

F. S. LOBDELL.
CARBURETER.
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1,152,031.

Patented Aug. 31, 1915.

Fig. 1

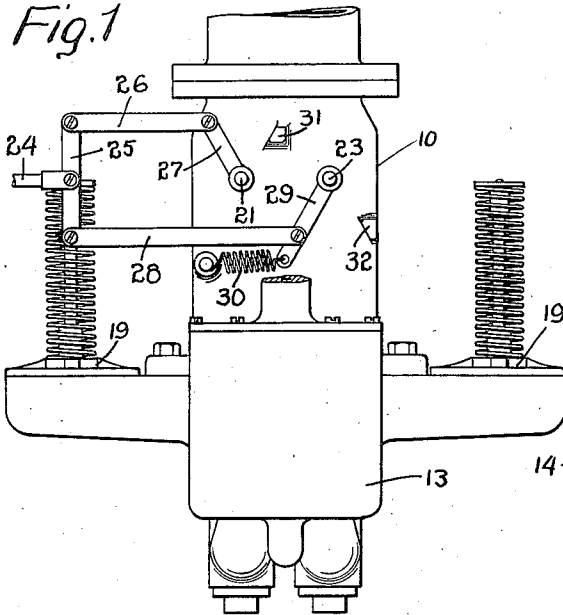


Fig. 2

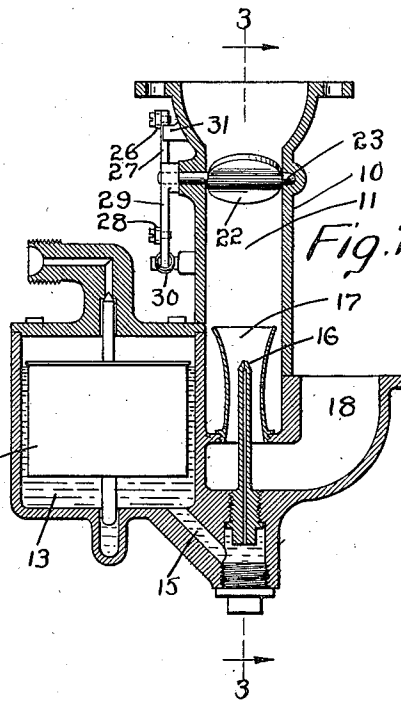


Fig. 3

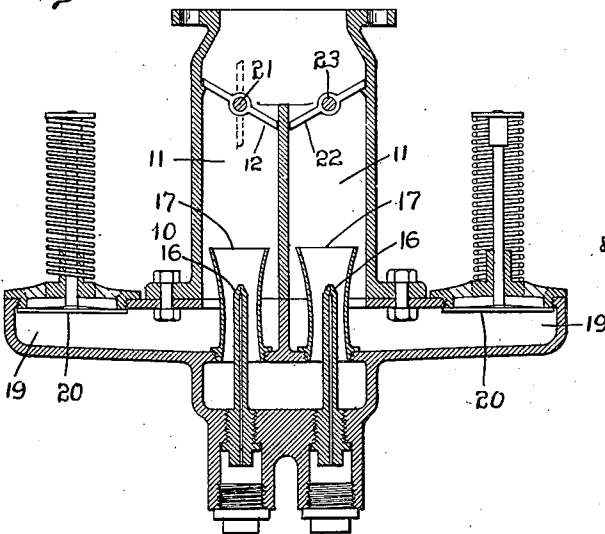
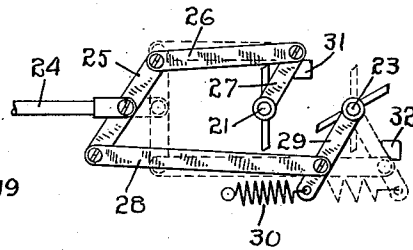


Fig. 4



WITNESSES:

H. W. Meade
E. M. Culver

INVENTOR

Frank S. Lobdell

BY

A. M. Wooster
ATTORNEY

UNITED STATES PATENT OFFICE.

FRANK S. LOBDELL, OF NAUGATUCK, CONNECTICUT.

CARBURETER.

1,152,031.

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To all whom it may concern:

Be it known that I, FRANK S. LOBDELL, a citizen of the United States, residing at Naugatuck, county of New Haven, State of Connecticut, have invented an Improvement in Carbureters, of which the following is a specification.

This invention has for its object to provide a carbureter in which the supply of gasoline or other hydrocarbon shall be under more effective control than heretofore, whereby waste of the hydrocarbon is prevented and an engine may be rendered more efficient with a reduced consumption of hydrocarbon, my invention being especially adapted for use on automobiles, and its value appearing when it is required to increase or reduce speed or in passing from a good stretch of road to a bad one, or from a level road to a steep grade, and vice versa. This result I accomplish by providing a plurality of jet nozzles, a corresponding number of throttle valves and mechanism for opening and closing said valves successively with a continuous movement.

