

1,107,849.

Fig. 1.

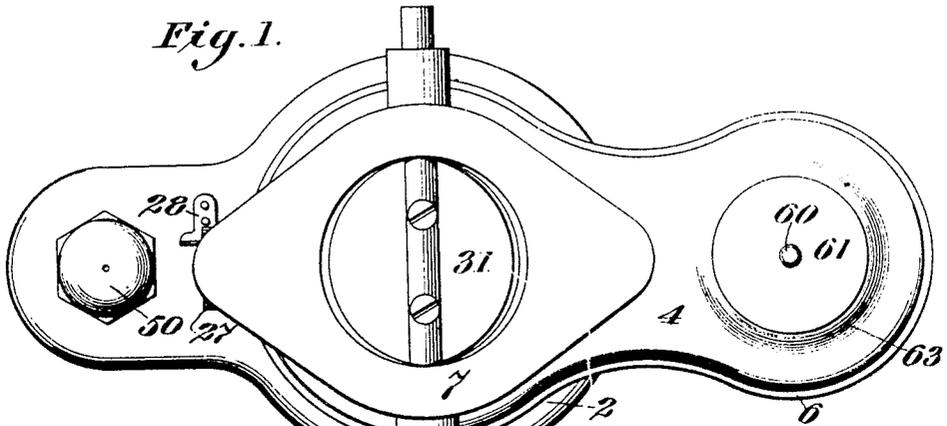
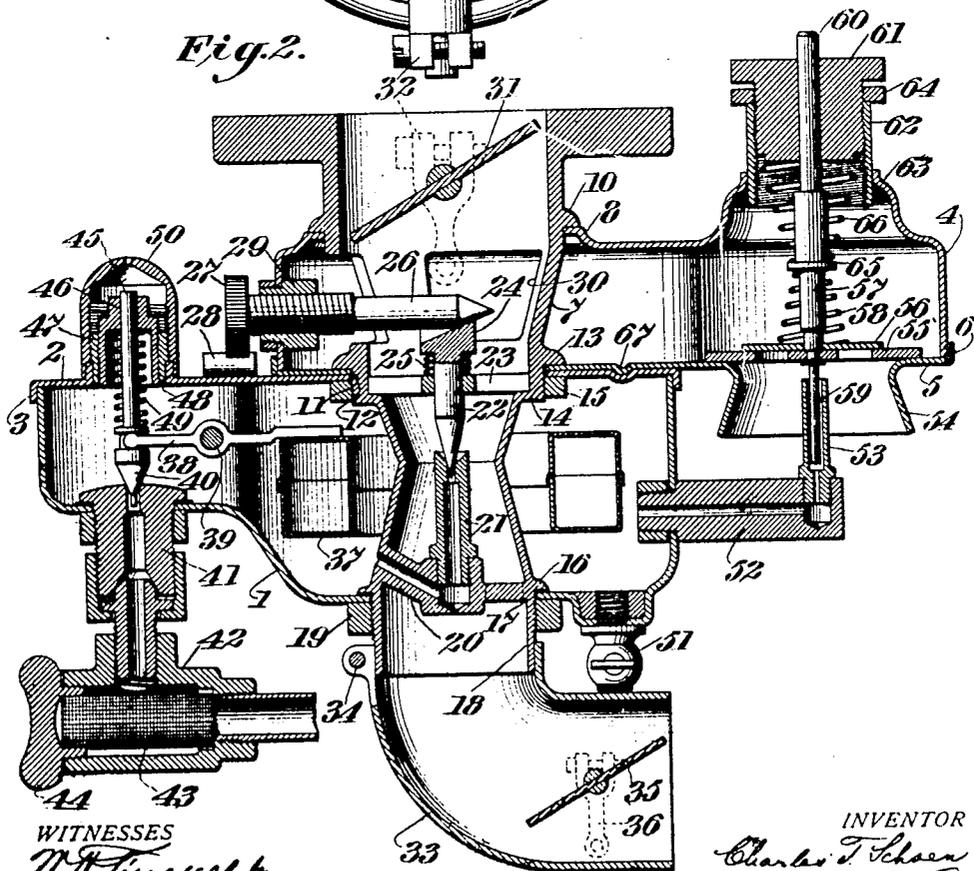


Fig. 2.



