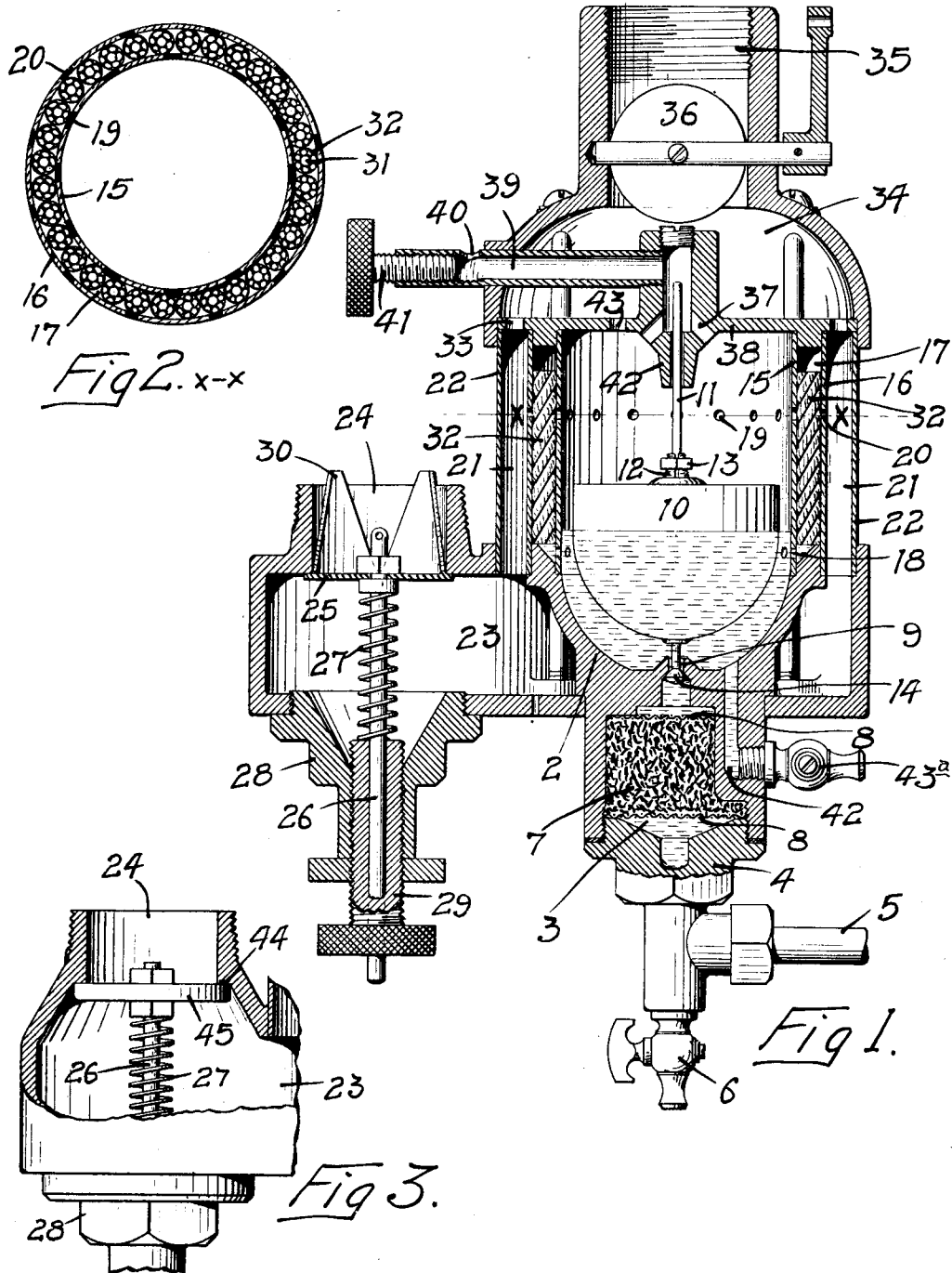


W. J. RUBESKY.
CARBURETER.

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1,065,331.