In the accompanying drawing forming a portion of this specification, Figure 1 is an elevation of my novel carbureter; Fig. 2 a vertical section on planes at right angles to the plane of Fig. 1, one plane cutting the gasoline reservoir, the other cutting one of the mixing chambers; Fig. 3 a section on the line 3—3 in Fig. 2, looking in the direction of the arrows, and Fig. 4 is a diagrammatic view of the valve mechanism detached, and illustrating the operation thereof, one of the valves (in full lines) being fully open, the other remaining closed.

I have illustrated a structure embodying two mixing chambers only and the corresponding valves and operating mechanism. It is obviously however within the principle of the invention to increase the number of mixing chambers and valves.

10 denotes the body within which are mixing chambers 11, each closed by an independently operated throttle valve, said valves being indicated respectively by 12 and 22.

13 denotes the hydrocarbon reservoir within which is a float 14 operating in the usual manner. From the reservoir the hydrocarbon passes through ducts 15 to the jet nozzles 16, outside of which are throat tubes 17. The openings in the jet nozzles are made relatively small, which greatly im-

proves the vaporization. The primary air supply is through passage 18, and the secondary air supply through passages 19 which are normally closed by spring-controlled valves 20. Throttle valves 12 and 22 are carried respectively by shafts 21 and 23.

24 denotes an operating rod to which a lever 25 is pivoted. A link 26 connects one end of this lever with an arm 27 extending from shaft 21, and a link 28 connects the other end of said lever with an arm 29 extending from shaft 23. A spring 30 connected to the free end of arm 29 and to a fixed support acts to retain valve 22 in the closing position until valve 12 has been fully operated. Stops 31 and 32 engaged by arms 27 and 29 respectively act to limit the opening movement of the valves.

The operation will be readily understood by comparing Fig. 4 with Fig. 1, which shows the normal position of the parts, both throttle valves being closed. The throttle valves are opened successively by a continuous movement of the operating rod toward the right from the position shown in Fig. 1. The first effect of movement of the operating rod will be wholly upon valve 12, for the reason that spring 30 will retain valve 22 closed until valve 12 is in the fully open position and arm 27 is in engagement with stop 31. After the movement of arm 27 has been stopped, and valve 12 is fully open, continued movement of the operating rod toward the right will overcome the power of spring 30 and will swing arm 29 toward the right, which will open valve 22. This movement may continue until arm 29 engages stop 32, when valve 22 will be fully open. In the closing movement, the first effect of the movement of the operating rod toward the left from its position with both valves in the fully open position, indicated by dotted lines in Fig. 4, will be wholly upon valve 22, this for the reason that spring 30 will act to move valve 22 toward the closing position the instant the operating rod is moved from its extreme position toward the right, so that valve 12 will remain wholly open until valve 22 is wholly closed. Further movement of the operating rod toward the left will then act to move valve 12 toward the closing position.

Having thus described my invention I claim:—

1. A carbureter comprising a plurality of

mixing chambers, a throttle valve for each chamber, shafts for said valves, arms extending from said shafts, an operating rod, connections between said rod and the arms, 5 and resilient means for normally retaining one of said valves closed against the action of the operating rod until the other valve has been fully opened, continued movement of the operating rod then overcoming the 10 resilient means and opening the other valve.

2. A carbureter comprising a plurality of mixing chambers, a throttle valve for each chamber, shafts for said valves, arms extending from said shafts, an operating rod, 15 a lever pivoted to said rod, links connecting the ends of said lever with the respective arms and a spring acting on one of said arms to retain the corresponding valve stationary until the other valve is fully opened 20 or closed.

3. A carbureter comprising a plurality of mixing chambers, a throttle valve for each chamber, shafts for said valves, arms extending from said shafts, an operating rod, 25 a lever pivoted to said rod, links connecting the ends of said lever with the respective

arms, a spring acting on one of said arms to retain the corresponding valve stationary until the other valve is fully opened or closed, and stops for limiting the opening 30 movement of the valves.

4. A carbureter comprising a plurality of mixing chambers, a throttle valve for each chamber, shafts for said valves, arms extending from said shafts, a spring acting 35 on one of said arms to retain the corresponding valve closed until the other valve is fully open, stops engaged by said arms to limit the opening movement of the valves and means acting with a continuous move- 40 ment to successively open one valve and then the other, the spring acting in the closing movement to close the last opened valve before the first opened valve commences to 45 close.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK S. LOBDELL.

Witnesses:

G. F. WIGMORE,
B. N. WILMOT.