G. A. BOYCE.

CARBURETER.

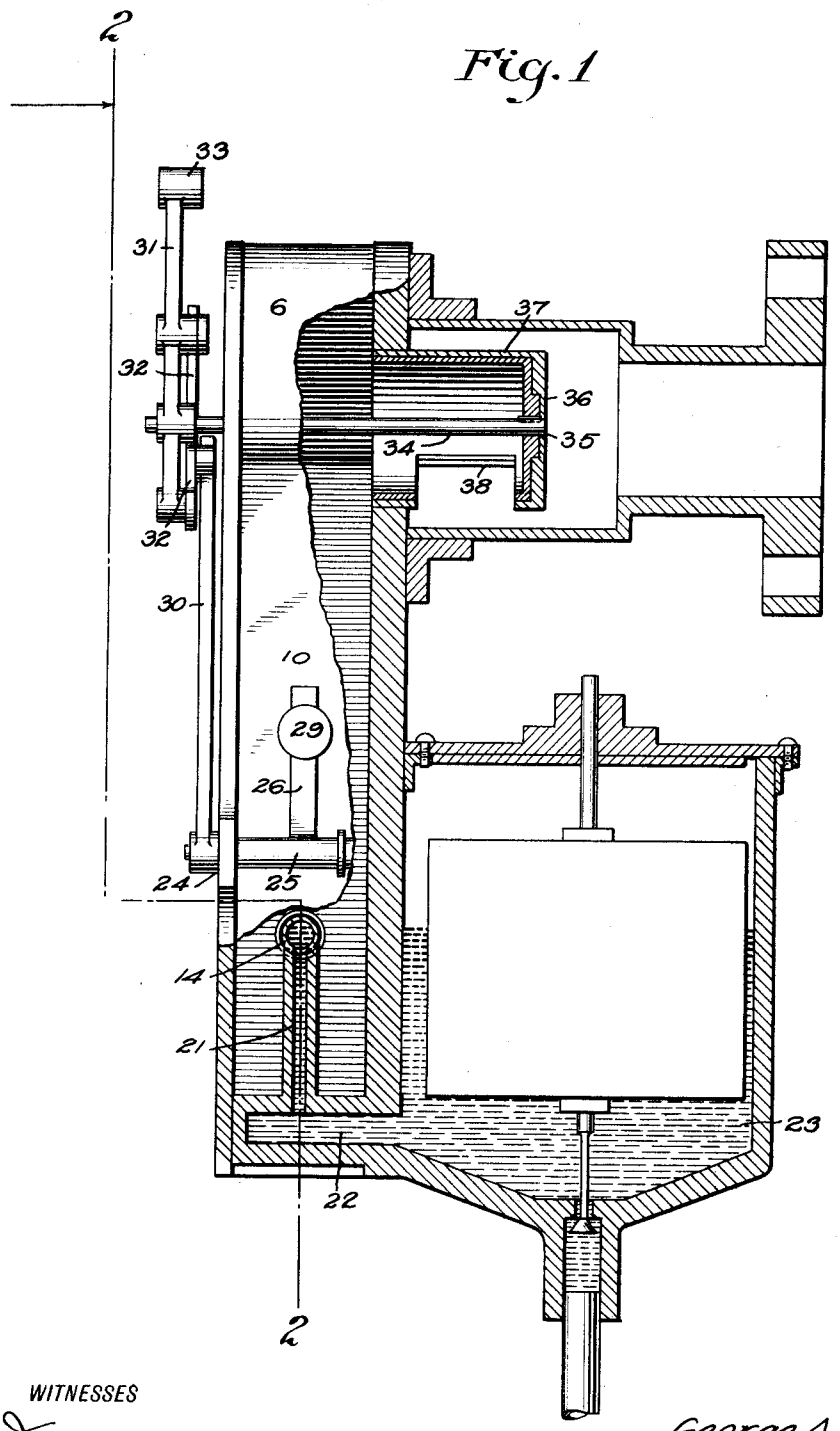
APPLICATION FILED JUNE 14, 1915.

1,176,516.

Patented Mar. 21, 1916.