WITNESSES

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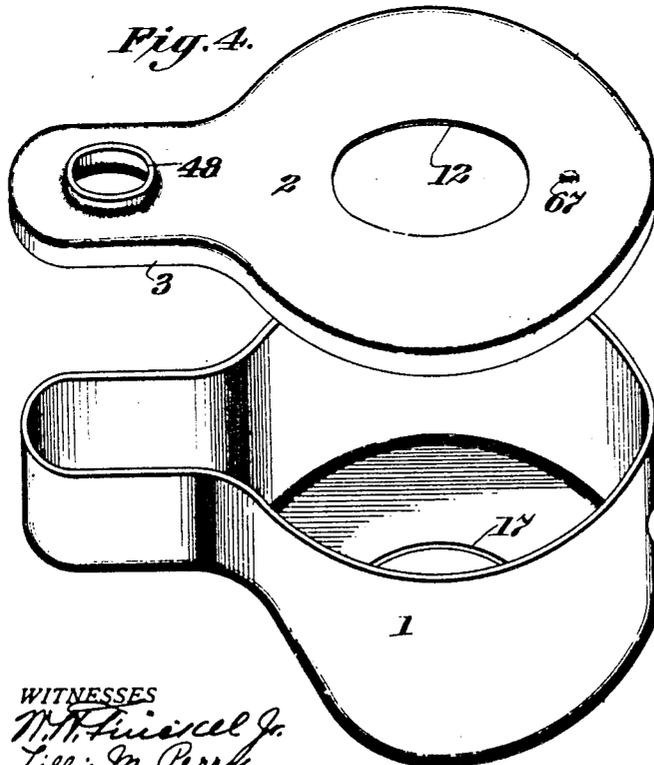
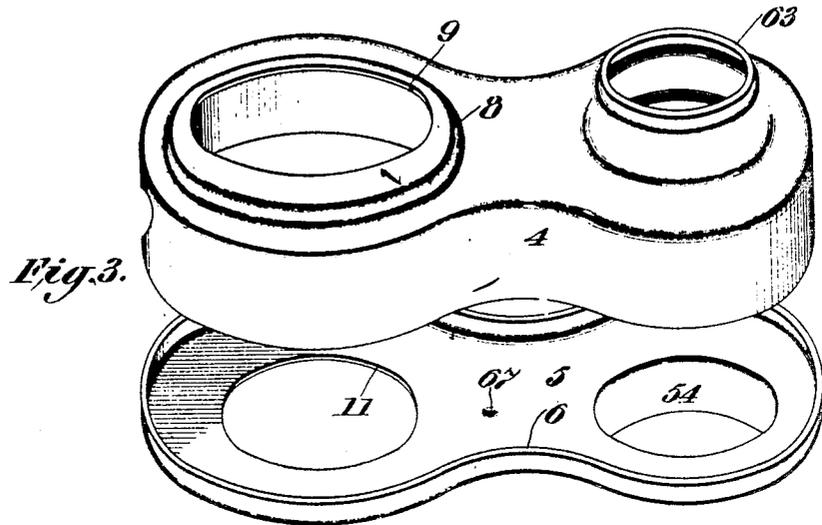
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CARBURETER.  
APPLICATION FILED JAN. 13, 1914.

Patented Aug. 18, 1914.

2 SHEETS-SHEET 2.

1,107,849.



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# UNITED STATES PATENT OFFICE.

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CARBURETER.

1,107,849.

Specification of Letters Patent. Patented Aug. 18, 1914.

Application filed January 13, 1914. Serial No. 811,833.

*To all whom it may concern:*

Be it known that I, CHARLES T. SCHOEN, a citizen of the United States, residing at Media, in the county of Delaware and State of Pennsylvania, have invented a certain new and useful Improvement in Carbureters, of which the following is a full, clear, and exact description.

