O. C. KREIS, Jr.

CARBURETER.

APPLICATION FILED DEC. 13, 1909.

1,006,387.

Patented Oct. 17, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

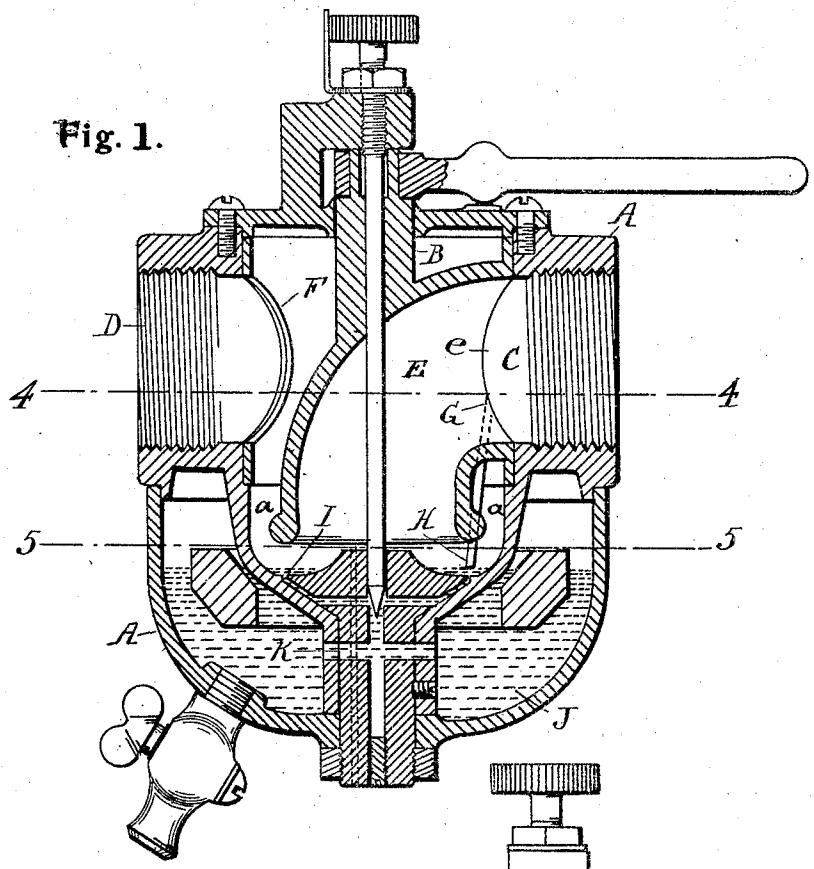


Fig. 3.

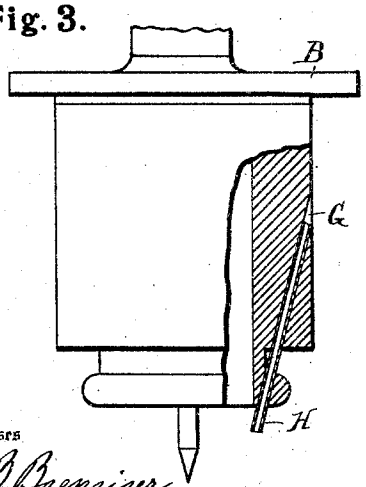
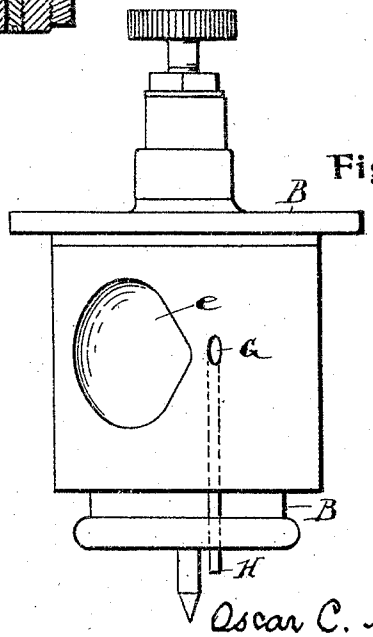


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

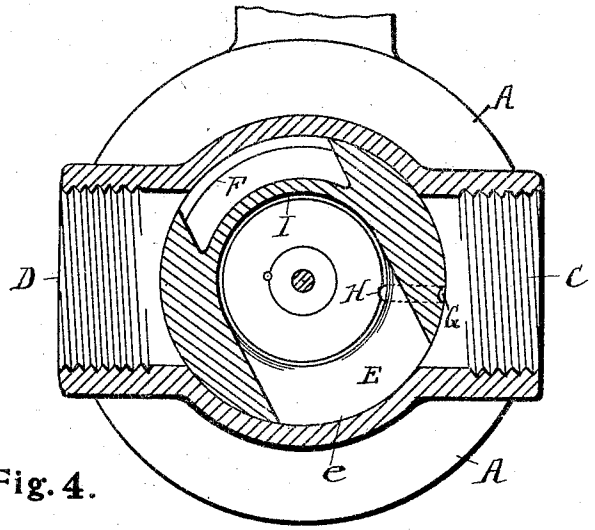

Fig. 4.

