G. W. ROMANS.

CARBURETER.

APPLICATION FILED JAN. 19, 1911.

1,037,993. Patented Sept. 10, 1912.

Fig. 1.

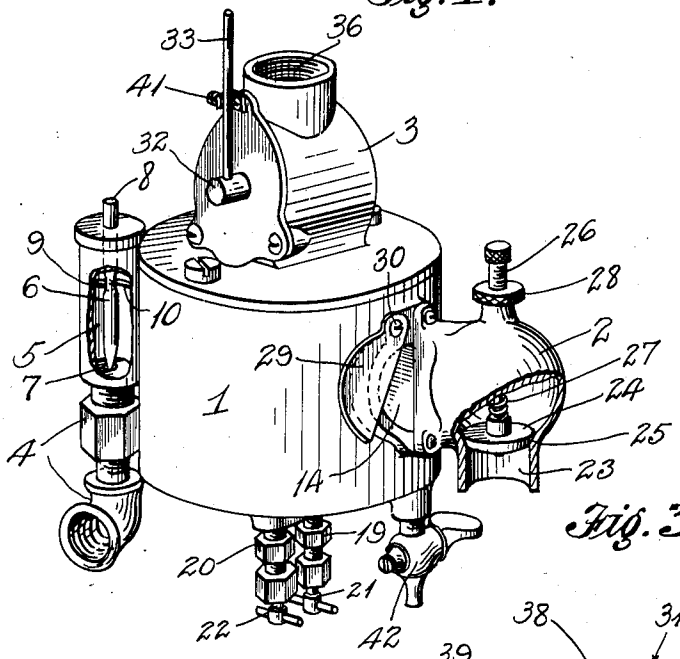


Fig. 3.

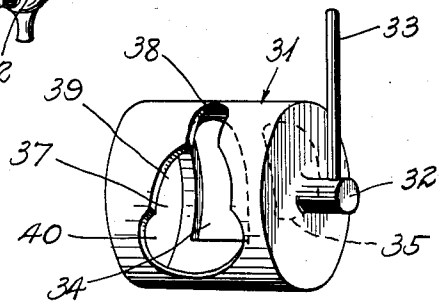


Fig. 2.

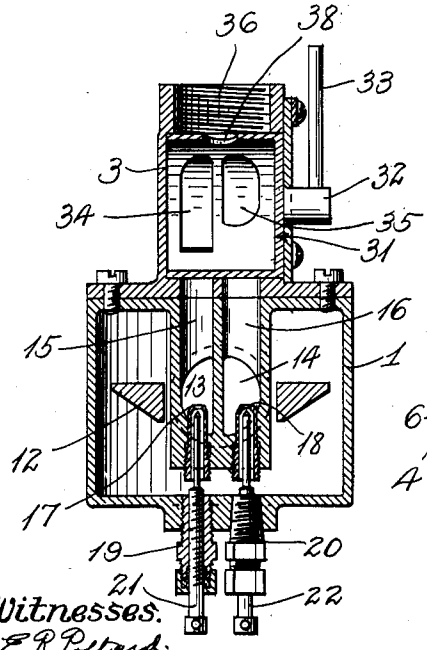
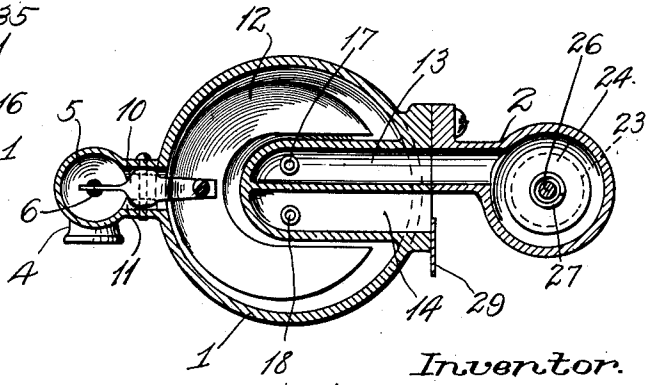


Fig. 4.



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CARBURETER.

1,037,993. Specification of Letters Patent. Patented Sept. 10, 1912.