Patented June 17, 1913.



WITNESSES
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WILLIAM J. RUBESKY, OF MINNEAPOLIS, MINNESOTA.

CARBURETER.

1,065,331.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM J. RUBESKY, a citizen of the United States, and a resident of Minneapolis, county of Hennepin, State of Minnesota, have invented certain new and useful Improvements in Carbureters, of which the following is a specification.

The object of my invention, is to provide a carbureter of simple construction, and one which is easily accessible in all its parts for examination or adjustment.

A further object, is to provide a carbureter having improved means for vaporizing the oil and insuring a uniform continuous feed to the engine at all times.

Other objects of the invention will appear from the following detailed description.

The invention consists generally of various constructions and combinations, all as hereinafter described and particularly pointed out in the claims.

In the accompanying drawing forming part of this specification, Figure 1, is a sectional view of a carbureter embodying my invention, Fig. 2, is a transverse sectional view on the line $x-x$ of Fig. 1, Fig. 3, is a detail sectional view showing a modified construction of air inlet valve.

In the drawing, 2 represents an oil cup beneath which is a filtering chamber 3 having a removable cap 4 communicating with the source of oil supply through a pipe 5. A drip-cock 6 below the pipe 5 allows the filtering chamber to be drained. Within this chamber, I provide a filtering material 7 with screens 8 above and below it, so that the oil will be thoroughly filtered before entering the cup. A port 9 leads through the bottom of the cup from the filtering chamber and a cup shaped float 10 is provided within the cup 2 and is adjustably mounted on a stem 11 by means of a split sleeve device 12, and a nut 13. Upon loosening this nut, the float may be moved up and down on the stem until the desired adjustment is obtained. The stem depends below the float and is provided at its lower end with a valve 14 having a tapered face to contact with a correspondingly shaped seat at the entrance of the port 9. When the float descends, the valve will be opened and communication permitted between the filtering chamber, and the cup. When the float ascends, the valve will be closed and communication cut off.

Mounted on the cup 2, are concentric sleeves 15 and 16 with an annular chamber 17 formed between them and the inner sleeve 15 has a series of ports 18 in its lower walls leading from the cup to the chamber 17. The upper walls of the sleeves have a series of ports 19 and 20 therein, in staggered relation with one another, and leading to an outer annular chamber 21 formed between the sleeve 16 and a shell or casing 22. The ports 19 are larger than the ports 20 to permit the passage of a greater volume of air in a given time and prevent the possibility of the oil being sucked up through the wick chamber. The chamber 21 communicates with a chamber 23 which incloses the lower portion of the cup 2 and said chamber 23 has an air inlet opening 24 and a valve 25 that is mounted on a slidable rod 26. A spring 27 on said rod normally holds the valve in its closed position. A cap 28 is tapped into the wall of the chamber 23 and is provided with a threaded plug 29 in which the rod 26 is adapted to slide. The inner end of the threaded plug contacts with the spring 27 and by moving the plug back and forth, the tension of the spring may be regulated. The valve 25 is provided with a series of tapered blades 30 which have notches formed between them for the admission of air into the chamber 23, said notches increasing rapidly in area as the valve opens and allowing an increased volume of air to enter the chamber as the valve descends. This means for regulating the increase in the area of the inlet opening as the valve descends, allows me to utilize a comparatively weak spring for supporting the valve and move the valve a considerable distance without exposing too large an opening. As indicated in Fig. 1, I provide means at the upper end of the rod 26 to allow the attachment of a cord thereto for holding the valve shut, when as in cold weather, it is desirable to increase temporarily the richness of the mixture, causing it to contain a larger percentage of vaporized oil in proportion to the fresh air supplied through the valve. By the movement of the plug 29, the tension of the spring can be increased or decreased and the stroke of the valve regulated. The air entering the chamber 23, will flow around the oil cup and up into the annular chamber 21.