2 SHEETS—SHEET 1.

Fig. 1



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 3

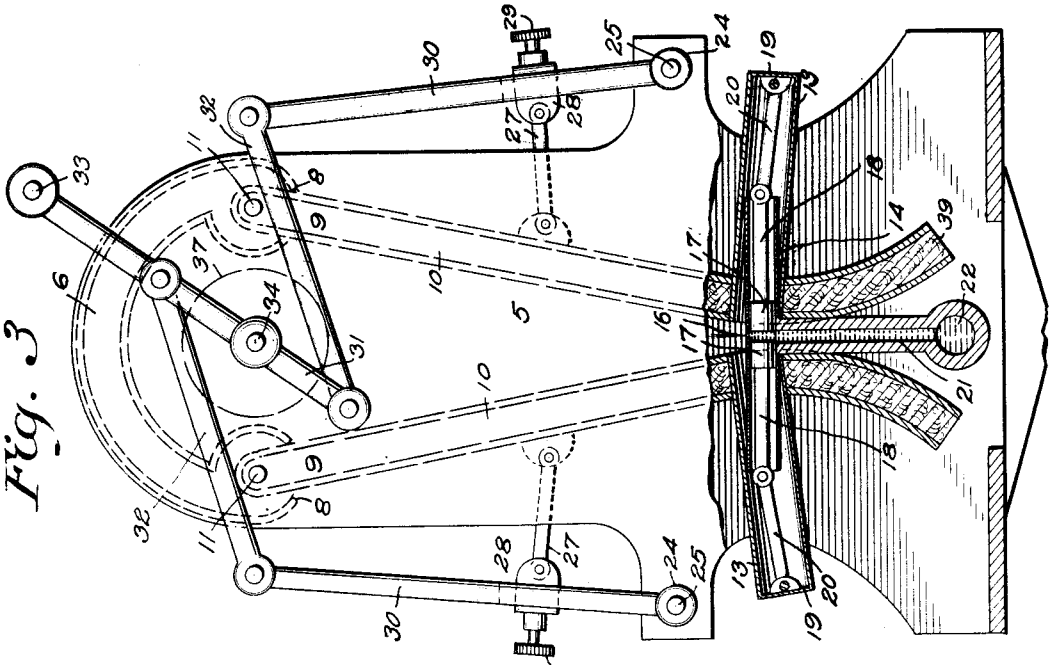
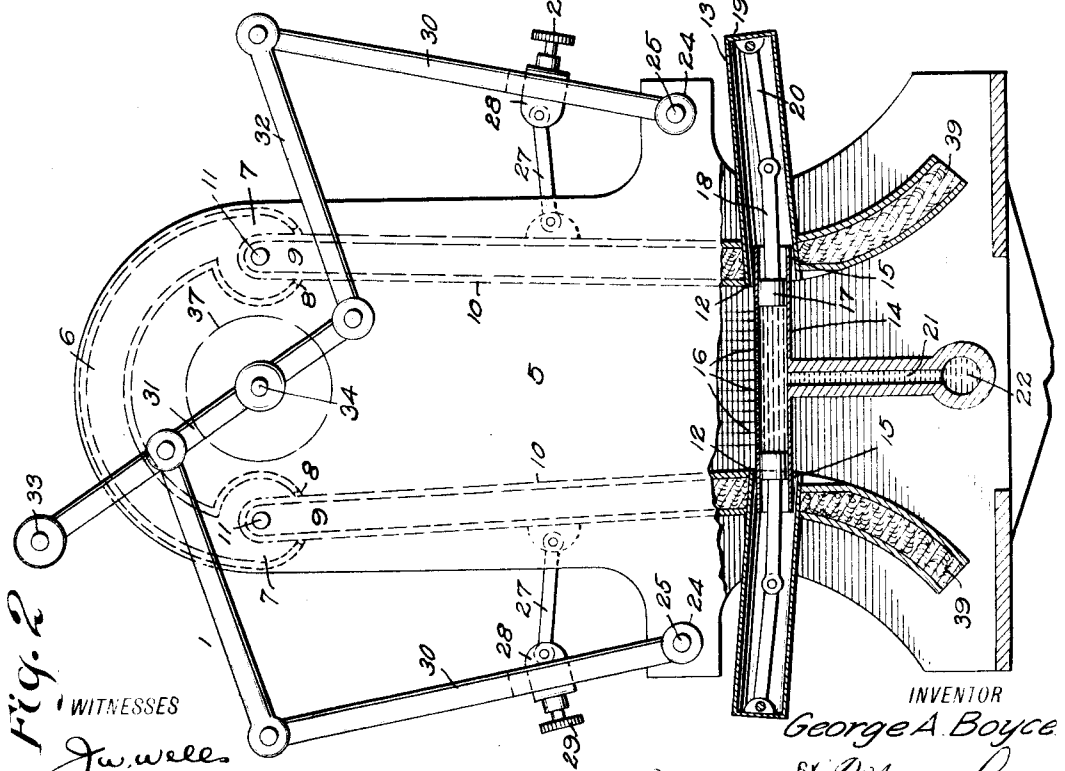


Fig. 2



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UNITED STATES PATENT OFFICE.

GEORGE ATEN BOYCE, OF EDGEMONT, NEVADA.

CARBURETER.

1,176,516. Specification of Letters Patent. Patented Mar. 21, 1916.