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To all whom it may concern:

Be it known that I, GEORGE W. ROMANS, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Carbureters, of which the following is a specification.

This invention relates to improvements in carbureters for gas engines and particularly for engines suitable for use upon automobiles or similar motor vehicles.

It is an object of the invention to provide a carbureter having suitable controlling means for feeding of gasolene, with a valve mechanism capable of controlling the inlet and supply of air and gasolene in proportion to the demands made thereupon by the engine.

It is also an object of the invention to provide a carbureter with a pair of inlet valves for introducing gasolene and a single valve for controlling the drawing of gasolene and air from the valve chambers into the engine to correspond with low or high speeds, the said single valve being also capable of cutting off the quantity of the carbureted air required for high speed when desired and admitting only that required for the low speed.

It is also an object of the invention to provide a carbureter with a gasolene inlet regulated by a float valve, a double carbureting chamber connected therewith and a valve mechanism capable of controlling the shutting off by the engine of carbureted air from either one or both of said chambers as required.

In the accompanying drawing forming a part of this specification, Figure 1 is a perspective view of a carbureter constructed in accordance with the present invention. Fig. 2 is a vertical central sectional view taken through said carbureter upon the line of the needle valves mounted therein. Fig. 3 is a detail perspective view of the throttle valve controlling the amount of carbureted air drawn from the carbureter. Fig. 4 is a horizontal sectional view taken through the carbureter just above the float mounted therein.

The invention will now be more particularly described with reference to the said drawing in which—

1 indicates a float chamber casing, 2 an air inlet valve casing and 3 a throttle valve casing. On one side of the casing 1 is an inlet connection as at 4 which receives the gasolene which is fed to the carbureter. This inlet or supply connection is fastened to a valve chamber 5 in which is mounted a vertically operable needle valve 6, the said valve seating the inlet opening 7 through which the gasolene is admitted to the carbureter. The upper end of the valve projects outside the chamber 5 as at 8 and may be thus in reach for operation in priming the carbureter.

The valve 6 is provided with a slot 9 therein, which receives the outer end of a float lever 10, the end of said lever playing loosely and freely in the said slot. The inner end of the lever 10 projects into the casing 1 through a passageway 11 and has secured to it within said chamber a float 12 of any usual or desired form. The said float 12 will maintain the gasolene in the chamber only at the proper height, since when the gasolene fills the chamber to a certain degree the valve will be caused to seat itself and cut off the supply of gasolene until the level of the gasolene in the said chamber 1 is lowered again.

Projecting into the float chamber 1, from one side thereof are air inlet passages 13 and 14, which communicate with vertical passages 15 and 16 which extend approximately at right angles to the said passages 13 and 14 and upwardly through the top of the casing 1 as clearly illustrated in Fig. 2. The said passages 13, 14, 15 and 16 are usually cast integrally with the casing 1 in forming the same.

At the inner ends of the passages 13 and 14 are arranged inlet needle valves as at 17 and 18, the said needle valves entering the passages 13 and 14 through the bottom thereof. The needle valve casings communicate with the interior of the float chamber while the needles pass outwardly through the bottom of the casing and are provided with screw bushings 19 and 20 within which the needle stems 21 and 22 are mounted. The said stems have a threaded engagement with the bushings 19 and 20 and by turning the outer ends of said stems the amount of gasolene that will be fed through the needle valves can be controlled from the exterior of the carbureter.

One of the passages 13 connects with a valve controlled air inlet as at 23 which

enters through a casing 2 secured to the casing 1, so as to register with the end of the passage 13. Mounted in the basing 2 is a spring controlled valve 24, which engages a valve seat 25 just inside the inlet opening 23. The valve 24 slides upon a guiding stem 26 around which a helical spring 27 is placed. The said spring normally holds the valve 24 upon its seat, though with a proper pressure to admit air in sufficient quantities to the carbureter through the passage 13. The tension of the spring may be controlled by adjusting the upper end of the stem 26, which passes outside the casing 2. A lock nut 28 upon the outside of the casing 2 makes it possible to secure the said stem 26 in its adjusted positions.