For the purpose of lifting the oil from the cup to the level of the ports, 19 and 20, I provide a series of what I prefer to designate as armored wicks, consisting of a core of ordinary wicking 31 and a series of wire strands 32 wrapped around it, said wicks being arranged side by side in the chamber 17 and inclosing the float chamber. The lower ends of the wicks are below the level of the oil in the cup as indicated in Fig. 1, and the oil will mount upward by capillary attraction and slowly spread over the surfaces of the wire strands and when the air is drawn from the float chamber through the ports 19 and 20, this oil will be vaporized and be carried along with the air current into the chamber 21. From thence it will pass through ports 33 into a chamber 34 which communicates through a passage 35 with the engine cylinder. A throttle 36 in said passage, controls the flow of the vapor laden air in the cylinder.

To supply fresh air to the float chamber, and maintain a circulation therethrough, I provide ports 37 in a cap 38 which closes the top of the float chamber, said ports communicating with a pipe 39 which extends outwardly through the wall of the chamber 34 and is provided with an intake port 40, whose area is regulated by means of a screw plug 41. The cap 38 has a guide 42 in which the upper end of the stem 11 is adapted to slide and said cap also has equalizing port 43 leading from the float chamber to the chamber 34, this equalizing port forming an important feature of my invention. It has no communication with the outer air, but forms a passage between the float chamber and the chamber leading to the cylinder through which the vapor laden air currents pass from the chamber 21. The ports 33 are of greater diameter than the port 43 and the air will be drawn through the ports 33 on the suction stroke, bearing the vaporized oil which has been collected from the strands of the wicks. The fresh air will enter the cup through the port 40, and prevent the formation of vacuum and the port 43 will enable an equilibrium to be maintained between the cup and the surrounding air chamber. The oil cup has a draw-off port 42 provided with a valve 43^a.

The operation of the carbureter is as follows: The inlet valve and the float having been properly adjusted, the suction stroke of the engine will open the inlet valve and air entering the chamber 23, will pass up around the float chamber and the suction will draw the air through the ports 19 and 20 and into the chamber 21. During the passage of the air from the float chamber, the oil collected on the wire strands of the wicks, will be gathered up and carried along with the air current, and be thoroughly vaporized, the oil being supplied through

the core wickings from the cup beneath. As the air is drawn from the float chamber, fresh air will enter therein through the port 40, and maintain a constant supply sufficient to insure the efficiency of the carbureting operation, and a uniform current of vaporized air to the cylinder.

In Fig. 3, I have shown a modified construction of the valve, which consists in providing a seat 44 for a disk 45 mounted on the stem corresponding to the one shown in Fig. 1, and held in a closed position with a yielding pressure by a spring coil around said stem and corresponding to the spring shown in Fig. 1. When the valve is opened on the suction stroke, an opening will be formed between the valve and seat through which the fresh air may flow into the chamber 23. The valve shown in Fig. 3, has a flaring wall 45' formed below its seat which has the same function as the tapered blades 30 of Fig. 1. The effect of this wall is to reduce the area of the valve opening on the initial movement of the valve and allow such opening to increase proportionately to the travel of the valve. This construction will allow me to use a weak spring and permit the valve to move a considerable distance on the suction stroke of the engine without exposing too large an opening for the admission of air.

With this carbureter, the volume of air admitted to the cup can be accurately controlled and this means of adjustment in connection with the regulation of the air inlet valve, permits me to control the feed to the cylinder and regulate the quantity of gas according to the volume of air passing the carbureting ports of the oil cup.