Application filed June 14, 1915. Serial No. 33,980.

To all whom it may concern:

Be it known that I, GEORGE A. BOYCE, a citizen of the United States, and a resident of Edgemont, county of Elko, State of Nevada, have invented a new and Improved Carbureter, of which the following is a full, clear, and exact description.

My invention has for its object to provide a carbureter with an adjustable fuel nozzle and an adjustable air intake at the nozzle, with means for regulating the nozzle and the air intake simultaneously, so that the velocity of the air at the air intake is substantially the same at all times, to vaporize the fuel perfectly whether the carbureter is wide open or partially closed.

The carbureter is constructed with one or more end walls, which may be moved to or from each other, and to which are secured plungers disposed for moving in the nozzle for closing and opening the nozzle openings with the movement of the said end wall or walls.

Additional objects of the invention will appear in the following specification, in which the preferred form of my invention is disclosed.

In the drawings similar reference characters refer to similar parts in all the drawings, in which—

Figure 1 is a side elevation of the carbureter, parts being broken away to illustrate the construction. Fig. 2 is a sectional view on the line 2—2 of Fig. 1; and Fig. 3 is a sectional view similar to that shown in Fig. 2, but with the throttle moved to partially close the carbureter.

By referring to the drawings it will be seen that the carbureter casing has side walls 5, which are connected at their upper ends by a top 6, this top 6 having enlarged ends 7 with openings 8, in which are disposed the upper ends 9 of the end walls 10 of the casing. The upper ends 9 of the said end walls 10 are pivoted at 11 to the top 6.

In the said end walls 10 there are openings 12, elongated caps 13 being secured to the end walls 10 around the said openings 12 and extending outwardly from the said end walls. Disposed in the casing there is a nozzle 14, the ends 15 of which are disposed in the elongated caps 13, the upper portion of the side wall of the nozzle 14 being provided with a plurality of outlet openings 16, which may be closed by the plungers 17, two of which are disposed in the nozzle 14. Each of these plungers 17 has an outwardly extending rod 18, which is connected with a head 19 of the elongated cap 13 by a link 20. It will, therefore, be seen that as the elongated caps 13 are secured to the end walls 10, that when the end walls 10 are moved in the direction of each other, they will, by means of the elongated cap 13 and the links 20 and the rods 18, cause the plungers 17 to move in the direction of each other.

In view of the fact that the air intake is up and around the nozzle 14, this air intake is contracted by the end walls 10 at the same time that the plungers 17 move inwardly to close the end outlet openings 16. By this means the air intake is contracted with a reduction of the fuel and the velocity of the air at the air intake is substantially the same whether the end walls 10 are disposed away from each other in the positions which they assume when the throttle is wide open, or if the end walls 10 are disposed adjacent each other, as illustrated in Fig. 3, which is the position that they assume when the throttle is moved to nearly close the carbureter.

At the bottom of the nozzle 14 there is an inlet 21 which conveys the liquid freely from the channel 22 to the nozzle 14, this channel 22 being in communication with a float valve chamber 23 which is of the usual construction.

The side walls 5 have bearings 24, in which are journaled shafts 25, an arm 26 being secured to each of the shafts 25, these arms 26 being connected with the pivoted end walls 10 by the links 27, the said links being pivoted to brackets 28, which are mounted to slide on the arms 26, and which may be held in adjusted position by the said screws 29. To the shafts 25 there are also secured arms 30, these arms being connected with the arms of the lever 31 by the links 32. As one of the links 32 is pivoted to one of the arms of the lever 31, and as the other link 32 is pivoted to the other arm of the said lever, it will be seen that the lever 31, with the links 32 and the means which has been described, acts as a throttle for opening or closing the carbureter. The lever 31 may be conveniently operated by a handle 33.

The lever 31 is fulcrumed to a rod 34, which, as is illustrated in Fig. 1 of the drawings, extends rearwardly and is secured at 35 to a head 36 of an outlet 37, which has

an outlet opening 38, from which the adjustable mixture may be drawn by the suction of the engine.

I prefer to make the side walls 5, the top 6 and the end walls 10 hollow, and pack them with fine wool felt 39.

Having thus described my invention I claim as new and desire to secure by Letters Patent:

1. In a carbureter, a casing having a pivoted wall, a nozzle in the casing and having an inlet, and outlet openings along one side, a plunger in the nozzle for moving longitudinally thereof, and means for moving the plunger and the wall simultaneously.

2. In a carbureter, a casing having a pivoted wall with an opening, a nozzle disposed in the casing with an end at the opening for moving therethrough, a plunger in the nozzle for moving longitudinally thereof, and means connecting said wall with the plunger for moving the latter relatively to the nozzle.