In running the automobile or other engine to which the carbureter is connected, at a low rate of speed, ample air is provided for the carbureter through the entrance 23 and past a valve 24. When, however, a large quantity of gasolene is required for the engine, air is also drawn through the passage 14 under the control of the throttle valve which will be hereinafter described. The passage 14 opens into the atmosphere at its outer end and is provided with a slide as 29 which is pivotally mounted on the casing 1 at 30. The said slide 29 is adjusted to admit just the right quantity of air for providing a proper carbureting thereof within the carbureter and after its adjustment may be clamped in position by means of the screw upon which it is pivotally mounted at 30.

The drawing of carbureted air through the carbureter is controlled by means of a throttle valve 31 which is movably mounted within the casing 3. The said valve 31 is preferably formed of a cylindrical shell usually closed at one end and open at the other, though it may be closed or opened at either end as desired, without affecting the action of the valve. The closed end, however, affords a means for supporting an operating stud or hub 32, which projects outside the casing 3 and receives an operating handle as 33 of any desired shape. The cylindrical walls of the valve 31 are provided with inlet controlling ports 34 and 35, the port 34 being adapted to coincide with the end of the inlet passage 15, while the port 35 is adapted to be brought into coincidence with the inlet passage 16. The port 34 is preferably made considerably longer than the port 35 so that carbureted air may be introduced from the passage 15 to the engine and operate the same upon comparatively low suctions, before any of the mixture is admitted from the passage 16 through the port 35. After the carbureted air passes through the valve 31 it escapes to the engine through the discharge opening 36 of the casing 3. Opposite to the ports 34 and 35 a valve 31 is provided with an elongated port 37 which has a reduced portion 38 formed therein and enlarged portions 39 and 40 which are successively brought opposite the discharge outlet 36, for permitting the escape of the quantities of the air and gasolene in the proportion in which they are received by the valve through the ports 34 and 35. The movement of the valve in one direction is limited by adjustable stop 41 secured upon the outside of the casing 3 and extending into the path of the lever 33 by which the valve is operated. The stop 41 is usually set so as to leave a small portion of the port 34 open, which will thus admit enough gasolene when the carbureter is primed for starting the action of the engine. As the engine gains headway the valve 31 is turned more and more so that the port 34 admits more and more carbureted air and when a high speed is to be attained the valve is still further turned so that the port 35 begins to admit the carbureted air from the passage 16. When the valve is fully opened, the engine will be able to draw carbureted air through the carbureter, to the full capacity of the passageways 15 and 16, through both the ports 34 and 35 and through the largest portion 40 of the port 37. The float chamber may be drained through any usual or ordinary drain cock 42 as illustrated in Fig. 1.

The mechanism above described is found very effective for introducing the desired quantities of carbureted air with a proper mixing of air with the gasolene. The throttle 31 can be connected by its handle 33 with any suitable operating means extending to any portion of the automobile or other device carrying the carbureter.

What I claim is—

1. A carbureter, comprising a casing having a float chamber therein, the said casing having a plurality of parallel and adjacent air inlet passages, one of which is open at its outer end directly to the atmosphere, a valve chamber adjoining said open end, a spring pressed inlet valve in said valve chamber controlling the other air inlet passage, fuel supply nozzles, one of which enters each of said air inlet passages, means for directing the mixing materials to the throttle mechanism of the carbureter, a throttle mechanism mounted above the mixing passages, a throttle valve mounted therein and having a controlling port for each inlet, one being longer than the other to begin the introduction of materials before the other.

2. A carbureter comprising a casing having a float chamber therein for controlling the admission of fuel, the said casing being formed with a plurality of L shaped passageways, the lower portions of which communicate with the atmosphere while the

upper portions extend to a throttle valve, fuel inlet nozzles extending into the said passageways and a cylindrical throttle valve having a long port communicating with one of said L shaped passageways and an elongated portion communicating with the other, the said valve also having an opposing port in its wall of increasing size from one end thereof toward the other whereby the admission of mixing air and fuel may be controlled from both passages by the movement of said throttle valve.

In witness that I claim the foregoing I have hereunto subscribed my name this 13th day of January, 1911.

GEORGE W. ROMANS.

Witnesses:
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CASSELL SEVERANCE.