I claim as my invention:

1. A carbureter, comprising a cup having a connection with a source of oil supply, sleeves mounted on said cup and one within the other and having a space between them, said inner sleeve having ports normally below the level of the liquid in the cup, and both said sleeves having ports in their upper walls above the level of the liquid in the cup, a series of wicks and metallic coverings therefor arranged between said sleeves, the lower ends of said wicks being below the level of the liquid in the cup and the upper ends thereof extending above the ports in the upper walls of said sleeves, means for regulating the admission of oil to said cup, a casing inclosing said sleeves and spaced therefrom and forming an air chamber, an inlet valve communicating with said air chamber, said chamber having means for connection with an engine cylinder, and means for admitting fresh air to the space inclosed by said inner sleeve, substantially as described.

2. A carbureter, comprising a cup having a connection with a source of oil supply,

sleeves concentrically mounted on said cup, the inner sleeve having ports in its lower walls below the level of the liquid in the cup, and both of said sleeves having ports in their upper walls extending therethrough, a series of wicks having metallic surfaces arranged between said sleeves, the lower ends of said wicks being below the level of the liquid in said cup and the upper ends of said wicks being above the ports in the upper walls of said sleeves, a casing inclosing said sleeves, means for admitting air to said cup, the suction in said casing establishing a circulation through said ports and across said wicks.

3. A carbureter, comprising a cup having a connection with a source of oil supply, a series of wicks having their lower ends below the level of the oil in said cup, walls between which said wicks are arranged, said inner wall having ports leading into said cup and both said walls having ports extending therethrough above the level of the liquid in the cup and said wicks extending above said last named ports, and being composed of a core of fibrous material and metallic strands inclosing the same, a casing inclosing said walls, means for admitting air to said cup, the suction in said casing establishing a circulation through said ports and across said wicks.

4. A carbureter, comprising a cup having a connection with a source of oil supply and having a wick chamber mounted thereon, said chamber being provided with inner and outer walls with a space between them and wicks within said space, said wicks being composed of a fibrous core and wire strands coiled about the same, and the inner wall of said chamber having ports below the level of the liquid in the cup and communicating with said wick chamber, and the upper walls of said chamber having ports extending therethrough, a casing inclosing said walls, means for admitting air to said cup, the suction in said casing establishing a circulation through said ports and across said wicks.

5. In a carbureter, an oil cup, sleeves therein and spaced apart and a series of oil feeding wicks between said sleeves, the lower ends of said wicks being below the normal level of the liquid in the cup, and the upper ends of said wicks being above said normal level, said wicks consisting of a fibrous core and a series of wire strands inclosing the same, the oil carried upward by said core being distributed over the surfaces of said wires, said sleeves having ports therein, and an air chamber communicating with said ports, the circulation in said air chamber causing the passage of currents of air through said ports and across said wicks.

6. A carbureter, comprising a cup having a connection with a source of oil supply and means for regulating the admission of the oil

thereto, wicks having their lower ends below the level of the oil in said cup, walls inclosing said wicks, the inner wall having ports below the level of the liquid in the cup and both said walls having ports above said level, an inlet valve having a chamber inclosing said wicks and having means for connection with an engine cylinder, a cap for said cup having ports therein, and a pipe communicating with said ports and having a fresh air inlet and regulating valve therefor, whereby the admission of air to said cup and said ports may be controlled.

7. A carbureter, comprising a cup having a connection with a source of oil supply and means for regulating the admission of oil thereto, said cup having walls with ports therein above and below the level of the liquid in the cup and means for feeding the liquid to said upper ports, a cap closing the top of said cup and having air intake ports therein, and means for regulating the admission of air thereto, and said cap having an equalizing port, a wall forming an air chamber inclosing said cup and having an inlet valve and said cap having ports leading to said chamber whereby currents of air will be established across the ports in the walls of said cup and a circulation established through said cup.

8. A carbureter, comprising a cup having means for connection with a source of oil supply, and a regulating valve for said supply, a cap closing the top of said cup and having air intake ports, means for regulating the admission of air to said ports, said cup having ports in its walls above and below the level of the liquid therein and means for feeding the oil to said upper ports, a chamber inclosing said cup and having an inlet valve and means for connection with an engine cylinder whereby air currents will be established across said upper ports and through said cup.