3. In a carbureter a nozzle having outlet openings along one side, and an inlet intermediate of its ends, two plungers, one disposed in each end of the nozzle and movable longitudinal thereof, and means for moving the plungers simultaneously.

4. In a carbureter, a casing having a movable wall, a nozzle in the casing and having an inlet, and outlet openings along one side, a plunger in the nozzle for moving longitudinally thereof, and means for moving the plunger connected with the wall, to be operated thereby.

5. In a carbureter a casing having two movable walls, a nozzle having outlet openings along one side, and an inlet intermediate of its ends, two plungers, one disposed in each end of the nozzle and movable longitudinally thereof, and means for moving the plungers and the side walls simultaneously.

6. In a carbureter a casing having a movable wall with an opening, a nozzle disposed in the casing with an end at the opening for moving therethrough, a plunger in the nozzle for moving longitudinally thereof, and means connecting said wall with the plunger for moving the latter relatively to the nozzle.

7. In a carbureter a casing having a movable wall with an opening, a cap secured to the wall around the opening and extending outwardly therefrom, a nozzle having an inlet, and outlet openings extending along one side, the nozzle being disposed in the casing with an end extending at the opening for moving therethrough, a plunger in the nozzle for moving longitudinally thereof, and means connecting the cap with the plunger for moving the latter relatively to the nozzle.

8. In a carbureter, a casing having opposite end walls pivoted relatively to the body of the casing, there being openings in the end walls, a nozzle having an inlet, and outlet openings extending along one side, the nozzle being disposed in the casing and having ends disposed for moving through the openings in the pivoted end walls, plungers disposed in the nozzle for moving longitudinally thereof, and means connecting the pivoted end walls with the plungers for moving the latter.

9. In a carbureter a casing having sides, and end walls pivoted relatively thereto, there being openings in the end walls, a nozzle having an inlet, and outlet openings along one side, the nozzle being disposed in the casing, and with its ends disposed at the openings in the end walls for moving therethrough, caps secured around the openings in the end walls and extending outwardly, plungers in the nozzle, and means connecting the caps with the plungers for moving the latter longitudinally of the nozzle.

10. In a carbureter a casing having sides, and end walls pivoted relatively thereto, there being openings in the end walls, a nozzle having an inlet, and outlet openings along one side, the nozzle being disposed in the casing, and with its ends disposed at the openings in the end walls for moving therethrough, caps secured around the openings in the end walls and extending outwardly, plungers, means connecting the caps with the plungers for moving the latter longitudinally in the nozzle, a lever fulcrumed relatively to the casing, two shafts journaled in the side walls, links connecting the lever with the shafts for rocking the latter, and means connecting the shafts with the end walls of the casing for moving the latter relatively to the casing's side walls.

11. In a carbureter a casing having side walls and end walls movable relatively thereto, and to and from each other, a nozzle having an inlet, and outlet openings extending along one side, the nozzle being disposed in the casing, with its ends extending in the direction of the end walls, the plunger in the nozzle, means connecting the end walls with the plunger for moving the latter relatively to the nozzle, a lever fulcrumed relatively to the casing, two shafts journaled in the side walls, links connecting the levers with the shafts for rocking the latter, and means for connecting the shafts with the end walls for moving the latter relatively to the side walls.

12. In a carbureter, a casing having two pivoted walls, a nozzle having outlet openings along one side and an inlet intermediate of its ends, two plungers, one disposed in each end of the nozzle and movable longitudinally thereof, and means for moving the plungers and the pivoted walls simultaneously

13. In a carbureter, a casing having a passage one end of which is inclosed by a wall movable transversely relatively to the body of the casing, a nozzle in the casing and having an inlet, and outlet openings along one side, a plunger in the nozzle for moving longitudinally thereof, and means for simultaneously moving the plunger and the wall.

14. In a carbureter, a casing having two walls one movable relatively to the other, there being an opening in the movable wall, a nozzle disposed in the casing, with outlet openings along one side and with an end at the opening in the wall, and means for moving the wall having the opening relatively to the other wall.

15. In a carbureter, a casing having two walls, one movable relatively to the other, there being an opening in the movable wall, a nozzle disposed transversely in the casing with an end at the opening, and means for moving the wall having the opening longitudinally of the nozzle.

16. In a carbureter, a casing having sides and end walls, one pivoted for moving relatively to the other, there being an opening in the pivoted end wall, a nozzle having an inlet, and outlet openings along one side, the nozzle being disposed in the casing with an end disposed at the opening in the pivoted end wall for moving therethrough, a cap secured around the opening in the pivoted end wall and extending outwardly, a plunger in the nozzle, and means connecting the cap with the plunger for moving the latter longitudinally of the nozzle.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE ATEN BOYCE.

Witnesses:

T. C. PLUNKETT,

P. A. NELSON.