1912.

Application filed January 17, 1910. Serial No. 538,484.

To all whom it may concern:

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

My invention relates to carbureters and particularly a self-priming one.

In carbureters as usually constructed, it is necessary, particularly in cold weather, to operate the valve by hand to feed some gasolene into the mixing chamber for the purpose of priming it. Sometimes it is necessary to drop gasolene into the cylinder or cylinders before the engine can be started.

The object of my present invention is to maintain, while the engine is at rest, a pool of gasolene in the vaporizing chamber to the end that the engine can be easily and quickly started.

A further object is to provide a construction which will permit air to be drawn in from all sides and thoroughly mixed with the gasolene preparatory to entering the engine cylinder.

The invention consists generally in a carbureting vaporizing chamber having means for retaining a pool of oil therein contiguous to the air inlet ports.

Further the invention consists in providing a series of air inlet ports around the vaporizing chamber.

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 horizontal sectional view on the line x—x of Fig. 1, Fig. 3 is a side elevation, Fig. 4 is a modified construction illustrating the air inlet ports arranged tangentially with respect to the axis of the vaporizing chamber.

In the drawing, 2 represents an oil reservoir having a supply opening 3 and a float 4 controlling a valve 5 in the usual way.

6 is an oil passage leading from the reservoir and 7 is a port communicating with said passage and with the vaporizing chamber 8. In the bottom of this chamber is a depression 9 wherein a pool of the oil may collect upon entering the chamber through the port 7, the oil in the pool being maintained on a level with the oil in the reservoir. A needle valve 10 controls the entrance of oil from the passage 6 into the vaporizing chamber. This valve is adjusted to admit the desired amount of oil from the reservoir, the adjustment being varied according to the temperature, as usual in devices of this kind. An annular wall 11 incloses the vaporizing chamber and has a series of radial air passages 12 therein leading from the open air into said chamber, and within said chamber and depending below said air passages and preferably to a point within the oil in the pool or contiguous thereto, is a flange 13 inclosing a passage 14 through which the mixture flows to a passage 15 leading to the cylinder. This passage 15 is provided with the usual valve 16 and opposite this valve an auxiliary air intake valve 17 is preferably provided. A pipe 18 is connected with the cylinder in the usual way and when the engine is in operation, a suction will be established through the passages 14 and 15 and currents of air will be drawn in through the passages 12. These currents of air, entering the annular passage, formed between the flange 13 and the wall of the vaporizing chamber, will flow downwardly therein and, contacting with the pool of oil, will be thoroughly carbureted. If the lower edge of the flange is out of contact with the oil in the pool, then the air will flow over the surface of the oil, but if the lower edge of the flange is immersed in the oil, then the currents of air will pass down through the oil and under the flange, emerging in the passage 14. As fast as the oil in the pool is taken up a fresh supply will enter through the port 7, and in practice I have found that the vaporization is so rapid that the supply in the pool will be gathered up instantly upon starting the engine and will only accumulate when the engine is at rest. When the engine stops, a pool of the oil will collect in the bottom of the vaporizing chamber and be present contiguous to the air passages for immediate vaporization as soon as the engine is started. No time is, therefore, required for priming or introducing oil to the cylinders. The location of the series of air passages around the chamber insures the entrance of a large volume of air to the vaporizing chamber and an abundant supply of the mixture to the engine. The introduction of air from all sides of the vaporizing chamber insures a more thorough mixture than would be possible with air inlet ports as usually arranged. The flange coöperating with the walls of the chamber forms a duct, usually annular, extending around the cham-

ber and communicating with the air intake openings, the walls of the duct serving to direct the currents of air downwardly into contact with the pool of oil in the bottom of the chamber.

In Fig. 4 I have illustrated a modified construction, which consists in providing air passages 20 tangentially arranged with respect to the axis of the vaporizing chamber. The operation, however, will be substantially the same as described, the currents of air entering the passages, striking the wall of the flange 14 and being deflected downwardly thereby into the pool of oil beneath.

I do not, in this application, wish to be confined to the specific arrangement or construction of parts shown herein, as I am aware that the vaporizing chamber and the air inlet ports may be modified in various ways and still be within the scope of my invention.

I claim as my invention:

1. A carbureter comprising a casing having a vaporizing chamber and an oil reservoir provided with an overflow opening communicating with said chamber, the floor of said chamber being adapted to receive the overflow from said opening and form a shallow pool of oil sufficient for the initial charge of the engine, the central portion of said chamber above said floor being open and unobstructed, the outer, upper walls of said chamber having a series of air intake openings extending at intervals around said chamber, said walls also having a circumferential duct communicating with said openings and operating to direct the incoming currents of air downwardly into the oil on said floor, the currents of air flowing downwardly from all sides and being deflected inwardly and upwardly by the lower walls of said chamber, and meeting in the central unobstructed portion of said chamber, whereby a uniform and thorough mixture of the oil and air will be obtained.

2. A carbureter comprising a casing having a vaporizing chamber and an oil reservoir provided with an overflow opening communicating with said chamber centrally through the bottom or floor thereof, a valve for said overflow opening, the floor around said valve being adapted to contain a shallow pool of oil sufficient for the initial charge of the engine, said floor being normally dry when the engine is in operation, said vaporizing chamber having a series of air intake openings in its upper walls extending around said chamber, the middle portion of said chamber being open and unobstructed, a flange depending within said chamber near its outer walls and spaced therefrom and forming with said outer walls a narrow circumferential duct communicating at its upper end with said air inlet openings, the lower end of said duct leading into said chamber near the floor thereof and directing the currents of air into the pool of oil, the lower walls of said chamber deflecting the air currents upwardly and inwardly, said currents meeting in the central portion of said chamber and flowing inwardly from all sides of said chamber, whereby a uniform mixture will be obtained.

3. A carbureter comprising a casing having a vaporizing chamber and an oil reservoir provided with an overflow opening communicating with said chamber, the overflow from said opening accumulating on the floor of said chamber when the engine is at rest and forming a pool sufficient for the initial charge of the engine, the vaporization being sufficiently rapid when the engine is at work to prevent accumulation of the oil on the floor of said chamber, said chamber having a series of circumferential air intake openings in its upper walls and a flange depending within said chamber to a point near the floor thereof, and spaced from the walls of said chamber and forming therewith a narrow duct which communicates at its upper end with said air intake openings, the walls of said chamber and said flange directing the air currents downwardly into the pool of oil and deflecting them inwardly and upwardly, said air currents entering said chamber from all sides thereof, whereby a uniform mixture will be obtained.

4. A carbureter comprising a casing having a vaporizing chamber therein provided with a bottom adapted to contain a shallow pool or film of oil and communicating with a source of oil supply, the walls of said casing having a series of air intake passages tangentially arranged with respect to said walls, said chamber having a circumferential duct communicating with said passages, the walls of said duct directing the air currents downwardly into the pool of oil in the bottom of said chamber whereby said air currents will be uniformly and thoroughly carbureted.

In witness whereof I have hereunto set my hand this 11″ day of Jan. 1910.

CHARLES M. STROUD.

Witnesses:
L. C. CRONEN,
A. M. WALSTROM.