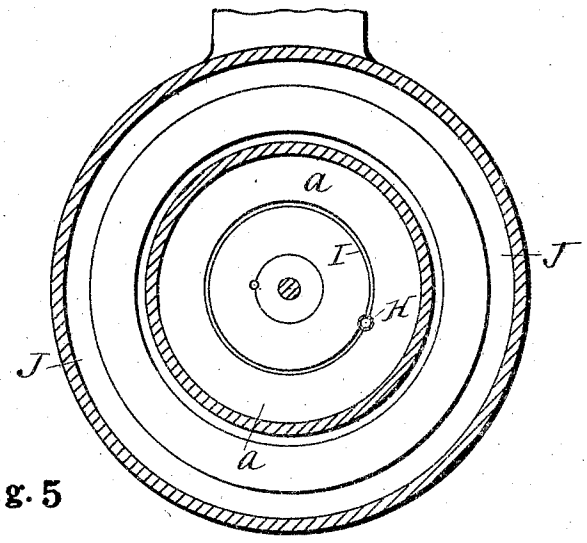

Fig. 5

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UNITED STATES PATENT OFFICE.

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CARBURETER.

1,006,387. Specification of Letters Patent. Patented Oct. 17, 1911.

Application filed December 13, 1909. Serial No. 532,781.

To all whom it may concern:

Be it known that I, OSCAR C. KREIS, JR., a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and uesful Improvement in Carbureters, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to carbureters and an object of my invention is to provide an improved carbureter which shall maintain a uniform and proper mixture when the throttle is partly closed. I secure this object in the device illustrated in the accompanying drawings, in which,—

Figure 1, is a sectional elevation of a carbureter embodying my invention. Fig. 2, is an elevation of the plug separate from the casing. Fig. 3, is a detail sectional view of a part of the plug shown in Fig. 2. Fig. 4, is a section on the line 4—4, Fig. 1, looking from above. Fig. 5, is a section on the line 5—5, Fig. 1, looking from above.

A is a casing in which is a reservoir J for gasolene and a mixing chamber *a*.

B is a plug fitted to turn in the casing A and communicating with the mixing chamber *a*, the intake C to the casing and the exit passage D which is intended to be connected to the intake passage of the motor.

E is a curved passage in the plug B having its lower end opening downward into the mixing chamber *a*, its upper end opening at the side of the plug B and adapted to register with the intake passage C.

F is an aperture in the wall of the plug B adapted to register with the passage D.

K is a passage for the liquid hydro-carbon communicating with an annular opening I, through which annular opening the hydro-carbon is delivered to the mixing chamber *a* and rises in said chamber to about the level indicated. The annular opening I has its center in line with the axis of the plug B.

G is the upper, and H the lower end of a pipe in the plug B. The upper end G opens at the periphery of said plug so as to register with the passage C even when the plug is turned so that the opening *e* of the passage E no longer registers with the passage C, or when the opening *e* only communicates to a small extent with the passage C, as indicated in Fig. 4. When the plug B is turned on its axis to control the area of the air passage through the casing A, the lower end H of the pipe G H passes along slightly above the opening I and close to the level of the liquid in the chamber *a* and is always in substantially the same position relative to said opening. When the plug B is turned so that the passage is fully open through the casing A, then the upper end of the pipe G is covered by the wall of said casing. When the passage for air through the casing A is partly closed, as indicated in Fig. 4, the upper end G of the pipe G H is fully open to the passage C and the suction of the engine draws a strong draft of air through the pipe G H which impinges directly upon, and approximately at right angles to the level of, the hydro-carbon in the chamber *a* and the annular opening I, thus producing a rich mixture of air and hydro-carbon vapor to unite with and enrich the air drawn through the passages C, E, F, and D. As the passage through the casing A is contracted by the turning of the plug B, the air moves through said passage with less velocity and is less efficient in taking up the gasolene. To remedy this defect, the pipe G H provides a passage through which a stronger draft will be drawn when the other passage for air through the casing A is partly closed.

It will be noted that by placing the pipe G H, as above described, in a rotating piece, the lower end of said pipe will be maintained in such a position relative to the liquid hydro-carbon and the delivery opening therefor that the air through said pipe will always directly impinge upon the gasolene under the most favorable conditions for taking up the vapor.

I have found by experiment that the relative size of the pipe G H should be about as shown.

Claims:—

1. In a carbureter having an air passage therethrough, a mixing chamber, and an opening adapted to deliver liquid hydro-carbon to said chamber, a rotating member adapted to adjust the area of said passage, a pipe on said rotating member so located that one of its ends shall be in communication with the outer air when the first-mentioned air passage is partly closed and hav-

ing its other end opening into said mixing chamber so located relative to said rotating member and to the hydro-carbon in said chamber that said other end shall always maintain the same relative position relative to the hydro-carbon in said chamber.

2. In a carbureter, the combination of a mixing chamber, an annular delivery opening for gasolene opening into said mixing chamber, a rotating member adapted to regulate the area of the passage through said mixing chamber and adapted to turn about an axis concentric with said annular delivery opening, and a pipe in said rotary member having one end adjacent to and directed toward said annular opening, and its other end opening at the side of said rotary member and communicating with the outer air when said rotary member has partly closed the passage through said mixing chamber, substantially as and for the purpose described.

3. In a carbureter, the combination of a mixing chamber, means to maintain liquid therein at a predetermined place, a passage through said carbureter including said mixing chamber, means for regulating the area of said passage, a second passage communicating with the outer air and adapted to convey a current of air and deliver the same at said place, when the first-named passage is closed, and means for closing said second passage when the first passage is open.

4. In combination, a carbureter having an air passage therethrough, a rotating member adapted to regulate the area of said passage, a delivery passage for hydro-carbon opening into said passage having its center in line with the axis of said rotating member and a second passage located in said rotating member opening at the side thereof at one end and at its other end opening into the first-named passage adjacent to the opening of the delivery opening for hydrocarbon, substantially as and for the purpose described.

In testimony whereof, I sign this specification in the presence of two witnesses.

OSCAR C. KREIS, JR.

Witnesses:
VERA PILLMAN,
ELLIOTT J. STODDARD.