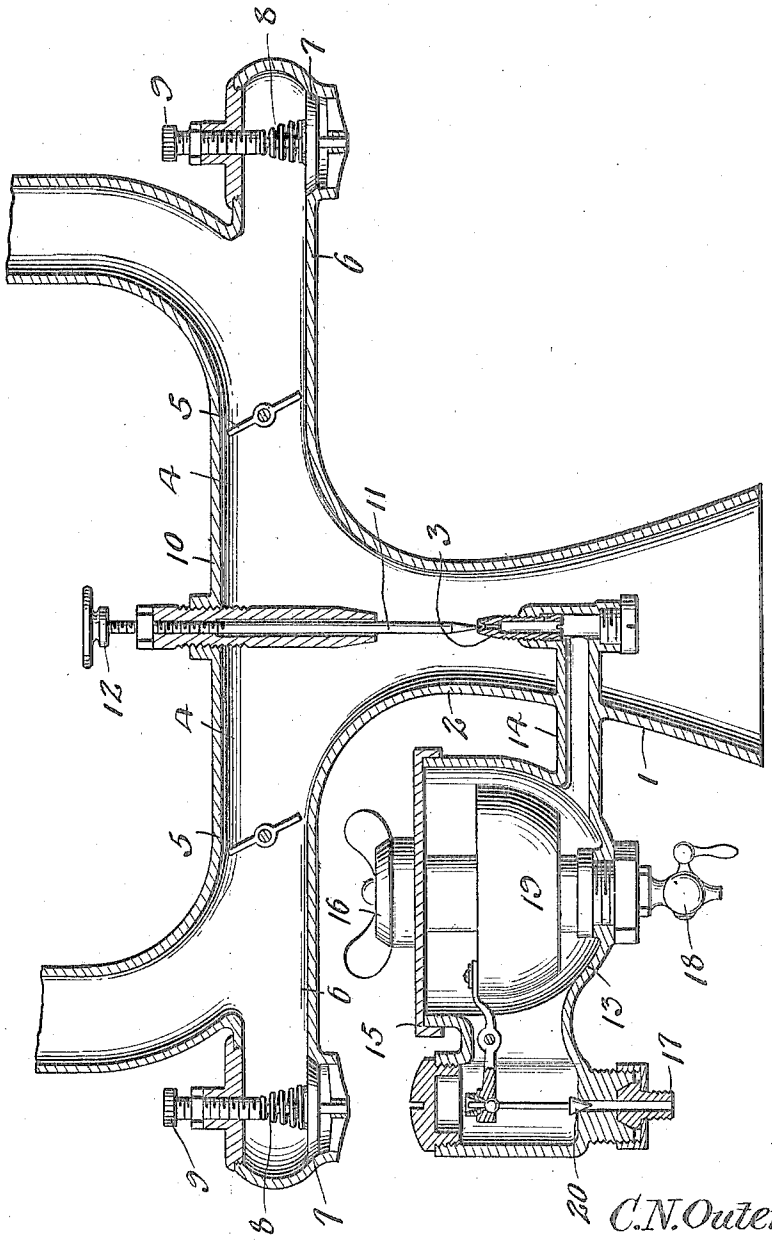
C. N. OUTERBRIDGE.

CARBURETER.

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1,273,401. Patented July 23, 1918.



Inventor

C. N. Outerbridge,

Witnesses

E. Andersen Jr.

P. M. Smith.

By Victor J. Evans

Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CYRIL NORTON OUTERBRIDGE, OF CHARLOTTESVILLE, VIRGINIA.

CARBURETER.

1,273,401. Specification of Letters Patent. Patented July 23, 1918.

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To all whom it may concern:

Be it known that I, CYRIL N. OUTERBRIDGE, a citizen of the United States, residing at Charlottesville, in the county of Albemarle and State of Virginia, have invented new and useful Improvements in Carbureters, of which the following is a specification.

This invention relates to carbureters, the object in view being to provide a carbureter which is especially designed for use in connection with a multiple cylinder engine, the carbureter embodying a Venturi tube having discharge branches diverging therefrom and constituting the intake manifold branches which lead to the engine cylinders, combined with a float controlled fuel supply, and a novel arrangement of throttle valves and auxiliary air valves one of each of which is employed in connection with each branch of the Venturi tube.