This invention relates to carbureters, particularly such as may be used in connection with the motors of motor vehicles, and the like, and the objects of the invention are to produce a carbureter at a low cost, and to simplify the construction so as not only to effect an economy in the first cost, but also to avoid the complication of adjustments to get a maximum of efficiency and economy in consumption of fuel.

The invention consists of a carbureter having a float chamber composed of a body and a cover therefor, preferably made of metal pressed into shape and fitted together in any suitable way, and a mixing chamber also composed of a body and a cover likewise preferably made of metal pressed into shape, the float chamber and the mixing chamber being united by a Venturi tube, and these parts provided with the necessary valves to regulate the admission of fuel and air, as I will proceed now more particularly to explain and finally claim.

In the accompanying drawings illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a top plan view and Fig. 2 is a vertical longitudinal section of the complete carbureter. Fig. 3 is a perspective view of the constituent parts of the mixing chamber. Fig. 4 is a perspective view of the constituent parts of the float chamber.

The numeral 1 indicates the body portion of the float chamber, of substantially the contour illustrated in Fig. 4, and provided with a cover 2 having an edge flange 3 fitted in any suitable fluid-tight manner to the body portion.

4 is the body portion of the mixing chamber, of substantially the contour shown in Fig. 3, and 5 is the cover for the mixing chamber body portion having a flange 6 by

which it is fitted in any suitable fluid-tight manner to the body portion 4. The mixing chamber is arranged above the cover of the float chamber and the four parts so far described of the float chamber and the mixing chamber are provided with openings which are brought into alinement and in these openings is arranged the Venturi tube 7. As shown more in detail in Fig. 2, the body portion 4 of the mixing chamber has a raised portion 8 surrounding its opening 9, and on this raised portion rests a flange 10 on the Venturi tube. The openings 11 and 12 in the covers of the mixing chamber and the float chamber, respectively, are overlapped by another flange 13 on the Venturi tube, and the Venturi tube is provided with a screwthreaded shoulder 14 to which is applied the nut 15 screwed up against the inner side of the cover 2. Near its bottom the Venturi tube is provided with a third flange 16 which overlaps the opening 17 in the bottom of the body portion of the float chamber, and the bottom 18 of the Venturi tube is externally screwthreaded to receive a nut 19 which is screwed up against the bottom of the body portion 1, thereby not only securing the Venturi tube in place but also serving to rigidly unite the component parts of the float chamber and the mixing chamber. The Venturi tube communicates with the float chamber through a passage 20, and this passage communicates with a spray nozzle 21 in which is arranged a needle valve 22 supported in a spider 23 crossing the Venturi tube, and this valve has an inclined head 24 engaged by a lifting spring 25 on one side and an adjusting screw 26 on the other side, which adjusting screw serves to adjust the needle valve 22, and consequently regulate the quantity of liquid passing through the spray nozzle 21. This inclined head may be of any suitable construction, and it is here shown as having merely an angular or inclined slot or nick. This adjusting screw 26 may have a knurled head 27 engaged by any suitable detent, such as a spring 28, to hold it in adjusted position. This adjusting screw 26 may be mounted in a bushing or hub 29 suitably fixed in the end

of the body of the mixing chamber. The Venturi tube is provided with any suitable number of lateral openings 30 in open communication with the mixing chamber, so as to admit thereto the fluid from the float chamber.

The upper portion of the Venturi tube is provided with a throttle valve 31 to which may be applied any suitable operating means such as a throttle lever 32. The lower part of the Venturi tube is provided with an elbow 33 secured thereon by any suitable means, such as a clamping screw 34. In this elbow is mounted a throttle valve 35, which is provided with any suitable operating means, such as a throttle lever 36.