9. A carbureter, comprising a cup having means for connection with a source of oil supply, said cup having a series of ports in its upper walls and means for feeding the oil upwardly to said ports, an air chamber inclosing said cup and having an inlet valve and connected with the engine cylinder, a cap closing the top of said cup and having an air intake port and an equalizing port provided in said cap leading to said cup and communicating with the passage from said air chamber to the engine cylinder, substantially as described.

10. A carbureter comprising an oil cup communicating with a source of oil supply and a float in said cup, wicks arranged around said cup and having their lower ends below the normal level of the oil in said cup, walls inclosing said wicks and having ports therein communicating with the interior of said cup, a cover for said

cup having an air port, and a mixing chamber communicating with said cup through said port, a circulation of air being established through said ports and across said wicks with the suction stroke of the engine.

11. The combination, with a carbureter including a cup, sleeves mounted thereon and having air ports therein, of an oil feeding wick interposed between said sleeves and consisting of a fibrous core, and a wire coiled around said core.

12. The combination, with a carbureter including a cup, and sleeves mounted thereon and having air ports therein, of a series of oil feeding wicks interposed between said sleeves, each wick consisting of a fibrous core and a closely coiled wire covering therefor.

13. A carbureter, comprising a cup having means for connection with the source of oil supply, said cup having ports in its upper walls and means for feeding the oil thereto, an air chamber connected with the engine cylinder and having an inlet valve, a cap closing the top of said cup and having an air intake port and an equalizing port leading to said cup and communicating with the passage from said air chamber to the engine cylinder.

14. A carbureter comprising a cup adapted to contain a supply of oil, walls arranged above said cup and having ports therein, wicks disposed between said walls and adapted to feed the oil by capillary attraction to said ports, a wall inclosing said cup and forming an air chamber around said wicks and admitting air to said ports, said cup having a cover and port therein, a circulation of air being established from said air chamber through said ports and across said wicks on the suction stroke of the engine.

15. A carbureter comprising a cup adapted to contain oil, walls spaced apart above said cup and having ports therethrough, a wick in the space between said walls and having a metallic covering, the lower portion of said wick being below the level of

the oil in said cup and the upper portion of the wick extending above said ports.

16. A carbureter comprising a cup, sleeves concentrically arranged and having ports in their upper walls, an oil feeding wick having a fibrous core depending within said cup and disposed between said sleeves, the currents of air entering said ports passing through said wick, and the lower walls of the outer sleeve being imperforate.

17. A carbureter comprising a cup adapted to contain a supply of oil, sleeves concentrically arranged above said cup and having air ports therein, the ports in the inner sleeve being larger than those in the outer sleeve, an oil feeding wick having a fibrous core depending within said cup and disposed within said sleeves and adapted to feed the oil by capillary attraction upwardly to said ports, a wall inclosing said sleeves and spaced therefrom to form an air chamber, and a valve adapted to open with the suction stroke of the engine for admitting air to said chamber.

18. A carbureter comprising a cup, a wick having a closely coiled wire covering in contact with the oil in said cup, walls inclosing said wick and having ports therein, an air chamber communicating with said ports, a valve for regulating the admission of air to said chamber, said valve opening with the suction stroke of the engine.

19. A carbureter comprising a cup adapted to contain a supply of oil, a wick having a metallic covering, walls inclosing said wick and having ports therein, said wick being adapted to feed the oil by capillary attraction to said ports, an air chamber arranged to supply air to said ports, and a valve for said chamber adapted to open with the suction stroke of the engine.

In witness whereof, I have hereunto set my hand this 13th day of August, 1908.

WILLIAM J. RUBESKY.

Witnesses:

RICHARD PAUL,
C. G. HANSON.