A further object in view is to provide in connection with the spray nozzle outlet of the fuel supply, an adjustable valve which together with the spray nozzle is located in such relation to the Venturi tube and its branches as to cause a spreading and diffusion of the carbureted air prior to the delivery thereof to the Venturi tube branches.

With the above and other objects in view, the invention consists in the novel construction, combination and arrangement, herein fully described, illustrated and claimed.

The accompanying drawing represents a vertical diametrical section through a carbureter embodying the present invention.

Referring to the drawings 1 designates a Venturi tube of the usual formation, having the upper and lower expanded end portions and the substantially central contracted portion 2 in which is arranged the spray nozzle 3 the discharge end of which is located at a comparatively high elevation within the tube 1. The flared bottom end of the Venturi tube 1 forms the main or primary air inlet.

At its upper end the Venturi tube is formed into two branches 4 which diverge upwardly on curvilinear lines and are provided with the usual flanges whereby connection is made between said branches 4 and the cylinders or intake manifold of the engine.

Each of the branches 4 contains an independent throttle valve 5 of the butterfly type and is also formed with a tubular extension or auxiliary air inlet connection 6 containing an auxiliary air inlet valve 7 and a valve seating spring 8, the tension of the spring 8 being varied to suit conditions by adjusting means 9.

Extending through the top wall 10 at the head of the Venturi tube 1 is a regulating valve 11 shown in the form of a needle valve adapted to coöperate with the discharge end of the spray nozzle 3, said valve 11 being provided with adjusting means 12 so that the quantity of fuel admitted to the carbureter may be regulated in accordance with atmospheric conditions and the type of engine in connection with which the carbureter is used. The valve 11 acts to spray or spread and diffuse the upwardly drawn fuel as it leaves the spray nozzle 3.

13 represents the fuel bowl of the carbureter which is shown as supported in relation to the Venturi tube 1 by means of a fuel feed pipe 14. The cover 15 of the bowl 13 is removable, being detachably fastened in place by means 16. A fuel pipe 17 leads to the bowl of the carbureter and sediment, water or other material may be drained therefrom by means of the usual drain cock 18. The bowl 14 contains the usual float 19 which controls the fuel inlet valve 20 and maintains the fuel at a proper level within the bowl 13. Ordinarily the throttle valves 5 will be connected to the same controlling element so that an equal amount of carbureted air may be allowed to pass through both of the Venturi branches 4.

A great advantage resides in employing two independent throttle valves and two independent auxiliary air inlet valves for the reason that should one block of cylinders become disabled, the throttle valve controlling said block of cylinders may be disconnected from the valve operating means and closed so that no explosive mixture will reach the disabled block of cylinders. This also effects a great saving of gasolene. By having independent auxiliary air valves, they may be adjusted to suit the blocks of cylinders which they serve thus enabling better results to be obtained than where both blocks are supplied by a single auxiliary air inlet valve. By arranging the needle valve to point downwardly, it does not have to be packed in order to prevent leakage of gasolene around the stem thereof and the handle does not interfere with the inflow of the

primary air; it is furthermore accessible for adjustment. The air valves are also easily adjusted without soiling the hands.

I claim:

1. In a carbureter, a Venturi tube having a plurality of branches leading from the discharge end thereof and constituting members of the intake manifold of an internal combustion engine, a fuel spray nozzle discharging within said Venturi tube, an independent auxiliary air valve associated with each branch from the Venturi tube, and an independent throttle valve for each of said branches.

2. In a carbureter, the combination with a Venturi tube the lower end of which forms a primary air inlet, of a fuel spray nozzle discharging within said Venturi tube, a plurality of branches leading from the discharge end of said tube and constituting members of the intake manifold of an internal combustion engine, each of said branches being provided with a tubular extension having an independent auxiliary air inlet, an auxiliary air valve for each of said inlets, and independent tensioning means for said auxiliary air valves.

In testimony whereof I affix my signature.

CYRIL NORTON OUTERBRIDGE.

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