37 is the float, here shown as of annular form, and made of pressed metal parts suitably united, and having connected therewith a float lever 38 mounted upon a suitable bearing 39 and connected with a valve 40 which is seated in a plug 41 applied to the bottom of the float chamber body in any suitable way, and connected in any suitable way with a source of fluid supply. I prefer to interpose a connecting piece 42 between the valve seat 41 and the source of supply, and in it arrange a foraminous cylinder or strainer 43 to intercept any foreign matter that may be in the fluid; and this strainer is mounted in a nut 44 in such way as to be easily removable when necessary. The valve 40 has a stem 45 arranged in a plug 46 screw-threaded in a bushing 47 suitably mounted in the flanged opening 48 in the cover 2. Proper tension is placed upon the valve 40 by means of a coiled spring 49 interposed between it and its plug 46, and the plug 46 may be adjusted in its bushing in order to correct the tension of the spring 49. These last described valve parts are preferably inclosed by a cap 50 applied to the bushing 47 and cover 2.

51 is a pet cock for draining the float chamber.

52 is a tube extending laterally from the body of the float chamber and provided with a nozzle 53 to serve as an auxiliary fluid supply to the mixing chamber.

The cover of the mixing chamber has a flanged opening 54 for the admission of air and an auxiliary supply of fuel as just described, and this opening is covered by a ported disk valve 55, the openings in which are covered by an auxiliary disk valve 56, and these valves are mounted upon a stem 57, the valve 55 being rigid on the stem and the valve 56 having a slight vertical play thereon to open and close the ports in the valve 55, said valve 56 being normally held in place by a coiled spring 58 to normally close the ports in the valve 55. This valve stem 57 has an extension 59 projecting down

into the nozzle 53, and another extension 60 extending up through a plug 61 adjustably fitted in a tube 62 fixed in the raised opening 63 in the body of the mixing chamber, the adjustment of the plug 61 being fixed by the jam nut 64. Between the plug 61 and the collar 65 on the stem 57 is a coiled spring 66 which acts upon the valve 55 to seat it, and the tension of this spring 66 may be regulated by adjusting the nut 61 more or less in the tube 62.

It will be understood that the needle valve 22 is used in low speed to regulate the quantity of fluid which may be drawn through the nozzle 21 when the engine is in motion, and that the lift of this needle from its seat in the nozzle is regulated by the screw 26 acting upon the inclined head 24.

It will also be understood that the valve 56 is free to lift upon compression of the spring 58 to thereby admit air through the ports in the valve 55. As the vacuum increases by the increased suction of the engine, the valve 55 is lifted, compressing the spring 66.

The throttle 35 is used for closing off the air to increase the suction on the nozzle 21 for the easy starting of the motor.

Otherwise than as herein described, the carbureter operates in the usual manner for controlling the supply of motive fluid to the motor and the mixing of such supply with the proper quantity of air.

The mixing chamber and the float chamber may be provided with any suitable expedients for preventing the turning of the mixing chamber on the float chamber, such as the indentations 67.

While it is preferred to produce the body and cover parts of the float and mixing chambers by pressing them from sheet or plate metal, such as steel, it is to be understood that the invention is not limited to any mode of production.

What I claim is:—

1. In a carbureter, the combination of a float chamber and a mixing chamber, each composed of a body portion and a cover, the said body portions and covers provided with aligned openings, a Venturi tube fitted in said openings and provided with flanges overlapping said openings, and nuts applied to the Venturi tube beneath the body portion of the float chamber and the two covers.

2. In a carbureter, the combination of a float chamber and a mixing chamber, each composed of a body portion and a cover, the said body portions and covers provided with aligned openings, a Venturi tube fitted in said openings and provided with flanges overlapping said openings and screw-threaded portions next to the openings in the covers and the opening in the body portion

of the float chamber, and nuts applied to such screwthreaded portions beneath the covers and the said body portion.

3. In a carbureter, a float chamber, and a superposed mixing chamber, each chamber having a body portion and a flanged cover portion of pressed metal, the mixing chamber cover having a flanged air inlet, combined with a Venturi tube extending through

said chambers and connecting their body portions and covers in cooperative relation.

In testimony whereof I have hereunto set my hand this twelfth day of January, A. D. 1914.

CHARLES T. SCHOEN.

Witnesses:

J. S. WOOD,

C. S. JOHNSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."